PATENT
Customer No. 74,863
Attorney Docket No. 1007.0013-01000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Prior Application Art Unit: 3723 Prior Application Examiner: David A. Redding

SIR: This is a request for filing a

☒ Continuation ☐ Continuation-in-Part ☐ Divisional Application under 37 C.F.R. § 1.53(b) of pending prior Application No. 10/818,073 filed April 5, 2004 of Joseph L. Jones et al. for AUTONOMOUS FLOOR CLEANING ROBOT.

1. ☒ Enclosed is a complete copy of the prior application including the oath or Declaration and drawings, if any, as originally filed. I hereby verify that the attached papers are a true copy of prior Application No. 10/818,073 as originally filed on April 5, 2004, which is incorporated herein by reference.

2. ☐ Enclosed is a Request for Non-Publication of Application and Certification Under 35 U.S.C. § 122(b)(2)(B)(i).

3. ☒ A Preliminary Amendment is enclosed.

4. ☐ The filing fee is calculated on the basis of the claims existing in the prior application as amended in the Preliminary Amendment filed herewith.

Basic Utility Application Filing Fee					$310	$ 310.00
Search Fee					$510	$ 510.00
Examination Fee					$210	$ 210.00
	Number of Claims		Basic	Extra		
Total Claims	19	-	20	0	x $ 50	
Independent Claims	4	-	3	1	x $210	210.00
☐ Presentation of Multiple Dep. Claim(s)					+ $370	
Total Application Pages (specification, drawings, printed sequence or computer listing, and preliminary amendment)	58	If over 100 pages, add $260 for each additional 50 pages or fraction thereof.				
Subtotal						$ 1240.00
Reduction by ½ if small entity						-
TOTAL APPLICATION FILING FEE						$ 1240.00

5. ☒ The above Application Filing Fee is paid via credit card charge.

6. ☒ The Commissioner is hereby authorized to charge any fees, except the issue fee, which may be required including fees due under 37 C.F.R. § 1.16 and any other fees due under 37 C.F.R. § 1.17, or credit any overpayment during the pendency of this application to Deposit Account No. 50-4126.

7. ☐ New acceptable drawings are enclosed.

8. ☒ The prior application is assigned of record to: iRobot Corporation.

9. ☐ Priority of Application No. [Text], filed on [Text] in [Country] is claimed under 35 U.S.C. § 119. A certified copy

☐ is enclosed or ☐ is on file in the prior application.

10. ☐ Small entity status is appropriate and applies to this application.

11. ☒ Please address all correspondence to O'BRIEN JONES PLLC, Customer Number 74,863.

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12. ☒ Also enclosed are an Application Data Sheet and an Information Disclosure Statement.

PETITION FOR EXTENSION. If any extension of time is necessary for the filing of this application, including any extension in parent Application No. 10/818,073, filed April 5, 2004, for the purpose of maintaining copendency between the parent application and this application, and such extension has not otherwise been requested, such an extension is hereby requested, and the Commissioner is authorized to charge necessary fees for such an extension to Deposit Account No. 50-4126. A duplicate copy of this paper is enclosed for use in charging the deposit account.

O'BRIEN JONES PLLC

Dated: August 29, 2008

By: /Jill DeMello Hill, Reg. No. 42,477/
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PATENT
Customer No. 74,863
Attorney Docket No. 1007.0013-01000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re 37 C.F.R. § 1.53(b) Continuation Application of U.S. Application No. 10/818,073	)	
	)	Parent Group Art Unit: 3723
Inventors: Joseph L. JONES et al.	)	
	)	Parent Examiner: David A. Redding
Application No.: To be Assigned	)	
	)	
Filed: August 29, 2008	)	
	)	
For: AUTONOMOUS FLOOR CLEANING ROBOT	)	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

PRELIMINARY AMENDMENT

Please amend the above-identified patent application as follows:

Amendments to the Specification are included in this paper.

Amendments to the Claims are reflected in the listing of claims in this paper.

AMENDMENTS TO THE SPECIFICATION:

Please replace the first paragraph starting at page 1, line 1, with the following new paragraph:

This is a division of U.S. Non-Provisional Patent Application No. 10/818,073 filed April 5, 2004, which is a continuation of U.S. Non-Provisional Patent Application No. 10/320,729 filed December 16, 2002 and which claims priority to U.S. Provisional Patent Application No. 60/345,764 filed January 3, 2002, the disclosures of which are incorporated herein by reference in their entireties. The subject matter of this application is also related to commonly-owned U.S. Patent No. 6,615,439 filed January 24, 2001, U.S. Patent No. 6,809,490 filed June 12, 2002, and U.S. Patent No. 6,690,134 filed January 24, 2002.

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Claims 1-77. (Canceled).

78. (New) A floor cleaning robot comprising:

a housing;

wheels and at least one motor to drive the wheels disposed at least partially within the housing and configured to move the floor cleaning robot across a floor;

a control module disposed within the housing and directing movement of the floor cleaning robot across the floor;

at least one sensor for detecting an obstacle and communicating obstacle information to the control module so that the control module can cause the floor cleaning robot to react to the obstacle;

a removable bin disposed at least partially within the housing and configured to receive particulates;

a first rotating member configured to direct particulates toward the bin; and

a second rotating member configured to cooperate with the first rotating member to direct particulates toward the bin;

wherein the removable bin is configured to receive particulates directed thereto by the first and second rotating members and the particulates pass from the first rotating member to the removable bin without passing through a filter, and

wherein, during cleaning, the weight of the floor cleaning robot overcomes a force exerted by a member biasing one or more of the wheels to an extended position.

79. (New) The floor cleaning robot of claim 78, further comprising an air moving system disposed at least partially within the housing and configured to ingest particulates and direct particulates toward the removable bin.

80. (New) The floor cleaning robot of claim 79, wherein the first rotating member cooperates with the air moving system to direct particulates toward the bin.

81. (New) The floor cleaning robot of claim 79, wherein air moved by the air moving system passes through a filter before exiting the housing.

82. (New) The floor cleaning robot of claim 78, wherein the second rotating member is disposed at least partially within the housing and is spaced from the floor a greater distance than the first rotating member.

83. (New) The floor cleaning robot of claim 78, wherein the first rotating member contacts the floor and agitates particulates and directs the particulates toward the second rotating member.

84. (New) The floor cleaning robot of claim 83, wherein the second rotating member is positioned to receive particulates from the first rotating member and direct the particulates toward the removable bin.

85. (New) The floor cleaning robot of claim 78, wherein the first rotating member is a brush.

86. (New) The floor cleaning robot of claim 85, wherein the second rotating member includes a central member and two or more blade-like members extending therefrom.

87. (New) A floor cleaning robot comprising:

a housing;

wheels and at least one motor disposed at least partially within the housing and configured to move the floor cleaning robot across a floor;

a control module disposed within the housing and directing movement of the floor cleaning robot across the floor;

at least one sensor for detecting an obstacle and communicating obstacle information to the control module so that the control module can cause the floor cleaning robot to react to the obstacle;

a removable bin disposed at least partially within the housing and configured to receive particulates;

a rotating brush configured to agitate particulates and direct particulates toward a rotating member having a central member and two or more blade-like members extending therefrom, the rotating member configured to cooperate with the rotating brush to direct particulates from the rotating brush toward the bin;

wherein the removable bin is configured to receive particulates directed thereto by the rotating brush and the rotating member, and the particulates pass from the rotating brush to the removable bin without passing through a filter.

88. (New) The floor cleaning robot of claim 87, further comprising an air moving system disposed at least partially within the housing and configured to ingest particulates.

89. (New) The floor cleaning robot of claim 88, wherein the rotating brush cooperates with the air moving system to direct particulates toward the bin.

90. (New) The floor cleaning robot of claim 88, wherein air moved by the air moving system passes through a filter before exiting the housing.

91. (New) The floor cleaning robot of claim 87, wherein the rotating member is disposed at least partially within the housing and is spaced from the floor a greater distance than the rotating brush.

92. (New) The floor cleaning robot of claim 87 wherein, during cleaning, the weight of the floor cleaning robot overcomes a force exerted by a member biasing one or more of the wheels to an extended position.

93. (New) The floor cleaning robot of claim 92, wherein the second rotating member is positioned to receive particulates from the first rotating member and direct the particulates toward the removable bin.

94. (New) A method for directing particulates from a floor into a bin, the method comprising:

moving a housing across a floor;

sensing obstacles;

causing the housing to avoid the sensed obstacles;

agitating particulates from the floor and directing the particulates toward a rotating member disposed at least partially within the housing and having a central member and two or more blade-like members extending therefrom;

rotating the rotating member to direct particulates toward a removable bin disposed at least partially within the housing;

generating a negative pressure to direct agitated particulates toward the removable bin;

holding particulates in the removable bin; and

filtering air used to direct particulates toward the rotating bin after particulates carried by the air are held by the removable bin.

95. (New) A floor cleaning robot comprising:

a housing;

wheels and at least one motor to drive the wheels disposed at least partially within the housing and configured to move the floor cleaning robot across a floor;

a control module disposed within the housing and directing movement of the floor cleaning robot across the floor;

at least one sensor for detecting an obstacle and communicating obstacle information to the control module so that the control module can cause the floor cleaning robot to react to the obstacle;

a removable bin disposed at least partially within the housing and configured to receive particulates;

a rotating member configured to direct particulates toward the bin; and

an air moving system creating a negative pressure and including an impeller configured to cooperate with the rotating member to direct particulates toward the bin;

wherein the removable bin is configured to receive particulates directed thereto, and the particulates pass from the first rotating member to the removable bin without passing through a filter, and

wherein, during cleaning, the weight of the floor cleaning robot overcomes a force exerted by a member biasing one or more of the wheels to an extended position.

96. (New) The floor cleaning robot of claim 95, wherein air moved by the air moving system passes through a filter before exiting the housing.

97. (New) The floor cleaning robot of claim 95, wherein the impeller is disposed at least partially within the housing and is spaced from the floor a greater distance than the rotating member.

REMARKS

The application has been amended to insert the required reference to the parent applications, for which benefit is claimed, of this new continuing application. Original claims 1-77 have been canceled and new claims 78-97 have been added. Support for the subject matter of the new claims can be found throughout the originally-filed disclosure.

Please grant any extensions of time required to enter this paper and charge any additional required fees to Deposit Account 50-4126.

Respectfully submitted,

O'BRIEN JONES PLLC

Dated: August 29, 2008

By: /Jill DeMello Hill, Reg. No. 42,477/
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Application Data Sheet

Application Information

Application Type::	Regular
Subject Matter::	Utility
Suggested Group Art Unit::	3723
CD-ROM or CD-R?::	None
Sequence submission?::	None
Computer Readable Form (CRF)?::	No
Title::	Autonomous Floor-Cleaning Robot
Attorney Docket Number::	1007.0013-01000
Request for Early Publication?::	No
Request for Non-Publication?::	No
Suggested Drawing Figure::	2A
Total Drawing Sheets::	13
Small Entity?::	No
Petition included?::	No
Secrecy Order in Parent Appl.?::	No

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Correspondence Customer Number:: 74,863

Representative Information

Representative Customer Number:: 74,863

Domestic Priority Information

Application::	Continuity Type::	Parent Application::	Parent Filing Date::
This Application	Continuation under 37 CFR § 1.53(b)	10/818,073	April 5, 2004

AUTONOMOUS FLOOR-CLEANING ROBOT

Cross-Reference to Related Applications

This application for U.S. Patent is a continuation of, and claims priority from, U.S. Patent Application Serial No. 10/320,729 filed December 16, 2002, entitled Autonomous Floor-Cleaning Robot and U.S. Provisional Application Serial No. 60/345,764 filed January 3, 2002, entitled Cleaning Mechanisms for Autonomous Robot. The subject matter of this application is also related to commonly-owned, co-pending U.S. patent application serial numbers 09/768,773, filed January 24, 2001, entitled Robot Obstacle Detection System; 10/167,851, filed June 12, 2002, entitled Method and System for Robot Localization and Confinement; and, 10/056,804, filed January 24, 2002, entitled Method and System for Multi-Mode Coverage for an Autonomous Robot.

Background of the Invention

(1) Field of the Invention

The present invention relates to cleaning devices, and more particularly, to an autonomous floor-cleaning robot that comprises a self-adjustable cleaning head subsystem that includes a dual-stage brush assembly having counter-rotating, asymmetric brushes and an adjacent, but independent, vacuum assembly such that the cleaning capability and efficiency of the self-adjustable cleaning head subsystem is optimized while concomitantly minimizing the power requirements thereof. The autonomous floor-cleaning robot further includes a side brush assembly for directing particulates outside the envelope of the robot into the self-adjustable cleaning head subsystem.

(2) Description of Related Art

Autonomous robot cleaning devices are known in the art. For example, U.S. Patent Nos. 5,940,927 and 5,781,960 disclose an Autonomous Surface Cleaning Apparatus and a Nozzle Arrangement for a Self-Guiding Vacuum Cleaner. One of the primary

requirements for an autonomous cleaning device is a self-contained power supply - the utility of an autonomous cleaning device would be severely degraded, if not outright eliminated, if such an autonomous cleaning device utilized a power cord to tap into an external power source.

And, while there have been distinct improvements in the energizing capabilities of self-contained power supplies such as batteries, today's self-contained power supplies are still time-limited in providing power. Cleaning mechanisms for cleaning devices such as brush assemblies and vacuum assemblies typically require large power loads to provide effective cleaning capability. This is particularly true where brush assemblies and vacuum assemblies are configured as combinations, since the brush assembly and/or the vacuum assembly of such combinations typically have not been designed or configured for synergic operation.

A need exists to provide an autonomous cleaning device that has been designed and configured to optimize the cleaning capability and efficiency of its cleaning mechanisms for synergic operation while concomitantly minimizing or reducing the power requirements of such cleaning mechanisms.

Summary of the Invention

One object of the present invention is to provide a cleaning device that is operable without human intervention to clean designated areas.

Another object of the present invention is to provide such an autonomous cleaning device that is designed and configured to optimize the cleaning capability and efficiency of its cleaning mechanisms for synergic operations while concomitantly minimizing the power requirements of such mechanisms.

These and other objects of the present invention are provided by one embodiment autonomous floor-cleaning robot according to the present invention that comprises a housing infrastructure including a chassis, a power subsystem; for providing the energy to power the autonomous floor-cleaning robot, a motive subsystem operative to propel the autonomous floor-cleaning robot for cleaning operations, a control module operative to control the autonomous floor-cleaning robot to effect cleaning operations, and a self-adjusting cleaning head subsystem that includes a deck mounted in pivotal combination

with the chassis, a brush assembly mounted in combination with the deck and powered by the motive subsystem to sweep up particulates during cleaning operations, a vacuum assembly disposed in combination with the deck and powered by the motive subsystem to ingest particulates during cleaning operations, and a deck height adjusting subassembly mounted in combination with the motive subsystem for the brush assembly, the deck, and the chassis that is automatically operative in response to a change in torque in said brush assembly to pivot the deck with respect to said chassis and thereby adjust the height of the brushes from the floor. The autonomous floor-cleaning robot also includes a side brush assembly mounted in combination with the chassis and powered by the motive subsystem to entrain particulates outside the periphery of the housing infrastructure and to direct such particulates towards the self-adjusting cleaning head subsystem.

Brief Description of the Drawings

A more complete understanding of the present invention and the attendant features and advantages thereof may be had by reference to the following detailed description of the invention when considered in conjunction with the accompanying drawings wherein :

Figure 1 is a schematic representation of an autonomous floor-cleaning robot according to the present invention.

Figure 2 is a perspective view of one embodiment of an autonomous floor-cleaning robot according to the present invention.

Figure 2A is a bottom plan view of the autonomous floor-cleaning robot of Figure 2.

Figure 3A is a top, partially-sectioned plan view, with cover removed, of another embodiment of an autonomous floor-cleaning robot according to the present invention.

Figure 3B is a bottom, partially-section plan view of the autonomous floor-cleaning robot embodiment of Figure 3A.

Figure 3C is a side, partially sectioned plan view of the autonomous floor-cleaning robot embodiment of Figure 3A.

Figure 4A is a top plan view of the deck and chassis of the autonomous floor-cleaning robot embodiment of Figure 3A.

Figure 4B is a cross-sectional view of Figure 4A taken along line B-B thereof.

Figure 4C is a perspective view of the deck-adjusting subassembly of autonomous floor-cleaning robot embodiment of Figure 3A.

Figure 5A is a first exploded perspective view of a dust cartridge for the autonomous floor-cleaning robot embodiment of Figure 3A.

Figure 5B is a second exploded perspective view of the dust cartridge of Figure 5A.

Figure 6 is a perspective view of a dual-stage brush assembly including a flapper brush and a main brush for the autonomous floor-cleaning robot embodiment of Figure 3A.

Figure 7A is a perspective view illustrating the blades and vacuum compartment for the autonomous floor cleaning robot embodiment of Figure 3A.

Figure 7B is a partial perspective exploded view of the autonomous floor-cleaning robot embodiment of Figure 7A.

Detailed Description of the Invention

Referring now to the drawings where like reference numerals identify corresponding or similar elements throughout the several views, Figure 1 is a schematic representation of an autonomous floor-cleaning robot 10 according to the present invention. The robot 10 comprises a housing infrastructure 20, a power subsystem 30, a motive subsystem 40, a sensor subsystem 50, a control module 60, a side brush assembly 70, and a self-adjusting cleaning head subsystem 80. The power subsystem 30, the motive subsystem 40, the sensor subsystem 50, the control module 60, the side brush assembly 70, and the self-adjusting cleaning head subsystem 80 are integrated in combination with the housing infrastructure 20 of the robot 10 as described in further detail in the following paragraphs.

In the following description of the autonomous floor-cleaning robot 10, use of the terminology "forward/fore" refers to the primary direction of motion of the autonomous floor-cleaning robot 10, and the terminology fore-aft axis (see reference characters "FA" in Figures 3A, 3B) defines the forward direction of motion (indicated

by arrowhead of the fore-aft axis FA), which is coincident with the fore-aft diameter of the robot 10.

Referring to Figures 2, 2A, and 3A-3C, the housing infrastructure 20 of the robot 10 comprises a chassis 21, a cover 22, a displaceable bumper 23, a nose wheel subassembly 24, and a carrying handle 25. The chassis 21 is preferably molded from a material such as plastic as a unitary element that includes a plurality of preformed wells, recesses, and structural members for, inter alia, mounting or integrating elements of the power subsystem 30, the motive subsystem 40, the sensor subsystem 50, the side brush assembly 70, and the self-adjusting cleaning head subsystem 80 in combination with the chassis 21. The cover 22 is preferably molded from a material such as plastic as a unitary element that is complementary in configuration with the chassis 21 and provides protection of and access to elements/components mounted to the chassis 21 and/or comprising the self-adjusting cleaning head subsystem 80. The chassis 21 and the cover 22 are detachably integrated in combination by any suitable means, e.g., screws, and in combination, the chassis 21 and cover 22 form a structural envelope of minimal height having a generally cylindrical configuration that is generally symmetrical along the fore-aft axis FA.

The displaceable bumper 23, which has a generally arcuate configuration, is mounted in movable combination at the forward portion of the chassis 21 to extend outwardly therefrom, i.e., the normal operating position. The mounting configuration of the displaceable bumper is such that the bumper 23 is displaced towards the chassis 21 (from the normal operating position) whenever the bumper 23 encounters a stationary object or obstacle of predetermined mass, i.e., the displaced position, and returns to the normal operating position when contact with the stationary object or obstacle is terminated (due to operation of the control module 60 which, in response to any such displacement of the bumper 23, implements a "bounce" mode that causes the robot 10 to evade the stationary object or obstacle and continue its cleaning routine, e.g., initiate a random -- or weighted-random -- turn to resume forward movement in a different direction). The mounting configuration of the displaceable bumper 23 comprises a pair of rotatable support members 23RSM, which are operative to facilitate the movement of the bumper 23 with respect to the chassis 21.

The pair of rotatable support members 23RSM are symmetrically mounted about the fore-aft axis FA of the autonomous floor-cleaning robot 10 proximal the center of the displaceable bumper 23 in a V-configuration. One end of each support member 23RSM is rotatably mounted to the chassis 21 by conventional means, e.g., pins/dowel and sleeve arrangement, and the other end of each support member 23RSM is likewise rotatably mounted to the displaceable bumper 23 by similar conventional means. A biasing spring (not shown) is disposed in combination with each rotatable support member 23RSM and is operative to provide the biasing force necessary to return the displaceable bumper 23 (through rotational movement of the support members 23RSM) to the normal operating position whenever contact with a stationary object or obstacle is terminated.

The embodiment described herein includes a pair of bumper arms 23BA that are symmetrically mounted in parallel about the fore-aft diameter FA of the autonomous floor-cleaning robot 10 distal the center of the displaceable bumper 23. These bumper arms 23BA do not per se provide structural support for the displaceable bumper 23, but rather are a part of the sensor subsystem 50 that is operative to determine the location of a stationary object or obstacle encountered via the bumper 23. One end of each bumper arm 23BA is rigidly secured to the displaceable bumper 23 and the other end of each bumper arm 23BA is mounted in combination with the chassis 21 in a manner, e.g., a slot arrangement such that, during an encounter with a stationary object or obstacle, one or both bumper arms 23BA are linearly displaceable with respect to the chassis 21 to activate an associated sensor, e.g., IR break beam sensor, mechanical switch, capacitive sensor, which provides a corresponding signal to the control module 60 to implement the "bounce" mode. Further details regarding the operation of this aspect of the sensor subsystem 50, as well as alternative embodiments of sensors having utility in detecting contact with or proximity to stationary objects or obstacles can be found in commonly-owned, co-pending U.S. patent application No. 10/056,804, filed 24 January 2002, entitled Method and System for Multi-Mode Coverage for an Autonomous Robot.

The nose-wheel subassembly 24 comprises a wheel 24W rotatably mounted in combination with a clevis member 24CM that includes a mounting shaft. The clevis mounting shaft 24CM is disposed in a well in the chassis 21 at the forward end thereof

on the fore-aft diameter of the autonomous floor-cleaning robot 10. A biasing spring 24BS (hidden behind a leg of the clevis member 24CM in Figure 3C) is disposed in combination with the clevis mounting shaft 24CM and operative to bias the nose-wheel subassembly 24 to an 'extended' position whenever the nose-wheel subassembly 24 loses contact with the surface to be cleaned. During cleaning operations, the weight of the autonomous floor-cleaning robot 10 is sufficient to overcome the force exerted by the biasing spring 24BS to bias the nose-wheel subassembly 24 to a partially retracted or operating position wherein the wheel rotates freely over the surface to be cleaned. Opposed triangular or conical wings 24TW extend outwardly from the ends of the clevis member to prevent the side of the wheel from catching on low obstacle during turning movements of the autonomous floor-cleaning robot 10. The wings 24TW act as ramps in sliding over bumps as the robot turns.

Ends 25E of the carrying handle 25 are secured in pivotal combination with the cover 22 at the forward end thereof, centered about the fore-aft axis FA of the autonomous floor-cleaning robot 10. With the autonomous floor-cleaning robot 10 resting on or moving over a surface to be cleaned, the carrying handle 25 lies approximately flush with the surface of the cover 22 (the weight of the carrying handle 25, in conjunction with arrangement of the handle-cover pivot configuration, is sufficient to automatically return the carrying handle 25 to this flush position due to gravitational effects). When the autonomous floor-cleaning robot 10 is picked up by means of the carrying handle 25, the aft end of the autonomous floor-cleaning robot 10 lies below the forward end of the autonomous floor-cleaning robot 10 so that particulate debris is not dislodged from the self-adjusting cleaning head subsystem 80.

The power subsystem 30 of the described embodiment provides the energy to power individual elements/components of the motive subsystem 40, the sensor subsystem 50, the side brush assembly 70, and the self-adjusting cleaning head subsystem 80 and the circuits and components of the control module 60 via associated circuitry 32-4, 32-5, 32-7, 32-8, and 32-6, respectively (see Figure 1) during cleaning operations. The power subsystem 30 for the described embodiment of the autonomous floor-cleaning robot 10 comprises a rechargeable battery pack 34 such as a NiMH

battery pack. The rechargeable battery pack 34 is mounted in a well formed in the chassis 21 (sized specifically for mounting/retention of the battery pack 34) and retained therein by any conventional means, e.g., spring latches (not shown). The battery well is covered by a lid 34L secured to the chassis 21 by conventional means such as screws. Affixed to the lid 34L are friction pads 36 that facilitate stopping of the autonomous floor-cleaning robot 10 during automatic shutdown. The friction pads 36 aid in stopping the robot upon the robot's attempting to drive over a cliff. The rechargeable battery pack 34 is configured to provide sufficient power to run the autonomous floor-cleaning robot 10 for a period of sixty (60) to ninety (90) minutes on a full charge while meeting the power requirements of the elements/components comprising motive subsystem 40, the sensor subsystem 50, the side brush assembly 70, the self-adjusting cleaning head subsystem 80, and the circuits and components of the control module 60.

The motive subsystem 40 comprises the independent means that: (1) propel the autonomous floor-cleaning robot 10 for cleaning operations; (2) operate the side brush assembly 70; and (3) operate the self-adjusting cleaning head subsystem 80 during such cleaning operations. Such independent means includes right and left main wheel subassemblies 42A, 42B, each subassembly 42A, 42B having its own independently-operated motor $42A_M$, $42B_M$, respectively, an independent electric motor 44 for the side brush assembly 70, and two independent electric motors 46, 48 for the self-adjusting brush subsystem 80, one motor 46 for the vacuum assembly and one motor 48 for the dual-stage brush assembly.

The right and left main wheel subassemblies 42A, 42B are independently mounted in wells of the chassis 21 formed at opposed ends of the transverse diameter of the chassis 21 (the transverse diameter is perpendicular to the fore-aft axis FA of the robot 10). Mounting at this location provides the autonomous floor-cleaning robot 10 with an enhanced turning capability, since the main wheel subassemblies 42A, 42B motor can be independently operated to effect a wide range of turning maneuvers, e.g., sharp turns, gradual turns, turns in place.

Each main wheel subassembly 42A, 42B comprises a wheel $42A_W$, $42B_W$ rotatably mounted in combination with a clevis member $42A_{CM}$, $42B_{CM}$. Each clevis member $42A_{CM}$, $42B_{CM}$ is pivotally mounted to the chassis 21 aft of the wheel axis of

rotation (see Figure 3C which illustrates the wheel axis of rotation $42A_{AR}$; the wheel axis of rotation for wheel subassembly 42B, which is not shown, is identical), i.e., independently suspended. The aft pivot axis $42A_{PA}$, $42B_{PA}$ (see Figure 3A) of the main wheel subassemblies 42A, 42B facilitates the mobility of the autonomous floor-cleaning robot 10, i.e., pivotal movement of the subassemblies 42A, 42B through a predetermined arc. The motor $42A_M$, $42B_M$ associated with each main wheel subassembly 42A, 42B is mounted to the aft end of the clevis member $42A_{CM}$, $42B_{CM}$. One end of a tension spring $42B_{TS}$ (the tension spring for the right wheel subassembly 42A is not illustrated, but is identical to the tension spring 42BTS of the left wheel subassembly 42A) is attached to the aft portion of the clevis member $42B_{CM}$ and the other end of the tension spring $42B_{TS}$ is attached to the chassis 21 forward of the respective wheel $42A_W$, 42 B_W.

Each tension spring is operative to rotatably bias the respective main wheel subassembly 42A, 42B (via pivotal movement of the corresponding clevis member $42A_{CM}$, $42B_{CM}$ through the predetermined arc) to an 'extended' position when the autonomous floor-cleaning robot 10 is removed from the floor (in this 'extended' position the wheel axis of rotation lies below the bottom plane of the chassis 21). With the autonomous floor-cleaning robot 10 resting on or moving over a surface to be cleaned, the weight of autonomous floor-cleaning robot 10 gravitationally biases each main wheel subassembly 42A, 42B into a retracted or operating position wherein axis of rotation of the wheels are approximately coplanar with bottom plane of the chassis 21. The motors $42A_M$, $42B_M$ of the main wheel subassemblies 42A, 42B are operative to drive the main wheels: (1) at the same speed in the same direction of rotation to propel the autonomous floor-cleaning robot 10 in a straight line, either forward or aft; (2) at different speeds (including the situation wherein one wheel is operated at zero speed) to effect turning patterns for the autonomous floor-cleaning robot 10; or (3) at the same speed in opposite directions of rotation to cause the robot 10 to turn in place, i.e., "spin on a dime".

The wheels $42A_W$, $42B_W$ of the main wheel subassemblies 42A, 42B preferably have a "knobby" tread configuration $42A_{KT}$, $42B_{KT}$. This knobby tread configuration $42A_{KT}$, $42B_{KT}$ provides the autonomous floor-cleaning robot 10 with

enhanced traction, particularly when traversing smooth surfaces and traversing between contiguous surfaces of different textures, e.g., bare floor to carpet or vice versa. This knobby tread configuration $42A_{KT}$, $42B_{KT}$ also prevents tufted fabric of carpets/rugs from being entrapped in the wheels $42A_W$, 42B and entrained between the wheels and the chassis 21 during movement of the autonomous floor-cleaning robot 10. One skilled in the art will appreciate, however, that other tread patterns/configurations are within the scope of the present invention.

The sensor subsystem 50 comprises a variety of different sensing units that may be broadly characterized as either: (1) control sensing units 52; or (2) emergency sensing units 54. As the names imply, control sensing units 52 are operative to regulate the normal operation of the autonomous floor-cleaning robot 10 and emergency sensing units 54 are operative to detect situations that could adversely affect the operation of the autonomous floor-cleaning robot 10 (e.g., stairs descending from the surface being cleaned) and provide signals in response to such detections so that the autonomous floor-cleaning robot 10 can implement an appropriate response via the control module 60. The control sensing units 52 and emergency sensing units 54 of the autonomous floor-cleaning robot 10 are summarily described in the following paragraphs; a more complete description can be found in commonly-owned, co-pending U.S. patent application serial numbers 09/768,773, filed 24 January 2001, entitled Robot Obstacle Detection System, 10/167,851, 12 June 2002, entitled Method and System for Robot Localization and Confinement, and 10/056,804, filed 24 January 2002, entitled Method and System for Multi-Mode Coverage for an Autonomous Robot.

The control sensing units 52 include obstacle detection sensors 52OD mounted in conjunction with the linearly-displaceable bumper arms 23BA of the displaceable bumper 23, a wall-sensing assembly 52WS mounted in the right-hand portion of the displaceable bumper 23, a virtual wall sensing assembly 52VWS mounted atop the displaceable bumper 23 along the fore-aft diameter of the autonomous floor-cleaning robot 10, and an IR sensor/encoder combination 52WE mounted in combination with each wheel subassembly 42A, 42B.

Each obstacle detection sensor 52OD includes an emitter and detector combination positioned in conjunction with one of the linearly displaceable bumper arms 23BA so

that the sensor 52OD is operative in response to a displacement of the bumper arm 23BA to transmit a detection signal to the control module 60. The wall sensing assembly 52WS includes an emitter and detector combination that is operative to detect the proximity of a wall or other similar structure and transmit a detection signal to the control module 60. Each IR sensor/encoder combination 52WE is operative to measure the rotation of the associated wheel subassembly 42A, 42B and transmit a signal corresponding thereto to the control module 60.

The virtual wall sensing assembly 52VWS includes detectors that are operative to detect a force field and a collimated beam emitted by a stand-alone emitter (the virtual wall unit - not illustrated) and transmit respective signals to the control module 60. The autonomous floor cleaning robot 10 is programmed not to pass through the collimated beam so that the virtual wall unit can be used to prevent the robot 10 from entering prohibited areas, e.g., access to a descending staircase, room not to be cleaned. The robot 10 is further programmed to avoid the force field emitted by the virtual wall unit, thereby preventing the robot 10 from overrunning the virtual wall unit during floor cleaning operations.

The emergency sensing units 54 include 'cliff detector' assemblies 54CD mounted in the displaceable bumper 23, wheeldrop assemblies 54WD mounted in conjunction with the left and right main wheel subassemblies 42A, 42B and the nose-wheel assembly 24, and current stall sensing units 54CS for the motor $42A_M$, $42B_M$ of each main wheel subassembly 42A, 42B and one for the motors 44, 48 (these two motors are powered via a common circuit in the described embodiment). For the described embodiment of the autonomous floor-cleaning robot 10, four (4) cliff detector assemblies 54CD are mounted in the displaceable bumper 23. Each cliff detector assembly 54CD includes an emitter and detector combination that is operative to detect a predetermined drop in the path of the robot 10, e.g., descending stairs, and transmit a signal to the control module 60. The wheeldrop assemblies 54WD are operative to detect when the corresponding left and right main wheel subassemblies 32A, 32B and/or the nose-wheel assembly 24 enter the extended position, e.g., a contact switch, and to transmit a corresponding signal to the control module 60. The current stall sensing units 54CS are operative to detect a change in the current in the respective

motor, which indicates a stalled condition of the motor's corresponding components, and transmit a corresponding signal to the control module 60.

The control module 60 comprises the control circuitry (see, e.g., control lines 60-4, 60-5, 60-7, and 60-8 in Figure 1) and microcontroller for the autonomous floor-cleaning robot 10 that controls the movement of the robot 10 during floor cleaning operations and in response to signals generated by the sensor subsystem 50. The control module 60 of the autonomous floor-cleaning robot 10 according to the present invention is preprogrammed (hardwired, software, firmware, or combinations thereof) to implement three basic operational modes, i.e., movement patterns, that can be categorized as: (1) a "spot-coverage" mode; (2) a "wall/obstacle following" mode; and (3) a "bounce" mode. In addition, the control module 60 is preprogrammed to initiate actions based upon signals received from sensor subsystem 50, where such actions include, but are not limited to, implementing movement patterns (2) and (3), an emergency stop of the robot 10, or issuing an audible alert. Further details regarding the operation of the robot 10 via the control module 60 are described in detail in commonly-owned, co-pending U.S. patent application serial numbers 09/768,773, filed 24 January 2001, entitled Robot Obstacle Detection System, 10/167,851, filed 12 June 2002, entitled Method and System for Robot Localization and Confinement, and 10/056,804, filed 24 January 2002, entitled Method and System for Multi-Mode Coverage for an Autonomous Robot.

The side brush assembly 70 is operative to entrain macroscopic and microscopic particulates outside the periphery of the housing infrastructure 20 of the autonomous floor-cleaning robot 10 and to direct such particulates towards the self-adjusting cleaning head subsystem 80. This provides the robot 10 with the capability of cleaning surfaces adjacent to baseboards (during the wall-following mode).

The side brush assembly 70 is mounted in a recess formed in the lower surface of the right forward quadrant of the chassis 21 (forward of the right main wheel subassembly 42A just behind the right hand end of the displaceable bumper 23). The side brush assembly 70 comprises a shaft 72 having one end rotatably connected to the electric motor 44 for torque transfer, a hub 74 connected to the other end of the shaft 72,

a cover plate 75 surrounding the hub 74, a brush means 76 affixed to the hub 74, and a set of bristles 78.

The cover plate 75 is configured and secured to the chassis 21 to encompass the hub 74 in a manner that prevents the brush means 76 from becoming stuck under the chassis 21 during floor cleaning operations.

For the embodiment of Figures 3A-3C, the brush means 76 comprises opposed brush arms that extend outwardly from the hub 74. These brush arms 76 are formed from a compliant plastic or rubber material in an "L"/hockey stick configuration of constant width. The configuration and composition of the brush arms 76, in combination, allows the brush arms 76 to resiliently deform if an obstacle or obstruction is temporarily encountered during cleaning operations. Concomitantly, the use of opposed brush arms 76 of constant width is a trade-off (versus using a full or partial circular brush configuration) that ensures that the operation of the brush means 76 of the side brush assembly 70 does not adversely impact (i.e., by occlusion) the operation of the adjacent cliff detector subassembly 54CD (the left-most cliff detector subassembly 54CD in Figure 3B) in the displaceable bumper 23. The brush arms 76 have sufficient length to extend beyond the outer periphery of the autonomous floor-cleaning robot 10, in particular the displaceable bumper 23 thereof. Such a length allows the autonomous floor-cleaning robot 10 to clean surfaces adjacent to baseboards (during the wall-following mode) without scrapping of the wall/baseboard by the chassis 21 and/or displaceable bumper 23 of the robot 10.

The set of bristles 78 is set in the outermost free end of each brush arm 76 (similar to a toothbrush configuration) to provide the sweeping capability of the side brush assembly 70. The bristles 78 have a length sufficient to engage the surface being cleaned with the main wheel subassemblies 42A, 42B and the nose-wheel subassembly 24 in the operating position.

The self-adjusting cleaning head subsystem 80 provides the cleaning mechanisms for the autonomous floor-cleaning robot 10 according to the present invention. The cleaning mechanisms for the preferred embodiment of the self-adjusting cleaning head subsystem 80 include a brush assembly 90 and a vacuum assembly 100.

For the described embodiment of Figures 3A-3C, the brush assembly 90 is a dual-stage brush mechanism, and this dual-stage brush assembly 90 and the vacuum assembly 100 are independent cleaning mechanisms, both structurally and functionally, that have been adapted and designed for use in the robot 10 to minimize the over-all power requirements of the robot 10 while simultaneously providing an effective cleaning capability. In addition to the cleaning mechanisms described in the preceding paragraph, the self-adjusting cleaning subsystem 80 includes a deck structure 82 pivotally coupled to the chassis 21, an automatic deck adjusting subassembly 84, a removable dust cartridge 86, and one or more bails 88 shielding the dual-stage brush assembly 90.

The deck 82 is preferably fabricated as a unitary structure from a material such as plastic and includes opposed, spaced-apart sidewalls 82SW formed at the aft end of the deck 82 (one of the sidewalls 82SW comprising a U-shaped structure that houses the motor 46, a brush-assembly well 82W, a lateral aperture 82LA formed in the intermediate portion of the lower deck surface, which defines the opening between the dual-stage brush assembly 90 and the removable dust cartridge 86, and mounting brackets 82MB formed in the forward portion of the upper deck surface for the motor 48.

The sidewalls 82SW are positioned and configured for mounting the deck 82 in pivotal combination with the chassis 21 by a conventional means, e.g., a revolute joint (see reference characters 82RJ in Figure 3A) . The pivotal axis of the deck 82 - chassis 21 combination is perpendicular to the fore - aft axis FA of the autonomous floor-cleaning robot 10 at the aft end of the robot 10 (see reference character 82_{PA} which identifies the pivotal axis in Figure 3A).

The mounting brackets 82MB are positioned and configured for mounting the constant-torque motor 48 at the forward lip of the deck 82. The rotational axis of the mounted motor 48 is perpendicular to the fore - aft diameter of the autonomous floor-cleaning robot 10 (see reference character 48RA which identifies the rotational axis of the motor 48 in Figure 3A). Extending from the mounted motor 48 is an shaft 48S for transferring the constant torque to the input side of a stationary, conventional dual-

output gearbox 48B (the housing of the dual-output gearbox 48B is fabricated as part of the deck 82).

The desk adjusting subassembly 84, which is illustrated in further detail in Figures 4A-4C, is mounted in combination with the motor 48, the deck 82 and the chassis 21 and operative, in combination with the electric motor 48, to provide the physical mechanism and motive force, respectively, to pivot the deck 82 with respect to the chassis 21 about pivotal axis 82_{PA} whenever the dual-stage brush assembly 90 encounters a situation that results in a predetermined reduction in the rotational speed of the dual-stage brush assembly 90. This situation, which most commonly occurs as the autonomous floor-cleaning robot 10 transitions between a smooth surface such as a floor and a carpeted surface, is characterized as the 'adjustment mode' in the remainder of this description.

The deck adjusting subassembly 84 for the described embodiment of Figure 3A includes a motor cage 84MC, a pulley 84P, a pulley cord 84C, an anchor member 84AM, and complementary cage stops 84CS. The motor 48 is non-rotatably secured within the motor cage 84MC and the motor cage 84MC is mounted in rotatable combination between the mounting brackets 82MB. The pulley 84P is fixedly secured to the motor cage 84MC on the opposite side of the interior mounting bracket 82MB in such a manner that the shaft 48S of the motor 48 passes freely through the center of the pulley 84P. The anchor member 84AM is fixedly secured to the top surface of the chassis 21 in alignment with the pulley 84P.

One end of the pulley cord 84C is secured to the anchor member 84AM and the other end is secured to the pulley 84P in such a manner, that with the deck 82 in the 'down' or non-pivoted position, the pulley cord 84C is tensioned. One of the cage stops 84CS is affixed to the motor cage 84MC; the complementary cage stop 84CS is affixed to the deck 82. The complementary cage stops 84CS are in abutting engagement when the deck 82 is in the 'down' position during normal cleaning operations due to the weight of the self-adjusting cleaning head subsystem 80.

During normal cleaning operations, the torque generated by the motor 48 is transferred to the dual-stage brush subassembly 90 by means of the shaft 48S through the dual-output gearbox 48B. The motor cage assembly is prevented from rotating by

the counter-acting torque generated by the pulley cord 84C on the pulley 84P. When the resistance encountered by the rotating brushes changes, the deck height will be adjusted to compensate for it. If for example, the brush torque increases as the machine rolls from a smooth floor onto a carpet, the torque output of the motor 48 will increase. In response to this, the output torque of the motor 48 will increase. This increased torque overcomes the counter-acting torque exerted by the pulley cord 84C on the pulley 84P. This causes the pulley 84P to rotate, effectively pulling itself up the pulley cord 84C. This in turn, pivots the deck about the pivot axis, raising the brushes, reducing the friction between the brushes and the floor, and reducing the torque required by the dual-stage brush subassembly 90. This continues until the torque between the motor 48 and the counter-acting torque generated by the pulley cord 84C on the pulley 84P are once again in equilibrium and a new deck height is established.

In other words, during the adjustment mode, the foregoing torque transfer mechanism is interrupted since the shaft 48S is essentially stationary. This condition causes the motor 48 to effectively rotate about the shaft 48S. Since the motor 48 is non-rotatably secured to the motor cage 84MC, the motor cage 84MC, and concomitantly, the pulley 84P, rotate with respect to the mounting brackets 82MB. The rotational motion imparted to the pulley 84P causes the pulley 84P to 'climb up' the pulley cord 84PC towards the anchor member 84AM. Since the motor cage 84MC is effectively mounted to the forward lip of the deck 82 by means of the mounting brackets 82MB, this movement of the pulley 84P causes the deck 82 to pivot about its pivot axis 82PA to an "up" position (see Figure 4C). This pivoting motion causes the forward portion of the deck 82 to move away from surface over which the autonomous floor-cleaning robot is traversing.

Such pivotal movement, in turn, effectively moves the dual-stage brush assembly 90 away from the surface it was in contact with, thereby permitting the dual-stage brush assembly 90 to speed up and resume a steady-state rotational speed (consistent with the constant torque transferred from the motor 48). At this juncture (when the dual-stage brush assembly 90 reaches its steady-state rotational speed), the weight of the forward edge of the deck 82 (primarily the motor 48), gravitationally biases the deck 82 to pivot back to the 'down' or normal state, i.e., planar with the

bottom surface of the chassis 21, wherein the complementary cage stops 84CS are in abutting engagement.

While the deck adjusting subassembly 84 described in the preceding paragraphs is the preferred pivoting mechanism for the autonomous floor-cleaning robot 10 according to the present invention, one skilled in the art will appreciate that other mechanisms can be employed to utilize the torque developed by the motor 48 to induce a pivotal movement of the deck 82 in the adjustment mode. For example, the deck adjusting subassembly could comprise a spring-loaded clutch mechanism such as that shown in Figure 4C (identified by reference characters SLCM) to pivot the deck 82 to an "up" position during the adjustment mode, or a centrifugal clutch mechanism or a torque-limiting clutch mechanism. In other embodiments, motor torque can be used to adjust the height of the cleaning head by replacing the pulley with a cam and a constant force spring or by replacing the pulley with a rack and pinion, using either a spring or the weight of the cleaning head to generate the counter-acting torque.

The removable dust cartridge 86 provides temporary storage for macroscopic and microscopic particulates swept up by operation of the dual-stage brush assembly 90 and microscopic particulates drawn in by the operation of the vacuum assembly 100. The removable dust cartridge 86 is configured as a dual chambered structure, having a first storage chamber 86SC1 for the macroscopic and microscopic particulates swept up by the dual-stage brush assembly 90 and a second storage chamber 86SC2 for the microscopic particulates drawn in by the vacuum assembly 100. The removable dust cartridge 86 is further configured to be inserted in combination with the deck 82 so that a segment of the removable dust cartridge 86 defines part of the rear external sidewall structure of the autonomous floor-cleaning robot 10.

As illustrated in Figures 5A-5B, the removable dust cartridge 86 comprises a floor member 86FM and a ceiling member 86CM joined together by opposed sidewall members 86SW. The floor member 86FM and the ceiling member 86CM extend beyond the sidewall members 86SW to define an open end 86OE, and the free end of the floor member 86FM is slightly angled and includes a plurality of baffled projections 86AJ to remove debris entrained in the brush mechanisms of the dual-stage brush assembly 90, and to facilitate insertion of the removable dust cartridge 86 in

combination with the deck 82 as well as retention of particulates swept into the removable dust cartridge 86. A backwall member 86BW is mounted between the floor member 86FM and the ceiling member 86CM distal the open end 86OE in abutting engagement with the sidewall members 86SW. The backwall member 86BW has an baffled configuration for the purpose of deflecting particulates angularly therefrom to prevent particulates swept up by the dual-stage brush assembly 90 from ricocheting back into the brush assembly 90. The floor member 86FM, the ceiling member 86CM, the sidewall members 86SW, and the backwall member 86BW in combination define the first storage chamber 86SC1.

The removable dust cartridge 86 further comprises a curved arcuate member 86CAM that defines the rear external sidewall structure of the autonomous floor-cleaning robot 10. The curved arcuate member 86CAM engages the ceiling member 86CM, the floor member 86F and the sidewall members 86SW. There is a gap formed between the curved arcuate member 86CAM and one sidewall member 86SW that defines a vacuum inlet 86VI for the removable dust cartridge 86. A replaceable filter 86RF is configured for snap fit insertion in combination with the floor member 86FM. The replaceable filter 86RF, the curved arcuate member 86CAM, and the backwall member 86BW in combination define the second storage chamber 86SC1.

The removable dust cartridge 86 is configured to be inserted between the opposed spaced-apart sidewalls 82SW of the deck 82 so that the open end of the removable dust cartridge 86 aligns with the lateral aperture 82LA formed in the deck 82. Mounted to the outer surface of the ceiling member 86CM is a latch member 86LM, which is operative to engage a complementary shoulder formed in the upper surface of the deck 82 to latch the removable dust cartridge 86 in integrated combination with the deck 82.

The bail 88 comprises one or more narrow gauge wire structures that overlay the dual-stage brush assembly 90. For the described embodiment, the bail 88 comprises a continuous narrow gauge wire structure formed in a castellated configuration, i.e., alternating open-sided rectangles. Alternatively, the bail 88 may comprise a plurality of single, open-sided rectangles formed from narrow gauge wire. The bail 88 is designed and configured for press fit insertion into complementary retaining grooves 88A, 88B,

respectively, formed in the deck 82 immediately adjacent both sides of the dual-stage brush assembly 90. The bail 88 is operative to shield the dual-stage brush assembly 90 from larger external objects such as carpet tassels, tufted fabric, rug edges, during cleaning operations, i.e., the bail 88 deflects such objects away from the dual-stage brush assembly 90, thereby preventing such objects from becoming entangled in the brush mechanisms.

The dual-stage brush assembly 90 for the described embodiment of Figure 3A comprises a flapper brush 92 and a main brush 94 that are generally illustrated in Figure 6. Structurally, the flapper brush 92 and the main brush 94 are asymmetric with respect to one another, with the main brush 94 having an O.D. greater than the O.D. of the flapper brush 92. The flapper brush 92 and the main brush 94 are mounted in the deck 82 recess, as described below in further detail, to have minimal spacing between the sweeping peripheries defined by their respective rotating elements. Functionally, the flapper brush 92 and the main brush 94 counter-rotate with respect to one another, with the flapper brush 92 rotating in a first direction that causes macroscopic particulates to be directed into the removable dust cartridge 86 and the main brush 94 rotating in a second direction, which is opposite to the forward movement of the autonomous floor-cleaning robot 10, that causes macroscopic and microscopic particulates to be directed into the removable dust cartridge 86. In addition, this rotational motion of the main brush 94 has the secondary effect of directing macroscopic and microscopic particulates towards the pick-up zone of the vacuum assembly 100 such that particulates that are not swept up by the dual-stage brush assembly 90 can be subsequently drawn up (ingested) by the vacuum assembly 100 due to movement of the autonomous floor-cleaning robot 10.

The flapper brush 92 comprises a central member 92CM having first and second ends. The first and second ends are designed and configured to mount the flapper brush 92 in rotatable combination with the deck 82 and a first output port $48B_{O1}$ of the dual output gearbox 48B, respectively, such that rotation of the flapper brush 92 is provided by the torque transferred from the electric motor 48 (the gearbox 48B is configured so that the rotational speed of the flapper brush 92 is relative to the speed of the autonomous floor-cleaning robot 10 -- the described embodiment of the robot 10 has

a top speed of approximately 0.9 ft/sec). In other embodiments, the flapper brush 92 rotates substantially faster than traverse speed either in relation or not in relation to the transverse speed. Axle guards 92AG having a beveled configuration are integrally formed adjacent the first and second ends of the central member 92CM for the purpose of forcing hair and other similar matter away from the flapper brush 92 to prevent such matter from becoming entangled with the ends of the central member 92CM and stalling the dual-stage brush assembly 90.

The brushing element of the flapper brush 92 comprises a plurality of segmented cleaning strips 92CS formed from a compliant plastic material secured to and extending along the central member 92CM between the internal ends of the axle guards 92AG (for the illustrated embodiment, a sleeve, configured to fit over and be secured to the central member 92CM, has integral segmented strips extending outwardly therefrom). It was determined that arranging these segmented cleaning strips 92CS in a herringbone or chevron pattern provided the optimal cleaning utility (capability and noise level) for the dual-stage brush subassembly 90 of the autonomous floor-cleaning robot 10 according to the present invention. Arranging the segmented cleaning strips 92CS in the herringbone/chevron pattern caused macroscopic particulate matter captured by the strips 92CS to be circulated to the center of the flapper brush 92 due to the rotation thereof. It was determined that cleaning strips arranged in a linear/straight pattern produced a irritating flapping noise as the brush was rotated. Cleaning strips arranged in a spiral pattern circulated captured macroscopic particulates towards the ends of brush, which resulted in particulates escaping the sweeping action provided by the rotating brush.

For the described embodiment, six (6) segmented cleaning strips 92CS were equidistantly spaced circumferentially about the central member 92CM in the herringbone/chevron pattern. One skilled in the art will appreciate that more or less segmented cleaning strips 92CS can be employed in the flapper brush 90 without departing from the scope of the present invention. Each of the cleaning strips 92S is segmented at prescribed intervals, such segmentation intervals depending upon the configuration (spacing) between the wire(s) forming the bail 88. The embodiment of

the bail 88 described above resulted in each cleaning strip 92CS of the described embodiment of the flapper brush 92 having five (5) segments.

The main brush 94 comprises a central member 94CM (for the described embodiment the central member 94CM is a round metal member having a spiral configuration)having first and second straight ends (i.e., aligned along the centerline of the spiral). Integrated in combination with the central member 94CM is a segmented protective member 94PM. Each segment of the protective member 94PM includes opposed, spaced-apart, semi-circular end caps 94EC having integral ribs 94IR extending therebetween. For the described embodiment, each pair of semi-circular end caps EC has two integral ribs extending therebetween. The protective member 94PM is assembled by joining complementary semi-circular end caps 94EC by any conventional means, e.g., screws, such that assembled complementary end caps 94EC have a circular configuration.

The protective member 94PM is integrated in combination with the central member 94CM so that the central member 94CM is disposed along the centerline of the protective member 94PM, and with the first end of the central member 94CM terminating in one circular end cap 94EC and the second end of the central member 94CM extending through the other circular end cap 94EC. The second end of the central member 94CM is mounted in rotatable combination with the deck 82 and the circular end cap 94EC associated with the first end of the central member 94CM is designed and configured for mounting in rotatable combination with the second output port $48B_{O2}$ of the gearbox 48B such that the rotation of the main brush 94 is provided by torque transferred from the electric motor 48 via the gearbox 48B.

Bristles 94B are set in combination with the central member 94CM to extend between the integral ribs 94IR of the protective member 94PM and beyond the O.D. established by the circular end caps 94EC. The integral ribs 94IR are configured and operative to impede the ingestion of matter such as rug tassels and tufted fabric by the main brush 94.

The bristles 94B of the main brush 94 can be fabricated from any of the materials conventionally used to form bristles for surface cleaning operations. The bristles 94B of the main brush 94 provide an enhanced sweeping capability by being specially

configured to provide a "flicking" action with respect to particulates encountered during cleaning operations conducted by the autonomous floor-cleaning robot 10 according to the present invention. For the described embodiment, each bristle 94B has a diameter of approximately 0.010 inches, a length of approximately 0.90 inches, and a free end having a rounded configuration. It has been determined that this configuration provides the optimal flicking action. While bristles having diameters exceeding approximately 0.014 inches would have a longer wear life, such bristles are too stiff to provide a suitable flicking action in the context of the dual-stage brush assembly 90 of the present invention. Bristle diameters that are much less than 0.010 inches are subject to premature wear out of the free ends of such bristles, which would cause a degradation in the sweeping capability of the main brush. In a preferred embodiment, the main brush is set slightly lower than the flapper brush to ensure that the flapper does not contact hard surface floors.

The vacuum assembly 100 is independently powered by means of the electric motor 46. Operation of the vacuum assembly 100 independently of the self-adjustable brush assembly 90 allows a higher vacuum force to be generated and maintained using a battery-power source than would be possible if the vacuum assembly were operated in dependence with the brush system. In other embodiments, the main brush motor can drive the vacuum. Independent operation is used herein in the context that the inlet for the vacuum assembly 100 is an independent structural unit having dimensions that are not dependent upon the "sweep area" defined by the dual-stage brush assembly 90.

The vacuum assembly 100, which is located immediately aft of the dual-stage brush assembly 90, i.e., a trailing edge vacuum, is orientated so that the vacuum inlet is immediately adjacent the main brush 94 of the dual-stage brush assembly 90 and forward facing, thereby enhancing the ingesting or vacuuming effectiveness of the vacuum assembly 100. With reference to Figures 7A, 7B, the vacuum assembly 100 comprises a vacuum inlet 102, a vacuum compartment 104, a compartment cover 106, a vacuum chamber 108, an impeller 110, and vacuum channel 112 . The vacuum inlet 102 comprises first and second blades 102A, 102B formed of a semi-rigid/compliant plastic or elastomeric material, which are configured and arranged to provide a vacuum inlet 102 of constant size (lateral width and gap-see discussion

below), thereby ensuring that the vacuum assembly 100 provides a constant air inflow velocity, which for the described embodiment is approximately 4m/sec.

The first blade 102A has a generally rectangular configuration, with a width (lateral) dimension such that the opposed ends of the first blade 102A extend beyond the lateral dimension of the dual-stage brush assembly 90. One lateral edge of the first blade 102A is attached to the lower surface of the deck 82 immediately adjacent to but spaced apart from, the main brush 94 (a lateral ridge formed in the deck 82 provides the separation therebetween, in addition to embodying retaining grooves for the bail 88 as described above) in an orientation that is substantially symmetrical to the fore-aft diameter of the autonomous floor-cleaning robot 10. This lateral edge also extends into the vacuum compartment 104 where it is in sealed engagement with the forward edge of the compartment 104. The first blade 102A is angled forwardly with respect to the bottom surface of the deck 82 and has length such that the free end $102A_{FE}$ of the first blade 102A just grazes the surface to be cleaned.

The free end $102A_{FE}$ has a castellated configuration that prevents the vacuum inlet 102 from pushing particulates during cleaning operations. Aligned with the castellated segments 102CS of the free end $102A_{FE}$, which are spaced along the width of the first blade 102A, are protrusions 102P having a predetermined height. For the prescribed embodiment, the height of such protrusions 102P is approximately 2mm. The predetermined height of the protrusions 102P defines the "gap" between the first and second blades 102A, 102B.

The second blade 102B has a planar, unitary configuration that is complementary to the first blade 102A in width and length. The second blade 102B, however, does not have a castellated free end; instead, the free end of the second blade 102B is a straight edge. The second blade 102B is joined in sealed combination with the forward edge of the compartment cover 106 and angled with respect thereto so as to be substantially parallel to the first blade 102A. When the compartment cover 106 is fitted in position to the vacuum compartment 104, the planar surface of the second blade 102B abuts against the plurality of protrusions 102P of the first blade 102A to form the "gap" between the first and second blades 102A, 102B.

The vacuum compartment 104, which is in fluid communication with the vacuum inlet 102, comprises a recess formed in the lower surface of the deck 82. This recess includes a compartment floor 104F and a contiguous compartment wall 104CW that delineates the perimeter of the vacuum compartment 104. An aperture 104A is formed through the floor 104, offset to one side of the floor 104F. Due to the location of this aperture 104A, offset from the geometric center of the compartment floor 104F, it is prudent to form several guide ribs 104GR that project upwardly from the compartment floor 104F. These guide ribs 104GR are operative to distribute air inflowing through the gap between the first and second blades 102A, 102B across the compartment floor 104 so that a constant air inflow is created and maintained over the entire gap, i.e., the vacuum inlet 102 has a substantially constant 'negative' pressure (with respect to atmospheric pressure).

The compartment cover 106 has a configuration that is complementary to the shape of the perimeter of the vacuum compartment 104. The cover 106 is further configured to be press fitted in sealed combination with the contiguous compartment wall 104CW wherein the vacuum compartment 104 and the vacuum cover 106 in combination define the vacuum chamber 108 of the vacuum assembly 100. The compartment cover 106 can be removed to clean any debris from the vacuum channel 112. The compartment cover 106 is preferable fabricated from a clear or smoky plastic material to allow the user to visually determine when clogging occurs.

The impeller 110 is mounted in combination with the deck 82 in such a manner that the inlet of the impeller 110 is positioned within the aperture 104A. The impeller 110 is operatively connected to the electric motor 46 so that torque is transferred from the motor 46 to the impeller 110 to cause rotation thereof at a constant speed to withdraw air from the vacuum chamber 108. The outlet of the impeller 110 is integrated in sealed combination with one end of the vacuum channel 112.

The vacuum channel 112 is a hollow structural member that is either formed as a separate structure and mounted to the deck 82 or formed as an integral part of the deck 82. The other end of the vacuum channel 110 is integrated in sealed combination with the vacuum inlet 86VI of the removable dust cartridge 86. The outer surface of the

vacuum channel 112 is complementary in configuration to the external shape of curved arcuate member 86CAM of the removable dust cartridge 86.

A variety of modifications and variations of the present invention are possible in light of the above teachings. For example, the preferred embodiment described above included a cleaning head subsystem 80 that was self-adjusting, i.e., the deck 82 was automatically pivotable with respect to the chassis 21 during the adjustment mode in response to a predetermined increase in brush torque of the dual-stage brush assembly 90. It will be appreciated that another embodiment of the autonomous floor-cleaning robot according to the present invention is as described hereinabove, with the exception that the cleaning head subsystem is non-adjustable, i.e., the deck is non-pivotable with respect to the chassis. This embodiment would not include the deck adjusting subassembly described above, i.e., the deck would be rigidly secured to the chassis. Alternatively, the deck could be fabricated as an integral part of the chassis - in which case the deck would be a virtual configuration, i.e., a construct to simplify the identification of components comprising the cleaning head subsystem and their integration in combination with the robot.

It is therefore to be understood that, within the scope of the appended claims, the present invention may be practiced other than as specifically described herein.

We claim:

1. An autonomous floor-cleaning robot, comprising:

a housing infrastructure including a chassis;

a power subsystem for providing the energy to power said autonomous floor-cleaning robot;

a motive subsystem operative to propel said autonomous floor-cleaning robot for cleaning operations;

a control module operative to control the said autonomous floor-cleaning robot to effect said cleaning operations; and

a self-adjusting cleaning head subsystem including

a deck mounted in pivotal combination with said chassis,

a brush assembly mounted in combination with said deck and powered by said motive subsystem to sweep up particulates during cleaning operations,

a deck adjusting subassembly mounted in combination with said motive subsystem for said brush assembly, said deck, and said chassis that is automatically operative in response to a change in torque in said brush assembly to pivot said deck with respect to said chassis, and

means coupled to said brush assembly for collecting particulates swept up by said brush assembly.

2. The autonomous floor-cleaning robot of claim 1 wherein said brush assembly is a dual-stage brush assembly comprising first and second counter-rotating brushes.

3. The autonomous floor-cleaning robot of claim 2 wherein said first and second brushes are asymmetric, said second brush having an outer diameter greater than the outer diameter of said first brush.

4. The autonomous floor-cleaning robot of claim 2 wherein said first brush is a flapper brush configured for mounting in rotatable combination with said deck and said motive subsystem for said dual-stage brush assembly, said flapper brush including a plurality of spaced-apart cleaning strips.

5. The autonomous floor-cleaning robot of claim 4 wherein said plurality of spaced-apart cleaning strips are arranged in a chevron pattern.

6. The autonomous floor-cleaning robot of claim 4 wherein each of said plurality of spaced-apart cleaning strips are segmented.

7. The autonomous floor-cleaning robot of claim 6 wherein said plurality of segmented cleaning strips comprises six segmented cleaning strips.

8. The autonomous floor-cleaning robot of claim 7 wherein said segmented cleaning strips comprise five segments.

9. The autonomous floor-cleaning robot of claim 6 further comprising a bail having a castellated configuration with portions thereof press fit inserted in said deck in such a manner so that said bail forms a shield over said dual-stage brush assembly; and wherein said castellated configuration of said bail defines the segmentation of said plurality of spaced-apart cleaning strips.

10. The autonomous floor-cleaning robot of claim 2 wherein said second brush is a main brush that comprises:

a central member;

a protective member mounted in combination with said central member and having end caps configured for mounting said main brush in rotatable combination with said deck and said motive subsystem for said dual-stage brush assembly, respectively.

11. The autonomous floor-cleaning robot of claim 10 where said protective member includes integral ribs configured and operative to impede the ingestion of matter by said main brush.

12. The autonomous floor-cleaning robot of claim 11 further comprising a plurality of bristles set in combination with said central member to extend beyond said integral ribs and the outer diameter defined by said end caps.

13. The autonomous floor-cleaning robot of claim 11 where each bristle has a diameter of approximately 0.01 inches, a length of approximately 0.9 inches, and a free end having a rounded configuration.

14. The autonomous floor-cleaning robot of claim 1 wherein said brush assembly is a dual-stage brush assembly comprising a flapper brush and a main brush,

said flapper brush configured for mounting in rotatable combination with said deck and said motive subsystem for said dual-stage brush assembly, respectively, and

including a plurality of spaced-apart segmented cleaning strips arranged in a chevron pattern, and

said main brush including a central member, a protective member mounted in combination with said central member and having end caps configured for mounting said main brush in rotatable combination with said deck and said motive subsystem for said dual-stage brush assembly, respectively, and a plurality of bristles set in combination with said central member to extend beyond the outer diameter defined by said end caps.

15. The autonomous floor-cleaning robot of claim 14 wherein said protective member includes integral ribs configured and operative to impede the ingestion of matter by said main brush.

16. The autonomous floor-cleaning robot of claim 15 wherein said flapper brush and said main brush are asymmetric, said main brush having an outer diameter greater than the outer diameter of said flapper brush; and further wherein said flapper brush and said main brush are counter-rotating with respect to one another.

17. An autonomous floor-cleaning robot comprising:

a housing infrastructure including a chassis;

a power subsystem for providing the energy to power said autonomous floor-cleaning robot;

a motive subsystem operative to propel said autonomous floor-cleaning robot for cleaning operations;

a control module operative to control said autonomous floor-cleaning robot to effect cleaning operations;

a self-adjusting cleaning head subsystem including

a deck mounted in pivotal combination with said chassis,

a brush assembly mounted in combination with said deck and powered by said motive subsystem to sweep up particulates during cleaning operations,

a vacuum assembly disposed in combination with said deck adjacent to said brush assembly and powered by said motive subsystem independently of said brush assembly to ingest particulates during cleaning operations,

a deck adjusting subassembly mounted in combination with said motive subsystem for said brush assembly, said deck, and said chassis that is automatically operative in response to a change in torque in said brush assembly to pivot said deck with respect to said chassis, and

means coupled to said brush assembly and said vacuum assembly for collecting particulates swept up by said brush assembly and ingested by said vacuum assembly.

18. The autonomous floor-cleaning robot of claim 17 wherein said vacuum assembly includes:

a vacuum inlet having a predetermined width and gap, said vacuum inlet being separate from and independent of the brush sweep area defined by said brush assembly;

a vacuum compartment formed in said deck to include a compartment floor, a contiguous compartment wall, and an aperture formed through said compartment floor;

a removable compartment cover configured to be press fitted in sealed combination with said vacuum compartment and said vacuum inlet, said compartment cover and said vacuum compartment in press fitted combination defining a vacuum chamber;

an impeller mounted in combination with said deck so that the inlet of said impeller is positioned within said aperture, said impeller being operatively connected to said motive subsystem to receive torque therefrom; and

a vacuum channel integrated in sealed combination with said impeller for removal of collected particulates from said vacuum chamber.

19. The autonomous floor-cleaning robot of claim 18 wherein said vacuum inlet comprises:

a first blade having a generally rectangular configuration and a lateral dimension that defines said predetermined width of said vacuum inlet, one lateral edge of said first blade being attached to the lower surface of said deck and extending into and sealed in combination with said contiguous compartment wall so that said first blade is angled forwardly with respect to said deck; and

a second blade having a generally rectangular configuration that is complementary to the configuration of said first blade, one lateral edge of said second blade being disposed in sealed combination with said removable compartment cover;

wherein said first and second blades in combination define said vacuum inlet having said predetermined width and gap.

20. The autonomous floor-cleaning robot of claim 19 wherein the free lateral edge of said first blade has a castellated configuration to mitigate the pushing of particulates by said vacuum inlet during cleaning operations, said castellated configuration defining a plurality of castellated segments along said free lateral edge.

21. The autonomous floor-cleaning robot of claim 20 further comprising a plurality of protrusions having a predetermined height, said plurality of protrusions being aligned with and extending from said castellated segments; and wherein in combination the planar surface of said second blade abuts against said protrusions of said first blade to form said predetermined gap of said vacuum inlet.

22. The autonomous floor-cleaning robot of claim 18 wherein said vacuum inlet comprises:

a first blade having a generally rectangular configuration and a lateral dimension that defines said predetermined width of said vacuum inlet, and wherein one lateral edge of said first blade being attached to the lower surface of said deck and extending into and sealed in combination with said contiguous compartment wall so that said first blade is angled forwardly with respect to said deck and the free lateral edge of said first blade has a castellated configuration to mitigate the pushing of particulates by said vacuum inlet during cleaning operations, said castellated configuration defining a plurality of castellated segments along said free lateral edge;

a second blade having a generally rectangular configuration that is complementary to the configuration of said first blade, one lateral edge of said second blade being disposed in sealed combination with said removable compartment cover; and

a plurality of protrusions having a predetermined height, said plurality of protrusions being aligned with and extending from said castellated segments; and wherein in combination the planar surface of said second blade abuts against said protrusions of said first blade to form said predetermined gap of said vacuum inlet.

23. The autonomous floor-cleaning robot of claim 18 wherein said aperture is formed through said compartment floor so as to be offset from the geometric center thereof; and wherein said compartment floor further includes guide ribs projecting

upwardly therefrom to distribute the airflow through said predetermined gap so that a substantially constant negative pressure is maintained over said predetermined gap.

24. The autonomous floor-cleaning robot of claim 1 wherein said deck adjusting subassembly comprises:

a motor cage mounted in rotatable combination with said deck, said motive subsystem for said brush assembly being non-rotatably secured within said motor cage;

a pulley fixedly secured to said motor cage;

an anchor member fixedly secured to said chassis in alignment with said pulley; and

a pulley cord secured to said anchor member and said pulley in tension therebetween with said deck in the non-pivoted position with respect to said chassis;

wherein, in response to a a change in torque in said brush assembly, said motor cage is automatically rotated in such a manner that the pulley climbs up said pulley cord, causing said deck to pivot with respect to said chassis.

25. The autonomous floor-cleaning robot of claim 24 wherein said deck adjusting subassembly further comprises complementary cage stops affixed to said motor cage and said deck in such a manner that the complementary cage stops are in abutting engagement with said deck in the non-pivoted position with respect to said chassis.

26. The autonomous floor-cleaning robot as in claims 1 or 17 further comprising a side brush assembly mounted in combination with said chassis and powered by said motive subsystem to entrain particulates outside the periphery of said housing infrastructure and to direct such particulates towards said self-adjusting cleaning head subsystem.

27. The autonomous floor-cleaning robot of claim 26 wherein said side brush assembly comprises:

a shaft having one end thereof rotatably connected to said motive subsystem for torque transfer thereto;

a hub connected to the other end of said shaft;

brush means connected to said hub that is operative to entrain particulates outside the periphery of said housing infrastructure and to direct such particulates towards said self-adjusting cleaning head subsystem

28. The autonomous floor-cleaning robot of claim 27 wherein said brush means comprises:

opposed brush arms extending outwardly from said hub; and

a set of bristles set in the free end of each said brush arm.

29. The autonomous floor-cleaning robot of claim 28 wherein each said brush arm has an L-shaped configuration, with the longer leg of said L-shaped configuration having a constant width and said set of bristles set in the free end thereof.

30. The autonomous floor-cleaning robot of claim 1 wherein said particulate collecting means comprises a removable dust cartridge configured for integration in combination with said deck so as to be coupled to said brush assembly and said vacuum assembly.

31. The autonomous floor-cleaning robot of claim 1 wherein said removable dust cartridge comprises:

a floor member;

a ceiling member;

sidewall members joining together said floor member and said ceiling member so that said floor and ceiling members extend beyond said sidewalls to define an open end; and

a curved arcuate member disposed in combination with said floor, ceiling, and sidewall members, said curved arcuate member defining the rear external sidewall structure of said autonomous floor-cleaning robot.

32. The autonomous floor-cleaning robot of claim 31 wherein the free end of said floor member is angled and includes a plurality of projections with interact with said brush assembly to remove entrained debris therefrom.

33. The autonomous floor-cleaning robot of claim 31 further comprising an backwall member mounted between said floor and ceiling members in abutting engagement with said sidewall members wherein:

said floor member, said ceiling member, said sidewalls, and said backwall member in combination defining a first storage chamber that is positioned to receive particulates from said brush assembly; and

said floor member, said sidewall members, said curved arcuate member, and said backwall member in combination defining a second storage chamber that is coupled to said vacuum assembly for receiving particulates therefrom.

34. The autonomous floor-cleaning robot of claim 33 wherein said backwall member has an baffled configuration.

35. The autonomous floor-cleaning robot of claim 31 further comprising a replaceable filter that is snap fitted in combination with said floor member.

36. The autonomous floor-cleaning robot of claim 31 further comprising a latch member mounted to said ceiling member and configured to latch with said deck to integrate said removable dust cartridge in combination with said deck.

37. The autonomous floor-cleaning robot of claim 1 wherein said motive subsystem comprises:

first and second wheel subassemblies independently mounted in combination with said chassis at opposed ends of the transverse diameter of said chassis, each said wheel subassembly being configured for pivotal motion with respect to said chassis; and

each said wheel subassembly including a wheel and a motor coupled to said motor for transferring torque to said wheel for rotation thereof;

wherein said wheels of said first and second wheel subassemblies are operable at the same speed to propel said autonomous floor-cleaning robot in a straight line forward or aft, at different speeds to effect turning patterns for said autonomous floor-cleaning robot, and at the same speed in opposite directions to cause said autonomous floor-cleaning robot to turn in place.

38. The autonomous floor-cleaning robot of claim 1 further comprising a bumper mounted in displaceable combination with said chassis at the forward end thereof centered about the fore-aft axis of said chassis.

39. The autonomous floor-cleaning robot of claim 1 further comprising a cover complementary in configuration with said chassis and configured to be attached in combination therewith wherein said autonomous floor-cleaning robot has a generally cylindrical configuration that is generally symmetrical along the fore-aft axis.

40. The autonomous floor-cleaning robot of claim 1 further comprising a sensor subsystem disposed in combination with said autonomous floor-cleaning robot and

operative to: (a) provide signals to said command and control module to regulate the normal cleaning operations of said autonomous floor-cleaning robot; and (b) detect situations that could adversely affect the normal cleaning operations of said autonomous floor-cleaning robot and provide signals in response to said detections so that said autonomous floor-cleaning robot can implement an appropriate response via said command and control unit.

41. An autonomous floor-cleaning robot, comprising:

a housing infrastructure including a chassis wherein part of said chassis is configured as a deck;

a power subsystem for providing the energy to power said autonomous floor-cleaning robot;

a motive subsystem operative to propel said autonomous floor-cleaning robot for cleaning operations;

a control module operative to control the said autonomous floor-cleaning robot to effect said cleaning operations; and

a cleaning head subsystem including

a dual-stage brush assembly comprising first and second asymmetric brushes mounted in combination with said deck and powered by said motive subsystem to sweep up particulates during cleaning operations, said second brush having an outer diameter greater than said first brush,

and

means coupled to said brush assembly for collecting particulates swept up by said brush assembly.

42. The autonomous floor-cleaning robot of claim 41 wherein said first and second asymmetric brushes counter rotate with respect to on another.

43. The autonomous floor-cleaning robot of claim 41 wherein said first brush is a flapper brush configured for mounting in rotatable combination with said deck and said motive subsystem for said dual-stage brush assembly, said flapper brush including a plurality of spaced-apart cleaning strips.

44. The autonomous floor-cleaning robot of claim 46 wherein said plurality of spaced-apart cleaning strips are arranged in a chevron pattern.

45. The autonomous floor-cleaning robot of claim 43 wherein said plurality of spaced-apart cleaning strips are segmented.

46. The autonomous floor-cleaning robot of claim 45 wherein said plurality of segmented cleaning strips comprises six segmented cleaning strips.

47. The autonomous floor-cleaning robot of claim 46 wherein said segmented cleaning strips comprise five segments.

48. The autonomous floor-cleaning robot of claim 45 further comprising a bail having a castellated configuration with portions thereof press fit inserted in said deck in such a manner so that said bail forms a shield over said dual-stage brush assembly; and wherein said castellated configuration of said bail defines the segmentation of said plurality of spaced-apart cleaning strips.

49. The autonomous floor-cleaning robot of claim 41 wherein said second brush is a main brush that comprises:

a central member;

a protective member mounted in combination with said central member and having end caps configured for mounting said main brush in rotatable combination with said deck and said motive subsystem for said dual-stage brush assembly, respectively.

50. The autonomous floor-cleaning robot of claim 49 where said protective member includes integral ribs configured and operative to impede the ingestion of matter by said main brush.

51. The autonomous floor-cleaning robot of claim 50 further comprising a plurality of bristles set in combination with said central member to extend beyond said integral ribs and the outer diameter defined by said end caps.

52. The autonomous floor-cleaning robot of claim 51 where each bristle has a diameter of approximately 0.01 inches, a length of approximately 0.9 inches, and a free end having a rounded configuration.

53. The autonomous floor-cleaning robot of claim 41 wherein said dual-stage brush assembly comprises a flapper brush and a main brush,

said flapper brush configured for mounting in rotatable combination with said deck and said motive subsystem for said dual-stage brush assembly, respectively, and

including a plurality of spaced-apart segmented cleaning strips arranged in a chevron pattern, and

said main brush including a central member, a protective member mounted in combination with said central member and having end caps configured for mounting said main brush in rotatable combination with said deck and said motive subsystem for said dual-stage brush assembly, respectively, and a plurality of bristles set in combination with said central member to extend beyond the outer diameter defined by said end caps.

54. The autonomous floor-cleaning robot of claim 53 wherein said protective member includes integral ribs configured and operative to impede the ingestion of matter by said main brush.

55. The autonomous floor-cleaning robot of claim 54 wherein said flapper brush and said main brush are asymmetric, said main brush having an outer diameter greater than the outer diameter of said flapper brush; and further wherein said flapper brush and said main brush are counter-rotating with respect to one another.

56. An autonomous floor-cleaning robot comprising:

a housing infrastructure including a chassis wherein part of said chassis is configured as a deck;

a power subsystem for providing the energy to power said autonomous floor-cleaning robot;

a motive subsystem operative to propel said autonomous floor-cleaning robot for cleaning operations;

a control module operative to control the said autonomous floor-cleaning robot to effect cleaning operations; and

a cleaning head subsystem including

a dual-stage brush assembly comprising first and second asymmetric brushes mounted in combination with said deck and powered by said motive subsystem to sweep up particulates during cleaning operations, said second brush having an outer diameter greater than said first brush,

a vacuum assembly disposed in combination with said deck aft of and immediately adjacent to said dual-stage brush assembly and powered by said motive subsystem to ingest particulates during cleaning operations,

and

means coupled to said brush assembly and said vacuum assembly for collecting particulates swept up by said brush assembly and ingested by said vacuum assembly.

57. The autonomous floor-cleaning robot of claim 56 where said vacuum assembly includes:

a vacuum inlet having a predetermined width and gap, said vacuum inlet being separate from and independent of the brush sweep area defined by said dual-stage brush assembly;

a vacuum compartment formed in said deck to include a compartment floor, a contiguous compartment wall, and an aperture formed through said compartment floor;

a removable compartment cover configured to be press fitted in sealed combination with said vacuum compartment and said vacuum inlet, said compartment cover and said vacuum compartment in press fitted combination defining a vacuum chamber;

an impeller mounted in combination with said deck so that the inlet of said impeller is positioned within said aperture, said impeller being operatively connected to said motive subsystem to receive torque therefrom; and

a vacuum channel integrated in sealed combination with said impeller for removal of collected particulates from said vacuum chamber.

58. The autonomous floor-cleaning robot of claim 57 wherein said vacuum inlet comprises:

a first blade having a generally rectangular configuration and a lateral dimension that defines said predetermined width of said vacuum inlet, one lateral edge of said first blade being attached to the lower surface of said deck and extending into and sealed in combination with said contiguous compartment wall so that said first blade is angled forwardly with respect to said deck; and

a second blade having a generally rectangular configuration that is complementary to the configuration of said first blade, one lateral edge of said second blade being disposed in sealed combination with said removable compartment cover;

wherein said first and second blades in combination define said vacuum inlet having said predetermined width and gap.

59. The autonomous floor-cleaning robot of claim 58 wherein the free lateral edge of said first blade has a castellated configuration to mitigate the pushing of particulates by said vacuum inlet during cleaning operations, said castellated configuration defining a plurality of castellated segments along said free lateral edge.

60. The autonomous floor-cleaning robot of claim 59 further comprising a plurality of protrusions having a predetermined height, said plurality of protrusions being aligned with and extending from said castellated segments; and wherein in combination the planar surface of said second blade abuts against said protrusions of said first blade to form said predetermined gap of said vacuum inlet.

61. The autonomous floor-cleaning robot of claim 57wherein said vacuum inlet comprises:

a first blade having a generally rectangular configuration and a lateral dimension that defines said predetermined width of said vacuum inlet, and wherein one lateral edge of said first blade being attached to the lower surface of said deck and extending into and sealed in combination with said contiguous compartment wall so that said first blade is angled forwardly with respect to said deck and the free lateral edge of said first blade has a castellated configuration to mitigate the pushing of particulates by said vacuum inlet during cleaning operations, said castellated configuration defining a plurality of castellated segments along said free lateral edge;

a second blade having a generally rectangular configuration that is complementary to the configuration of said first blade, one lateral edge of said second blade being disposed in sealed combination with said removable compartment cover; and

a plurality of protrusions having a predetermined height, said plurality of protrusions being aligned with and extending from said castellated segments; and wherein in combination the planar surface of said second blade abuts against said protrusions of said first blade to form said predetermined gap of said vacuum inlet.

62. The autonomous floor-cleaning robot of claim 57 wherein said aperture is formed through said compartment floor so as to be offset from the geometric center thereof; and wherein said compartment floor further includes guide ribs projecting upwardly therefrom to distribute the airflow through said predetermined gap so that a substantially constant negative pressure is maintained over said predetermined gap.

63. The autonomous floor-cleaning robot as in claim 41 or 56 further comprising a side brush assembly mounted in combination with said chassis and powered by said motive subsystem to entrain particulates outside the periphery of said housing infrastructure and to direct such particulates towards said self-adjusting cleaning head subsystem.

64. The autonomous floor-cleaning robot of claim 63 wherein said side brush assembly comprises:

a shaft having one end thereof rotatably connected to said motive subsystem for torque transfer thereto;

a hub connected to the other end of said shaft;

brush means connected to said hub that is operative to entrain particulates outside the periphery of said housing infrastructure and to direct such particulates towards said self-adjusting cleaning head subsystem

65. The autonomous floor-cleaning robot of claim 64 wherein said brush means comprises:

opposed brush arms extending outwardly from said hub; and

a set of bristles set in the free end of each said brush arm.

66. The autonomous floor-cleaning robot of claim 65 wherein each said brush arm has an L-shaped configuration, with the longer leg of said L-shaped configuration having a constant width and said set of bristles set in the free end thereof.

67. The autonomous floor-cleaning robot of claim 41 wherein said particulate collecting means comprises a removable dust cartridge configured for integration in combination with said deck so as to be coupled to said brush assembly and said vacuum assembly.

68. The autonomous floor-cleaning robot of claim 67 wherein said removable dust cartridge comprises:

a floor member;

a ceiling member;

sidewall members joining together said floor member and said ceiling member so that said floor and ceiling members extend beyond said sidewalls to define an open end; and

a curved arcuate member disposed in combination with said floor, ceiling, and sidewall members, said curved arcuate member defining the rear external sidewall structure of said autonomous floor-cleaning robot.

69. The autonomous floor-cleaning robot of claim 68 wherein the free end of said floor member is angled and includes a plurality of projections with interact with said brush assembly to remove entrained debris therefrom.

70. The autonomous floor-cleaning robot of claim 69 further comprising an backwall member mounted between said floor and ceiling members in abutting engagement with said sidewall members wherein:

said floor member, said ceiling member, said sidewalls, and said backwall member in combination defining a first storage chamber that is positioned to receive particulates from said brush assembly; and

said floor member, said sidewall members, said curved arcuate member, and said backwall member in combination defining a second storage chamber that is coupled to said vacuum assembly for receiving particulates therefrom.

71. The autonomous floor-cleaning robot of claim 70 wherein said backwall member has an baffled configuration.

72. The autonomous floor-cleaning robot of claim 68 further comprising a replaceable filter that is snap fitted in combination with said floor member.

73. The autonomous floor-cleaning robot of claim 68 further comprising a latch member mounted to said ceiling member and configured to latch with said deck to integrate said removable dust cartridge in combination with said deck.

74. The autonomous floor-cleaning robot of claim 41 wherein said motive subsystem comprises:

first and second wheel subassemblies independently mounted in combination with said chassis at opposed ends of the transverse diameter of said chassis, each said wheel subassembly being configured for pivotal motion with respect to said chassis; and

each said wheel subassembly including a wheel and a motor coupled to said motor for transferring torque to said wheel for rotation thereof;

wherein said wheels of said first and second wheel subassemblies are operable at the same speed to propel said autonomous floor-cleaning robot in a straight line forward or aft, at different speeds to effect turning patterns for said autonomous floor-cleaning robot, and at the same speed in opposite directions to cause said autonomous floor-cleaning robot to turn in place.

75. The autonomous floor-cleaning robot of claim 41 further comprising a bumper mounted in displaceable combination with said chassis at the forward end thereof centered about the fore-aft axis of said chassis.

76. The autonomous floor-cleaning robot of claim 41 further comprising a cover complementary in configuration with said chassis and configured to be attached in combination therewith wherein said autonomous floor-cleaning robot has a generally cylindrical configuration that is generally symmetrical along the fore-aft axis.

77. The autonomous floor-cleaning robot of claim 41 further comprising a sensor subsystem disposed in combination with said autonomous floor-cleaning robot and operative to: (a) provide signals to said command and control module to regulate the normal cleaning operations of said autonomous floor-cleaning robot; and (b) detect situations that could adversely affect the normal cleaning operations of said autonomous floor-cleaning robot and provide signals in response to said detections so that said autonomous floor-cleaning robot can implement an appropriate response via said command and control unit.

Abstract

An autonomous floor-cleaning robot comprising a housing infrastructure including a chassis, a power subsystem; for providing the energy to power the autonomous floor-cleaning robot, a motive subsystem operative to propel the autonomous floor-cleaning robot for cleaning operations, a command and control subsystem operative to control the autonomous floor-cleaning robot to effect cleaning operations, and a self-adjusting cleaning head subsystem that includes a deck mounted in pivotal combination with the chassis, a brush assembly mounted in combination with the deck and powered by the motive subsystem to sweep up particulates during cleaning operations, a vacuum assembly disposed in combination with the deck and powered by the motive subsystem to ingest particulates during cleaning operations, and a deck adjusting subassembly mounted in combination with the motive subsystem for the brush assembly, the deck, and the chassis that is automatically operative in response to an increase in brush torque in said brush assembly to pivot the deck with respect to said chassis. The autonomous floor-cleaning robot also includes a side brush assembly mounted in combination with the chassis and powered by the motive subsystem to entrain particulates outside the periphery of the housing infrastructure and to direct such particulates towards the self-adjusting cleaning head subsystem.

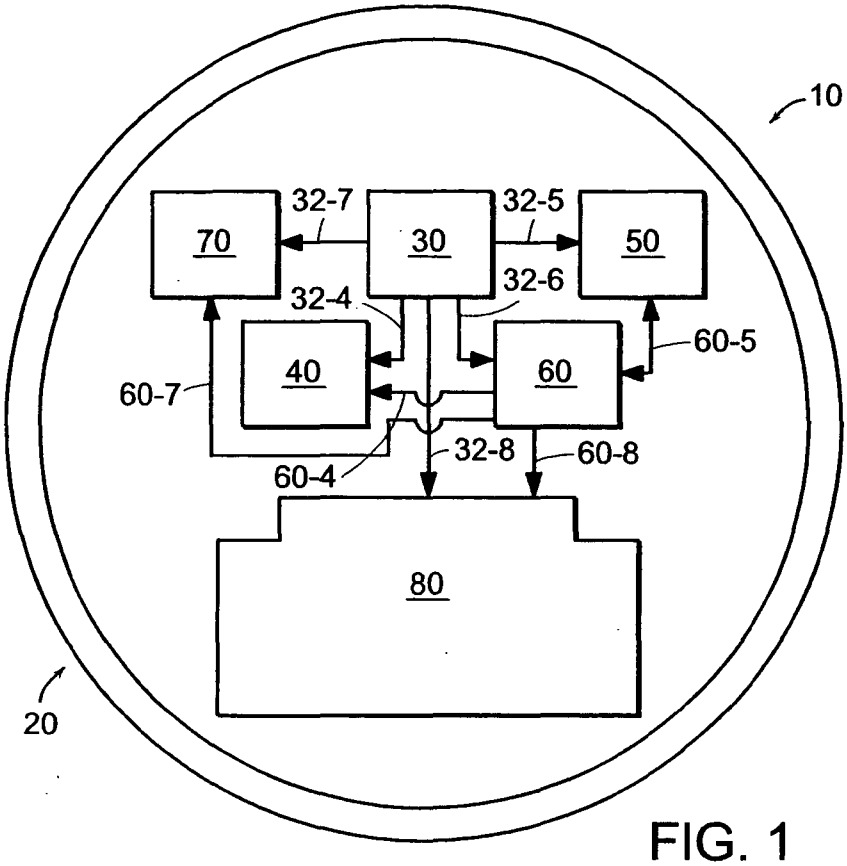
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FIG. 1

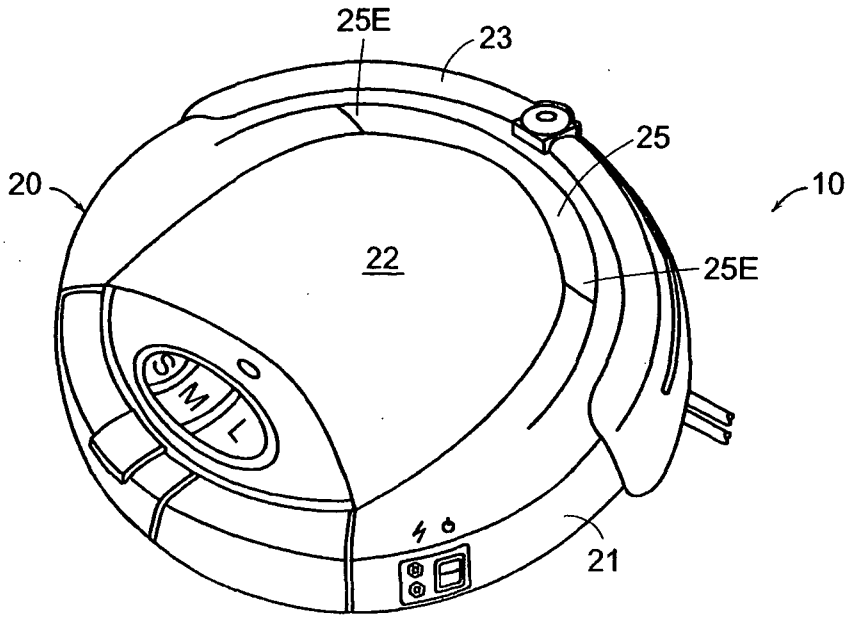
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FIG. 2

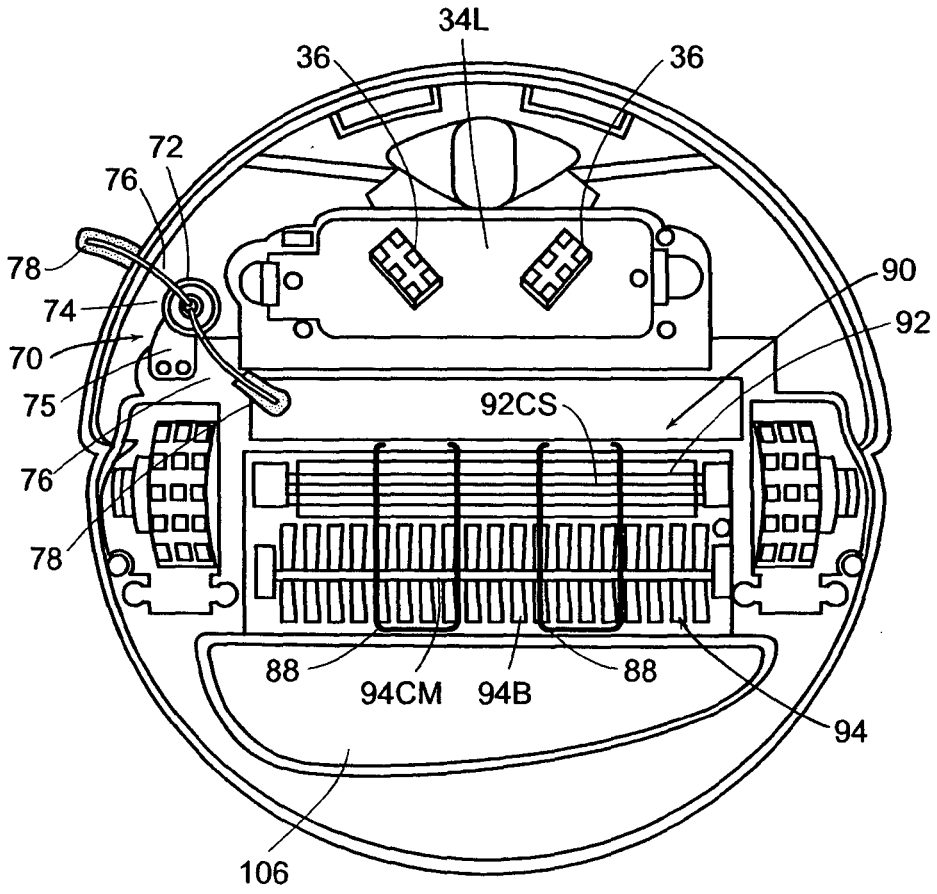
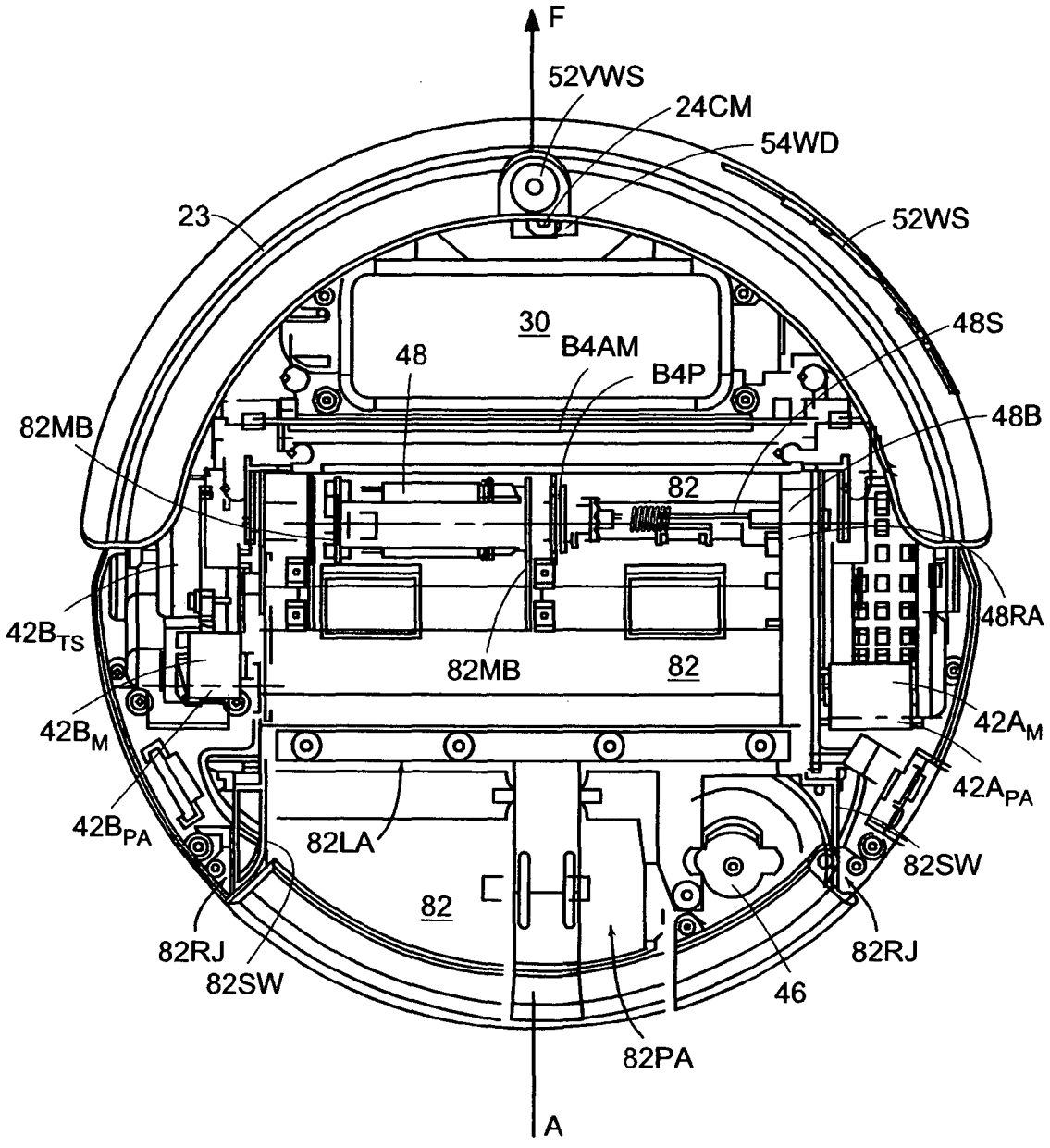


FIG. 2A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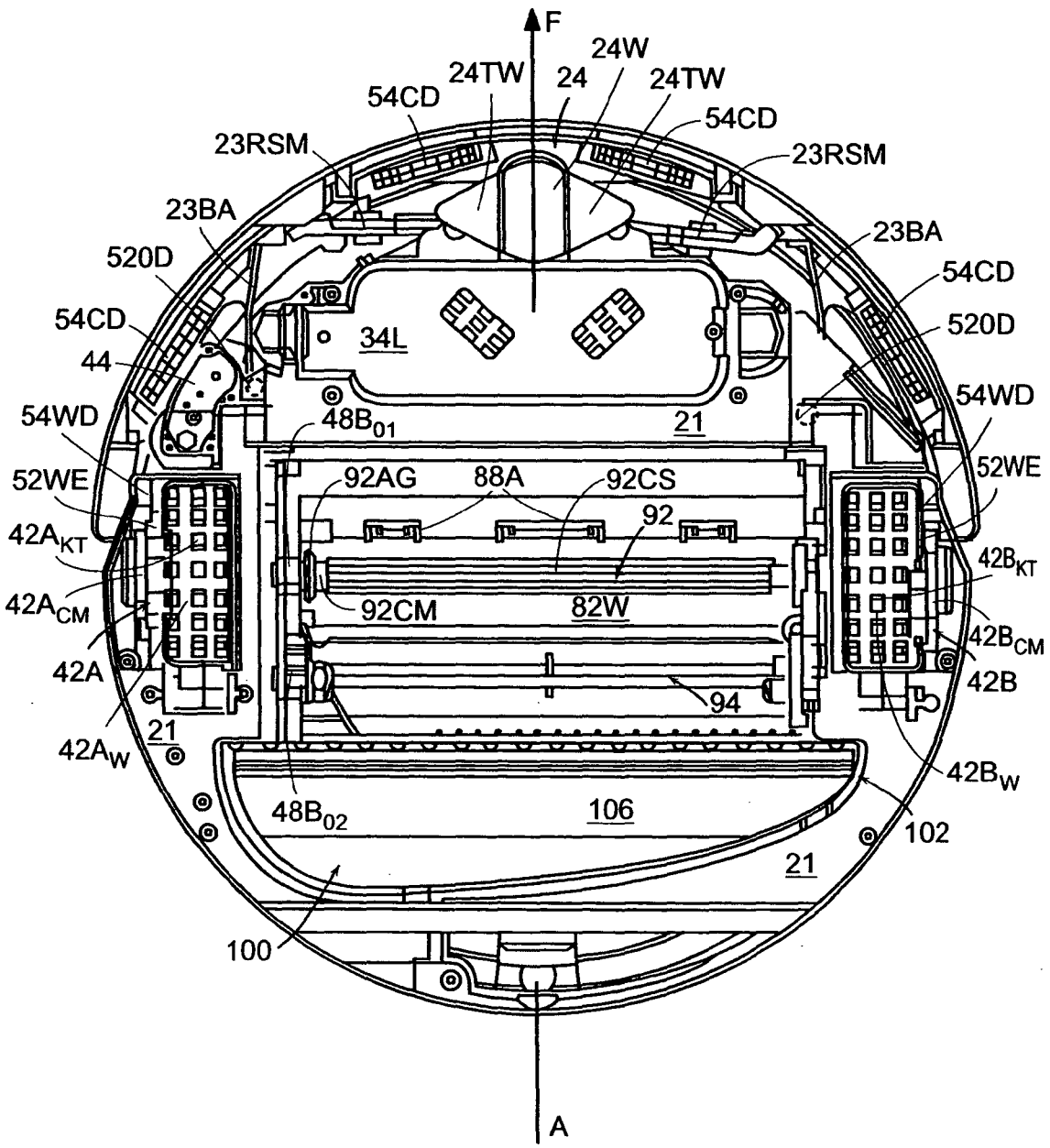
46
82PA
A

FIG. 3A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24TW
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54WD
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52WE
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88A
92CS
52WE
92
42AKT
42BKT
42ACM
92CM
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42BCM
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42B
94
21
42AW
42BW
48B02
106
102
21
100
A

FIG. 3B

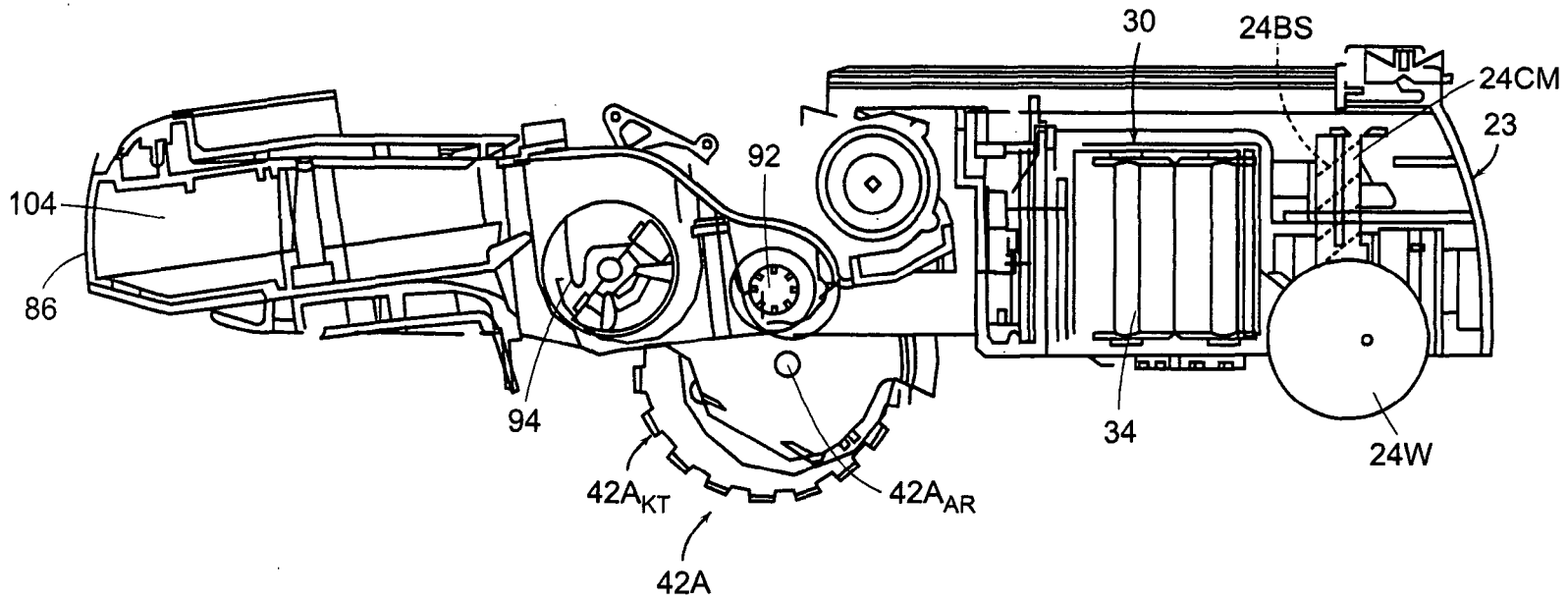


FIG. 3C

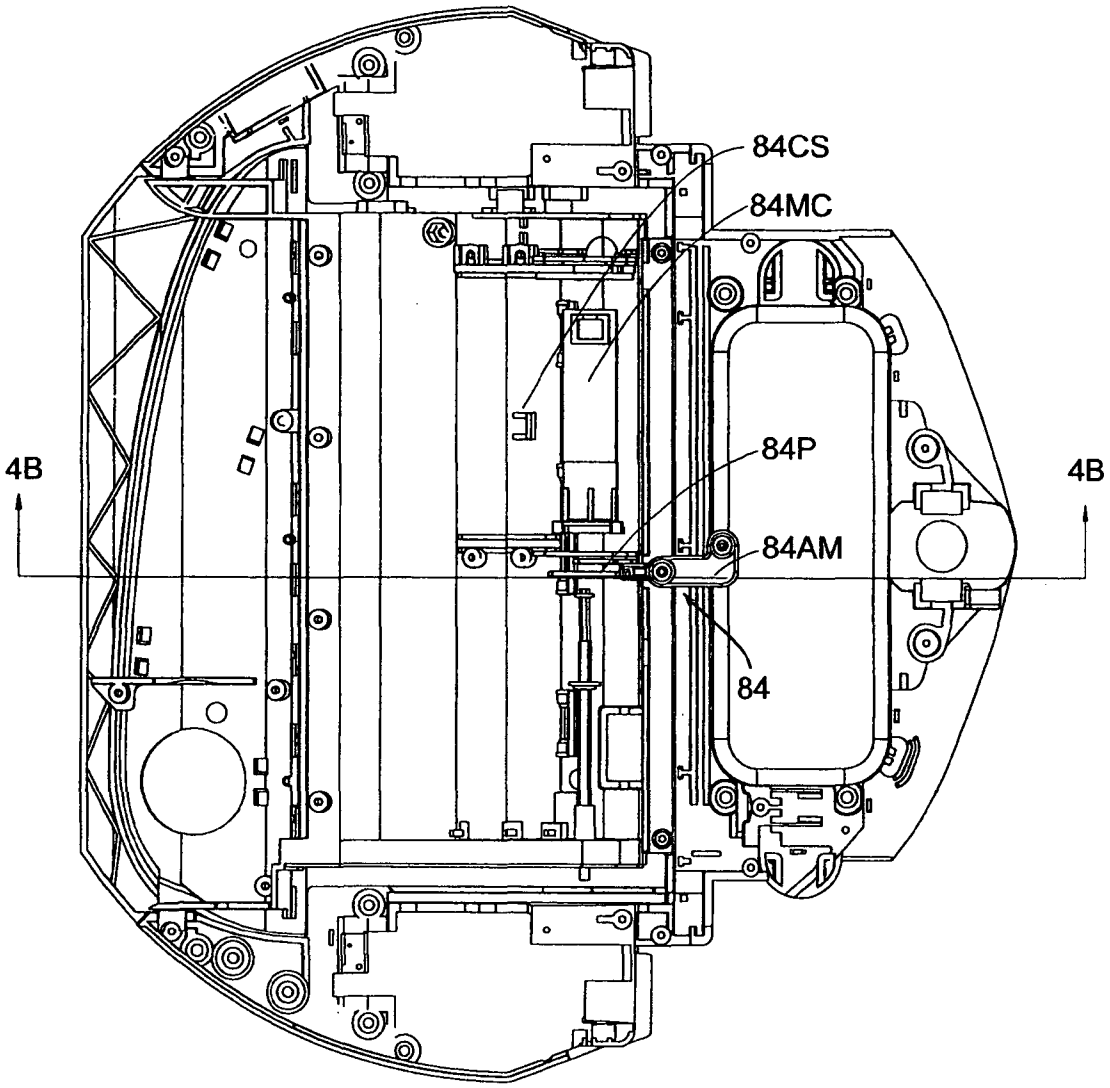


FIG. 4A

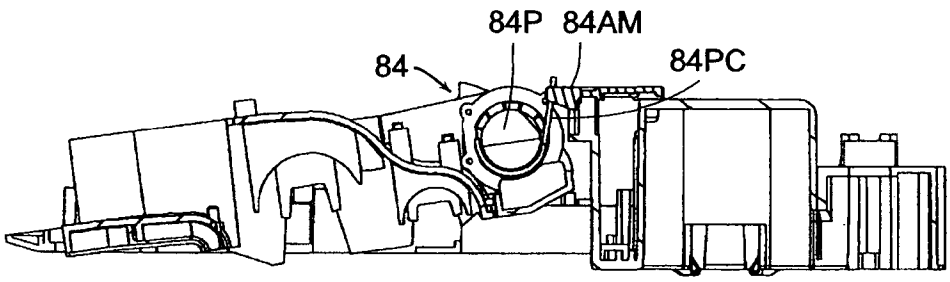


FIG. 4B

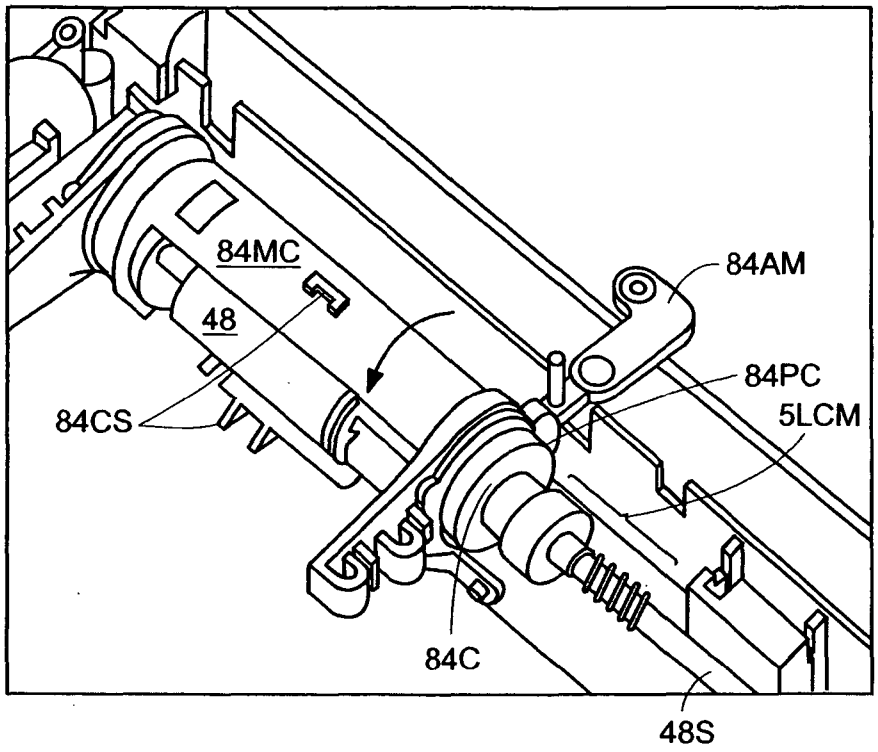


FIG. 4C

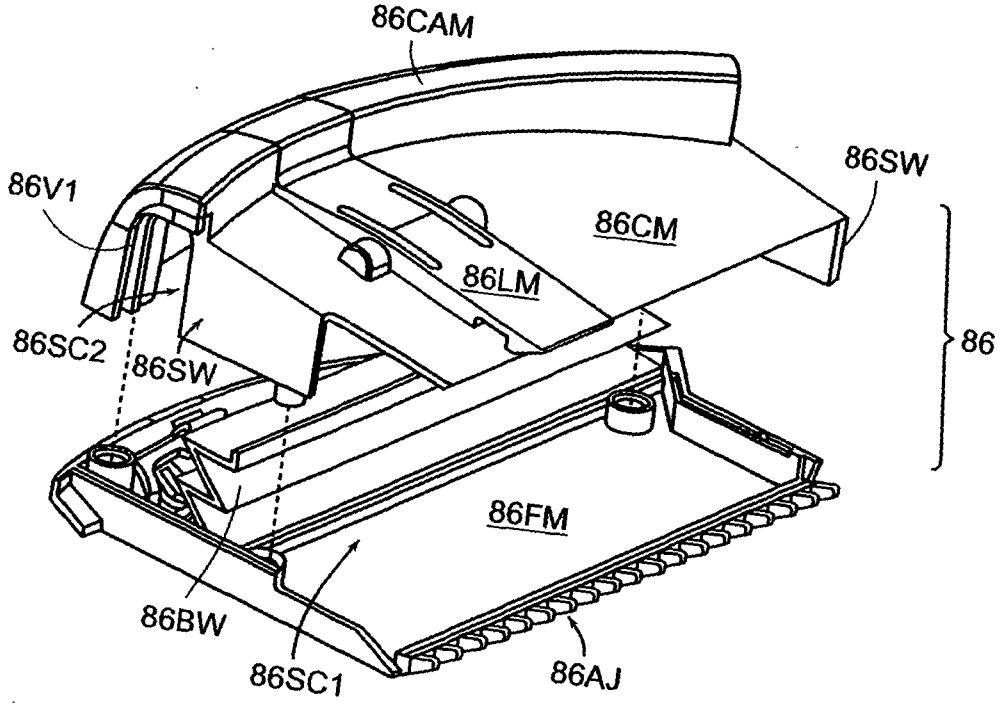


FIG. 5A

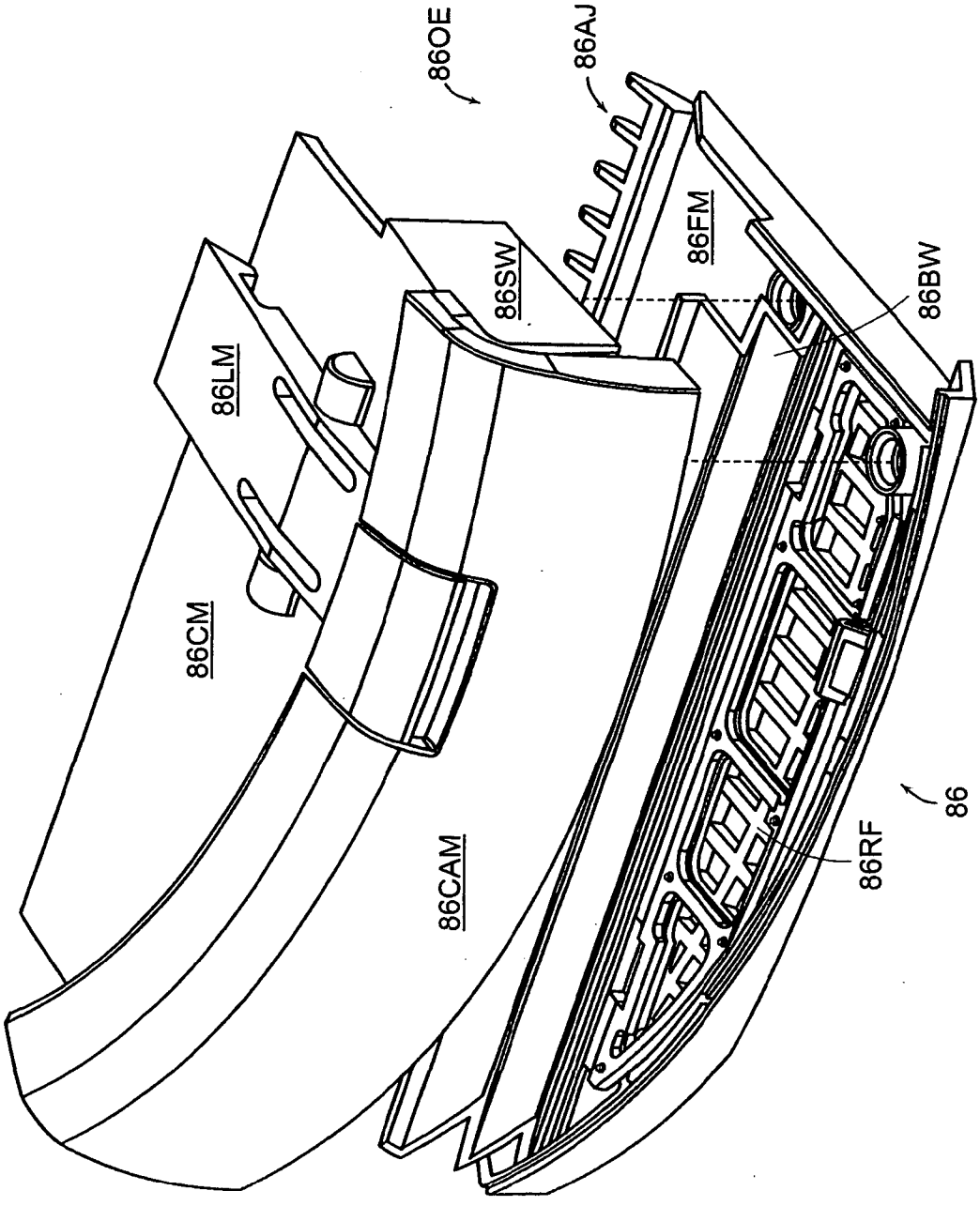


FIG. 5B

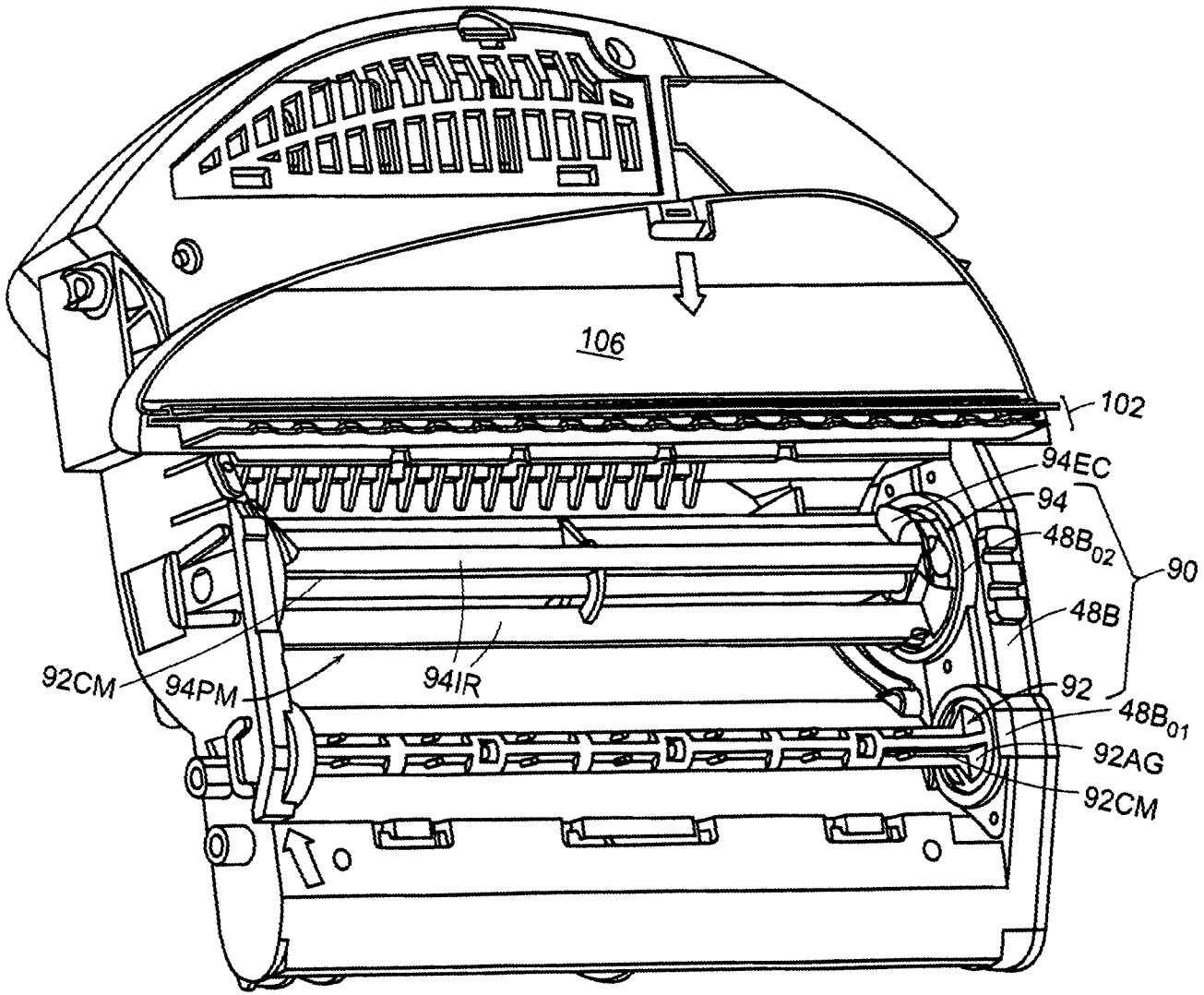
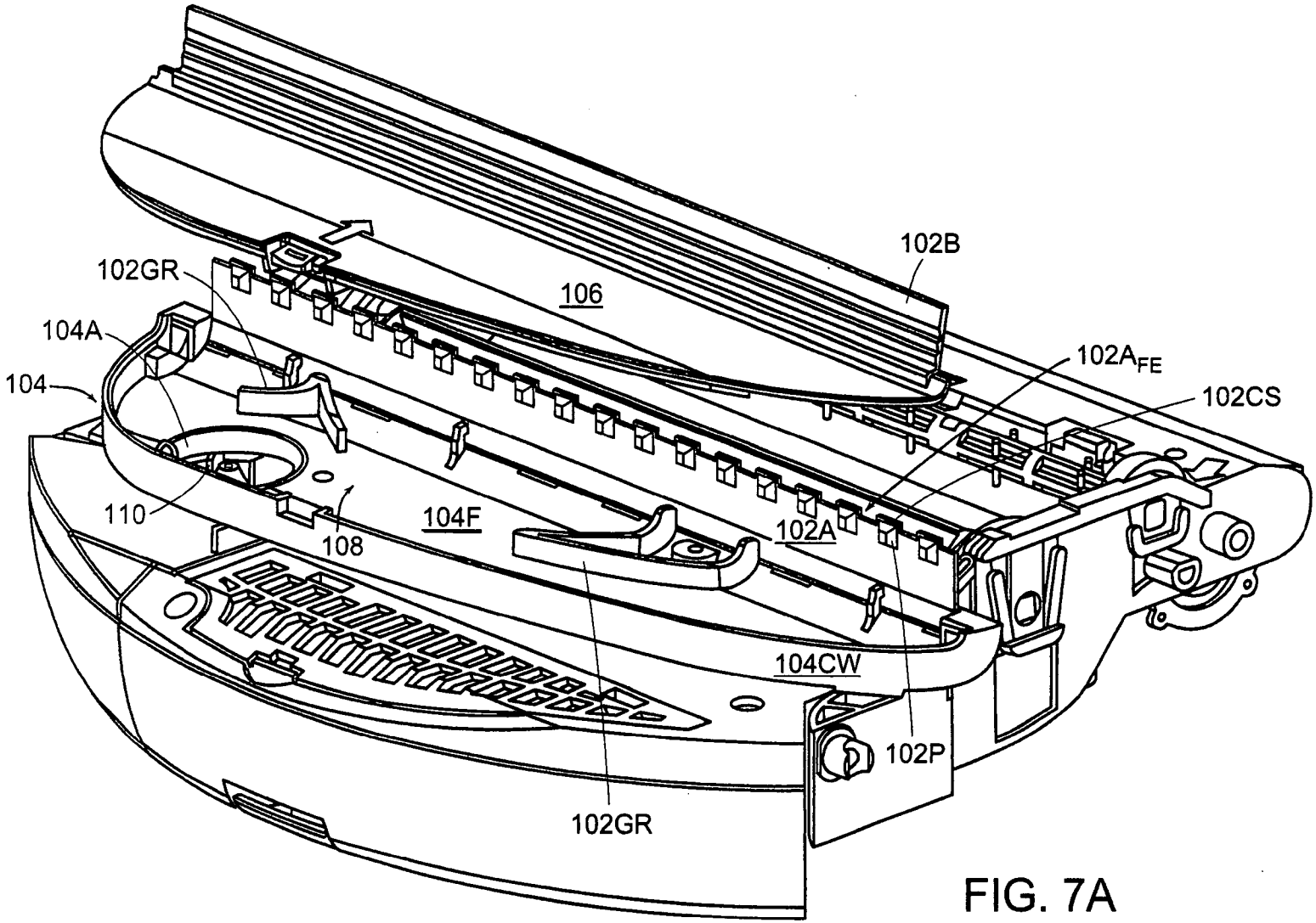


FIG. 6

11/13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104CW
102P
102GR

FIG. 7A

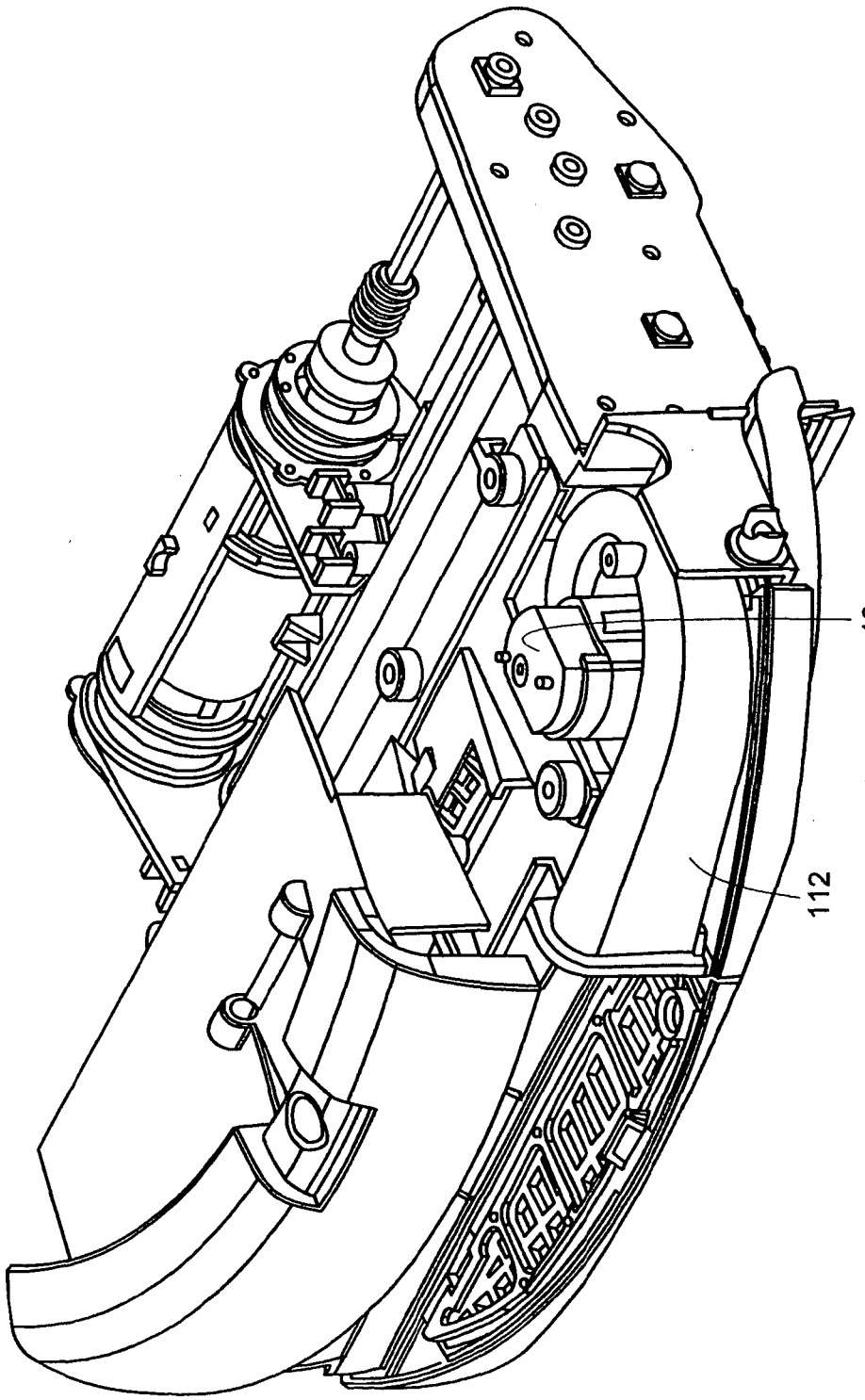

FIG. 7B

PTO/SB/01 (10-01)
App. ..d for use through 10/31/2002. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

☐ Declaration Submitted with Initial Filing **OR** ☑ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)

Attorney Docket Number	ISR-012/DP-10
First Named Inventor	JONES
COMPLETE IF KNOWN	
Application Number	10/320,729
Filing Date	12/16/2002
Art Unit	
Examiner Name	

As the below named inventor, I hereby declare that:

My residence, mailing address, and citizenship are as stated below next to my name.

I believe I am the original and first inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

AUTONOMOUS FLOOR-CLEANING ROBOT

(Title of the Invention)

the specification of which

☐ is attached hereto

OR

☑ was filed on (MM/DD/YYYY) 12/16/2002 as United States Application Number or PCT International

Application Number _____ and was amended on (MM/DD/YYYY) _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached? YES	NO
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

PTO/SB/01 (10-01)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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DECLARATION — Utility or Design Patent Application

Direct all correspondence to: ☑ Customer Number or Bar Code Label 24390 OR ☐ Correspondence address below

Name

Address

City | State | ZIP

Country | Telephone | Fax

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

NAME OF SOLE OR FIRST INVENTOR : ☐ A petition has been filed for this unsigned inventor

Given Name (first and middle [if any]): Joseph L. | Family Name or Surname: Jones

Inventor's Signature: Joseph L Jones | Date: 1/6/03

Residence: City: Acton | State: MA | Country: US | Citizenship: US

Mailing Address: 9 Redwood Road

City: Acton | State: MA | ZIP: 01720 | Country: US

NAME OF SECOND INVENTOR: ☐ A petition has been filed for this unsigned inventor

Given Name (first and middle [if any]): Newton E. | Family Name or Surname: Mack

Inventor's Signature: Newton E Mack | Date: 1/8/03

Residence: City: Somerville | State: MA | Country: US | Citizenship: US

Mailing Address: 115 Elm Street, #2

City: Somerville | State: MA | ZIP: 02144 | Country: US

☑ Additional inventors are being named on the 1 supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto.

PTO/SB/02A (10-00)
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DECLARATION

ADDITIONAL INVENTOR(S)
Supplemental Sheet
Page 1 of 1

Name of Additional Joint Inventor, if any:	☐ A petition has been filed for this unsigned inventor		
David M. (Given Name)		Nugent (Family Name or Surname)	
Inventor's Signature David Nugent			1/07/2003 (Date)
Newport (Residence: City)	RI (State)	US (Country)	US (Citizenship)
52 Farewell St. (Mailing Address)			
Mailing Address			
Newport (City)	RI (State)	02840 (ZIP)	US (Country)
Name of Additional Joint Inventor, if any:	☐ A petition has been filed for this unsigned inventor		
Paul E. (Given Name)		Sandin (Family Name or Surname)	
Inventor's Signature Paul E Sandin			Date 1/6/03
Randolph (Residence: City)	MA (State)	US (Country)	US (Citizenship)
98 Wilmarth Road (Mailing Address)			
Mailing Address			
Randolph (City)	MA (State)	02368 (ZIP)	US (Country)
Name of Additional Joint Inventor, if any:	☐ A petition has been filed for this unsigned inventor		
Given Name		Family Name or Surname	
Inventor's Signature			Date
Residence: City	State	Country	Citizenship
Mailing Address			
Mailing Address			
City	State	ZIP	Country

Burden Hour Statement: This form is estimated to take 21 minutes to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	Autonomous Floor Cleaning Robot
First Named Inventor/Applicant Name:	Joseph L. Jones
Filer:	Jill Elizabeth DeMello
Attorney Docket Number:	1007.0013-01000

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Utility application filing	1011	1	310	310
Utility Search Fee	1111	1	510	510
Utility Examination Fee	1311	1	210	210
Pages:				
Claims:				
Independent claims in excess of 3	1201	1	210	210
Miscellaneous-Filing:				
Petition:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
		Total in USD ($)		**1240**

Electronic Acknowledgement Receipt

EFS ID:	3865069
Application Number:	12201554
International Application Number:	
Confirmation Number:	9658
Title of Invention:	Autonomous Floor Cleaning Robot
First Named Inventor/Applicant Name:	Joseph L. Jones
Customer Number:	74863
Filer:	Jill Elizabeth DeMello
Filer Authorized By:	
Attorney Docket Number:	1007.0013-01000
Receipt Date:	29-AUG-2008
Filing Date:	
Time Stamp:	15:39:45
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$1240
RAM confirmation Number	981
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1		ContinuationForFiling.pdf	3023370 32ac1b6ffa8f08cf95d6f727da56a294e233b215	yes	74

Multipart Description/PDF files in .zip description		
Document Description	**Start**	**End**
Transmittal of New Application	1	3
Preliminary Amendment	4	13
Application Data Sheet	14	16
Specification	17	41
Claims	42	57
Abstract	58	58
Drawings-only black and white line drawings	59	71
Oath or Declaration filed	72	74

Warnings:					
Information:					
2	Fee Worksheet (PTO-06)	fee-info.pdf	35874 2427cf9b6e5bc35b6deada0b3415e3fe95c896e1	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	3059244	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (12-04)

Filing Date: 08/29/08

Approved for use through 7/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/201,554

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	310
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	510
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	210
TOTAL CLAIMS (37 CFR 1.16(i))	20 minus 20 =		X$ 25		OR	X$50	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4 minus 3 =	* 1	X$105			X$210	210
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $260 ($130 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR						
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))			185			370	
			TOTAL			TOTAL	1240

* If the difference in column 1 is less than zero, enter "0" in column 2.

APPLICATION AS AMENDED – PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					N/A		OR	N/A	
						TOTAL ADD'T FEE		OR	TOTAL ADD'T FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)	OR	RATE ($)	ADDITIONAL FEE ($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					N/A		OR	N/A	
						TOTAL ADD'T FEE		OR	TOTAL ADD'T FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
12/201,554	08/29/2008	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY ☐ RATE ($)	SMALL ENTITY ☐ FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	08/29/2008	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0	X $ =		OR	X $50=	0
	Independent (37 CFR 1.16(h))	* 4	Minus	***4	= 0	X $ =		OR	X $210=	0
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/DEBORAH NASH/

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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
12/201,554	08/29/2008	3723	1240	1007.0013-01000	20	4

CONFIRMATION NO. 9658

74863
O"Brien Jones, PLLC (w/iRobot Corp.)
8200 Greensboro Drive
Suite 1020A
McLean, VA 22102

FILING RECEIPT

OC000000032002643

Date Mailed: 09/11/2008

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Applicant(s)

Joseph L. Jones, Acton, MA;
Newton E. Mack, Somerville, MA;
David M. Nugent, Newport, RI;
Paul E. Sandin, Randolph, MA;

Assignment For Published Patent Application

iRobot Corporation

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CON of 10/818,073 04/05/2004
which is a CON of 10/320,729 12/16/2002 PAT 6,883,201
which claims benefit of 60/345,764 01/03/2002

Foreign Applications

If Required, Foreign Filing License Granted: 09/10/2008

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/201,554**

Projected Publication Date: 12/18/2008

Non-Publication Request: No

Early Publication Request: No

Title

Autonomous Floor-Cleaning Robot

Preliminary Class

015

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at http://www.uspto.gov/web/offices/pac/doc/general/index.html.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, http://www.stopfakes.gov. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as

set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

PATENT
Customer No. 74,863
Attorney Docket No. 1007.0013-01000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Joseph L. Jones et al.	)	
	)	
Application No.: 12/201,554	)	Group Art Unit: N/A
	)	
Filed: August 29, 2008	)	Examiner: N/A
	)	
For: AUTONOMOUS FLOOR CLEANING ROBOT	)	
	)	Confirmation No.: 9658

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

REVOCATION OF POWER OF ATTORNEY
AND GRANT OF NEW POWER OF ATTORNEY

The undersigned, a representative authorized to sign on behalf of the assignee owning all of the interest in this patent application, hereby revokes all previous powers of attorney or authorization of agent granted in this application before the date of execution hereof. The undersigned verifies that iRobot Corporation is the assignee of the entire right, title, and interest in the patent application identified above by virtue of assignment by the inventors of the parent patent application, U.S. Patent Application Serial Number 10/818,073, filed April 5, 2004, recorded in the U.S. Patent and Trademark Office at Reel 017260, Frame 0785. The undersigned certifies that the evidentiary documents have been reviewed and to the best of the undersigned's knowledge and belief, title is in the assignee iRobot Corporation.

The undersigned hereby grants its power of attorney to the patent practitioners associated with O'BRIEN JONES PLLC, Customer Number 74,863, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, and to receive the Letters Patent.

Please send all future correspondence concerning this application to O'BRIEN JONES PLLC, Customer Number 74,863.

Dated: September 10, 2008

By: _____
Glen Weinstein
Senior VP and General Counsel
iRobot Corporation

Electronic Acknowledgement Receipt

EFS ID:	3925747
Application Number:	12201554
International Application Number:	
Confirmation Number:	9658
Title of Invention:	Autonomous Floor-Cleaning Robot
First Named Inventor/Applicant Name:	Joseph L. Jones
Customer Number:	74863
Filer:	Jill Elizabeth DeMello/RENEE ROBERTS
Filer Authorized By:	Jill Elizabeth DeMello
Attorney Docket Number:	1007.0013-01000
Receipt Date:	11-SEP-2008
Filing Date:	29-AUG-2008
Time Stamp:	14:11:19
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	ExecutedREV_POA.pdf	60127 061dd16e3a3da12904abf4861a8b363385b72f7b	no	2

Warnings:

The page size in the PDF is too large. The pages should be 8.5 x 11 or A4. If this PDF is submitted, the pages will be resized upon entry into the Image File Wrapper and may affect subsequent processing	
Information:	
Total Files Size (in bytes):	60127

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/201,554	08/29/2008	Joseph L. Jones	1007.0013-01000

CONFIRMATION NO. 9658

IMPROPER CPOA LETTER

74863
O"Brien Jones, PLLC (w/iRobot Corp.)
8200 Greensboro Drive
Suite 1020A
McLean, VA 22102

OC000000032153757

Date Mailed: 09/22/2008

NOTICE REGARDING POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/11/2008. The Power of Attorney in this application is not accepted for the reason(s) listed below:

- The Power of Attorney is from an assignee and the Certificate required by 37 CFR 3.73(b) has not been received.

/sibrahim/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/201,554	08/29/2008	Joseph L. Jones	1007.0013-01000

CONFIRMATION NO. 9658

74863
O"Brien Jones, PLLC (w/iRobot Corp.)
8200 Greensboro Drive
Suite 1020A
McLean, VA 22102

POA ACCEPTANCE LETTER

OC000000032279809

Date Mailed: 09/25/2008

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/11/2008.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/rnrawls/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/201,554	08/29/2008	Joseph L. Jones	1007.0013-01000

CONFIRMATION NO. 9658

74863
O"Brien Jones, PLLC (w/iRobot Corp.)
8200 Greensboro Drive
Suite 1020A
McLean, VA 22102

PUBLICATION NOTICE

OC000000033680265

Title: Autonomous Floor-Cleaning Robot

Publication No.US-2008-0307590-A1
Publication Date:12/18/2008

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently http://www.uspto.gov/patft/.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently http://pair.uspto.gov/. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Managment, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

PATENT
Customer No. 74,863
Attorney Docket No. 1007.0013-01000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
	)	
Joseph L. Jones et al.	)	Group Art Unit: 3723
	)	
Application No.: 12/201,554	)	Examiner: TBA
	)	
Filed: August 29, 2008	)	
	)	
For: AUTONOMOUS FLOOR CLEANING ROBOT	)	Confirmation No.: 9658
	)	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97(b)

Pursuant to 37 C.F.R. §§ 1.56 and 1.97(b), applicants bring to the attention of the Examiner the documents on the attached listing. This Information Disclosure Statement is being filed before the mailing date of a first Office Action on the merits for the above-referenced application.

The listed documents are of record in prior application no. 10/818,073, filing date April 5, 2004, upon which applicants rely for the benefits provided in 35 U.S.C. § 120, and accordingly copies are not enclosed.

Applicants respectfully request that the Examiner consider the listed documents and indicate that they were considered by making appropriate notations on the attached form.

To the extent possible, English language Abstracts or Search Reports are provided for any non-English language documents to explain their relevance.

This submission does not represent that a search has been made or that no better art exists and does not constitute an admission that each or all of the listed documents are material or constitute "prior art." If the Examiner applies any of the documents as prior art against any claim in the application and applicants determine that the cited documents do not constitute "prior art" under United States law, applicants reserve the right to present to the Office the relevant facts and law regarding the appropriate status of such documents.

Applicants further reserve the right to take appropriate action to establish the patentability of the disclosed invention over the listed documents, should one or more of the documents be applied against the claims of the present application.

If there is any fee due in connection with the filing of this Statement, please charge the fee to our Deposit Account No. 50-4126.

Respectfully submitted,

O'BRIEN JONES^{PLLC}

Dated: February 5, 2009

By:/Jill DeMello Hill, Reg. No. 42,477/
Jill DeMello Hill
Reg. No. 42,477

Electronic Acknowledgement Receipt

EFS ID:	4738560
Application Number:	12201554
International Application Number:	
Confirmation Number:	9658
Title of Invention:	Autonomous Floor-Cleaning Robot
First Named Inventor/Applicant Name:	Joseph L. Jones
Customer Number:	74863
Filer:	Jill Elizabeth DeMello
Filer Authorized By:	
Attorney Docket Number:	1007.0013-01000
Receipt Date:	05-FEB-2009
Filing Date:	29-AUG-2008
Time Stamp:	15:17:20
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		IDS_AsFiled.pdf	1326579 64c48d462b80e7788d63c04f8c60fa141308e2ca	yes	31

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Information Disclosure Statement Letter	1	2
	Foreign Reference	3	3
	Foreign Reference	4	4
	Foreign Reference	5	5
	Foreign Reference	6	6
	Foreign Reference	7	7
	Foreign Reference	8	8
	Foreign Reference	9	9
	Foreign Reference	10	10
	Foreign Reference	11	11
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	Foreign Reference	30	30
	Foreign Reference	31	31

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Information:

Total Files Size (in bytes):	1326579

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

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National Stage of an International Application under 35 U.S.C. 371

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New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PATENT
Customer No. 74,863
Attorney Docket No. 1007.0013-01000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
	)	
Joseph L. Jones et al.	)	Group Art Unit: 3723
	)	
Application No.: 12/201,554	)	Examiner: TBA
	)	
Filed: August 29, 2008	)	
	)	
For: AUTONOMOUS FLOOR CLEANING ROBOT	)	Confirmation No.: 9658
	)	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97(b)

Pursuant to 37 C.F.R. §§ 1.56 and 1.97(b), applicants bring to the attention of the Examiner the documents on the attached listing. This Information Disclosure Statement is being filed before the mailing date of a first Office Action on the merits for the above-referenced application.

The listed documents are of record in prior application no. 10/818,073, filing date April 5, 2004, upon which applicants rely for the benefits provided in 35 U.S.C. § 120, and accordingly copies are not enclosed.

Applicants respectfully request that the Examiner consider the listed documents and indicate that they were considered by making appropriate notations on the attached form.

To the extent possible, English language Abstracts or Search Reports are provided for any non-English language documents to explain their relevance.

This submission does not represent that a search has been made or that no better art exists and does not constitute an admission that each or all of the listed documents are material or constitute "prior art." If the Examiner applies any of the documents as prior art against any claim in the application and applicants determine that the cited documents do not constitute "prior art" under United States law, applicants reserve the right to present to the Office the relevant facts and law regarding the appropriate status of such documents.

Applicants further reserve the right to take appropriate action to establish the patentability of the disclosed invention over the listed documents, should one or more of the documents be applied against the claims of the present application.

If there is any fee due in connection with the filing of this Statement, please charge the fee to our Deposit Account No. 50-4126.

Respectfully submitted,

O'BRIEN JONES^{PLLC}

Dated: February 5, 2009

By:/Jill DeMello Hill, Reg. No. 42,477/
Jill DeMello Hill
Reg. No. 42,477

IDS Form PTO/SB/08: Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				*Application Number*	12/201,554
				Filing Date	August 29, 2008
				First Named Inventor	Joseph L. Jones
				Art Unit	3723
(Use as many sheets as necessary)				*Examiner Name*	TBA
Sheet	1	of	13	*Attorney Docket Number*	1007.0013-01000

U.S. PATENTS AND PUBLISHED U.S. PATENT APPLICATIONS					
Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Issue or Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-2003/0060928 A1	03-27-2003	Abramson et al.	
		US-2003/0192144 A1	10-16-2003	Song et al.	
		US-3,457,575	07-29-1969	Bienek	
		US-3,937,174	02-10-1976	Haaga	
		US-4,099,284	07-11-1978	Shinozaki et al.	
		US-4,306,329	12-22-1981	Yokoi	
		US-4,756,049	07-12-1988	Uehara	
		US-4,815,157	03-28-1989	Tsuchiya	
		US-4,901,394	02-20-1990	Nakamura et al.	
		US-5,020,186	06-04-1991	Lessig et al.	
		US-5,084,934	02-04-1992	Lessig et al.	
		US-5,086,535	02-11-1992	Grossmeyer et al.	
		US-5,109,566	05-05-1992	Kobayashi et al.	
		US-5,115,538	05-26-1992	Cochran et al.	
		US-5,261,139	11-16-1993	Lewis	
		US-5,284,522	02-08-1994	Kobayashi et al.	
		US-5,321,614	06-14-1994	Ashworth	
		US-5,548,511	08-20-1996	Bancroft	
		US-5,553,349	09-10-1996	Kilstrom et al.	
		US-5,608,944	03-11-1997	Gordon	
		US-5,613,261	03-25-1997	Kawakami et al.	
		US-5,634,239	06-03-1997	Tuvin et al.	
		US-5,709,007	01-20-1998	Chiang	
		US-5,781,960	07-21-1998	Kilstrom et al.	
		US-5,787,545	08-04-1998	Colens	
		US-5,794,297	08-18-1998	Muta	
		US-5,815,880	10-06-1998	Nakanishi	
		US-5,839,156	11-24-1998	Park et al.	
		US-5,867,800	02-02-1999	Leif	
		US-5,926,909	07-27-1999	McGee	
		US-5,935,179	08-10-1999	Kleiner et al.	
		US-5,940,927	08-24-1999	Haegermarck et al.	
		US-6,030,465	02-29-2000	Marcussen et al.	

IDS Form PTO/SB/08: Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				*Application Number*	12/201,554
				Filing Date	August 29, 2008
				First Named Inventor	Joseph L. Jones
				Art Unit	3723
(Use as many sheets as necessary)				*Examiner Name*	TBA
Sheet	2	of	13	*Attorney Docket Number*	1007.0013-01000

U.S. PATENTS AND PUBLISHED U.S. PATENT APPLICATIONS					
		US-6,038,501	03-14-2000	Kawakami	
		US-6,076,025	06-13-2000	Ueno et al.	
		US-6,076,226	06-20-2000	Reed	
		US-6,240,342 B1	05-29-2001	Fiegert et al.	
		US-6,261,379 B1	07-17-2001	Conrad et al.	
		US-6,327,741 B1	12-11-2001	Reed	
		US-6,339,735 B1	01-15-2002	Peless et al.	
		US-6,389,329 B1	05-14-2002	Colens	
		US-6,381,802 B2	05-07-2002	Park	
		US-6,457,206 B1	10-01-2002	Judson	
		US-6,459,955 B1	10-01-2002	Bartsch et al.	
		US-6,465,982 B1	10-15-2002	Bergvall et al.	
		US-6,481,515 B1	11-19-2002	Kirkpatrick et al.	
		US-6,493,612 B1	12-10-2002	Bisset et al.	
		US-6,493,613 B2	12-10-2002	Peless et al.	
		US-6,525,509 B1	02-25-2003	Petersson et al.	
		US-6,571,415 B2	06-03-2003	Gerber et al.	
		US-6,601,265 B1	08-05-2003	Burlington	
		US-6,605,156 B1	08-12-2003	Clark et al.	
		US-4,556,313	12-03-1985	Miller et al.	
		US-4,887,415	12-19-1989	Martin	
		US-4,893,025	01-09-1990	Lee	
		US-5,002,145	03-26-1991	Wakaumi et al.	
		US-5,142,985	09-01-1992	Stearns et al.	
		US-5,208,521	05-04-1993	Aoyama	
		US-5,279,672	01-18-1994	Betker, Jr. et al.	
		US-5,446,356	08-29-1995	Kim	
		US-5,569,589	10-1996	Hwang	
		US-5,652,489	07-29-1997	Kawakami	
		US-5,812,267	09-22-1998	Everett, Jr. et al.	
		US-6,226,830 B1	05-08-2001	Hendricks et al.	
		US-4,119,900	10-10-1978	Kremnitz	
		US-4,700,427	10-20-1987	Knepper	
		US-5,353,224	10-04-1994	Lee et al.	

IDS Form PTO/SB/08: Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				*Application Number*	12/201,554
				Filing Date	August 29, 2008
				First Named Inventor	Joseph L. Jones
				Art Unit	3723
(Use as many sheets as necessary)				*Examiner Name*	TBA
Sheet	3	of	13	*Attorney Docket Number*	1007.0013-01000

U.S. PATENTS AND PUBLISHED U.S. PATENT APPLICATIONS					
		US-5,537,017	07-16-1996	Feiten et al.	
		US-5,650,702	07-22-1997	Azumi	
		US-6,255,793 B1	07-03-2001	Peless et al.	
		US-4,674,048	06-16-1987	Okumura	
		US-5,682,313	10-28-1997	Edlund et al.	
		US-5,204,814	04-20-1993	Noonan et al.	
		US-2001/0047231 A1	11-29-2001	Peless et al.	
		US-6,615,108 B1	09-02-2003	Peless et al.	
		US-6,463,368 B1	10-08-2002	Feiten et al.	
		US-6,574,536 B1	06-03-2003	Kawagoe et al.	
		US-6,370,453 B2	04-09-2002	Sommer	
		US-4,962,453	10-09-1990	Pong et al.	
		US-5,341,540	08-30-1994	Soupert et al.	
		US-5,942,869	08-24-1999	Katou et al.	
		US-5,634,237	06-03-1997	Paranipe	
		US-4,679,152	07-07-1987	Perdue	
		US-4,777,416	12-11-1988	George II et al.	
		US-2003/0025472	02-06-2003	Jones et al.	
		US-2002/0016649	02-07-2002	Jones	
		US-4,811,228	03-07-1989	Hyyppa	
		US-3,550,714	12-29-1970	Bellinger	
		US-4,626,995	12-02-1986	Lofgren et al.	
		US-6,259,979 B1	07-10-2001	Holmquist	
		US-4,912,643	03-27-1990	Beirxe	
		US-5,165,064	11-17-1992	Mattaboni	
		US-5,974,348	10-26-1999	Rocks	
		US-4,716,621	01-05-1988	Zoni	
		US-2001/0047231	11-2001	Peless et al.	
		US-2002/0016649	02-2002	Jones	
		US-2002/0011813	01-31-2002	Koselka et al.	
		US-2002/0120364	08-09-2002	Colens	
		US-2002/156556	10-24-2002	Ruffner	
		US-2002/0173877	11-21-2002	Zweig	
		US-2003/0025472	02-06-2003	Jones et al.	

IDS Form PTO/SB/08: Substitute for form 1449A/PTO				Complete if Known	
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U.S. PATENTS AND PUBLISHED U.S. PATENT APPLICATIONS					
		US-2003/0060928	03-2003	Abramson et al.	
		US-2003/0120389	06-26-2003	Abramson et al.	
		US-2003/0137268	07-24-2003	Papanikolopoulos et al.	
		US-2003/0019071	05-30-2006	Field et al.	
		US-2003/0192144	10-2003	Song et al.	
		US-2003/0216834	11-20-2003	Allard	
		US-2003/0233177	12-18-2003	Johnson et al.	
		US-2004/0020000	02-05-2004	Jones	
		US-2004/0030571	02-12-2004	Solomon	
		US-2004/0031113	02-19-2004	Wosewick et al.	
		US-2004/0030450	02-12-2004	Solomon	
		US-2004/0030449	02-12-2004	Solomon	
		US-2004/0030448	02-12-2004	Solomon	
		US-2004/0049877	04-26-2005	Jones et al.	
		US-2004/0068416	04-08-2004	Solomon	
		US-2004/0068415	04-08-2004	Solomon	
		US-2004/0068351	04-08-2004	Solomon	
		US-2004/0076324	04-22-2004	Burl et al.	
		US-2004/0088079	05-06-2004	Lavarec et al.	
		US-2004/0111184	06-10-2004	Chiappetta et al.	
		US-2004/0134337	07-15-2004	Solomon	
		US-2004/0134336	07-15-2004	Solomon	
		US-2004/0158357	08-12-2004	Lee et al.	
		US-2004/0156541	08-12-2004	Jeon et al.	
		US-2004/0200505	10-14-2004	Taylor et al.	
		US-2004/0211444	10-28-2004	Taylor et al.	
		US-2004/0204792	10-2004	Taylor et al.	
		US-2004/0236468	11-2004	Taylor et al.	
		US-2004/0244138	12-09-2004	Taylor et al.	
		US-2005/0000543	01-06-2005	Taylor et al.	
		US-2005/0010331	01-13-2005	Taylor et al.	
		US-2005/0156562	07-21-2005	Cohen et al.	
		US-D 510,066	09-27-2005	Hickey et al.	
		US-3,457,575	07-1969	Bienek	

IDS Form PTO/SB/08: Substitute for form 1449A/PTO				Complete if Known	
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U.S. PATENTS AND PUBLISHED U.S. PATENT APPLICATIONS					
		US-3,550,714	12-1970	Bellinger	
		US-3,674,316	07-1972	De Brey	
		US-3,937,174	02-1976	Haaga	
		US-4,099,284	07-1978	Shinozaki et al.	
		US-4,119,900	10-1978	Kremnitz	
		US-4,306,329	12-1981	Yokoi	
		US-4,369,543	01-25-1983	Chen et al.	
		US-4,513,469	04-30-1985	Godfrey et al.	
		US-4,626,995	12-1986	Lofgren et al.	
		US-4,674,048	06-1987	Okumura	
		US-4,679,152	07-07-1987	Perdue	
		US-4,696,074	09-29-1987	Cavalli et al.	
		US-4,700,427	10-1987	Knepper	
		US-4,733,430	03-1988	Westergren	
		US-4,733,431	03-1988	Martin	
		US-4,756,049	07-1988	Uehara	
		US-4,777,416	10-1988	George, II et al.	
		US-4,782,550	11-1988	Jacobs	
		US-4,815,157	03-1989	Tsuchiya	
		US-4,854,000	08-08-1989	Takimoto	
		US-4,887,415	12-1989	Martin	
		US-4,901,394	02-1990	Nakamura et al.	
		US-4,974,283	12-04-1990	Holsten et al.	
		US-4,919,224	04-24-1990	Shyu et al.	
		US-4,933,864	06-1990	Evans et al.	
		US-4,956,891	09-18-1990	Wulff	
		US-4,962,453	10-1990	Pong et al.	
		US-5,002,145	03-1991	Waqkaumi et al.	
		US-5,086,535	02-1992	Grossmeyer et al.	
		US-5,093,955	03-10-1992	Blehert et al.	
		US-5,105,502	04-1992	Takashima	
		US-5,109,566	05-1992	Kobayashi et al.	
		US-5,115,538	05-1992	Cochran et al.	
		US-5,136,750	08-1992	Takashima et al.	

IDS Form PTO/SB/08: Substitute for form 1449A/PTO				Complete if Known	
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U.S. PATENTS AND PUBLISHED U.S. PATENT APPLICATIONS					
		US-5,204,814	04-1993	Noonan et al.	
		US-5,239,720	08-31-1993	Wood et al.	
		US-5,303,448	04-19-1994	Hennessey et al.	
		US-5,319,828	06-14-1994	Waldhauser et al.	
		US-5,261,139	11-1993	Lewis	
		US-5,279,672	01-1964	Belker, Jr. et al.	
		US-5,284,522	02-1994	Kobayashi et al.	
		US-5,293,955	03-15-1994	Lee	
		US-5,324,948	06-28-1994	Dudar et al.	
		US-5,341,540	08-1994	Soupert et al.	
		US-5,353,224	10-1994	Lee et al.	
		US-5,369,347	11-29-1994	Yoo	
		US-5,440,216	08-08-1995	Kim	
		US-5,444,965	08-29-1995	Colens	
		US-5,446,356	08-1995	Kim	
		US-5,454,129	10-03-1995	Kell	
		US-5,455,982	10-10-1995	Armstrong et al.	
		US-5,467,273	11-1995	Faibish et al.	
		US-5,497,529	03-12-1996	Boesi	
		US-5,507,067	04-1996	Hoekstra et al.	
		US-5,515,572	05-1996	Hoekstra et al.	
		US-5,534,762	07-09-1996	Kim	
		US-5,537,017	07-1996	Feiten et al.	
		US-5,539,953	07-1996	Kurz	
		US-5,542,146	08-1996	Hoekstra et al.	
		US-5,548,511	08-1996	Bancroft	
		US-5,553,349	09-1996	Kilstrom et al.	
		US-5,555,587	09-17-1996	Guha	
		US-5,560,077	10-01-1996	Crotchett	
		US-5,568,589	10-1996	Hwang	
		US-5,611,106	03-18-1997	Richard F. Wulff	
		US-5,611,108	03-18-1997	Knowlton et al.	
		US-5,613,261	03-1997	Kawakami et al.	
		US-5,621,291	04-15-1997	Lee	

IDS Form PTO/SB/08: Substitute for form 1449A/PTO				Complete if Known	
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U.S. PATENTS AND PUBLISHED U.S. PATENT APPLICATIONS					
		US-5,622,236	04-22-1997	Azumi et al.	
		US-5,634,237	06-03-1997	Paranjpe	
		US-5,634,239	06-1997	Tuvin et al.	
		US-5,650,702	07-1997	Azumi	
		US-5,652,489	07-1997	Kawakami	
		US-5,682,313	10-1997	Edlund et al.	
		US-5,709,007	01-1998	Chiang	
		US-5,761,762	06-1998	Kubo et al.	
		US-5,781,960	07-1998	Kilstrom et al.	
		US-5,787,545	08-1998	Colens	
		US-5,794,297	08-1998	Muta	
		US-5,839,156	11-1998	Park et al.	
		US-5,841,259	11-24-1998	Kim et al.	
		US-5,867,800	02-1999	Leif	
		US-5,926,909	07-27-1999	McGee	
		US-5,935,179	08-1999	Kleiner et al.	
		US-5,940,927	08-1999	Haegermarck et al.	
		US-5,940,930	08-24-1999	Oh et al.	
		US-5,943,730	08-31-1999	Boomgaarden	
		US-5,943,733	08-31-1999	Tagliaferri	
		US-5,959,423	09-1999	Nakanishi et al.	
		US-6,041,471	03-28-2000	Charkey et al.	
		US-6,444,003	09-03-2002	Sutcliffe	
		US-6,496,754	12-17-2002	Song et al.	
		US-6,525,509	02-25-2003	Petersson et al.	
		US-6,532,404	03-2003	Colens	
		US-6,571,415	06-2003	Gerber et al.	
		US-6,574,536	06-2003	Kawagoe et al.	
		US-6,580,246	06-17-2003	Jacobs	
		US-6,605,156	08-2003	Clark et al.	
		US-6,611,120	08-26-2003	Song et al.	
		US-6,611,738	08-26-2003	Ruffner	
		US-6,658,693	12-09-2003	Reed, Jr.	
		US-6,671,592	12-2003	Bisset et al.	

IDS Form PTO/SB/08: Substitute for form 1449A/PTO				Complete if Known	
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U.S. PATENTS AND PUBLISHED U.S. PATENT APPLICATIONS					
		US-6,690,134	02-10-2004	Jones et al.	
		US-6,741,054	05-25-2004	Koselka et al.	
		US-6,748,297	06-08-2004	Song et al.	
		US-6,781,338	08-24-2004	Jones et al.	
		US-6,809,490	10-26-2004	Jones et al.	
		US-6,830,120	12-14-2004	Yashima et al.	
		US-6,883,201	04-26-2005	Jones et al.	
		US-6,956,348	10-18-2005	Landry et al.	
		US-6,841,963	01-11-2005	Song et al.	
		US-6,901,624	01-12-2005	Mori et al.	
		US-6,938,298	01-13-2005	Turbjorn Aasen	
		US-6,965,209	01-14-2005	Jones et al.	
		US-6,971,140	01-15-2005	Se Wan Kim	
		US-2005/204717	09-22-2005	Colens	
		US-7,206,677	04-17-2007	Hulden	
		US-7,085,624	08-01-2006	Aldred et al.	
		US-7,024,278	04-04-2006	Chiapetta et al.	
		US-6,999,850	02-14-2006	McDonald	
		US-6,611,738	08-26-2003	Raffner	
		US-6,496,755	12-17-2002	Wallach et al.	
		US-5,467,273	11-14-1995	Faibish et al.	
		US-5,465,525	11-14-1995	Mifune et al.	
		US-5,321,614	06-14-1994	Ashworth	
		US-5,309,592	05-1994	Hiratsuka	
		US-5,787,545	08-1998	Colens	
		US-7,013,527	03-2006	Thomas et al.	

Note: Submission of copies of U.S. Patents and published U.S. Patent Applications is not required.

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] Number[4] Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	Translation[6]
		WO 00/04430	01-27-2000	Bottomley et al.		
		WO 00/38029	06-29-2000	Bisset et al.		
		WO 00/78410 A1	12-28-2000	Colens		
		WO 01/06904 A1	02-01-2001	Clark et al.		

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FOREIGN PATENT DOCUMENTS						
		WO 02/058527 A1	08-01-2002	Dijksman et al.		
		WO 02/067744 A1	09-06-2002	Haegermarck et al.		
		WO 02/067745 A1	09-06-2002	Haegermarck		
		WO 02/074150 A1	09-26-2002	Wallach et al.		
		WO 02/075356 A1	09-26-2002	Hulden et al.		
		WO 02/075469 A1	09-26-2002	Hulden		
		WO 02/075470 A1	09-26-2002	Hulden		
		WO 02/39864 A1	05-23-2002	Aasen		
		WO 02/39868 A1	05-23-2002	McDonald		
		WO 03/026474 A2	04-03-2003	Abramson et al.		
		WO 03/040845 A1	05-15-2003	Aldred et al.		
		WO 03/040846 A1	05-15-2003	Aldred		
		WO 95/26512	10-05-1995	Elund		
		WO 97/15224	05-01-1997	Moren et al.		
		WO 97/40734	11-06-1997	Haegermarck et al.		
		WO 97/41451	11-06-1997	Kleiner et al.		
		WO 99/28800	06-10-1999	Colens		
		WO 99/59042	11-18-1999	Peless et al.		
		WO 99/38056	07-29-1999	Bergvall et al.		
		WO 99/38237	07-29-1999	Petersson et al.		
		WO 99/43250	09-02-1999	Haegermarck		
		JP 2002-355206 A	12-10-2002	Matsushita Elec. Industrial		Abstract
		JP 2003-38402 A	02-12-2003	Toshiba Tec Corp.		
		JP 3-51023 A	03-05-1991	Matsushita Elec. Industrial		
		JP 6-327598 A	11-29-1994	Tokyo Electric Co.		Abstract
		JP 7-129239 A	05-19-1995	Matsushita Elec. Industrial		Abstract
		JP 8-89451 A	04-09-1996	Nippon Yusoki Co., Ltd.		
		JP 8-152916 A	06-11-1996	Matsushita Elec. Industrial		Abstract
		JP 2003-10076 A	01-14-2003	Figla Co., Ltd.		
		JP 2003-38401 A	02-12-2003	Toshiba Tec Corp.		
		JP 2002-532178 A	10-02-2002	Dyson, Ltd.		Abstract
		JP 2002-360479 A	12-17-2002	Matsushita Elec. Industrial		Abstract
		JP 2002-360482 A	12-17-2002	Matsushita Elec. Industrial		Abstract
		JP 2002-360471 A	12-17-2002	Matsushita Elec. Industrial		Abstract

IDS Form PTO/SB/08: Substitute for form 1449A/PTO				Complete if Known	
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FOREIGN PATENT DOCUMENTS						
		JP 2002-78650 A	03-19-2002	Matsushita Elec. Industrial		
		WO 99/16078	04-10-1999	Hitachi, Ltd.		
		WO 00/38029	06-29-2000	Bisset et al.		
		JP 11162454	12-19-2000	Ichijo Hisashi		
		JP 08000393	07-15-1997	Kitami Hideyo et al.		
		JP 08016776	08-12-1997	Tajima Shigeki et al.		
		JP 60293095	07-09-1987	Ogasawara Hitoshi		
		JP 62074018	10-06-1988	Ogasawara Hitoshi et al.		
		JP 09043901	09-11-1998	Kawakami Yuichi		
		JP 07338573	07-11-1997	Akisawa Yasuro et al.		
		JP 60259895	06-01-1987	Shiokawa Junji		
		JP 2002/204768	07-23-2002	Matsushita Elec. Industrial		
		JP 2003/036116	02-07-2003	Toshiba Tec Corp		Abstract
		JP 7/295636	11-10-1995	Samsung Electron Co. Ltd.		
		JP 6/3251	01-18-1994	NEC Home Electronics, Ltd.		
		JP 2,555,263	08-01-1997	NEC Home Electronics, Ltd.		
		JP 63/183032	07-28-1988	Matsushita Elec. Indus. Co.		
		JP 2003/052596	02-25-2003	Samsung Electronics		
		JP 3,375,843	11-29-2002	Honda Motor Co., Ltd.		Abstract
		JP 11/510935	09-21-1999	Akeibolaget Electrolux		Abstract
		JP 2001/525567	12-11-2001	Solar and Robotics		Abstract
		JP 2002/323925	11-08-2002	Matsushita Elec. Indus. Co.		Abstract
		JP 2003/061882	03-04-2003	Matsushita Elec. Indus. Co.		Abstract
		JP 2/6312	01-17-1990			
		DE 198 49 978 C2	02-08-2001	Prassler		Abstract
		JP 62-120510	06-01-1987			Abstract
		JP 62-154008	07-09-1987			Abstract
		JP 63-241610	10-06-1988			Abstract
		JP 03-051023	03-05-1991			
		JP 06-327598	11-29-1994			
		GB 2 283 838	05-17-1995			
		WO 95/26512	10/1995			
		JP 7-295636	11-10-1995			Abstract
		JP 08-089451	04-09-1996			

IDS Form PTO/SB/08: Substitute for form 1449A/PTO				Complete if Known	
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FOREIGN PATENT DOCUMENTS						
		JP 08-152916	06-11-1996			
		WO 97/15224	05-1997			
		JP 9-179625	07-11-1997			Abstract
		WO 97/40734	11-1997			
		WO 97/41451	11-1997			
		WO 99/28800	06-1999			
		WO 99/38056	07-1999			
		WO 99/38237	07-1999			
		JP 11-508810	08-03-1999			Abstract
		WO 99/43250	09-02-1999			
		WO 00/04430	01-2000			
		WO 00/36962	06-2000			
		WO 00/38026	06-2000			
		WO 00/78410	12-2000			
		FR 2 828 589	08-07-2001			Abstract
		EP 1 331 537 A1	07-30-2003			
		EP 1 331 537 B1	07-30-2003			
		WO 05/055795	06-23-2005			
		JP 2003-10076	01-14-2003			
		WO 04/006034	01-2004			
		WO 01/06904	02-2001			
		WO 01/06905	02-2001			
		JP 2003-036116	02-07-2003			Abstract
		JP 2003-38401	02-12-2003			
		JP 2003-38402	02-12-2003			
		JP 2003-505127	02-12-2003			Abstract
		JP 2003-5296	01-08-2003			
		JP 2002-78650	03-19-2002			
		WO 03/026474	04-2003			
		WO 02/39864	05-2002			
		WO 02/39868	05-2002			
		WO 03/040845	05-2003			
		WO 03/040846	05-2003			
		JP 2002-204768	07-23-2002			Abstract

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FOREIGN PATENT DOCUMENTS						
		WO 02/058527	08-2002			
		WO 02/062194	08-2002			
		JP 2001-258807	09-25-2001			Abstract
		WO 02/067744	09-2002			
		WO 02/067745	09-2002			
		WO 02/074150	09-2002			
		WO 02/075356	09-2002			
		WO 02/075469	09-2002			
		WO 02/075470	09-2002			
		JP 2001-275908	10-2001			Abstract
		JP 3356170	10-2002			
		JP 2003-310489	11-2003			Abstract
		WO 02/101477	12-2002			
		WO 04004533 A1	01-15-2004			
		WO 04058028 A2	01-16-2004			
		WO 05077244 A1	01-17-2004			
		WO 06068403 A1	01-18-2004			
		JP 9185410	07-15-1997			Abstract

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	Translation[6]
		GAT, Erann, Robust Low-computation Sensor-driven Control for Task-Directed Navigation, Proceedings of the 1991 IEEE, International Conference on Robotics and Automation, Sacramento, California, April 1991, pp. 2484-2489.	
		SCHOFIELD, Monica, "Neither Master nor Slave..." A Practical Case Study in the Development and Employment of Cleaning Robots, Emerging Technologies and Factory Automation, 1999, Proceedings, EFA '99. 1999 7th IEEE International Conference on Barcelona, Spain 18-21 Oct. 1999, pp. 1427-1434.	
		DOTY, Keith L. et al., "Sweep Strategies for a Sensory-Driven, Behavior-Based Vacuum Cleaning Agent" AAAI 1993 Fall Symposium Series Instantiating Real-World Agents Research Triangle Park, Raleigh, NC, October 22-24, 1993, pp. 1-6.	
		Cameron Morland, *Autonomous Lawn Mower Control*, July 24, 2002.	
		Doty, Keith L et al., "Sweep Strategies for a Sensory-Driven, Behavior-Based Vacuum Cleaning Agent" AAAI 1993 Fall Symposium Series Instantiating Real-World Agents Research Triangle Park, Raleigh, NC, Oct 22-24, 1993.	
		Electrolux designed for the well-lived home, website: http://www.electroluxusa.com/node57.as[?currentURL =node142.asp%3F, accessed 3/18/2005, 2 pages.	
		eVac Robotic Vacuum S1727 Instruction Manual, Sharper Image Corp., Copyright 2004, 14 pages.	
		Everyday Robots, website: http://www.everydayrobots.com/index.php?option=content&task=view&id=9, accessed 4/20/2005.	

IDS Form PTO/SB/08: Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				*Application Number*	12/201,554
				Filing Date	August 29, 2008
				First Named Inventor	Joseph L. Jones
				Art Unit	3723
(Use as many sheets as necessary)				*Examiner Name*	TBA
Sheet	13	of	13	*Attorney Docket Number*	1007.0013-01000

NON PATENT LITERATURE DOCUMENTS			
		Facts on the Trilobite webpage: "http://trilobiteelectroluxse/presskit_en/node11335asp?print=yes&pressID=" accessed 12/12/03.	
		Friendly Robotics Robotic Vacuum RV400-The Robot Store website: http://www.therobotstore.com/s.nl/sc.9/category,-109/it.A/id.43/.f, accessed 4/20/2005.	
		HITACHI: News release: The home cleaning robot of the autonomous movement type (experimental machine) is developed, website: http://www.i4u.com/japanreleases/hitachirobot.htm., accessed 3/18/2005.	
		Kärcher Product Manual Download webpage: "http://wwwkarchercom/bta/downloadenshtml?ACTION=SELECTTEILENR&ID=rc3000&submitButtonName=Select+Product+Manual" and associated pdf file "5959-915enpdf (47 MB) English/English" accessed 1/21/04	
		Karcher RC 3000 Cleaning Robot – user manual Manufacturer: Alfred-Karcher GmbH & Co, Cleaning Systems, Alfred Karcher-Str 28-40, PO Box 160, D-71349 Winnenden, Germany, Dec 2002	
		Kärcher RoboCleaner RC 3000 Product Details webpages: "http://wwwrobocleanerde/english/screen3html" through "...screen6html" accessed 12/12/03.	
		KARCHER USA, RC3000 Robotic Cleaner, website: http://www.karcher-usa.com/showproducts.php?op=view_prod&param1=143&param2=&param3=, accessed 3/18/2005.	
		koolvac Robotic Vacuum Cleaner Owner's Manual, Koolatron, Undated.	
		NorthStar Low-Cost, Indoor Localization, Evolution robotics, Powering Intelligent Products.	
		Put Your Roomba..... On "Automatic" Roomba Timer> Timed Cleaning-Floorvac Robotic Vacuum webpages: http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=43575198387&rd=1, accessed 4/20/2005.	
		Put Your Roomba..... On "Automatic" webpages: "http://www.acomputeredge.com/roomba," accessed 4/20/2005.	
		RoboMaid Sweeps Your Floors So You Won't Have To, the Official Site, website: http://www.therobomaid.com/, accessed 3/18/2005.	
		Robot Review Samsung Robot Vacuum (VC-RP30W), website: http://www.onrobo.com/reviews/At_Home/Vacuum_Cleaners/on00vcrp30rosam/index.htm, accessed 3/18/2005.	
		Robotic Vacuum Cleaner, website: http://www.sharperimage.com/us/en/catalog/productview.jhtml?sku=S1727BLU, accessed 3/18/2005.	
		Wired News: Robot Vacs Are in the House, website: http://www.wired.com/news/print/0,1294,59237,00.html, accessed 3/18/2005.	
		Zoombot Remote Controlled Vacuum-RV-500 NEW Roomba 2, website: http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=43526&item=4373497618&rd=1, accessed 4/20/2005	

Examiner Signature		Date Considered	

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

PTO Notes regarding this form:

[1] Applicant's unique citation designation number (optional).
[2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04.
[3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).
[4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.
[5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible.
[6] Applicant is to place a check mark here if English language Translation is attached.

Electronic Acknowledgement Receipt

EFS ID:	4742326
Application Number:	12201554
International Application Number:	
Confirmation Number:	9658
Title of Invention:	Autonomous Floor-Cleaning Robot
First Named Inventor/Applicant Name:	Joseph L. Jones
Customer Number:	74863
Filer:	Jill Elizabeth DeMello
Filer Authorized By:	
Attorney Docket Number:	1007.0013-01000
Receipt Date:	05-FEB-2009
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Time Stamp:	16:48:58
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		IDS_AsFiled.pdf	2291539 6e67f7373372e040a8d9391076ee6ca993c25e13	yes	44

Multipart Description/PDF files in .zip description		
Document Description	**Start**	**End**
Information Disclosure Statement Letter	1	2
Information Disclosure Statement (IDS) Filed (SB/08)	3	16
Foreign Reference	17	17
Foreign Reference	18	18
Foreign Reference	19	19
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	Foreign Reference	44	44

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2	Foreign Reference	IDS_AsFiled2.pdf	52863 7cf652f4b1acaa371c8f83aac4af475d2087b708	no	1

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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/201,554	08/29/2008	Joseph L. Jones	1007.0013-01000	9658

74863 7590 06/16/2009

O'Brien Jones, PLLC (w/iRobot Corp.)
8200 Greensboro Drive
Suite 1020A
McLean, VA 22102

EXAMINER	
SCRUGGS, ROBERT J	

ART UNIT	PAPER NUMBER
3723	

NOTIFICATION DATE	DELIVERY MODE
06/16/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

info@obrienjones.com
jill.hill@obrienjones.com
michelle.obrien@obrienjones.com

Office Action Summary	Application No.	Applicant(s)	
	12/201,554	JONES ET AL.	
	Examiner	Art Unit	
	ROBERT SCRUGGS	3723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 August 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *78-97* is/are pending in the application.

4a) Of the above claim(s) *1-77* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *78-97* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 August 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/5/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on February 5, 2009 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement has been considered by the examiner.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of **50 to 150 words**. It is important that the abstract not **exceed 150 words** in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 78-80, 82-86, 95 and 97 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bisset et al. (6493612) in view of Takemoto (JP6327598) and Hopkins et al. (6276478).

In reference to claims 78 and 95, Bisset et al. disclose a floor cleaning robot comprising, a housing (100), wheels (104) and at least one motor (105) to drive the wheels disposed at least partially within the housing and configured to move the floor cleaning robot across a floor, a control module formed as the control software (Column 3, Line 59-Column 4, Line 4) disposed within the housing and directing movement of the floor cleaning robot across the floor, at least one sensor for detecting an obstacle and communicating obstacle information to the control module so that the control module can cause the floor cleaning robot to react to the obstacle (Column 3, lines 53-58), a removable bin formed as the bottom area of cyclone (152) (Column 4, Lines 1-2) disposed at least partially within the housing and configured to receive particulates, a first rotating member (125) configured to direct particulates toward the bin, wherein the removable bin is configured to receive particulates directed thereto from the rotating member

without passing through a filter (since no filter is disclosed in Bisset et al.), but lack, a second rotating member configured to cooperate with the first rotating member to direct particulates toward the bin, a biasing member that biases the wheels to an extended position and wherein during cleaning the weight of the floor cleaning robot overcomes the force exerted by the biasing member However, Takemoto teaches a technique of providing a vacuum cleaning device with a first rotating member (33) and a second rotating member/impeller (25) configured to cooperate with the first rotating member to direct particulates toward a bin (Figure 2).One of ordinary skill in the art could have applied the known technique of providing a second rotating brush in a vacuum system, as taught by Takemoto, in the same way to the device, of Bisset et al., and the results would have been predictable. In this situation, one could provide a more versatile cleaning device that more effectively cleans carpet and flooring surfaces. In addition, Hopkins et al. teach a technique of providing a vacuum cleaner with a biasing member (62) that biases wheels (60) into an extended position. One of ordinary skill in the art could have applied the known technique of providing a biasing member that biases the wheels to an extended position, as taught by Hopkins et al., in the same way to the device, of Bisset et al., and the results would have been predictable. In this situation, one could provide a cleaning device having wheels that more effectively maintain engagement with floor surfaces thereby more effectively maneuvering the device across surfaces of varying heights. Finally, regarding that the weight of the device is sufficient enough to overcome the force of the biasing member the examiner notes that

obviously the weight of the device would be sufficient to overcome the force of the biasing member depending on the type and size of spring used, furthermore, where the general conditions of a claim are disclosed in the prior art discovering the optimum or workable ranges involves only routine optimization and experimentation to one of ordinary skill in the art. *In re Aller*, 105 USPQ 233. Here, one could select a spring having a force that is less than the amount of weight being applied from the device depending on the specific needs of a user for the particular problem at hand.

In reference to claim 79, Bisset et al. also disclose an air moving system formed as the cyclonic separator disposed at least partially within the housing and configured to ingest particulates and direct particulates toward the removable bin (Column 4, Lines 5-16).

In reference to claim 80, Bisset et al. also disclose that the first rotating member cooperates with the air moving system to direct particulates toward the bin (Column 3, Line 27-Column 4, Line 16).

In reference to claims 82 and 97, Takemoto also shows that the second rotating member/impeller (25) is disposed at least partially within the housing and is spaced from the floor a greater distance than the first rotating member (Figure 2).

In reference to claim 83, Takemoto also shows that the first rotating member (33) contacts the floor and agitates particulates and directs the particulates toward the second rotating member (25) (Figure 2).

In reference to claim 84, Takemoto also shows that the second rotating member is positioned to receive particulates from the first rotating member and direct the particulates toward the bin (16) (Figure 2)

In reference to claim 85, Takemoto also shows that the first rotating member is a brush (33) (Figure 2 and 5).

In reference to claim 86, Takemoto also shows that the second rotating member includes a central member (i.e. element 25) and two or more blade-like members (26) extending therefrom (Figure 2).

5. Claims 81, 94 and 96 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bisset et al. (6493612) in view of Takemoto (JP6327598), Hopkins et al. (6276478) and Conrad et al. (6482252).

In reference to claims 81 and 96, Bisset et al. disclose the claimed invention previously mentioned above, but lack, having air moved by the air moving system passing through a filter before exiting the housing. However, Conrad et al. teach a technique of placing a filter (50) (Figure 3) below an air outlet (74) such that air

passes through the filter before exiting the housing. One of ordinary skill in the art could have applied the known technique of providing a below an air outlet such that the air passes through the filter before exiting the housing, as taught by Conrad et al., in the same way to the device, of Bisset et al., and the results would have been predictable. In this situation, one could provide a filtering device that more effectively removes material from air thereby more effectively exhausting cleaner air from the system.

In reference to method claim 94, Bisset et al. disclose a method comprising, moving the housing across the floor (see claim 11), sensing obstacles (see claim 11), causing the device to avoid said obstacles (see claim 11), Takemoto teach of rotating a rotating member having blade-like members (26) (Figure 2) for agitating particles on the floor toward a bin (16) (Figure 2), generating negative pressure toward the bin by using cyclone (152), holding particles at the bottom of the removable bin formed s the bottom area of cyclone (152) (Column 4, Lines 1-2) and Conrad et al. teach of placing a filter such that dirty air passes through said filter before exiting the device as previously discussed above.

6. Claims 87-89, 91 and 93 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bisset et al. (6493612) in view of Takemoto (JP6327598).

In reference to claim 87, Bisset et al. disclose a floor cleaning robot comprising, a housing (100), wheels (104) and at least one motor (105) to drive the wheels

disposed at least partially within the housing and configured to move the floor cleaning robot across a floor, a control module formed as the control software (Column 3, Line 59-Column 4, Line 4) disposed within the housing and directing movement of the floor cleaning robot across the floor, at least one sensor for detecting an obstacle and communicating obstacle information to the control module so that the control module can cause the floor cleaning robot to react to the obstacle (Column 3, lines 53-58), a removable bin formed as the bottom area of cyclone (152) (Column 4, Lines 1-2) disposed at least partially within the housing and configured to receive particulates, a first rotating member (125) configured to direct particulates toward the bin, wherein the removable bin is configured to receive particulates directed thereto from the rotating member without passing through a filter (since no filter is disclosed in Bisset et al.), but lacks, a second rotating member configured to cooperate with the first rotating member to direct particulates toward the bin and wherein, during cleaning, the weight of the floor cleaning robot overcomes a force exerted by a member biasing one or more of the wheels to an extended position. However, Takemoto teaches a technique of providing a vacuum cleaning device with a first rotating member (33) and a second rotating member configured to cooperate with the first rotating member to direct particulates toward a bin (Figure 2).One of ordinary skill in the art could have applied the known technique of providing a second rotating brush in a vacuum system, as taught by Takemoto, in the same way to the device, of Bisset et al., and the results would have been predictable. In this

situation, one could provide a more versatile cleaning device that more effectively cleans carpet and flooring surfaces.

In reference to claim 88, Bisset et al. also disclose an air moving system formed as the cyclonic separator disposed at least partially within the housing and configured to ingest particulates (Column 4, Lines 5-16).

In reference to claim 89, Bisset et al. also disclose that the first rotating member cooperates with the air moving system to direct particulates toward the bin (Column 3, Line 27-Column 4, Line 16).

In reference to claim 91, Takemoto also shows that the second rotating member (25) is disposed at least partially within the housing and is spaced from the floor a greater distance than the first rotating member (Figure 2).

In reference to claim 93, Takemoto also shows that the second rotating member is positioned to receive particulates from the first rotating member and direct the particulates toward the bin (16) (Figure 2)

7. Claim 90, is rejected under 35 U.S.C. 103(a) as being unpatentable over Bisset et al. (6493612) in view of Takemoto (JP6327598) and Conrad et al. (6482252). Bisset et al. disclose the claimed invention previously mentioned above, but lack, having air moved by the air moving system passing through a

filter before exiting the housing. However, Conrad et al. teach a technique of placing a filter (50) (Figure 3) below an air outlet (74) such that air passes through the filter before exiting the housing. One of ordinary skill in the art could have applied the known technique of providing a below an air outlet such that the air passes through the filter before exiting the housing, as taught by Conrad et al., in the same way to the device, of Bisset et al., and the results would have been predictable. In this situation, one could provide a filtering device that more effectively removes material from air thereby more effectively exhausting cleaner air from the system.

8. Claim 92, is rejected under 35 U.S.C. 103(a) as being unpatentable over Bisset et al. (6493612) in view of Takemoto (JP6327598) and Hopkins et al. (6276478). Bisset et al. disclose the claimed invention previously mentioned above, but lack, a biasing member that biases the wheels to an extended position and wherein during cleaning the weight of the floor cleaning robot overcomes the force exerted by the biasing member. However, Hopkins et al. teach a technique of providing a vacuum cleaner with a biasing member (62) that biases wheels (60) into an extended position. One of ordinary skill in the art could have applied the known technique of providing a biasing member that biases the wheels to an extended position, as taught by Hopkins et al., in the same way to the device, of Bisset et al., and the results would have been predictable. In this situation, one could provide a cleaning device having wheels that more effectively maintain engagement with floor surfaces thereby more effectively

maneuvering the device across surfaces of varying heights. Finally, regarding that the weight of the device is sufficient enough to overcome the force of the biasing member the examiner notes that obviously the weight of the device would be sufficient to overcome the force of the biasing member depending on the type and size of spring used, furthermore, where the general conditions of a claim are disclosed in the prior art discovering the optimum or workable ranges involves only routine optimization and experimentation to one of ordinary skill in the art. *In re Aller*, 105 USPQ 233. Here, one could select a spring having a force that is less than the amount of weight being applied from the device depending on the specific needs of a user for the particular problem at hand.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT SCRUGGS whose telephone number is (571)272-8682. The examiner can normally be reached on Monday-Friday 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on 571-272-4485. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ROBERT SCRUGGS/
Examiner, Art Unit 3723

Notice of References Cited	Application/Control No. 12/201,554	Applicant(s)/Patent Under Reexamination JONES ET AL.	
	Examiner ROBERT SCRUGGS	Art Unit 3723	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,493,612	12-2002	Bisset et al.	701/23
*	B	US-6,276,478	08-2001	Hopkins et al.	180/164
*	C	US-6,482,252	11-2002	Conrad et al.	96/57
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
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FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N	JP6327598		JP	Takemoto	
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NON-PATENT DOCUMENTS

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Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12201554	JONES ET AL.
	Examiner	Art Unit
	ROBERT SCRUGGS	3723

SEARCHED			
Class	Subclass	Date	Examiner
15	319,339,52.1,340.1,356,360	5/20/2009	rs
700	245	5/20/2009	rs

SEARCH NOTES		
Search Notes	Date	Examiner

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

/ROBERT SCRUGGS/ Examiner.Art Unit 3723	

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U.S. PATENTS AND PUBLISHED U.S. PATENT APPLICATIONS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Issue or Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-2003/0060928 A1	03-27-2003	Abramson et al.	
		US-2003/0192144 A1	10-16-2003	Song et al.	
		US-3,457,575	07-29-1969	Bienek	
		US-3,937,174	02-10-1976	Haaga	
		US-4,099,284	07-11-1978	Shinozaki et al.	
		US-4,306,329	12-22-1981	Yokoi	
		US-4,756,049	07-12-1988	Uehara	
		US-4,815,157	03-28-1989	Tsuchiya	
		US-4,901,394	02-20-1990	Nakamura et al.	
		US-5,020,186	06-04-1991	Lessig et al.	
		US-5,084,934	02-04-1992	Lessig et al.	
		US-5,086,535	02-11-1992	Grossmeyer et al.	
		US-5,109,566	05-05-1992	Kobayashi et al.	
		US-5,115,538	05-26-1992	Cochran et al.	
		US-5,261,139	11-16-1993	Lewis	
		US-5,284,522	02-08-1994	Kobayashi et al.	
		US-5,321,614	06-14-1994	Ashworth	
		US-5,548,511	08-20-1996	Bancroft	
		US-5,553,349	09-10-1996	Kilstrom et al.	
		US-5,608,944	03-11-1997	Gordon	
		US-5,613,261	03-25-1997	Kawakami et al.	
		US-5,634,239	06-03-1997	Tuvin et al.	
		US-5,709,007	01-20-1998	Chiang	
		US-5,781,960	07-21-1998	Kilstrom et al.	
		US-5,787,545	08-04-1998	Colens	
		US-5,794,297	08-18-1998	Muta	
		US-5,815,880	10-06-1998	Nakanishi	
		US-5,839,156	11-24-1998	Park et al.	
		US-5,867,800	02-02-1999	Leif	
		US-5,926,909	07-27-1999	McGee	
		US-5,935,179	08-10-1999	Kleiner et al.	
		US-5,940,927	08-24-1999	Haegermarck et al.	
		US-6,030,465	02-29-2000	Marcussen et al.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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U.S. PATENTS AND PUBLISHED U.S. PATENT APPLICATIONS					
		US-6,038,501	03-14-2000	Kawakami	
		US-6,076,025	06-13-2000	Ueno et al.	
		US-6,076,226	06-20-2000	Reed	
		US-6,240,342 B1	05-29-2001	Fiegert et al.	
		US-6,261,379 B1	07-17-2001	Conrad et al.	
		US-6,327,741 B1	12-11-2001	Reed	
		US-6,339,735 B1	01-15-2002	Peless et al.	
		US-6,389,329 B1	05-14-2002	Colens	
		US-6,381,802 B2	05-07-2002	Park	
		US-6,457,206 B1	10-01-2002	Judson	
		US-6,459,955 B1	10-01-2002	Bartsch et al.	
		US-6,465,982 B1	10-15-2002	Bergvall et al.	
		US-6,481,515 B1	11-19-2002	Kirkpatrick et al.	
		US-6,493,612 B1	12-10-2002	Bisset et al.	
		US-6,493,613 B2	12-10-2002	Peless et al.	
		US-6,525,509 B1	02-25-2003	Petersson et al.	
		US-6,571,415 B2	06-03-2003	Gerber et al.	
		US-6,601,265 B1	08-05-2003	Burlington	
		US-6,605,156 B1	08-12-2003	Clark et al.	
		US-4,556,313	12-03-1985	Miller et al.	
		US-4,887,415	12-19-1989	Martin	
		US-4,893,025	01-09-1990	Lee	
		US-5,002,145	03-26-1991	Wakaumi et al.	
		US-5,142,985	09-01-1992	Stearns et al.	
		US-5,208,521	05-04-1993	Aoyama	
		US-5,279,672	01-18-1994	Betker, Jr. et al.	
		US-5,446,356	08-29-1995	Kim	
		US-5,569,589	10-1996	Hwang	
		US-5,652,489	07-29-1997	Kawakami	
		US-5,812,267	09-22-1998	Everett, Jr. et al.	
		US-6,226,830 B1	05-08-2001	Hendricks et al.	
		US-4,119,900	10-10-1978	Kremnitz	
		US-4,700,427	10-20-1987	Knepper	
		US-5,353,224	10-04-1994	Lee et al.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

IDS Form PTO/SB/08: Substitute for form 1449A/PTO				Complete if Known	
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U.S. PATENTS AND PUBLISHED U.S. PATENT APPLICATIONS					
		US-5,537,017	07-16-1996	Feiten et al.	
		US-5,650,702	07-22-1997	Azumi	
		US-6,255,793 B1	07-03-2001	Peless et al.	
		US-4,674,048	06-16-1987	Okumura	
		US-5,682,313	10-28-1997	Edlund et al.	
		US-5,204,814	04-20-1993	Noonan et al.	
		US-2001/0047231 A1	11-29-2001	Peless et al.	
		US-6,615,108 B1	09-02-2003	Peless et al.	
		US-6,463,368 B1	10-08-2002	Feiten et al.	
		US-6,574,536 B1	06-03-2003	Kawagoe et al.	
		US-6,370,453 B2	04-09-2002	Sommer	
		US-4,962,453	10-09-1990	Pong et al.	
		US-5,341,540	08-30-1994	Soupert et al.	
		US-5,942,869	08-24-1999	Katou et al.	
		US-5,634,237	06-03-1997	Paranipe	
		US-4,679,152	07-07-1987	Perdue	
		US-4,777,416	12-11-1988	George II et al.	
		US-2003/0025472	02-06-2003	Jones et al.	
		US-2002/0016649	02-07-2002	Jones	
		US-4,811,228	03-07-1989	Hyyppa	
		US-3,550,714	12-29-1970	Bellinger	
		US-4,626,995	12-02-1986	Lofgren et al.	
		US-6,259,979 B1	07-10-2001	Holmquist	
		US-4,912,643	03-27-1990	Beirxe	
		US-5,165,064	11-17-1992	Mattaboni	
		US-5,974,348	10-26-1999	Rocks	
		US-4,716,621	01-05-1988	Zoni	
		US-2001/0047231	11-2001	Peless et al.	
		US-2002/0016649	02-2002	Jones	
		US-2002/0011813	01-31-2002	Koselka et al.	
		US-2002/0120364	08-09-2002	Colens	
		US-2002/156556	10-24-2002	Ruffner	
		US-2002/0173877	11-21-2002	Zweig	
		US-2003/0025472	02-06-2003	Jones et al.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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U.S. PATENTS AND PUBLISHED U.S. PATENT APPLICATIONS

		US-2003/0060928	03-2003	Abramson et al.	
		US-2003/0120389	06-26-2003	Abramson et al.	
		US-2003/0137268	07-24-2003	Papanikolopoulos et al.	
		US-2003/0019071	05-30-2006	Field et al.	
		US-2003/0192144	10-2003	Song et al.	
		US-2003/0216834	11-20-2003	Allard	
		US-2003/0233177	12-18-2003	Johnson et al.	
		US-2004/0020000	02-05-2004	Jones	
		US-2004/0030571	02-12-2004	Solomon	
		US-2004/0031113	02-19-2004	Wosewick et al.	
		US-2004/0030450	02-12-2004	Solomon	
		US-2004/0030449	02-12-2004	Solomon	
		US-2004/0030448	02-12-2004	Solomon	
		US-2004/0049877	04-26-2005	Jones et al.	
		US-2004/0068416	04-08-2004	Solomon	
		US-2004/0068415	04-08-2004	Solomon	
		US-2004/0068351	04-08-2004	Solomon	
		US-2004/0076324	04-22-2004	Burl et al.	
		US-2004/0088079	05-06-2004	Lavarec et al.	
		US-2004/0111184	06-10-2004	Chiappetta et al.	
		US-2004/0134337	07-15-2004	Solomon	
		US-2004/0134336	07-15-2004	Solomon	
		US-2004/0158357	08-12-2004	Lee et al.	
		US-2004/0156541	08-12-2004	Jeon et al.	
		US-2004/0200505	10-14-2004	Taylor et al.	
		US-2004/0211444	10-28-2004	Taylor et al.	
		US-2004/0204792	10-2004	Taylor et al.	
		US-2004/0236468	11-2004	Taylor et al.	
		US-2004/0244138	12-09-2004	Taylor et al.	
		US-2005/0000543	01-06-2005	Taylor et al.	
		US-2005/0010331	01-13-2005	Taylor et al.	
		US-2005/0156562	07-21-2005	Cohen et al.	
		US-D 510,066	09-27-2005	Hickey et al.	
		US-3,457,575	07-1969	Bienek	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

IDS Form PTO/SB/08: Substitute for form 1449A/PTO

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U.S. PATENTS AND PUBLISHED U.S. PATENT APPLICATIONS					
		US-3,550,714	12-1970	Bellinger	
		US-3,674,316	07-1972	De Brey	
		US-3,937,174	02-1976	Haaga	
		US-4,099,284	07-1978	Shinozaki et al.	
		US-4,119,900	10-1978	Kremnitz	
		US-4,306,329	12-1981	Yokoi	
		US-4,369,543	01-25-1983	Chen et al.	
		US-4,513,469	04-30-1985	Godfrey et al.	
		US-4,626,995	12-1986	Lofgren et al.	
		US-4,674,048	06-1987	Okumura	
		US-4,679,152	07-07-1987	Perdue	
		US-4,696,074	09-29-1987	Cavalli et al.	
		US-4,700,427	10-1987	Knepper	
		US-4,733,430	03-1988	Westergren	
		US-4,733,431	03-1988	Martin	
		US-4,756,049	07-1988	Uehara	
		US-4,777,416	10-1988	George, II et al.	
		US-4,782,550	11-1988	Jacobs	
		US-4,815,157	03-1989	Tsuchiya	
		US-4,854,000	08-08-1989	Takimoto	
		US-4,887,415	12-1989	Martin	
		US-4,901,394	02-1990	Nakamura et al.	
		US-4,974,283	12-04-1990	Holsten et al.	
		US-4,919,224	04-24-1990	Shyu et al.	
		US-4,933,864	06-1990	Evans et al.	
		US-4,956,891	09-18-1990	Wulff	
		US-4,962,453	10-1990	Pong et al.	
		US-5,002,145	03-1991	Waqkaumi et al.	
		US-5,086,535	02-1992	Grossmeyer et al.	
		US-5,093,955	03-10-1992	Blehert et al.	
		US-5,105,502	04-1992	Takashima	
		US-5,109,566	05-1992	Kobayashi et al.	
		US-5,115,538	05-1992	Cochran et al.	
		US-5,136,750	08-1992	Takashima et al.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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Attorney Docket Number	1007.0013-01000

U.S. PATENTS AND PUBLISHED U.S. PATENT APPLICATIONS					
		US-5,204,814	04-1993	Noonan et al.	
		US-5,239,720	08-31-1993	Wood et al.	
		US-5,303,448	04-19-1994	Hennessey et al.	
		US-5,319,828	06-14-1994	Waldhauser et al.	
		US-5,261,139	11-1993	Lewis	
		US-5,279,672	01-1964	Belker, Jr. et al.	
		US-5,284,522	02-1994	Kobayashi et al.	
		US-5,293,955	03-15-1994	Lee	
		US-5,324,948	06-28-1994	Dudar et al.	
		US-5,341,540	08-1994	Soupert et al.	
		US-5,353,224	10-1994	Lee et al.	
		US-5,369,347	11-29-1994	Yoo	
		US-5,440,216	08-08-1995	Kim	
		US-5,444,965	08-29-1995	Colens	
		US-5,446,356	08-1995	Kim	
		US-5,454,129	10-03-1995	Kell	
		US-5,455,982	10-10-1995	Armstrong et al.	
		US-5,467,273	11-1995	Faibish et al.	
		US-5,497,529	03-12-1996	Boesi	
		US-5,507,067	04-1996	Hoekstra et al.	
		US-5,515,572	05-1996	Hoekstra et al.	
		US-5,534,762	07-09-1996	Kim	
		US-5,537,017	07-1996	Feiten et al.	
		US-5,539,953	07-1996	Kurz	
		US-5,542,146	08-1996	Hoekstra et al.	
		US-5,548,511	08-1996	Bancroft	
		US-5,553,349	09-1996	Kilstrom et al.	
		US-5,555,587	09-17-1996	Guha	
		US-5,560,077	10-01-1996	Crotchett	
		US-5,568,589	10-1996	Hwang	
		US-5,611,106	03-18-1997	Richard F. Wulff	
		US-5,611,108	03-18-1997	Knowlton et al.	
		US-5,613,261	03-1997	Kawakami et al.	
		US-5,621,291	04-15-1997	Lee	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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U.S. PATENTS AND PUBLISHED U.S. PATENT APPLICATIONS

		US-5,622,236	04-22-1997	Azumi et al.	
		US-5,634,237	06-03-1997	Paranjpe	
		US-5,634,239	06-1997	Tuvin et al.	
		US-5,650,702	07-1997	Azumi	
		US-5,652,489	07-1997	Kawakami	
		US-5,682,313	10-1997	Edlund et al.	
		US-5,709,007	01-1998	Chiang	
		US-5,761,762	06-1998	Kubo et al.	
		US-5,781,960	07-1998	Kilstrom et al.	
		US-5,787,545	08-1998	Colens	
		US-5,794,297	08-1998	Muta	
		US-5,839,156	11-1998	Park et al.	
		US-5,841,259	11-24-1998	Kim et al.	
		US-5,867,800	02-1999	Leif	
		US-5,926,909	07-27-1999	McGee	
		US-5,935,179	08-1999	Kleiner et al.	
		US-5,940,927	08-1999	Haegermarck et al.	
		US-5,940,930	08-24-1999	Oh et al.	
		US-5,943,730	08-31-1999	Boomgaarden	
		US-5,943,733	08-31-1999	Tagliaferri	
		US-5,959,423	09-1999	Nakanishi et al.	
		US-6,041,471	03-28-2000	Charkey et al.	
		US-6,444,003	09-03-2002	Sutcliffe	
		US-6,496,754	12-17-2002	Song et al.	
		US-6,525,509	02-25-2003	Petersson et al.	
		US-6,532,404	03-2003	Colens	
		US-6,571,415	06-2003	Gerber et al.	
		US-6,574,536	06-2003	Kawagoe et al.	
		US-6,580,246	06-17-2003	Jacobs	
		US-6,605,156	08-2003	Clark et al.	
		US-6,611,120	08-26-2003	Song et al.	
		US-6,611,738	08-26-2003	Ruffner	
		US-6,658,693	12-09-2003	Reed, Jr.	
		US-6,671,592	12-2003	Bisset et al.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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U.S. PATENTS AND PUBLISHED U.S. PATENT APPLICATIONS

		US-6,690,134	02-10-2004	Jones et al.	
		US-6,741,054	05-25-2004	Koselka et al.	
		US-6,748,297	06-08-2004	Song et al.	
		US-6,781,338	08-24-2004	Jones et al.	
		US-6,809,490	10-26-2004	Jones et al.	
		US-6,830,120	12-14-2004	Yashima et al.	
		US-6,883,201	04-26-2005	Jones et al.	
		US-6,956,348	10-18-2005	Landry et al.	
		US-6,841,963	01-11-2005	Song et al.	
		US-6,901,624	01-12-2005	Mori et al.	
		US-6,938,298	01-13-2005	Turbjorn Aasen	
		US-6,965,209	01-14-2005	Jones et al.	
		US-6,971,140	01-15-2005	Se Wan Kim	
		US-2005/204717	09-22-2005	Colens	
		US-7,206,677	04-17-2007	Hulden	
		US-7,085,624	08-01-2006	Aldred et al.	
		US-7,024,278	04-04-2006	Chiapetta et al.	
		US-6,999,850	02-14-2006	McDonald	
		US-6,611,738	08-26-2003	Raffner	
		US-6,496,755	12-17-2002	Wallach et al.	
		US-5,467,273	11-14-1995	Faibish et al.	
		US-5,465,525	11-14-1995	Mifune et al.	
		US-5,321,614	06-14-1994	Ashworth	
		US-5,309,592	05-1994	Hiratsuka	
		US-5,787,545	08-1998	Colens	
		US-7,013,527	03-2006	Thomas et al.	

Note: Submission of copies of U.S. Patents and published U.S. Patent Applications is not required.

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] Number[4] Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	Translation[6]
		WO 00/04430	01-27-2000	Bottomley et al.		
		WO 00/38029	06-29-2000	Bisset et al.		
		WO 00/78410 A1	12-28-2000	Colens		
		WO 01/06904 A1	02-01-2001	Clark et al.		

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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FOREIGN PATENT DOCUMENTS

		WO 02/058527 A1	08-01-2002	Dijksman et al.		
		WO 02/067744 A1	09-06-2002	Haegermarck et al.		
		WO 02/067745 A1	09-06-2002	Haegermarck		
		WO 02/074150 A1	09-26-2002	Wallach et al.		
		WO 02/075356 A1	09-26-2002	Hulden et al.		
		WO 02/075469 A1	09-26-2002	Hulden		
		WO 02/075470 A1	09-26-2002	Hulden		
		WO 02/39864 A1	05-23-2002	Aasen		
		WO 02/39868 A1	05-23-2002	McDonald		
		WO 03/026474 A2	04-03-2003	Abramson et al.		
		WO 03/040845 A1	05-15-2003	Aldred et al.		
		WO 03/040846 A1	05-15-2003	Aldred		
		WO 95/26512	10-05-1995	Elund		
		WO 97/15224	05-01-1997	Moren et al.		
		WO 97/40734	11-06-1997	Haegermarck et al.		
		WO 97/41451	11-06-1997	Kleiner et al.		
		WO 99/28800	06-10-1999	Colens		
		WO 99/59042	11-18-1999	Peless et al.		
		WO 99/38056	07-29-1999	Bergvall et al.		
		WO 99/38237	07-29-1999	Petersson et al.		
		WO 99/43250	09-02-1999	Haegermarck		
		JP 2002-355206 A	12-10-2002	Matsushita Elec. Industrial		Abstract
		JP 2003-38402 A	02-12-2003	Toshiba Tec Corp.		
		JP 3-51023 A	03-05-1991	Matsushita Elec. Industrial		
		JP 6-327598 A	11-29-1994	Tokyo Electric Co.		Abstract
		JP 7-129239 A	05-19-1995	Matsushita Elec. Industrial		Abstract
		JP 8-89451 A	04-09-1996	Nippon Yusoki Co., Ltd.		
		JP 8-152916 A	06-11-1996	Matsushita Elec. Industrial		Abstract
		JP 2003-10076 A	01-14-2003	Figla Co., Ltd.		
		JP 2003-38401 A	02-12-2003	Toshiba Tec Corp.		
		JP 2002-532178 A	10-02-2002	Dyson, Ltd.		Abstract
		JP 2002-360479 A	12-17-2002	Matsushita Elec. Industrial		Abstract
		JP 2002-360482 A	12-17-2002	Matsushita Elec. Industrial		Abstract
		JP 2002-360471 A	12-17-2002	Matsushita Elec. Industrial		Abstract

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 10 of 13

Complete if Known	
Application Number	12/201,554
Filing Date	August 29, 2008
First Named Inventor	Joseph L. Jones
Art Unit	3723
Examiner Name	TBA
Attorney Docket Number	1007.0013-01000

FOREIGN PATENT DOCUMENTS

		JP 2002-78650 A	03-19-2002	Matsushita Elec. Industrial		
		WO 99/16078	04-10-1999	Hitachi, Ltd.		
		WO 00/38029	06-29-2000	Bisset et al.		
		JP 11162454	12-19-2000	Ichijo Hisashi		
		JP 08000393	07-15-1997	Kitami Hideyo et al.		
		JP 08016776	08-12-1997	Tajima Shigeki et al.		
		JP 60293095	07-09-1987	Ogasawara Hitoshi		
		JP 62074018	10-06-1988	Ogasawara Hitoshi et al.		
		JP 09043901	09-11-1998	Kawakami Yuichi		
		JP 07338573	07-11-1997	Akisawa Yasuro et al.		
		JP 60259895	06-01-1987	Shiokawa Junji		
		JP 2002/204768	07-23-2002	Matsushita Elec. Industrial		
		JP 2003/036116	02-07-2003	Toshiba Tec Corp		Abstract
		JP 7/295636	11-10-1995	Samsung Electron Co. Ltd.		
		JP 6/3251	01-18-1994	NEC Home Electronics, Ltd.		
		JP 2,555,263	08-01-1997	NEC Home Electronics, Ltd.		
		JP 63/183032	07-28-1988	Matsushita Elec. Indus. Co.		
		JP 2003/052596	02-25-2003	Samsung Electronics		
		JP 3,375,843	11-29-2002	Honda Motor Co., Ltd.		Abstract
		JP 11/510935	09-21-1999	Akeibolaget Electrolux		Abstract
		JP 2001/525567	12-11-2001	Solar and Robotics		Abstract
		JP 2002/323925	11-08-2002	Matsushita Elec. Indus. Co.		Abstract
		JP 2003/061882	03-04-2003	Matsushita Elec. Indus. Co.		Abstract
		JP 2/6312	01-17-1990			
		DE 198 49 978 C2	02-08-2001	Prassler		Abstract
		JP 62-120510	06-01-1987			Abstract
		JP 62-154008	07-09-1987			Abstract
		JP 63-241610	10-06-1988			Abstract
		JP 03-051023	03-05-1991			
		JP 06-327598	11-29-1994			
		GB 2 283 838	05-17-1995			
		WO 95/26512	10/1995			
		JP 7-295636	11-10-1995			Abstract
		JP 08-089451	04-09-1996			

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 11 of 13

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Application Number	12/201,554
Filing Date	August 29, 2008
First Named Inventor	Joseph L. Jones
Art Unit	3723
Examiner Name	TBA
Attorney Docket Number	1007.0013-01000

FOREIGN PATENT DOCUMENTS

		JP 08-152916	06-11-1996			
		WO 97/15224	05-1997			
		JP 9-179625	07-11-1997			Abstract
		WO 97/40734	11-1997			
		WO 97/41451	11-1997			
		WO 99/28800	06-1999			
		WO 99/38056	07-1999			
		WO 99/38237	07-1999			
		JP 11-508810	08-03-1999			Abstract
		WO 99/43250	09-02-1999			
		WO 00/04430	01-2000			
		WO 00/36962	06-2000			
		WO 00/38026	06-2000			
		WO 00/78410	12-2000			
		FR 2 828 589	08-07-2001			Abstract
		EP 1 331 537 A1	07-30-2003			
		EP 1 331 537 B1	07-30-2003			
		WO 05/055795	06-23-2005			
		JP 2003-10076	01-14-2003			
		WO 04/006034	01-2004			
		WO 01/06904	02-2001			
		WO 01/06905	02-2001			
		JP 2003-036116	02-07-2003			Abstract
		JP 2003-38401	02-12-2003			
		JP 2003-38402	02-12-2003			
		JP 2003-505127	02-12-2003			Abstract
		JP 2003-5296	01-08-2003			
		JP 2002-78650	03-19-2002			
		WO 03/026474	04-2003			
		WO 02/39864	05-2002			
		WO 02/39868	05-2002			
		WO 03/040845	05-2003			
		WO 03/040846	05-2003			
		JP 2002-204768	07-23-2002			Abstract

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

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Complete if Known	
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Art Unit	3723
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Attorney Docket Number	1007.0013-01000

FOREIGN PATENT DOCUMENTS

		WO 02/058527	08-2002			
		WO 02/062194	08-2002			
		JP 2001-258807	09-25-2001			Abstract
		WO 02/067744	09-2002			
		WO 02/067745	09-2002			
		WO 02/074150	09-2002			
		WO 02/075356	09-2002			
		WO 02/075469	09-2002			
		WO 02/075470	09-2002			
		JP 2001-275908	10-2001			Abstract
		JP 3356170	10-2002			
		JP 2003-310489	11-2003			Abstract
		WO 02/101477	12-2002			
		WO 04004533 A1	01-15-2004			
		WO 04058028 A2	01-16-2004			
		WO 05077244 A1	01-17-2004			
		WO 06068403 A1	01-18-2004			
		JP 9185410	07-15-1997			Abstract

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	Translation[6]
		GAT, Erann, Robust Low-computation Sensor-driven Control for Task-Directed Navigation, Proceedings of the 1991 IEEE, International Conference on Robotics and Automation, Sacramento, California, April 1991, pp. 2484-2489.	
		SCHOFIELD, Monica, "Neither Master nor Slave..." A Practical Case Study in the Development and Employment of Cleaning Robots, Emerging Technologies and Factory Automation, 1999, Proceedings, EFA '99. 1999 7th IEEE International Conference on Barcelona, Spain 18-21 Oct. 1999, pp. 1427-1434.	
		DOTY, Keith L. et al., "Sweep Strategies for a Sensory-Driven, Behavior-Based Vacuum Cleaning Agent" AAAI 1993 Fall Symposium Series Instantiating Real-World Agents Research Triangle Park, Raleigh, NC, October 22-24, 1993, pp. 1-6.	
		Cameron Morland, *Autonomous Lawn Mower Control*, July 24, 2002.	
		Doty, Keith L et al., "Sweep Strategies for a Sensory-Driven, Behavior-Based Vacuum Cleaning Agent" AAAI 1993 Fall Symposium Series Instantiating Real-World Agents Research Triangle Park, Raleigh, NC, Oct 22-24, 1993.	
		Electrolux designed for the well-lived home, website: http://www.electroluxusa.com/node57.as[?currentURL =node142.asp%3F, accessed 3/18/2005, 2 pages.	
		eVac Robotic Vacuum S1727 Instruction Manual, Sharper Image Corp., Copyright 2004, 14 pages.	
		Everyday Robots, website: http://www.everydayrobots.com/index.php?option=content&task=view&id=9, accessed 4/20/2005.	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

IDS Form PTO/SB/08: Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	12/201,554
				Filing Date	August 29, 2008
				First Named Inventor	Joseph L. Jones
				Art Unit	3723
(Use as many sheets as necessary)				Examiner Name	TBA
Sheet	13	of	13	Attorney Docket Number	1007.0013-01000

NON PATENT LITERATURE DOCUMENTS			
		Facts on the Trilobite webpage: "http://trilobiteelectroluxse/presskit_en/node11335asp?print=yes&pressID=" accessed 12/12/03.	
		Friendly Robotics Robotic Vacuum RV400-The Robot Store website: http://www.therobotstore.com/s.nl/sc.9/category,-109/it.A/id.43/.f, accessed 4/20/2005.	
		HITACHI: News release: The home cleaning robot of the autonomous movement type (experimental machine) is developed, website: http://www.i4u.com/japanreleases/hitachirobot.htm., accessed 3/18/2005.	
		Kärcher Product Manual Download webpage: "http://wwwkarchercom/bta/downloadenshtml?ACTION=SELECTTEILENR&ID=rc3000&submitButtonName=Select+Product+Manual" and associated pdf file "5959-915enpdf (47 MB) English/English" accessed 1/21/04	
		Karcher RC 3000 Cleaning Robot – user manual Manufacturer: Alfred-Karcher GmbH & Co, Cleaning Systems, Alfred Karcher-Str 28-40, PO Box 160, D-71349 Winnenden, Germany, Dec 2002	
		Kärcher RoboCleaner RC 3000 Product Details webpages: "http://wwwrobocleanerde/english/screen3html" through "...screen6html" accessed 12/12/03.	
		KARCHER USA, RC3000 Robotic Cleaner, website: http://www.karcher-usa.com/showproducts.php?op=view_prod&param1=143&param2=&param3=, accessed 3/18/2005.	
		~~KOOIVac Robotic Vacuum Cleaner Owner's Manual, Koolatron, Undated.~~	/RS/
		~~NorthStar Low-Cost, Indoor Localization, Evolution robotics, Powering Intelligent Products.~~	/RS/
		Put Your Roomba..... On "Automatic" Roomba Timer> Timed Cleaning-Floorvac Robotic Vacuum webpages: http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=43575198387&rd=1, accessed 4/20/2005.	
		Put Your Roomba..... On "Automatic" webpages: "http://www.acomputeredge.com/roomba," accessed 4/20/2005.	
		RoboMaid Sweeps Your Floors So You Won't Have To, the Official Site, website: http://www.therobomaid.com/, accessed 3/18/2005.	
		Robot Review Samsung Robot Vacuum (VC-RP30W), website: http://www.onrobo.com/reviews/At_Home/Vacuum_Cleaners/on00vcrp30rosam/index.htm, accessed 3/18/2005.	
		Robotic Vacuum Cleaner, website: http://www.sharperimage.com/us/en/catalog/productview.jhtml?sku=S1727BLU, accessed 3/18/2005.	
		Wired News: Robot Vacs Are in the House, website: http://www.wired.com/news/print/0,1294,59237,00.html, accessed 3/18/2005.	
		Zoombot Remote Controlled Vacuum-RV-500 NEW Roomba 2, website: http://cgi.ebay.com/ws/eBayISAPI.dll?ViewItem&category=43526&item=4373497618&rd=1, accessed 4/20/2005	

Examiner Signature	/Robert Scruggs/	Date Considered	05/20/2009

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L13	1008	(15/319).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2009/05/20 16:46
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L15	2218	(700/245).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2009/05/20 16:46
L19	516	(15/52.1).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2009/05/20 16:47
L21	677	(15/340.1).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2009/05/20 16:47
L22	86	(15/356).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2009/05/20 16:47
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S9	0	S8 "672"	US-PGPUB; USPAT; USOCR; EPO; JPO	AND	ON	2009/05/20 12:32
S10	8	S8 housing with "14"	US-PGPUB; USPAT; USOCR; EPO; JPO	AND	ON	2009/05/20 12:32
S11	15688	takemoto.inv.	US-PGPUB; USPAT; USOCR; EPO; JPO	AND	ON	2009/05/20 12:37
S12	654	S11 vacuum	US-PGPUB; USPAT; USOCR; EPO; JPO	AND	ON	2009/05/20 12:37
S13	84	S12 rotary	US-PGPUB; USPAT; USOCR; EPO; JPO	AND	ON	2009/05/20 12:37
S14	38	S13 motor	US-PGPUB; USPAT; USOCR; EPO; JPO	AND	ON	2009/05/20 12:37
S15	16	S14 direction	US-PGPUB; USPAT; USOCR; EPO; JPO	AND	ON	2009/05/20 12:37
S16	4	S15 blade	US-PGPUB; USPAT; USOCR; EPO; JPO	AND	ON	2009/05/20 12:37

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S20	1	S19 (wheel with motor)	US-PGPUB; USPAT; USOCR; EPO; JPO	AND	ON	2009/05/20 13:04
S21	1	S20 module	US-PGPUB; USPAT; USOCR; EPO; JPO	AND	ON	2009/05/20 13:06
S22	1	S21 sensor	US-PGPUB; USPAT; USOCR; EPO; JPO	AND	ON	2009/05/20 13:06
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PATENT
Customer No. 74,863
Attorney Docket No. 1007.0013-01000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Joseph L. JONES et al.	)	
	)	
Application No.: 12/201,554	)	Group Art Unit: 3723
	)	
Filed: August 29, 2008	)	Examiner: R. J. Scruggs
	)	
For: AUTONOMOUS FLOOR CLEANING ROBOT	)	Confirmation No.: 9658
	)	
	)	

MS Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

AMENDMENT

In reply to the Office Action dated June 16, 2009, Applicants propose that this application be amended as follows:

Amendments to the Specification are included in this paper.

Amendments to the Claims are included in this paper.

Remarks follow the amendment sections of this paper.

Attachments to this amendment include a substitute Abstract.

AMENDMENTS TO THE SPECIFICATION:

Please replace the first paragraph starting at page 1, line 1, with the following new paragraph:

This is a ~~division~~ continuation of U.S. Non-Provisional Patent Application No. 10/818,073 filed April 5, 2004, which is a continuation of U.S. Non-Provisional Patent Application No. 10/320,729 filed December 16, 2002 and which claims priority to U.S. Provisional Patent Application No. 60/345,764 filed January 3, 2002, the disclosures of which are incorporated herein by reference in their entireties. The subject matter of this application is also related to commonly-owned U.S. Patent No. 6,615,439 filed January 24, 2001, U.S. Patent No. 6,809,490 filed June 12, 2002, and U.S. Patent No. 6,690,134 filed January 24, 2002.

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Claims 1-77. (Canceled).

78. (Previously Presented) A floor cleaning robot comprising:

a housing;

wheels and at least one motor to drive the wheels disposed at least partially within the housing and configured to move the floor cleaning robot across a floor;

a control module disposed within the housing and directing movement of the floor cleaning robot across the floor;

at least one sensor for detecting an obstacle and communicating obstacle information to the control module so that the control module can cause the floor cleaning robot to react to the obstacle;

a removable bin disposed at least partially within the housing and configured to receive particulates;

a first rotating member configured to direct particulates toward the bin; and

a second rotating member configured to cooperate with the first rotating member to direct particulates toward the bin;

wherein the removable bin is configured to receive particulates directed thereto by the first and second rotating members and the particulates pass from the first rotating member to the removable bin without passing through a filter, and

wherein, during cleaning, the weight of the floor cleaning robot overcomes a force exerted by a member biasing one or more of the wheels to an extended position.

79. (Previously Presented) The floor cleaning robot of claim 78, further comprising an air moving system disposed at least partially within the housing and configured to ingest particulates and direct particulates toward the removable bin.

80. (Previously Presented) The floor cleaning robot of claim 79, wherein the first rotating member cooperates with the air moving system to direct particulates toward the bin.

81. (Previously Presented) The floor cleaning robot of claim 79, wherein air moved by the air moving system passes through a filter before exiting the housing.

82. (Previously Presented) The floor cleaning robot of claim 78, wherein the second rotating member is disposed at least partially within the housing and is spaced from the floor a greater distance than the first rotating member.

83. (Previously Presented) The floor cleaning robot of claim 78, wherein the first rotating member contacts the floor and agitates particulates and directs the particulates toward the second rotating member.

84. (Previously Presented) The floor cleaning robot of claim 83, wherein the second rotating member is positioned to receive particulates from the first rotating member and direct the particulates toward the removable bin.

85. (Previously Presented) The floor cleaning robot of claim 78, wherein the first rotating member is a brush.

86. (Previously Presented) The floor cleaning robot of claim 85, wherein the second rotating member includes a central member and two or more blade-like members extending therefrom.

87. (Previously Presented) A floor cleaning robot comprising:

a housing;

wheels and at least one motor disposed at least partially within the housing and configured to move the floor cleaning robot across a floor;

a control module disposed within the housing and directing movement of the floor cleaning robot across the floor;

Electronic Acknowledgement Receipt

EFS ID:	6088289
Application Number:	12201554
International Application Number:	
Confirmation Number:	9658
Title of Invention:	Autonomous Floor-Cleaning Robot
First Named Inventor/Applicant Name:	Joseph L. Jones
Customer Number:	74863
Filer:	Jill Elizabeth DeMello
Filer Authorized By:	
Attorney Docket Number:	1007.0013-01000
Receipt Date:	16-SEP-2009
Filing Date:	29-AUG-2008
Time Stamp:	21:53:22
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	AmendmentForFiling.pdf	105511 a7f6bb59ad782f9d86106d8ead9f25bc08f29d69	no	5

Warnings:	
Information:	

Total Files Size (in bytes):	105511

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New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PATENT
Customer No. 74,863
Attorney Docket No. 1007.0013-01000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Joseph L. JONES et al.	)	
	)	
Application No.: 12/201,554	)	Group Art Unit: 3723
	)	
Filed: August 29, 2008	)	Examiner: R. J. Scruggs
	)	
For: AUTONOMOUS FLOOR CLEANING ROBOT	)	Confirmation No.: 9658
	)	
	)	

MS Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

AMENDMENT

In reply to the Office Action dated June 16, 2009, Applicants propose that this application be amended as follows:

Amendments to the Specification are included in this paper.

Amendments to the Claims are included in this paper.

Remarks follow the amendment sections of this paper.

Attachments to this amendment include a substitute Abstract.

AMENDMENTS TO THE SPECIFICATION:

Please replace the first paragraph starting at page 1, line 1, with the following new paragraph:

This is a ~~division~~ continuation of U.S. Non-Provisional Patent Application No. 10/818,073 filed April 5, 2004, which is a continuation of U.S. Non-Provisional Patent Application No. 10/320,729 filed December 16, 2002 and which claims priority to U.S. Provisional Patent Application No. 60/345,764 filed January 3, 2002, the disclosures of which are incorporated herein by reference in their entireties. The subject matter of this application is also related to commonly-owned U.S. Patent No. 6,615,439 filed January 24, 2001, U.S. Patent No. 6,809,490 filed June 12, 2002, and U.S. Patent No. 6,690,134 filed January 24, 2002.

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Claims 1-77. (Canceled).

78. (Previously Presented) A floor cleaning robot comprising:

a housing;

wheels and at least one motor to drive the wheels disposed at least partially within the housing and configured to move the floor cleaning robot across a floor;

a control module disposed within the housing and directing movement of the floor cleaning robot across the floor;

at least one sensor for detecting an obstacle and communicating obstacle information to the control module so that the control module can cause the floor cleaning robot to react to the obstacle;

a removable bin disposed at least partially within the housing and configured to receive particulates;

a first rotating member configured to direct particulates toward the bin; and

a second rotating member configured to cooperate with the first rotating member to direct particulates toward the bin;

wherein the removable bin is configured to receive particulates directed thereto by the first and second rotating members and the particulates pass from the first rotating member to the removable bin without passing through a filter, and

wherein, during cleaning, the weight of the floor cleaning robot overcomes a force exerted by a member biasing one or more of the wheels to an extended position.

79. (Previously Presented) The floor cleaning robot of claim 78, further comprising an air moving system disposed at least partially within the housing and configured to ingest particulates and direct particulates toward the removable bin.

80. (Previously Presented) The floor cleaning robot of claim 79, wherein the first rotating member cooperates with the air moving system to direct particulates toward the bin.

81. (Previously Presented) The floor cleaning robot of claim 79, wherein air moved by the air moving system passes through a filter before exiting the housing.

82. (Previously Presented) The floor cleaning robot of claim 78, wherein the second rotating member is disposed at least partially within the housing and is spaced from the floor a greater distance than the first rotating member.

83. (Previously Presented) The floor cleaning robot of claim 78, wherein the first rotating member contacts the floor and agitates particulates and directs the particulates toward the second rotating member.

84. (Previously Presented) The floor cleaning robot of claim 83, wherein the second rotating member is positioned to receive particulates from the first rotating member and direct the particulates toward the removable bin.

85. (Previously Presented) The floor cleaning robot of claim 78, wherein the first rotating member is a brush.

86. (Previously Presented) The floor cleaning robot of claim 85, wherein the second rotating member includes a central member and two or more blade-like members extending therefrom.

87. (Previously Presented) A floor cleaning robot comprising:

a housing;

wheels and at least one motor disposed at least partially within the housing and configured to move the floor cleaning robot across a floor;

a control module disposed within the housing and directing movement of the floor cleaning robot across the floor;

at least one sensor for detecting an obstacle and communicating obstacle information to the control module so that the control module can cause the floor cleaning robot to react to the obstacle;

a removable bin disposed at least partially within the housing and configured to receive particulates;

rotating brush configured to agitate particulates and direct particulates toward a rotating member having a central member and two or more blade-like members extending therefrom, the rotating member configured to cooperate with the rotating brush to direct particulates from the rotating brush toward the bin;

wherein the removable bin is configured to receive particulates directed thereto by the rotating brush and the rotating member, and the particulates pass from the rotating brush to the removable bin without passing through a filter.

88. (Previously Presented) The floor cleaning robot of claim 87, further comprising an air moving system disposed at least partially within the housing and configured to ingest particulates.

89. (Previously Presented) The floor cleaning robot of claim 88, wherein the rotating brush cooperates with the air moving system to direct particulates toward the bin.

90. (Previously Presented) The floor cleaning robot of claim 88, wherein air moved by the air moving system passes through a filter before exiting the housing.

91. (Previously Presented) The floor cleaning robot of claim 87, wherein the rotating member is disposed at least partially within the housing and is spaced from the floor a greater distance than the rotating brush.

92. (Previously Presented) The floor cleaning robot of claim 87 wherein, during cleaning, the weight of the floor cleaning robot overcomes a force exerted by a member biasing one or more of the wheels to an extended position.

93. (Previously Presented) The floor cleaning robot of claim 92, wherein the second rotating member is positioned to receive particulates from the first rotating member and direct the particulates toward the removable bin.

94. (Previously Presented) A method for directing particulates from a floor into a bin, the method comprising:

moving a housing across a floor;

sensing obstacles;

causing the housing to avoid the sensed obstacles;

agitating particulates from the floor and directing the particulates toward a rotating member disposed at least partially within the housing and having a central member and two or more blade-like members extending therefrom;

rotating the rotating member to direct particulates toward a removable bin disposed at least partially within the housing;

generating a negative pressure to direct agitated particulates toward the removable bin;

holding particulates in the removable bin; and

filtering air used to direct particulates toward the rotating bin after particulates carried by the air are held by the removable bin.

Claims 95-97. (Canceled).

REMARKS

Claims 1-77 were previously canceled. Claims 95-97 are canceled herein. Claims 78-94 remain pending. A substitute abstract is provided herewith. A correction has been made to the initial paragraph of the written description. No new matter has been added.

In the Office Action of June 16, 2009, claims 78-80, 82-86, 95 and 97 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,493,612 to Bisset et al. in view of JP 6327598 to Takemoto and U.S. Patent No. 6,276,478 to Hopkins et al. Claims 81, 94, and 96 were rejected under 35 U.S.C. § 103(a) as unpatentable over Bisset et al. in view of Takemoto and Hopkins et al. and U.S. Patent No. 6,482,252 to Conrad et al. Claims 87-89, 91, and 93 were rejected under 35 U.S.C. § 103(a) as unpatentable over Bisset et al. in view of Takemoto. Claim 90 was rejected under 35 U.S.C. § 103(a) as unpatentable over Bisset et al. in view of Takemoto and Conrad et al. Claim 92 was rejected under 35 U.S.C. § 103(a) as unpatentable over Bisset et al. in view of Takemoto and Hopkins et al. Applicants respectfully traverse the rejections for the following reasons.

Independent claim 78 recites a first rotating member configured to direct particulates toward the bin, and a second rotating member configured to cooperate with the first rotating member to direct particulates toward the bin.

The Examiner admits that Bisset et al. fails to teach a second rotating member configured to cooperate with the first rotating member to direct particulates toward the bin, but alleges that Takemoto discloses, "a technique of providing a vacuum cleaning device with a first rotating member (33) and a second rotating member/impeller (25) configured to cooperate with the first rotating member to direct particulates toward a bin

(Figure 2)." The Examiner states that one of ordinary skill in the art could have applied the known technique of providing a second rotating brush in a vacuum system, as taught by Takemoto, in the same way to the device of Bisset et al. "and the results would have been predictable."

First, Applicants note that the Examiner has provided no motivation to combine the teachings of Bisset et al. with the teachings of Takemoto. Merely stating that one skilled in the art could have applied Takemoto's second brush to Bisset et al. device does not provide a motivation to combine Takemoto with Bisset et al.; nor does the Examiner's allegation that the results would have been predictable. *KSR* did not remove the requirement that a motivation to combine be set forth to establish prima facie obviousness.

Second, Takemoto teaches providing a vacuum head 11 that works on both carpeting and flooring. When cleaning carpet, the "travel cleaning body 33" rotates in a normal (forward) direction to assist in travel of the vacuum head 11 across the floor, while the rotary blade 25 is rotated in reverse to pick up dust from the carpet. When cleaning flooring, the travel cleaning body 33 is rotated in reverse to polish the floor and the rotary blade is rotated in a normal (forward) direction to pick up dust. Thus, only one of the rotating members 25, 33 is ever cleaning a surface over which the vacuum head 11 moves, while the other propels the vacuum head forward. Further, the travel cleaning body, alleged by the Examiner to be the claimed first rotating member, does not direct particulates toward a bin. It only polishes flooring or propels the vacuum head. Lastly, the rotary blade 25 of Takemoto, alleged by the Examiner to be the claimed second rotating member, might direct particulates toward a bin (although such

disclosure is not set forth in the English-language abstract of Takemoto available to Applicants), but it certainly is not configured to cooperate with the first rotating member to direct particulates toward the bin.

For these reasons, prima facie obvious has not been established with respect to independent claim 78 and the rejection of claim 78 must be withdrawn. Claim 78 is patentable over the prior art of record. Claims 79-86 depend directly or indirectly from claim 78 and are therefore allowable for at least the same reasons.

Independent claim 87 recites a rotating brush configured to agitate particulates and direct particulates toward a rotating member having a central member and two or more blade-like members extending therefrom, the rotating member configured to cooperate with the rotating brush to direct particulates from the rotating brush toward the bin.

Regarding claim 87, the Examiner similarly admits that Bisset et al. fails to teach a second rotating member configured to cooperate with the first rotating member to direct particulates toward the bin, but again alleges that Takemoto teaches "a technique of providing a vacuum cleaning device with a first rotating member (33) and a second rotating member (25) configured to cooperate with the first rotating member to direct particulates toward a bin (Figure 2)." Assuming that the Examiner considers Takemoto's rotary blade 25 to be the claimed "rotating member having a central member and two or more blade-lie members extending therefrom," and thus considers Takemoto's travel cleaning body 33 to be the claimed rotating brush, Takemoto's travel cleaning body 33 is not configured to agitate particulates and direct particulates toward a rotary blade 25, as required by claim 87. Further, Takemoto's rotary blade 25 is not

configured to cooperate with Takemoto's travel cleaning body 33 to direct particulates from the travel cleaning body 33 toward a bin. Rather, when cleaning carpet, the travel cleaning body 33 rotates in a normal (forward) direction to assist in travel of the vacuum head 11 across the floor, while the rotary blade 25 is rotated in reverse to pick up dust from the carpet. When cleaning flooring, the travel cleaning body 33 is rotated in reverse to polish the floor and the rotary blade is rotated in a normal (forward) direction to pick up dust. Thus, only one of the rotating members 25, 33 is ever cleaning a surface over which the vacuum head 11 moves, while the other propels the vacuum head forward. Further, the travel cleaning body does not agitate particulates or direct particulates toward a bin. It only polishes flooring or propels the vacuum head. In addition, the Examiner again fails to set forth any motivation to combine the teachings of Bisset et al. and Takemoto.

For these reasons, prima facie obvious has not been established with respect to independent claim 87 and the rejection of claim 87 must be withdrawn. Claim 87 is patentable over the prior art of record. Claims 88-93 depend directly or indirectly from claim 87 and are therefore allowable for at least the same reasons.

Independent claim 94 recites agitating particulates from the floor and directing the particulates toward a rotating member disposed at least partially within the housing and having a central member and two or more blade-like members extending therefrom.

As set forth above, Takemoto's rotary blade 25 is the only structure that agitates particulates from the floor – Takemoto's travel cleaning body 33 is a flooring polisher rather than a particulate agitator. Further, only one of Takemoto's rotating portions 25, 33 cleans at a time – while the other propels the vacuum head 11 forward. Thus,

Takemoto does not teach or suggest any structure that agitates particulates from the floor and directs particulates toward Takemoto's rotary blade 25. In addition, the Examiner again fails to set forth any motivation to combine the teachings of Bisset et al. and Takemoto.

For these reasons, prima facie obvious has not been established with respect to independent claim 94 and the rejection of claim 94 must be withdrawn. Claim 94 is patentable over the prior art of record.

In view of the foregoing remarks, Applicants submit that the claimed invention is neither anticipated by nor rendered obvious in view of the prior art references cited against this application. Applicants therefore request entry of this Amendment and timely allowance of the pending claims.

Please grant any extensions of time required to enter this Amendment and charge any additional required fees to Deposit Account No. 50-4126.

Respectfully submitted,

O'BRIEN JONES, PLLC

Dated: September 16, 2009

By: /Jill DeMello Hill, Reg. No. 42,477/
Jill DeMello Hill
Reg. No. 42,477

Attachments: **ABSTRACT**

ABSTRACT

A floor cleaning robot comprises a housing, wheels, and a motor driving the wheels to move the robot across a floor, a control module disposed within the housing and directing movement of the robot across the floor, a sensor for detecting and communicating obstacle information to the control module so that the control module can cause the robot to react to the obstacle, a removable bin disposed at least partially within the housing and receiving particulates, a first rotating member directing particulates toward the bin, and a second rotating member cooperating with the first rotating member to direct particulates toward the bin. The removable bin receives particulates directed thereto by the first and second rotating members and the particulates pass from the first rotating member to the removable bin without passing through a filter.

Electronic Acknowledgement Receipt

EFS ID:	6088302
Application Number:	12201554
International Application Number:	
Confirmation Number:	9658
Title of Invention:	Autonomous Floor-Cleaning Robot
First Named Inventor/Applicant Name:	Joseph L. Jones
Customer Number:	74863
Filer:	Jill Elizabeth DeMello
Filer Authorized By:	
Attorney Docket Number:	1007.0013-01000
Receipt Date:	16-SEP-2009
Filing Date:	29-AUG-2008
Time Stamp:	21:59:29
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	1007_0013_01AmendmentForFiling.pdf	471243 9ee909fd348700ded888f65f205bb4ee29ff80a1	no	14

Warnings:	
Information:	

Total Files Size (in bytes):	471243

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 12/201,554	Filing Date 08/29/2008	☐ To be Mailed

APPLICATION AS FILED – PART I

	(Column 1)	(Column 2)	SMALL ENTITY ☐		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE ($)	FEE ($)		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	

APPLICATION AS AMENDED – PART II

AMENDMENT	09/16/2009	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 17	Minus	** 20	= 0	X $ =		OR	X $52=	0
	Independent (37 CFR 1.16(h))	* 3	Minus	***4	= 0	X $ =		OR	X $220=	0
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	0

AMENDMENT		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/TYWANA P. LOVELACE/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/201,554	08/29/2008	Joseph L. Jones	1007.0013-01000	9658

74863 7590 01/14/2010

O'Brien Jones, PLLC (w/iRobot Corp.)
8200 Greensboro Drive
Suite 1020A
McLean, VA 22102

EXAMINER	
SCRUGGS, ROBERT J	

ART UNIT	PAPER NUMBER
3723	

NOTIFICATION DATE	DELIVERY MODE
01/14/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

info@obrienjones.com
jill.hill@obrienjones.com
michelle.obrien@obrienjones.com

Office Action Summary	Application No.	Applicant(s)	
	12/201,554	JONES ET AL.	
	Examiner	Art Unit	
	ROBERT SCRUGGS	3723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 September 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *78-94* is/are pending in the application.

4a) Of the above claim(s) *1-77 and 95-97* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *78-94* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to the amendment received on September 16, 2009. Claims 95-97 have been cancelled therefore claims 78-94 remain pending in the application and have been fully examined.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 78-80 and 82-86 are **Finally** rejected under 35 U.S.C. 103(a) as being unpatentable over Bisset et al. (6493612) in view of Takemoto (JP6327598, **previously cited**) and Hopkins et al. (6276478).

In reference to claim 78, Bisset et al. disclose a floor cleaning robot comprising, a housing (100), wheels (104) and at least one motor (105) to drive the wheels disposed at least partially within the housing and configured to move the floor cleaning robot across a floor, a control module formed as the control software (Column 3, Line 59-Column 4, Line 4) disposed within the housing and directing movement of the floor cleaning robot across the floor, at least one sensor for detecting an obstacle and communicating obstacle information to the control module so that the control module can cause the floor cleaning robot to react to the obstacle (Column 3, lines 53-58), a removable bin formed as the bottom area of cyclone (152) (Column 4, Lines 1-2)

disposed at least partially within the housing and configured to receive particulates, a rotating member (125) configured to direct particulates toward the bin, wherein the removable bin is configured to receive particulates directed thereto from the rotating member without passing through a filter (since no filter is disclosed in Bisset et al.), but lack, a second rotating member configured to cooperate with the first rotating member to direct particulates toward the bin, a biasing member that biases the wheels to an extended position and wherein during cleaning the weight of the floor cleaning robot overcomes the force exerted by the biasing member However, Takemoto teaches a technique of providing a vacuum cleaning device with a first rotating member (33) and a second rotating member/impeller (25) configured to cooperate with the first rotating member to direct particulates toward a bin (Figure 2). It would have been obvious to one of ordinary skill in the art to modify the cleaning device, of Bisset et al., with the known technique of providing a second rotating brush in a vacuum system, as taught by Takemoto, and the results would have been predictable. In this situation, one could provide a more versatile cleaning device that can more effectively remove material from various carpet and flooring surfaces. In addition, Hopkins et al. teach a technique of providing a vacuum cleaner with a biasing member (62) that biases wheels (60) into an extended position. It would have been obvious to one of ordinary skill in the art to modify the wheels, of Bisset et al., with the known technique of providing a biasing member that biases the wheels to an extended position, as taught by Hopkins et al., and the results would have been predictable. In this situation, one could provide a cleaning device having wheels that more effectively maintain engagement with floor

surfaces thereby more effectively maneuvering the device across surfaces of varying heights. Finally, regarding that the weight of the device is sufficient enough to overcome the force of the biasing member the examiner notes that obviously the weight of the device would be sufficient to overcome the force of the biasing member depending on the type and size of spring used, furthermore, where the general conditions of a claim are disclosed in the prior art discovering the optimum or workable ranges involves only routine optimization and experimentation to one of ordinary skill in the art. *In re Aller*, 105 USPQ 233. Here, one could select a spring having a force that is less than the amount of weight being applied from the device depending on the specific needs of a user for the particular problem at hand.

In reference to claim 79, Bisset et al. also disclose an air moving system formed as the cyclonic separator disposed at least partially within the housing and configured to ingest particulates and direct particulates toward the removable bin (Column 4, Lines 5-16).

In reference to claim 80, Bisset et al. also disclose that the first rotating member cooperates with the air moving system to direct particulates toward the bin (Column 3, Line 27-Column 4, Line 16).

In reference to claims 82 and 97, Takemoto also shows that the second rotating member/impeller (25) is disposed at least partially within the housing and is spaced from the floor a greater distance than the first rotating member (Figure 2).

In reference to claim 83, Takemoto also shows that the first rotating member (33) contacts the floor and agitates particulates and directs the particulates toward the second rotating member (25) (Figure 2).

In reference to claim 84, Takemoto also shows that the second rotating member is positioned to receive particulates from the first rotating member and direct the particulates toward the bin (16) (Figure 2)

In reference to claim 85, Takemoto also shows that the first rotating member is a brush (33) (Figure 2 and 5).

In reference to claim 86, Takemoto also shows that the second rotating member includes a central member (i.e. element 25) and two or more blade-like members (26) extending therefrom (Figure 2).

4. Claims 81 and 94 are **Finally** rejected under 35 U.S.C. 103(a) as being unpatentable over Bisset et al. (6493612) in view of Takemoto (JP6327598, **previously cited**), Hopkins et al. (6276478) and Conrad et al. (6482252).

In reference to claim 81, Bisset et al. disclose the claimed invention previously mentioned above, but lack, having air moved by the air moving system passing through

a filter before exiting the housing. However, Conrad et al. teach a technique of placing a filter (50) (Figure 3) below an air outlet (74) such that air passes through the filter before exiting the housing. It would have been obvious to one of ordinary skill in the art to modify the device, of Bisset et al., with the known technique of providing a filter below an air outlet such that the air passes through the filter before exiting the housing, as taught by Conrad et al., and the results would have been predictable. In this situation, one could provide a filtering device that more effectively removes material from air thereby more effectively exhausting cleaner air from the system.

In reference to method claim 94, Bisset et al. disclose a method comprising, moving the housing across the floor (see claim 11), sensing obstacles (see claim 11), causing the device to avoid said obstacles (see claim 11), Takemoto teach of rotating a rotating member having blade-like members (26) (Figure 2) for agitating particles on the floor toward a bin (16) (Figure 2), generating negative pressure toward the bin by using cyclone (152), holding particles at the bottom of the removable bin formed as the bottom area of cyclone (152) (Column 4, Lines 1-2), as taught by Bisset et al., and Conrad et al. teach of placing a filter such that dirty air passes through said filter before exiting the device as previously discussed above.

5. Claims 87-89, 91 and 93 are **Finally** rejected under 35 U.S.C. 103(a) as being unpatentable over Bisset et al. (6493612) in view of Takemoto (JP6327598, **previously cited**).

In reference to claim 87, Bisset et al. disclose a floor cleaning robot comprising, a housing (100), wheels (104) and at least one motor (105) to drive the wheels disposed at least partially within the housing and configured to move the floor cleaning robot across a floor, a control module formed as the control software (Column 3, Line 59-Column 4, Line 4) disposed within the housing and directing movement of the floor cleaning robot across the floor, at least one sensor for detecting an obstacle and communicating obstacle information to the control module so that the control module can cause the floor cleaning robot to react to the obstacle (Column 3, lines 53-58), a removable bin formed as the bottom area of cyclone (152) (Column 4, Lines 1-2) disposed at least partially within the housing and configured to receive particulates, a rotating member (125) configured to direct particulates toward the bin, said rotating member having a central member (i.e. hub) and two or more blade-like members extending therefrom (Figure 5a), wherein the removable bin is configured to receive particulates directed thereto from the rotating member without passing through a filter (since no filter is disclosed in Bisset et al.), but lack, a second rotating member configured to cooperate with the first rotating member to direct particulates toward the bin and wherein, during cleaning, the weight of the floor cleaning robot overcomes a force exerted by a member biasing one or more of the wheels to an extended position. However, Takemoto teaches a technique of providing a vacuum cleaning device with a first rotating member (33) and a second rotating member configured to cooperate with the first rotating member to direct particulates toward a bin (Figure 2). It would have

been obvious to one of ordinary skill in the art to modify the cleaning device, of Bisset et al., with the known technique of providing a second rotating brush in a vacuum system, as taught by Takemoto, and the results would have been predictable. In this situation, one could provide a more versatile cleaning device that can more effectively remove material from various carpet and flooring surfaces.

In reference to claim 88, Bisset et al. also disclose an air moving system formed as the cyclonic separator disposed at least partially within the housing and configured to ingest particulates (Column 4, Lines 5-16).

In reference to claim 89, Bisset et al. also disclose that the first rotating member cooperates with the air moving system to direct particulates toward the bin (Column 3, Line 27-Column 4, Line 16).

In reference to claim 91, Takemoto also shows that the second rotating member (25) is disposed at least partially within the housing and is spaced from the floor a greater distance than the first rotating member (Figure 2).

In reference to claim 93, Takemoto also shows that the second rotating member is positioned to receive particulates from the first rotating member and direct the particulates toward the bin (16) (Figure 2).

6. Claim 90, is **Finally** rejected under 35 U.S.C. 103(a) as being unpatentable over Bisset et al. (6493612) in view of Takemoto (JP6327598, **previously cited**) and Conrad et al. (6482252). Bisset et al. disclose the claimed invention previously mentioned above, but lack, having air moved by the air moving system passing through a filter before exiting the housing. However, Conrad et al. teach a technique of placing a filter (50) (Figure 3) below an air outlet (74) such that air passes through the filter before exiting the housing. It would have been obvious to one of ordinary skill in the art to modify the device, of Bisset et al., with the known technique of providing a filter below an air outlet such that the air passes through the filter before exiting the housing, as taught by Conrad et al., and the results would have been predictable. In this situation, one could provide a filtering device that more effectively removes material from air thereby more effectively exhausting cleaner air from the system.

7. Claim 92, is **Finally** rejected under 35 U.S.C. 103(a) as being unpatentable over Bisset et al. (6493612) in view of Takemoto (JP6327598, **previously cited**) and Hopkins et al. (6276478). Bisset et al. disclose the claimed invention previously mentioned above, but lack, a biasing member that biases the wheels to an extended position and wherein during cleaning the weight of the floor cleaning robot overcomes the force exerted by the biasing member. However, Hopkins et al. teach a technique of providing a vacuum cleaner with a biasing member (62) that biases wheels (60) into an extended position. It would have been obvious to one of ordinary skill in the art to modify the wheels, of Bisset et al., with the known technique of providing a biasing

member that biases the wheels to an extended position, as taught by Hopkins et al., and the results would have been predictable. In this situation, one could provide a cleaning device having wheels that more effectively maintain engagement with floor surfaces thereby more effectively maneuvering the device across surfaces of varying heights. Finally, regarding that the weight of the device is sufficient enough to overcome the force of the biasing member the examiner notes that obviously the weight of the device would be sufficient to overcome the force of the biasing member depending on the type and size of spring used, furthermore, where the general conditions of a claim are disclosed in the prior art discovering the optimum or workable ranges involves only routine optimization and experimentation to one of ordinary skill in the art. *In re Aller*, 105 USPQ 233. Here, one could select a spring having a force that is less than the amount of weight being applied from the device depending on the specific needs of a user for the particular problem at hand.

Response to Arguments

8. Applicant's arguments filed September 16, 2009 have been fully considered but they are not persuasive.

9. Applicant contends that, **"First, Applicants note that the Examiner has provided no motivation to combine the teachings of Bisset et al. with the teachings of Takemoto. Merely stating that one skilled in the art could have applied Takemoto's second brush to Bisset et al. device does not provide a motivation to combine Takemoto with Bisset et al.; nor does the Examiner's allegation that the results would have been predictable. KSR did not remove the**

requirement that a motivation to combine be set forth to establish prima facie obviousness."

a. However, the examiner respectfully disagrees with this statement. The examiner maintains that by adding a second rotatable cleaning device to Bisset one could provide a more versatile cleaning device that can more effectively remove material from various carpet and flooring surfaces is sufficient motivation therefore the examiner believes the rejection is proper and thus maintained.

10. Applicant contends that, **"Second, Takemoto teaches providing a vacuum head 11 that works on both carpeting and flooring. When cleaning carpet, the "travel cleaning body 33" rotates in a normal (forward) direction to assist in travel of the vacuum head 11 across the floor, while the rotary blade 25 is rotated in reverse to pick up dust from the carpet. When cleaning flooring, the travel cleaning body 33 is rotated in reverse to polish the floor and the rotary blade is rotated in a normal (forward) direction to pick up dust. Thus, only one of the rotating members 25, 33 is ever cleaning a surface over which the vacuum head 11 moves, while the other propels the vacuum head forward. Further, the travel cleaning body, alleged by the Examiner to be the claimed first rotating member, does not direct particulates toward a bin. It only polishes flooring or propels the vacuum head. Lastly, the rotary blade 25 of Takemoto, alleged by the Examiner to be the claimed second rotating member, might direct particulates toward a bin (although such disclosure is not set forth in the English-language abstract of**

Takemoto available to Applicants), but it certainly is not configured to cooperate with the first rotating member to direct particulates toward the bin."

b. However, the examiner respectfully disagrees with this statement. The examiner maintains that Takemoto still teaches of using two rotatable cleaning devices that cooperate with each other when cleaning a surface. By using the device, of Takemoto, such that member (33) rotates in a reverse direction the examiner maintains that material on the surface of the floor will obviously be directed toward member (25) therefore the examiner believes the rejection is proper and thus maintained.

11. Applicant contends that, **"Regarding claim 87, the Examiner similarly admits that Bisset et al. fails to teach a second rotating member configured to cooperate with the first rotating member to direct particulates toward the bin, but again alleges that Takemoto teaches "a technique of providing a vacuum cleaning device with a first rotating member (33) and a second rotating member (25) configured to cooperate with the first rotating member to direct particulates toward a bin (Figure 2)." Assuming that the Examiner considers Takemoto's rotary blade 25 to be the claimed "rotating member having a central member and two or more blade-lie members extending therefrom," and thus considers Takemoto's travel cleaning body 33 to be the claimed rotating brush, Takemoto's travel cleaning body 33 is not configured to agitate particulates and direct**

particulates toward a rotary blade 25, as required by claim 87. Further, Takemoto's rotary blade 25 is not configured to cooperate with Takemoto's travel cleaning body 33 to direct particulates from the travel cleaning body 33 toward a bin. Rather, when cleaning carpet, the travel cleaning body 33 rotates in a normal (forward) direction to assist in travel of the vacuum head 11 across the floor, while the rotary blade 25 is rotated in reverse to pick up dust from the carpet. When cleaning flooring, the travel cleaning body 33 is rotated in reverse to polish the floor and the rotary blade is rotated in a normal (forward) direction to pick up dust. Thus, only one of the rotating members 25, 33 is ever cleaning a surface over which the vacuum head 11 moves, while the other propels the vacuum head forward. Further, the travel cleaning body does not agitate particulates or direct particulates toward a bin. It only polishes flooring or propels the vacuum head. In addition, the Examiner again fails to set forth any motivation to combine the teachings of Bisset et al. and Takemoto."

c. However, the examiner respectfully disagrees with this statement. Body (33) when rotated in the reverse direction will send material toward the direction of member (25) thereby meeting the limitations of the claims. The examiner notes that the reverse mode of operation does not have to be operated only on flooring but could be operated on carpet as well therefore the examiner believes the rejection is proper and thus maintained.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT SCRUGGS whose telephone number is (571)272-8682. The examiner can normally be reached on Monday-Friday 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on 571-272-4485. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RS

/Joseph J. Hail, III/
Supervisory Patent Examiner, Art Unit 3723

Notice of References Cited	Application/Control No. 12/201,554	Applicant(s)/Patent Under Reexamination JONES ET AL.	
	Examiner ROBERT SCRUGGS	Art Unit 3723	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,493,612	12-2002	Bisset et al.	701/23
*	B	US-6,276,478	08-2001	Hopkins et al.	180/164
*	C	US-6,482,252	11-2002	Conrad et al.	96/57
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12201554	JONES ET AL.
	Examiner	Art Unit
	ROBERT SCRUGGS	3723

SEARCHED			
Class	Subclass	Date	Examiner
15	319,339,52.1,340.1,356,360	5/20/2009	rs
700	245	5/20/2009	rs
above	updated	12/23/2009	rs

SEARCH NOTES		
Search Notes	Date	Examiner

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

/ROBERT SCRUGGS/ Examiner.Art Unit 3723	

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L7	1	("6493612").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2009/12/23 11:35
L8	1	("6482252").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2009/12/23 12:06
L9	106	(15/360).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2009/12/23 12:52
L10	86	(15/356).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2009/12/23 12:53
L11	690	(15/340.1).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2009/12/23 12:53
L12	524	(15/52.1).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2009/12/23 12:53
L13	2371	(700/245).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2009/12/23 12:53
L14	1578	(15/339).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2009/12/23 12:53
L15	1034	(15/319).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO	OR	OFF	2009/12/23 12:53

EAST Search History (Interference)

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O'Brien Jones, PLLC (w/iRobot Corp.)
8200 Greensboro Drive
Suite 1020A
McLean, VA 22102

Courtesy Reminder for
Application Serial No: 12/201,554

Attorney Docket No: 1007.0013-01000
Customer Number: 74863
Date of Electronic Notification: 01/15/2010

This is a courtesy reminder that new correspondence is available for this application. The official date of notification of the outgoing correspondence will be indicated on the form PTOL-90 accompanying the correspondence.

An email notification regarding the correspondence was sent to the following email address(es) associated with your customer number:

info@obrienjones.com
jill.hill@obrienjones.com
michelle.obrien@obrienjones.com

Please verify that these email addresses are correct.

To view your correspondence online or update your email addresses, please visit us anytime at **https://sportal.uspto.gov/secure/myportal/privatepair.** If you have any questions, please email the Electronic Business Center (EBC) at EBC@uspto.gov or call 1-866-217-9197.

RESPONSE UNDER 37 C.F.R. § 1.116
EXPEDITED PROCEDURE REQUESTED
EXAMINING GROUP 3723
PATENT
Customer No. 74,863
Attorney Docket No. 1007.0013-01000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Joseph L. JONES et al.	)	
	)	Group Art Unit: 3723
Application No.: 12/201,554	)	
	)	Examiner: R. J. Scruggs
Filed: August 29, 2008	)	
	)	Confirmation No.: 9658
For: AUTONOMOUS FLOOR CLEANING ROBOT	)	
	)	**BOX AF**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

AMENDMENT AFTER FINAL

In reply to the final Office Action dated January 14, 2010, and pursuant to 37 C.F.R. § 1.116, Applicants propose that this application be amended as follows:

Amendments to the Claims are reflected in the listing of claims in this paper.

Amendments to the Specification are reflected in the attached substitute specification.

Amendments to the Drawings are reflected in the one Replacement Sheet (FIG. 3C).

Remarks follow the amendment sections of this paper.

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Claims 1-97. (Canceled).

98. (New) A floor cleaning robot comprising:

a housing and a chassis;

wheels and at least one motor to drive the wheels disposed at least partially within the housing and configured to move the floor cleaning robot across a floor, each of the wheels being attached to the chassis via a respective arm having a distal end and a proximal end;

a control module disposed within the housing and directing movement of the floor cleaning robot across the floor;

at least one sensor for detecting an obstacle and communicating obstacle information to the control module so that the control module can cause the floor cleaning robot to react to the obstacle;

a removable bin disposed at least partially within the housing and configured to receive particulates; and

a first rotating member configured to direct particulates toward the bin,

wherein one of the wheels is rotatably attached to the distal end of each arm, and the proximal end of each arm is pivotably attached to the chassis,

wherein each wheel is biased to an extended position away from the robot chassis by a spring extending between the arm and the robot chassis, and

wherein, during cleaning, the weight of the floor cleaning robot overcomes a force from the spring biasing the wheels to an extended position.

99. (New) The floor cleaning robot of claim 98, further comprising a second rotating member configured to cooperate with the first rotating member to direct particulates toward the bin.

100. (New) The floor cleaning robot of claim 98, further comprising an air moving system disposed at least partially within the housing and configured to ingest particulates and direct particulates toward the removable bin.

101. (New) The floor cleaning robot of claim 100, wherein the first rotating member cooperates with the air moving system to direct particulates toward the bin.

102. (New) The floor cleaning robot of claim 100, wherein air moved by the air moving system passes through a filter before exiting the housing.

103. (New) The floor cleaning robot of claim 98, wherein the at least one sensor comprises a wheel drop sensor for sensing when one of the wheels of the floor cleaning robot has dropped to an extended position, and

wherein the control module causes the floor cleaning robot to stop moving across the floor when the wheel drop sensor senses that a wheel of the floor cleaning robot has dropped to an extended position.

104. (New) The floor cleaning robot of claim 99, wherein the first rotating member contacts the floor and agitates particulates and directs the particulates toward the second rotating member.

105. (New) The floor cleaning robot of claim 104, wherein the second rotating member is positioned to receive particulates from the first rotating member and direct the particulates toward the removable bin.

106. (New) The floor cleaning robot of claim 98, wherein the first rotating member is a brush.

107. (New) A floor cleaning robot comprising:

a housing and a chassis;

a first wheel and a first arm for attaching the first wheel to the chassis, the first arm having a proximal end pivotably attached to the chassis and a distal end to which the first wheel is rotatably mounted;

a first resilient member connecting the first arm to the chassis and biasing the distal end of the first arm and the first wheel to an extended position;

a second wheel and a second arm for attaching the second wheel to the chassis, the second arm having a proximal end pivotably attached to the chassis and a distal end to which the second wheel is rotatably mounted;

a second resilient member connecting the second arm to the chassis and biasing the distal end of the second arm and the second wheel to an extended position;

at least one motor disposed at least partially within the housing and configured to drive the first and second wheels to move the floor cleaning robot across a floor;

a control module disposed within the housing and directing movement of the floor cleaning robot across the floor;

at least one sensor for detecting an obstacle and communicating obstacle information to the control module so that the control module can cause the floor cleaning robot to react to the obstacle;

a removable bin disposed at least partially within the housing and configured to receive particulates;

a rotating brush configured to agitate particulates and direct particulates toward the removable bin;

wherein, during cleaning, the weight of the floor cleaning robot overcomes a force from the first and second resilient members that biases the wheels to an extended position.

108. (New) The floor cleaning robot of claim 107, wherein the at least one sensor comprises a wheel drop sensor for sensing when one of the wheels of the floor cleaning robot has dropped to an extended position, and

wherein the control module causes the floor cleaning robot to stop moving across the floor when the wheel drop sensor senses that a wheel of the floor cleaning robot has dropped to an extended position.

109. (New) The floor cleaning robot of claim 107, wherein the removable bin is configured to receive particulates directed thereto by the rotating brush and the rotating member, and the particulates pass from the rotating brush to the removable bin without passing through a filter.

110. (New) The floor cleaning robot of claim 107, further comprising an air moving system disposed at least partially within the housing and configured to ingest particulates.

111. (New) The floor cleaning robot of claim 110, wherein the rotating brush cooperates with the air moving system to direct particulates toward the bin.

112. (New) The floor cleaning robot of claim 110, wherein air moved by the air moving system passes through a filter before exiting the housing.

113. (New) The floor cleaning robot of claim 109, wherein the rotating member is disposed at least partially within the housing and is spaced from the floor a greater distance than the rotating brush.

114. (New) A method for directing particulates from a floor into a bin, the method comprising:

driving wheels to move a cleaning robot across a floor, the wheels being attached to a chassis of the cleaning robot by a pivoting arm and being biased to an extended position by a spring extending between the arm and the chassis;

allowing the weight of the cleaning robot to overcome the spring force biasing the wheels to an extended position when the cleaning robot is positioned for use;

sensing obstacles;

causing the cleaning robot to avoid the sensed obstacles;

agitating particulates from the floor and directing the particulates toward a removable bin of the cleaning robot;

generating a negative pressure to direct agitated particulates toward the removable bin; and

holding particulates in the removable bin.

115. (New) The method of claim 114, further comprising filtering air used to direct particulates toward the removable bin after particulates carried by the air are held by the removable bin

116. (New) The method of claim 114, wherein agitating particulates from the floor and directing the particulates toward the removable bin comprises directing the particulates toward a rotating member disposed at least partially within the cleaning robot, and rotating the rotating member to direct particulates toward the removable bin.

117. (New) The method of claim 114, further comprising:

sensing when one of the wheels of the floor cleaning robot has dropped to an extended position; and

causing the floor cleaning robot to stop moving across the floor when the wheel drop sensor senses that a wheel of the floor cleaning robot has dropped to an extended position.

REMARKS

Claims 1-97 have been canceled and claims 98-117 have been added. In addition, a substitute specification and one Replacement Sheet of drawings (FIG. 3C) are submitted herewith. No new matter has been added. Support for the amendments and new claims presented herein can be found throughout the originally-filed disclosure. Claims 98-116 are pending.

In the pending final Office Action, claims 78-80 and 82-86 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,493,612 to Bisset et al. in view of JP 6327598 to Takemoto and U.S. Patent No. 6,276,478 to Hopkins et al. Claims 81 and 94 were rejected under 35 U.S.C. § 103(a) as unpatentable over Bisset et al. in view of Takemoto, Hopkins et al., and U.S. Patent No. 6,482,252 to Conrad et al. Claims 87-89, 91, and 93 were rejected under 35 U.S.C. § 103(a) as unpatentable over Bisset et al. in view of Takemoto. Claim 90 was rejected under 35 U.S.C. § 103(a) as unpatentable over Bisset et al. in view of Takemoto and Conrad et al. Claim 92 was rejected under 35 U.S.C. § 103(a) as unpatentable over Bisset et al. in view of Takemoto and Hopkins et al. Cancellation of claims 1-97 has rendered the pending rejections moot; however, Applicants hereafter address the cited references insofar as they apply to newly-presented claims 98-117.

New independent claims 98 and 107 recite, among other things, attachment of wheels of a cleaning robot to a chassis of the robot via a pivoting arm, and the wheels being biased to an extended position. The force biasing the wheels to the extended position can be overcome by the weight of the cleaning robot in use. Independent method claim 114 recites, among other things, the wheels being attached to a chassis of the cleaning robot by a pivoting arm and being biased to an extended position by a

spring extending between the arm and the chassis, and "allowing the weight of the cleaning robot to overcome a force biasing the wheels to an extended position when the cleaning robot is positioned for use."

Hopkins et al. merely teaches an adherent robot having wheels 60 biased with springs 62 to contact a surface 63. A chassis 64 and motors 61 are also disclosed. Hopkins et al. does not teach the claimed pivoting arm or biasing of the wheels to an extended position with a force that can be overcome by the weight of the robot. Further, one skilled in the art would not combine the teachings of Hopkins et al. with cleaning robots, because its teachings could not be integrated with cleaning robots existing at the time this application was filled to yield a working device. Even if one attempted to apply the teachings of Hopkins et al. to a cleaning robot at the time of filing this application, the result would not render the present claims obvious. None of the other prior art of record teaches the biased wheel assembly as claimed.

Claims 98, 107, and 114 are therefore allowable over the prior art of record. Claims 99-106 depend directly or indirectly from claim 98 and are therefore allowable for at least the same reasons. Claims 108-113 depend directly or indirectly from claim 107 and are therefore allowable for at least the same reasons. Claims 115-117 depend from claim 114 and are therefore allowable for at least the same reasons.

Applicants respectfully request that this Amendment under 37 C.F.R. § 1.116 be entered by the Examiner, placing the pending claims in condition for allowance.

In view of the foregoing remarks, Applicant submits that the claims, as amended, are neither anticipated nor rendered obvious in view of the prior art references cited

against this application. Applicant therefore requests the entry of this Amendment and timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to deposit account 50-4126.

Respectfully submitted,

O'BRIEN JONES^{PLLC}

Dated: March 29, 2010

By: /Jill DeMello Hill, Reg. No. 42,477
Jill DeMello Hill
Reg. No. 42,477

Attachments: **Substitute Specification (with Marked-Up Copy)**
One Replacement Sheet of Drawings

PATENT
Customer No. 74,863
Attorney Docket No. 1007.0013-01000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Joseph L. JONES et al.	)	
	)	Group Art Unit: 3723
Application No.: 12/201,554	)	
	)	Examiner: R. J. Scruggs
Filed: August 29, 2008	)	
	)	Confirmation No.: 9658
For: AUTONOMOUS FLOOR CLEANING ROBOT	)	
	)	**BOX AF**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

SUBMISSION OF REPLACEMENT DRAWINGS

Subject to approval of the Examiner, please replace one sheet of drawings in the above-identified application with the one Replacement Sheet filed herewith (FIG. 3C). If the Replacement Sheet for any reason is not in full compliance with the pertinent statutes and regulations, please so advise the undersigned.

If any fees are necessary for the submission of this Replacement Sheet, please charge Deposit Account No. 50-4126.

Respectfully submitted,

O'BRIEN JONES^{PLLC}

Dated: March 29, 2010

By: /Jill DeMello Hill, Reg. No. 42,477/
Jill DeMello Hill
Reg. No. 42,477

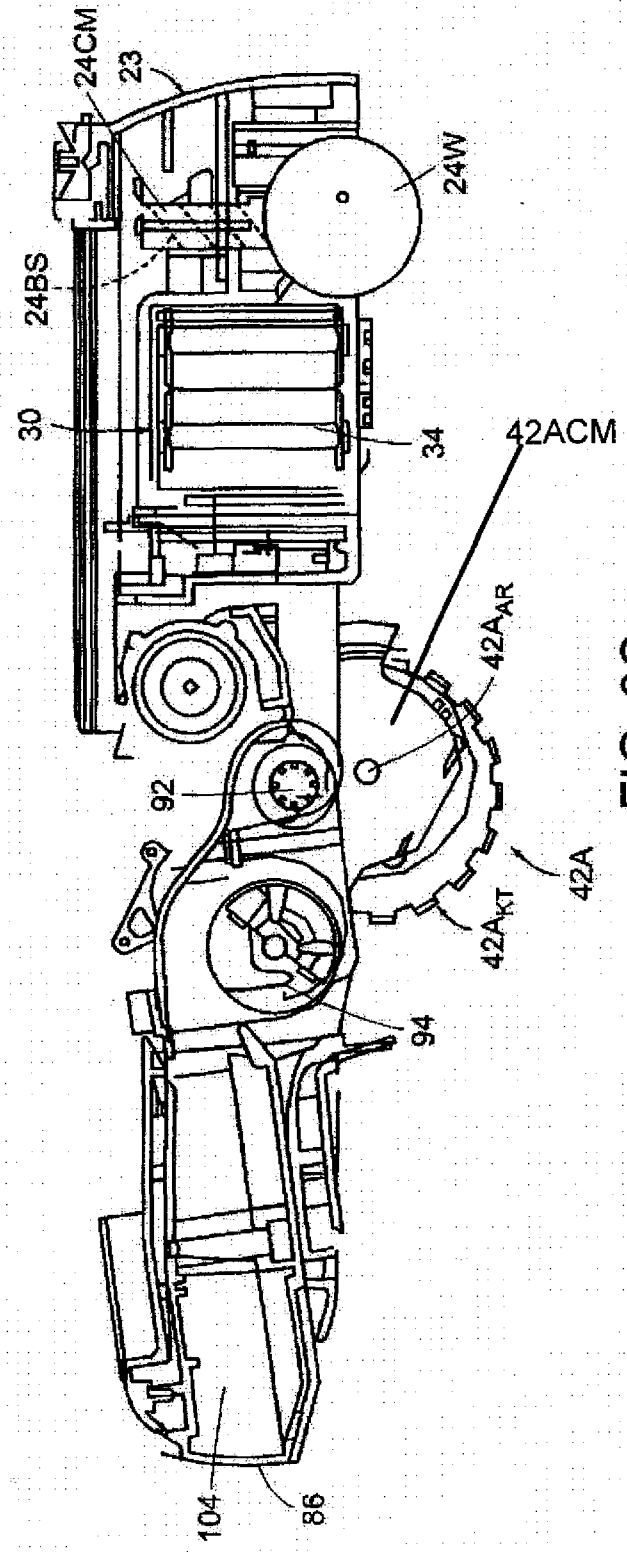

FIG. 3C

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AUTONOMOUS FLOOR-CLEANING ROBOT

Cross-Reference to Related Applications

[0001] This is a continuation of U.S. ~~Non-Provisional~~ Patent ~~Application~~ No. ~~10/818,073~~7,571,511 filed April 5, 2004, which is a continuation of U.S. ~~Non-Provisional~~ Patent ~~Application~~ No. ~~10/320,729~~6,883,201 filed December 16, 2002 and which claims priority to U.S. Provisional Patent Application No. 60/345,764 filed January 3, 2002, the disclosures of which are incorporated herein by reference in their entireties. The subject matter of this application is also related to commonly-owned U.S. Patent No. 6,615,439 filed January 24, 2001, U.S. Patent No. 6,809,490 filed June 12, 2002, and U.S. Patent No. 6,690,134 filed January 24, 2002.

Background of the Invention

[0002] (1) Field of the Invention

[0003] The present invention relates to cleaning devices, and more particularly, to an autonomous floor-cleaning robot that comprises a self-adjustable cleaning head subsystem that includes a dual-stage brush assembly having counter-rotating, asymmetric brushes and an adjacent, but independent, vacuum assembly such that the cleaning capability and efficiency of the self-adjustable cleaning head subsystem is

optimized while concomitantly minimizing the power requirements thereof. The autonomous floor-cleaning robot further includes a side brush assembly for directing particulates outside the envelope of the robot into the self-adjustable cleaning head subsystem.

[0004] (2) Description of Related Art

[0005] Autonomous robot cleaning devices are known in the art. For example, U.S. Patent Nos. 5,940,927 and 5,781,960 disclose an Autonomous Surface Cleaning Apparatus and a Nozzle Arrangement for a Self-Guiding Vacuum Cleaner. One of the primary requirements for an autonomous cleaning device is a self-contained power supply - the utility of an autonomous cleaning device would be severely degraded, if not outright eliminated, if such an autonomous cleaning device utilized a power cord to tap into an external power source.

[0006] And, while there have been distinct improvements in the energizing capabilities of self-contained power supplies such as batteries, today's self-contained power supplies are still time-limited in providing power. Cleaning mechanisms for cleaning devices such as brush assemblies and vacuum assemblies typically require large power loads to provide effective cleaning capability. This is particularly true where brush assemblies and vacuum assemblies are configured as combinations, since the brush assembly and/or the vacuum assembly of such combinations typically have not been

designed or configured for synergic operation.

[0007] A need exists to provide an autonomous cleaning device that has been designed and configured to optimize the cleaning capability and efficiency of its cleaning mechanisms for synergic operation while concomitantly minimizing or reducing the power requirements of such cleaning mechanisms.

Summary of the Invention

[0008] ~~One object of t~~The present invention ~~is to provide~~provides a cleaning device that is operable without human intervention to clean designated areas.

[0009] ~~Another object of t~~The present invention ~~is to provide such~~ provides an autonomous cleaning device that is designed and configured to optimize the cleaning capability and efficiency of its cleaning mechanisms for synergic operations while concomitantly minimizing the power requirements of such mechanisms.

[0010] ~~These and other objects of the present invention are provided by one embodiment~~The present teachings provide an autonomous floor-cleaning robot ~~according to the present invention that comprises~~comprising a housing infrastructure including a chassis, a power subsystem; for providing the energy to power the autonomous floor-cleaning robot, a motive subsystem operative to propel the

autonomous floor-cleaning robot for cleaning operations, a control module operative to control the autonomous floor-cleaning robot to effect cleaning operations, and a self-adjusting cleaning head subsystem that includes a deck mounted in pivotal combination with the chassis, a brush assembly mounted in combination with the deck and powered by the motive subsystem to sweep up particulates during cleaning operations, a vacuum assembly disposed in combination with the deck and powered by the motive subsystem to ingest particulates during cleaning operations, and a deck height adjusting subassembly mounted in combination with the motive subsystem for the brush assembly, the deck, and the chassis that is automatically operative in response to a change in torque in said brush assembly to pivot the deck with respect to said chassis and thereby adjust the height of the brushes from the floor. The autonomous floor-cleaning robot also includes a side brush assembly mounted in combination with the chassis and powered by the motive subsystem to entrain particulates outside the periphery of the housing infrastructure and to direct such particulates towards the self-adjusting cleaning head subsystem.

Brief Description of the Drawings

[0011] A more complete understanding of the present invention and the attendant features and advantages thereof may be had by reference to the following detailed description of the invention when considered in conjunction with the accompanying drawings wherein:

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[0012] ~~Figure~~ FIG. 1 is a schematic representation of an autonomous floor-cleaning robot according to the present invention.

[0013] ~~Figure~~ FIG. 2 is a perspective view of one embodiment of an autonomous floor-cleaning robot according to the present invention.

[0014] ~~Figure~~ FIG. 2A is a bottom plan view of the autonomous floor-cleaning robot of ~~Figure~~ FIG. 2.

[0015] ~~Figure~~ FIG. 3A is a top, partially-sectioned plan view, with cover removed, of another embodiment of an autonomous floor-cleaning robot according to the present invention.

[0016] ~~Figure~~ FIG. 3B is a bottom, partially-section plan view of the autonomous floor-cleaning robot embodiment of ~~Figure~~ FIG. 3A.

[0017] ~~Figure~~ FIG. 3C is a side, partially sectioned plan view of the autonomous floor-cleaning robot embodiment of ~~Figure~~ FIG. 3A.

[0018] ~~Figure~~ FIG. 4A is a top plan view of the deck and chassis of the autonomous floor-cleaning robot embodiment of ~~Figure~~ FIG. 3A.

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[0019] ~~Figure~~ FIG. 4B is a cross-sectional view of ~~Figure~~ FIG. 4A taken along line B-B thereof.

[0020] ~~Figure~~ FIG. 4C is a perspective view of the deck-adjusting subassembly of autonomous floor-cleaning robot embodiment of ~~Figure~~ FIG. 3A.

[0021] ~~Figure~~ FIG. 5A is a first exploded perspective view of a dust cartridge for the autonomous floor-cleaning robot embodiment of ~~Figure~~ FIG. 3A.

[0022] ~~Figure~~ FIG. 5B is a second exploded perspective view of the dust cartridge of ~~Figure~~ FIG. 5A.

[0023] ~~Figure~~ FIG. 6 is a perspective view of a dual-stage brush assembly including a flapper brush and a main brush for the autonomous floor-cleaning robot embodiment of ~~Figure~~ FIG. 3A.

[0024] ~~Figure~~ FIG. 7A is a perspective view illustrating the blades and vacuum compartment for the autonomous floor cleaning robot embodiment of ~~Figure~~ FIG. 3A.

[0025] ~~Figure~~ FIG. 7B is a partial perspective exploded view of the autonomous floor-cleaning robot embodiment of ~~Figure~~ FIG. 7A.

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Detailed Description of the Invention

[0026] Referring now to the drawings where like reference numerals identify corresponding or similar elements throughout the several views, ~~Figure~~ FIG. 1 is a schematic representation of an autonomous floor-cleaning robot 10 according to the present invention. The robot 10 comprises a housing infrastructure 20, a power subsystem 30, a motive subsystem 40, a sensor subsystem 50, a control module 60, a side brush assembly 70, and a self-adjusting cleaning head subsystem 80. The power subsystem 30, the motive subsystem 40, the sensor subsystem 50, the control module 60, the side brush assembly 70, and the self-adjusting cleaning head subsystem 80 are integrated in combination with the housing infrastructure 20 of the robot 10 as described in further detail in the following paragraphs.

[0027] In the following description of the autonomous floor-cleaning robot 10, use of the terminology "forward/fore" refers to the primary direction of motion of the autonomous floor-cleaning robot 10, and the terminology fore-aft axis (see reference characters "FA" in ~~Figures~~ FIGS. 3A, 3B) defines the forward direction of motion (indicated by arrowhead of the fore-aft axis FA), which is coincident with the fore-aft diameter of the robot 10.

[0028] Referring to ~~Figures~~ FIGS. 2, 2A, and 3A-3C, the housing infrastructure 20 of

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the robot 10 comprises a chassis 21, a cover 22, a displaceable bumper 23, a nose wheel subassembly 24, and a carrying handle 25. The chassis 21 is preferably molded from a material such as plastic as a unitary element that includes a plurality of preformed wells, recesses, and structural members for, inter alia, mounting or integrating elements of the power subsystem 30, the motive subsystem 40, the sensor subsystem 50, the side brush assembly 70, and the self-adjusting cleaning head subsystem 80 in combination with the chassis 21. The cover 22 is preferably molded from a material such as plastic as a unitary element that is complementary in configuration with the chassis 21 and provides protection of and access to elements/components mounted to the chassis 21 and/or comprising the self-adjusting cleaning head subsystem 80. The chassis 21 and the cover 22 are detachably integrated in combination by any suitable means, e.g., screws, and in combination, the chassis 21 and cover 22 form a structural envelope of minimal height having a generally cylindrical configuration that is generally symmetrical along the fore-aft axis FA.

[0029] The displaceable bumper 23, which has a generally arcuate configuration, is mounted in movable combination at the forward portion of the chassis 21 to extend outwardly therefrom, i.e., the normal operating position. The mounting configuration of the displaceable bumper is such that the bumper 23 is displaced towards the chassis 21 (from the normal operating position) whenever the bumper 23 encounters a stationary object or obstacle of predetermined mass, i.e., the displaced position, and returns to the normal operating position when contact with the stationary object or obstacle is

terminated (due to operation of the control module 60 which, in response to any such displacement of the bumper 23, implements a "bounce" mode that causes the robot 10 to evade the stationary object or obstacle and continue its cleaning routine, e.g., initiate a random -- or weighted-random -- turn to resume forward movement in a different direction). The mounting configuration of the displaceable bumper 23 comprises a pair of rotatable support members 23RSM, which are operative to facilitate the movement of the bumper 23 with respect to the chassis 21.

[0030] The pair of rotatable support members 23RSM are symmetrically mounted about the fore-aft axis FA of the autonomous floor-cleaning robot 10 proximal the center of the displaceable bumper 23 in a V-configuration. One end of each support member 23RSM is rotatably mounted to the chassis 21 by conventional means, e.g., pins/dowel and sleeve arrangement, and the other end of each support member 23RSM is likewise rotatably mounted to the displaceable bumper 23 by similar conventional means. A biasing spring (not shown) is disposed in combination with each rotatable support member 23RSM and is operative to provide the biasing force necessary to return the displaceable bumper 23 (through rotational movement of the support members 23RSM) to the normal operating position whenever contact with a stationary object or obstacle is terminated.

[0031] The embodiment described herein includes a pair of bumper arms 23BA that are symmetrically mounted in parallel about the fore-aft diameter FA of the autonomous

floor-cleaning robot 10 distal the center of the displaceable bumper 23. These bumper arms 23BA do not per se provide structural support for the displaceable bumper 23, but rather are a part of the sensor subsystem 50 that is operative to determine the location of a stationary object or obstacle encountered via the bumper 23. One end of each bumper arm 23BA is rigidly secured to the displaceable bumper 23 and the other end of each bumper arm 23BA is mounted in combination with the chassis 21 in a manner, e.g., a slot arrangement such that, during an encounter with a stationary object or obstacle, one or both bumper arms 23BA are linearly displaceable with respect to the chassis 21 to activate an associated sensor, e.g., IR break beam sensor, mechanical switch, capacitive sensor, which provides a corresponding signal to the control module 60 to implement the "bounce" mode. Further details regarding the operation of this aspect of the sensor subsystem 50, as well as alternative embodiments of sensors having utility in detecting contact with or proximity to stationary objects or obstacles can be found in commonly-owned, co-pending U.S. ~~patent application~~Patent No. ~~10/056,804~~6,690,134, filed 24 January 2002, entitled Method and System for Multi-Mode Coverage for an Autonomous Robot.

[0032] The nose-wheel subassembly 24 comprises a wheel 24W rotatably mounted in combination with a ~~clevis~~clevis-shaped arm member 24CM that includes a mounting shaft. The ~~clevis~~clevis-shaped arm mounting shaft 24CM is disposed in a well in the chassis 21 at the forward end thereof on the fore-aft diameter of the autonomous floor-cleaning robot 10. A biasing spring 24BS (hidden behind a leg of the ~~clevis~~clevis-

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shaped arm member 24CM in ~~Figure~~ FIGS. 3C) is disposed in combination with the ~~clevis~~clevis-shaped arm mounting shaft 24CM and operative to bias the nose-wheel subassembly 24 to an 'extended' position whenever the nose-wheel subassembly 24 loses contact with the surface to be cleaned. During cleaning operations, the weight of the autonomous floor-cleaning robot 10 is sufficient to overcome the force exerted by the biasing spring 24BS to bias the nose-wheel subassembly 24 to a partially retracted or operating position wherein the wheel rotates freely over the surface to be cleaned. Opposed triangular or conical wings 24TW extend outwardly from the ends of the ~~clevis~~clevis-shaped arm member to prevent the side of the wheel from catching on low obstacle during turning movements of the autonomous floor-cleaning robot 10. The wings 24TW act as ramps in sliding over bumps as the robot turns.

[0033] Ends 25E of the carrying handle 25 are secured in pivotal combination with the cover 22 at the forward end thereof, centered about the fore-aft axis FA of the autonomous floor-cleaning robot 10. With the autonomous floor-cleaning robot 10 resting on or moving over a surface to be cleaned, the carrying handle 25 lies approximately flush with the surface of the cover 22 (the weight of the carrying handle 25, in conjunction with arrangement of the handle-cover pivot configuration, is sufficient to automatically return the carrying handle 25 to this flush position due to gravitational effects). When the autonomous floor-cleaning robot 10 is picked up by means of the carrying handle 25, the aft end of the autonomous floor-cleaning robot 10 lies below the forward end of the autonomous floor-cleaning robot 10 so that particulate debris is not

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dislodged from the self-adjusting cleaning head subsystem 80.

[0034] The power subsystem 30 of the described embodiment provides the energy to power individual elements/components of the motive subsystem 40, the sensor subsystem 50, the side brush assembly 70, and the self-adjusting cleaning head subsystem 80 and the circuits and components of the control module 60 via associated circuitry 32-4, 32-5, 32-7, 32-8, and 32-6, respectively (see ~~Figure~~ FIGS. 1) during cleaning operations. The power subsystem 30 for the described embodiment of the autonomous floor-cleaning robot 10 comprises a rechargeable battery pack 34 such as a NiMH battery pack. The rechargeable battery pack 34 is mounted in a well formed in the chassis 21 (sized specifically for mounting/retention of the battery pack 34) and retained therein by any conventional means, e.g., spring latches (not shown). The battery well is covered by a lid 34L secured to the chassis 21 by conventional means such as screws. Affixed to the lid 34L are friction pads 36 that facilitate stopping of the autonomous floor-cleaning robot 10 during automatic shutdown. The friction pads 36 aid in stopping the robot upon the robot's attempting to drive over a cliff. The rechargeable battery pack 34 is configured to provide sufficient power to run the autonomous floor-cleaning robot 10 for a period of sixty (60) to ninety (90) minutes on a full charge while meeting the power requirements of the elements/components comprising motive subsystem 40, the sensor subsystem 50, the side brush assembly 70, the self-adjusting cleaning head subsystem 80, and the circuits and components of the control module 60.

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[0035] The motive subsystem 40 comprises the independent means that: (1) propel the autonomous floor-cleaning robot 10 for cleaning operations; (2) operate the side brush assembly 70; and (3) operate the self-adjusting cleaning head subsystem 80 during such cleaning operations. Such independent means includes right and left main wheel subassemblies 42A, 42B, each subassembly 42A, 42B having its own independently-operated motor $42A_M$, $42B_M$, respectively, an independent electric motor 44 for the side brush assembly 70, and two independent electric motors 46, 48 for the self-adjusting brush subsystem 80, one motor 46 for the vacuum assembly and one motor 48 for the dual-stage brush assembly.

[0036] The right and left main wheel subassemblies 42A, 42B are independently mounted in wells of the chassis 21 formed at opposed ends of the transverse diameter of the chassis 21 (the transverse diameter is perpendicular to the fore-aft axis FA of the robot 10). Mounting at this location provides the autonomous floor-cleaning robot 10 with an enhanced turning capability, since the main wheel subassemblies 42A, 42B motor can be independently operated to effect a wide range of turning maneuvers, e.g., sharp turns, gradual turns, turns in place.

[0037] Each main wheel subassembly 42A, 42B comprises a wheel $42A_W$, $42B_W$ rotatably mounted in combination with a ~~clevis~~clevis-shaped arm member $42A_{CM}$, $42B_{CM}$. Each ~~clevis~~clevis-shaped arm member $42A_{CM}$, $42B_{CM}$ is pivotally mounted to

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the chassis 21 aft of the wheel axis of rotation (see ~~Figure~~ FIGS. 3C which illustrates the wheel axis of rotation $42A_{AR}$; the wheel axis of rotation for wheel subassembly 42B, which is not shown, is identical), i.e., independently suspended. The aft pivot axis $42A_{PA}$, $42B_{PA}$ (see ~~Figure~~ FIG. 3A) of the main wheel subassemblies 42A, 42B facilitates the mobility of the autonomous floor-cleaning robot 10, i.e., pivotal movement of the subassemblies 42A, 42B through a predetermined arc. The motor $42A_M$, $42B_M$ associated with each main wheel subassembly 42A, 42B is mounted to the aft end of the ~~clevis~~clevis-shaped arm member $42A_{CM}$, $42B_{CM}$. One end of a tension spring $42B_{TS}$ (the tension spring for the right wheel subassembly 42A is not illustrated, but is identical to the tension spring ~~42BTS~~ $42B_{TS}$ of the left wheel subassembly 42A) is attached to the aft portion of the ~~clevis~~clevis-shaped arm member $42B_{CM}$ and the other end of the tension spring $42B_{TS}$ is attached to the chassis 21 forward of the respective wheel $42A_W$, $42B_W$.

[0038] Each tension spring is operative to rotatably bias the respective main wheel subassembly 42A, 42B (via pivotal movement of the corresponding ~~clevis~~clevis-shaped arm member $42A_{CM}$, $42B_{CM}$ through the predetermined arc) to an 'extended' position when the autonomous floor-cleaning robot 10 is removed from the floor (in this 'extended' position the wheel axis of rotation lies below the bottom plane of the chassis 21). With the autonomous floor-cleaning robot 10 resting on or moving over a surface to be cleaned, the weight of autonomous floor-cleaning robot 10 gravitationally biases each main wheel subassembly 42A, 42B into a retracted or operating position wherein

axis of rotation of the wheels are approximately coplanar with bottom plane of the chassis 21. The motors $42A_M$, $42B_M$ of the main wheel subassemblies 42A, 42B are operative to drive the main wheels: (1) at the same speed in the same direction of rotation to propel the autonomous floor-cleaning robot 10 in a straight line, either forward or aft; (2) at different speeds (including the situation wherein one wheel is operated at zero speed) to effect turning patterns for the autonomous floor-cleaning robot 10; or (3) at the same speed in opposite directions of rotation to cause the robot 10 to turn in place, i.e., “spin on a dime”.

[0039] The wheels $42A_W$, $42B_W$ of the main wheel subassemblies 42A, 42B preferably have a "knobby" tread configuration $42A_{KT}$, $42B_{KT}$. This knobby tread configuration $42A_{KT}$, $42B_{KT}$ provides the autonomous floor-cleaning robot 10 with enhanced traction, particularly when traversing smooth surfaces and traversing between contiguous surfaces of different textures, e.g., bare floor to carpet or vice versa. This knobby tread configuration $42A_{KT}$, $42B_{KT}$ also prevents tufted fabric of carpets/rugs from being entrapped in the wheels $42A_W$, 42B and entrained between the wheels and the chassis 21 during movement of the autonomous floor-cleaning robot 10. One skilled in the art will appreciate, however, that other tread patterns/configurations are within the scope of the present invention.

[0040] The sensor subsystem 50 comprises a variety of different sensing units that may be broadly characterized as either: (1) control sensing units 52; or (2) emergency

sensing units 54. As the names imply, control sensing units 52 are operative to regulate the normal operation of the autonomous floor-cleaning robot 10 and emergency sensing units 54 are operative to detect situations that could adversely affect the operation of the autonomous floor-cleaning robot 10 (e.g., stairs descending from the surface being cleaned) and provide signals in response to such detections so that the autonomous floor-cleaning robot 10 can implement an appropriate response via the control module 60. The control sensing units 52 and emergency sensing units 54 of the autonomous floor-cleaning robot 10 are summarily described in the following paragraphs; a more complete description can be found in commonly-owned, co-pending U.S. ~~patent application serial numbers 09/768,773~~Patent No. 6,594,844, filed 24 January 2001, entitled Robot Obstacle Detection System, ~~10/167,851~~U.S. Patent No. 6,809,490, filed 12 June 2002, entitled Method and System for Robot Localization and Confinement, and U.S. Patent No. ~~10/056,804~~6,690,134, filed 24 January 2002, entitled Method and System for Multi-Mode Coverage for an Autonomous Robot.

[0041] The control sensing units 52 include obstacle detection sensors 52OD mounted in conjunction with the linearly-displaceable bumper arms 23BA of the displaceable bumper 23, a wall-sensing assembly 52WS mounted in the right-hand portion of the displaceable bumper 23, a virtual wall sensing assembly 52VWS mounted atop the displaceable bumper 23 along the fore-aft diameter of the autonomous floor-cleaning robot 10, and an IR sensor/encoder combination 52WE mounted in combination with each wheel subassembly 42A, 42B.

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[0042] Each obstacle detection sensor 52OD includes an emitter and detector combination positioned in conjunction with one of the linearly displaceable bumper arms 23BA so that the sensor 52OD is operative in response to a displacement of the bumper arm 23BA to transmit a detection signal to the control module 60. The wall sensing assembly 52WS includes an emitter and detector combination that is operative to detect the proximity of a wall or other similar structure and transmit a detection signal to the control module 60. Each IR sensor/encoder combination 52WE is operative to measure the rotation of the associated wheel subassembly 42A, 42B and transmit a signal corresponding thereto to the control module 60.

[0043] The virtual wall sensing assembly 52VWS includes detectors that are operative to detect a force field and a collimated beam emitted by a stand-alone emitter (the virtual wall unit – not illustrated) and transmit respective signals to the control module 60. The autonomous floor cleaning robot 10 is programmed not to pass through the collimated beam so that the virtual wall unit can be used to prevent the robot 10 from entering prohibited areas, e.g., access to a descending staircase, room not to be cleaned. The robot 10 is further programmed to avoid the force field emitted by the virtual wall unit, thereby preventing the robot 10 from overrunning the virtual wall unit during floor cleaning operations.

[0044] The emergency sensing units 54 include 'cliff detector' assemblies 54CD

mounted in the displaceable bumper 23, wheeldrop assemblies 54WD mounted in conjunction with the left and right main wheel subassemblies 42A, 42B and the nose-wheel assembly 24, and current stall sensing units 54CS for the motor $42A_M$, $42B_M$ of each main wheel subassembly 42A, 42B and one for the motors 44, 48 (these two motors are powered via a common circuit in the described embodiment). For the described embodiment of the autonomous floor-cleaning robot 10, four (4) cliff detector assemblies 54CD are mounted in the displaceable bumper 23. Each cliff detector assembly 54CD includes an emitter and detector combination that is operative to detect a predetermined drop in the path of the robot 10, e.g., descending stairs, and transmit a signal to the control module 60. The wheeldrop assemblies 54WD are operative to detect when the corresponding left and right main wheel subassemblies 32A, 32B and/or the nose-wheel assembly 24 enter the extended position, e.g., a contact switch, and to transmit a corresponding signal to the control module 60. The current stall sensing units 54CS are operative to detect a change in the current in the respective motor, which indicates a stalled condition of the motor's corresponding components, and transmit a corresponding signal to the control module 60.

[0045] The control module 60 comprises the control circuitry (see, e.g., control lines 60-4, 60-5, 60-7, and 60-8 in ~~Figure~~ FIG. 1) and microcontroller for the autonomous floor-cleaning robot 10 that controls the movement of the robot 10 during floor cleaning operations and in response to signals generated by the sensor subsystem 50. The control module 60 of the autonomous floor-cleaning robot 10 according to the present

invention is preprogrammed (hardwired, software, firmware, or combinations thereof) to implement three basic operational modes, i.e., movement patterns, that can be categorized as: (1) a "spot-coverage" mode; (2) a "wall/obstacle following" mode; and (3) a "bounce" mode. In addition, the control module 60 is preprogrammed to initiate actions based upon signals received from sensor subsystem 50, where such actions include, but are not limited to, implementing movement patterns (2) and (3), an emergency stop of the robot 10, or issuing an audible alert. Further details regarding the operation of the robot 10 via the control module 60 are described in detail in commonly-owned, co-pending U.S. ~~patent application serial numbers 09/768,773~~Patent No. 6,594,844, filed 24 January 2001, entitled Robot Obstacle Detection System, ~~10/167,851~~U.S. Patent No. 6,809,490, filed 12 June 2002, entitled Method and System for Robot Localization and Confinement, and ~~10/056,804~~U.S. Patent No. 6,690,134, filed 24 January 2002, entitled Method and System for Multi-Mode Coverage for an Autonomous Robot.

[0046] The side brush assembly 70 is operative to entrain macroscopic and microscopic particulates outside the periphery of the housing infrastructure 20 of the autonomous floor-cleaning robot 10 and to direct such particulates towards the self-adjusting cleaning head subsystem 80. This provides the robot 10 with the capability of cleaning surfaces adjacent to baseboards (during the wall-following mode).

[0047] The side brush assembly 70 is mounted in a recess formed in the lower surface

of the right forward quadrant of the chassis 21 (forward of the right main wheel subassembly 42A just behind the right hand end of the displaceable bumper 23). The side brush assembly 70 comprises a shaft 72 having one end rotatably connected to the electric motor 44 for torque transfer, a hub 74 connected to the other end of the shaft 72, a cover plate 75 surrounding the hub 74, a brush means 76 affixed to the hub 74, and a set of bristles 78.

[0048] The cover plate 75 is configured and secured to the chassis 21 to encompass the hub 74 in a manner that prevents the brush means 76 from becoming stuck under the chassis 21 during floor cleaning operations.

[0049] For the embodiment of ~~Figures~~ FIGS. 3A-3C, the brush means 76 comprises opposed brush arms that extend outwardly from the hub 74. These brush arms 76 are formed from a compliant plastic or rubber material in an "L"/hockey stick configuration of constant width. The configuration and composition of the brush arms 76, in combination, allows the brush arms 76 to resiliently deform if an obstacle or obstruction is temporarily encountered during cleaning operations. Concomitantly, the use of opposed brush arms 76 of constant width is a trade-off (versus using a full or partial circular brush configuration) that ensures that the operation of the brush means 76 of the side brush assembly 70 does not adversely impact (i.e., by occlusion) the operation of the adjacent cliff detector subassembly 54CD (the left-most cliff detector subassembly 54CD in ~~Figure~~ FIG. 3B) in the displaceable bumper 23. The brush arms

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76 have sufficient length to extend beyond the outer periphery of the autonomous floor-cleaning robot 10, in particular the displaceable bumper 23 thereof. Such a length allows the autonomous floor-cleaning robot 10 to clean surfaces adjacent to baseboards (during the wall-following mode) without ~~scrapping~~ scraping of the wall/baseboard by the chassis 21 and/or displaceable bumper 23 of the robot 10.

[0050] The set of bristles 78 is set in the outermost free end of each brush arm 76 (similar to a toothbrush configuration) to provide the sweeping capability of the side brush assembly 70. The bristles 78 have a length sufficient to engage the surface being cleaned with the main wheel subassemblies 42A, 42B and the nose-wheel subassembly 24 in the operating position.

[0051] The self-adjusting cleaning head subsystem 80 provides the cleaning mechanisms for the autonomous floor-cleaning robot 10 according to the present invention. The cleaning mechanisms for the preferred embodiment of the self-adjusting cleaning head subsystem 80 include a brush assembly 90 and a vacuum assembly 100.

[0052] For the described embodiment of ~~Figures~~ FIGS. 3A-3C, the brush assembly 90 is a dual-stage brush mechanism, and this dual-stage brush assembly 90 and the vacuum assembly 100 are independent cleaning mechanisms, both structurally and functionally, that have been adapted and designed for use in the robot 10 to minimize the over-all power requirements of the robot 10 while simultaneously providing an

effective cleaning capability. In addition to the cleaning mechanisms described in the preceding paragraph, the self-adjusting cleaning subsystem 80 includes a deck structure 82 pivotally coupled to the chassis 21, an automatic deck adjusting subassembly 84, a removable dust cartridge 86, and one or more bails 88 shielding the dual-stage brush assembly 90.

[0053] The deck 82 is preferably fabricated as a unitary structure from a material such as plastic and includes opposed, spaced-apart sidewalls 82SW formed at the aft end of the deck 82 (one of the sidewalls 82SW comprising a U-shaped structure that houses the motor 46, a brush-assembly well 82W, a lateral aperture 82LA formed in the intermediate portion of the lower deck surface, which defines the opening between the dual-stage brush assembly 90 and the removable dust cartridge 86, and mounting brackets 82MB formed in the forward portion of the upper deck surface for the motor 48.

[0054] The sidewalls 82SW are positioned and configured for mounting the deck 82 in pivotal combination with the chassis 21 by a conventional means, e.g., a revolute joint (see reference characters 82RJ in ~~Figure~~ FIG. 3A). The pivotal axis of the deck 82-chassis 21 combination is perpendicular to the fore-aft axis FA of the autonomous floor-cleaning robot 10 at the aft end of the robot 10 (see reference character 82_{PA} which identifies the pivotal axis in ~~Figure~~ FIG. 3A).

[0055] The mounting brackets 82MB are positioned and configured for mounting the

constant-torque motor 48 at the forward lip of the deck 82. The rotational axis of the mounted motor 48 is perpendicular to the fore-aft diameter of the autonomous floor-cleaning robot 10 (see reference character 48RA which identifies the rotational axis of the motor 48 in ~~Figure~~ FIG. 3A). Extending from the mounted motor 48 is ~~an~~ a shaft 48S for transferring the constant torque to the input side of a stationary, conventional dual-output gearbox 48B (the housing of the dual-output gearbox 48B is fabricated as part of the deck 82).

[0056] The desk adjusting subassembly 84, which is illustrated in further detail in ~~Figures~~ FIGS. 4A-4C, is mounted in combination with the motor 48, the deck 82 and the chassis 21 and operative, in combination with the electric motor 48, to provide the physical mechanism and motive force, respectively, to pivot the deck 82 with respect to the chassis 21 about pivotal axis 82_{PA} whenever the dual-stage brush assembly 90 encounters a situation that results in a predetermined reduction in the rotational speed of the dual-stage brush assembly 90. This situation, which most commonly occurs as the autonomous floor-cleaning robot 10 transitions between a smooth surface such as a floor and a carpeted surface, is characterized as the 'adjustment mode' in the remainder of this description.

[0057] The deck adjusting subassembly 84 for the described embodiment of ~~Figure~~ FIG. 3A includes a motor cage 84MC, a pulley 84P, a pulley cord 84C, an anchor member 84AM, and complementary cage stops 84CS. The motor 48 is non-rotatably

secured within the motor cage 84MC and the motor cage 84MC is mounted in rotatable combination between the mounting brackets 82MB. The pulley 84P is fixedly secured to the motor cage 84MC on the opposite side of the interior mounting bracket 82MB in such a manner that the shaft 48S of the motor 48 passes freely through the center of the pulley 84P. The anchor member 84AM is fixedly secured to the top surface of the chassis 21 in alignment with the pulley 84P.

[0058] One end of the pulley cord 84C is secured to the anchor member 84AM and the other end is secured to the pulley 84P in such a manner, that with the deck 82 in the 'down' or non-pivoted position, the pulley cord 84C is tensioned. One of the cage stops 84CS is affixed to the motor cage 84MC; the complementary cage stop 84CS is affixed to the deck 82. The complementary cage stops 84CS are in abutting engagement when the deck 82 is in the 'down' position during normal cleaning operations due to the weight of the self-adjusting cleaning head subsystem 80.

[0059] During normal cleaning operations, the torque generated by the motor 48 is transferred to the dual-stage brush subassembly 90 by means of the shaft 48S through the dual-output gearbox 48B. The motor cage assembly is prevented from rotating by the counter-acting torque generated by the pulley cord 84C on the pulley 84P. When the resistance encountered by the rotating brushes changes, the deck height will be adjusted to compensate for it. If for example, the brush torque increases as the machine rolls from a smooth floor onto a carpet, the torque output of the motor 48 will

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increase. In response to this, the output torque of the motor 48 will increase. This increased torque overcomes the counter-acting torque exerted by the pulley cord 84C on the pulley 84P. This causes the pulley 84P to rotate, effectively pulling itself up the pulley cord 84C. This in turn, pivots the deck about the pivot axis, raising the brushes, reducing the friction between the brushes and the floor, and reducing the torque required by the dual-stage brush subassembly 90. This continues until the torque between the motor 48 and the counter-acting torque generated by the pulley cord 84C on the pulley 84P are once again in equilibrium and a new deck height is established.

[0060] In other words, during the adjustment mode, the foregoing torque transfer mechanism is interrupted since the shaft 48S is essentially stationary. This condition causes the motor 48 to effectively rotate about the shaft 48S. Since the motor 48 is non-rotatably secured to the motor cage 84MC, the motor cage 84MC, and concomitantly, the pulley 84P, rotate with respect to the mounting brackets 82MB. The rotational motion imparted to the pulley 84P causes the pulley 84P to 'climb up' the pulley cord 84PC towards the anchor member 84AM. Since the motor cage 84MC is effectively mounted to the forward lip of the deck 82 by means of the mounting brackets 82MB, this movement of the pulley 84P causes the deck 82 to pivot about its pivot axis 82PA to an "up" position (see ~~Figure~~ FIG. 4C). This pivoting motion causes the forward portion of the deck 82 to move away from surface over which the autonomous floor-cleaning robot is traversing.

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[0061] Such pivotal movement, in turn, effectively moves the dual-stage brush assembly 90 away from the surface it was in contact with, thereby permitting the dual-stage brush assembly 90 to speed up and resume a steady-state rotational speed (consistent with the constant torque transferred from the motor 48). At this juncture (when the dual-stage brush assembly 90 reaches its steady-state rotational speed), the weight of the forward edge of the deck 82 (primarily the motor 48), gravitationally biases the deck 82 to pivot back to the 'down' or normal state, i.e., planar with the bottom surface of the chassis 21, wherein the complementary cage stops 84CS are in abutting engagement.

[0062] While the deck adjusting subassembly 84 described in the preceding paragraphs is the preferred pivoting mechanism for the autonomous floor-cleaning robot 10 according to the present invention, one skilled in the art will appreciate that other mechanisms can be employed to utilize the torque developed by the motor 48 to induce a pivotal movement of the deck 82 in the adjustment mode. For example, the deck adjusting subassembly could comprise a spring-loaded clutch mechanism such as that shown in ~~Figure~~ FIG. 4C (identified by reference characters SLCM) to pivot the deck 82 to an "up" position during the adjustment mode, or a centrifugal clutch mechanism or a torque-limiting clutch mechanism. In other embodiments, motor torque can be used to adjust the height of the cleaning head by replacing the pulley with a cam and a constant force spring or by replacing the pulley with a rack and pinion, using either a spring or the weight of the cleaning head to generate the counter-acting torque.

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[0063] The removable dust cartridge 86 provides temporary storage for macroscopic and microscopic particulates swept up by operation of the dual-stage brush assembly 90 and microscopic particulates drawn in by the operation of the vacuum assembly 100. The removable dust cartridge 86 is configured as a dual chambered structure, having a first storage chamber 86SC1 for the macroscopic and microscopic particulates swept up by the dual-stage brush assembly 90 and a second storage chamber 86SC2 for the microscopic particulates drawn in by the vacuum assembly 100. The removable dust cartridge 86 is further configured to be inserted in combination with the deck 82 so that a segment of the removable dust cartridge 86 defines part of the rear external sidewall structure of the autonomous floor-cleaning robot 10.

[0064] As illustrated in ~~Figures~~ FIGS. 5A-5B, the removable dust cartridge 86 comprises a floor member 86FM and a ceiling member 86CM joined together by opposed sidewall members 86SW. The floor member 86FM and the ceiling member 86CM extend beyond the sidewall members 86SW to define an open end 86OE, and the free end of the floor member 86FM is slightly angled and includes a plurality of baffled projections 86AJ to remove debris entrained in the brush mechanisms of the dual-stage brush assembly 90, and to facilitate insertion of the removable dust cartridge 86 in combination with the deck 82 as well as retention of particulates swept into the removable dust cartridge 86. A backwall member 86BW is mounted between the floor member 86FM and the ceiling member 86CM distal the open end 86OE in abutting

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engagement with the sidewall members 86SW. The backwall member 86BW has ~~an~~ a baffled configuration for the purpose of deflecting particulates angularly therefrom to prevent particulates swept up by the dual-stage brush assembly 90 from ricocheting back into the brush assembly 90. The floor member 86FM, the ceiling member 86CM, the sidewall members 86SW, and the backwall member 86BW in combination define the first storage chamber 86SC1.

[0065] The removable dust cartridge 86 further comprises a curved arcuate member 86CAM that defines the rear external sidewall structure of the autonomous floor-cleaning robot 10. The curved arcuate member 86CAM engages the ceiling member 86CM, the floor member 86F and the sidewall members 86SW. There is a gap formed between the curved arcuate member 86CAM and one sidewall member 86SW that defines a vacuum inlet 86VI for the removable dust cartridge 86. A replaceable filter 86RF is configured for snap fit insertion in combination with the floor member 86FM. The replaceable filter 86RF, the curved arcuate member 86CAM, and the backwall member 86BW in combination define the second storage chamber 86SC1.

[0066] The removable dust cartridge 86 is configured to be inserted between the opposed spaced-apart sidewalls 82SW of the deck 82 so that the open end of the removable dust cartridge 86 aligns with the lateral aperture 82LA formed in the deck 82. Mounted to the outer surface of the ceiling member 86CM is a latch member 86LM, which is operative to engage a complementary shoulder formed in the upper surface of

the deck 82 to latch the removable dust cartridge 86 in integrated combination with the deck 82.

[0067] The bail 88 comprises one or more narrow gauge wire structures that overlay the dual-stage brush assembly 90. For the described embodiment, the bail 88 comprises a continuous narrow gauge wire structure formed in a castellated configuration, i.e., alternating open-sided rectangles. Alternatively, the bail 88 may comprise a plurality of single, open-sided rectangles formed from narrow gauge wire. The bail 88 is designed and configured for press fit insertion into complementary retaining grooves 88A, 88B, respectively, formed in the deck 82 immediately adjacent both sides of the dual-stage brush assembly 90. The bail 88 is operative to shield the dual-stage brush assembly 90 from larger external objects such as carpet tassels, tufted fabric, rug edges, during cleaning operations, i.e., the bail 88 deflects such objects away from the dual-stage brush assembly 90, thereby preventing such objects from becoming entangled in the brush mechanisms.

[0068] The dual-stage brush assembly 90 for the described embodiment of ~~Figure~~ FIG. 3A comprises a flapper brush 92 and a main brush 94 that are generally illustrated in ~~Figure~~ FIG. 6. Structurally, the flapper brush 92 and the main brush 94 are asymmetric with respect to one another, with the main brush 94 having an O.D. greater than the O.D. of the flapper brush 92. The flapper brush 92 and the main brush 94 are mounted in the deck 82 recess, as described below in further detail, to have minimal

spacing between the sweeping peripheries defined by their respective rotating elements. Functionally, the flapper brush 92 and the main brush 94 counter-rotate with respect to one another, with the flapper brush 92 rotating in a first direction that causes macroscopic particulates to be directed into the removable dust cartridge 86 and the main brush 94 rotating in a second direction, which is opposite to the forward movement of the autonomous floor-cleaning robot 10, that causes macroscopic and microscopic particulates to be directed into the removable dust cartridge 86. In addition, this rotational motion of the main brush 94 has the secondary effect of directing macroscopic and microscopic particulates towards the pick-up zone of the vacuum assembly 100 such that particulates that are not swept up by the dual-stage brush assembly 90 can be subsequently drawn up (ingested) by the vacuum assembly 100 due to movement of the autonomous floor-cleaning robot 10.

[0069] The flapper brush 92 comprises a central member 92CM having first and second ends. The first and second ends are designed and configured to mount the flapper brush 92 in rotatable combination with the deck 82 and a first output port $48B_{O1}$ of the dual output gearbox 48B, respectively, such that rotation of the flapper brush 92 is provided by the torque transferred from the electric motor 48 (the gearbox 48B is configured so that the rotational speed of the flapper brush 92 is relative to the speed of the autonomous floor-cleaning robot 10 -- the described embodiment of the robot 10 has a top speed of approximately 0.9 ft/sec). In other embodiments, the flapper brush 92 rotates substantially faster than traverse speed either in relation or not in relation to

the transverse speed. Axle guards 92AG having a beveled configuration are integrally formed adjacent the first and second ends of the central member 92CM for the purpose of forcing hair and other similar matter away from the flapper brush 92 to prevent such matter from becoming entangled with the ends of the central member 92CM and stalling the dual-stage brush assembly 90.

[0070] The brushing element of the flapper brush 92 comprises a plurality of segmented cleaning strips 92CS formed from a compliant plastic material secured to and extending along the central member 92CM between the internal ends of the axle guards 92AG (for the illustrated embodiment, a sleeve, configured to fit over and be secured to the central member 92CM, has integral segmented strips extending outwardly therefrom). It was determined that arranging these segmented cleaning strips 92CS in a herringbone or chevron pattern provided the optimal cleaning utility (capability and noise level) for the dual-stage brush subassembly 90 of the autonomous floor-cleaning robot 10 according to the present invention. Arranging the segmented cleaning strips 92CS in the herringbone/chevron pattern caused macroscopic particulate matter captured by the strips 92CS to be circulated to the center of the flapper brush 92 due to the rotation thereof. It was determined that cleaning strips arranged in a linear/straight pattern produced an irritating flapping noise as the brush was rotated. Cleaning strips arranged in a spiral pattern circulated captured macroscopic particulates towards the ends of brush, which resulted in particulates escaping the sweeping action provided by the rotating brush.

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[0071] For the described embodiment, six (6) segmented cleaning strips 92CS were equidistantly spaced circumferentially about the central member 92CM in the herringbone/chevron pattern. One skilled in the art will appreciate that more or less segmented cleaning strips 92CS can be employed in the flapper brush 90 without departing from the scope of the present invention. Each of the cleaning strips 92S is segmented at prescribed intervals, such segmentation intervals depending upon the configuration (spacing) between the wire(s) forming the bail 88. The embodiment of the bail 88 described above resulted in each cleaning strip 92CS of the described embodiment of the flapper brush 92 having five (5) segments.

[0072] The main brush 94 comprises a central member 94CM (for the described embodiment the central member 94CM is a round metal member having a spiral configuration) having first and second straight ends (i.e., aligned along the centerline of the spiral). Integrated in combination with the central member 94CM is a segmented protective member 94PM. Each segment of the protective member 94PM includes opposed, spaced-apart, semi-circular end caps 94EC having integral ribs 94IR extending therebetween. For the described embodiment, each pair of semi-circular end caps EC has two integral ribs extending therebetween. The protective member 94PM is assembled by joining complementary semi-circular end caps 94EC by any conventional means, e.g., screws, such that assembled complementary end caps 94EC have a circular configuration.

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[0073] The protective member 94PM is integrated in combination with the central member 94CM so that the central member 94CM is disposed along the centerline of the protective member 94PM, and with the first end of the central member 94CM terminating in one circular end cap 94EC and the second end of the central member 94CM extending through the other circular end cap 94EC. The second end of the central member 94CM is mounted in rotatable combination with the deck 82 and the circular end cap 94EC associated with the first end of the central member 94CM is designed and configured for mounting in rotatable combination with the second output port $48B_{O2}$ of the gearbox 48B such that the rotation of the main brush 94 is provided by torque transferred from the electric motor 48 via the gearbox 48B.

[0074] Bristles 94B are set in combination with the central member 94CM to extend between the integral ribs 94IR of the protective member 94PM and beyond the O.D. established by the circular end caps 94EC. The integral ribs 94IR are configured and operative to impede the ingestion of matter such as rug tassels and tufted fabric by the main brush 94.

[0075] The bristles 94B of the main brush 94 can be fabricated from any of the materials conventionally used to form bristles for surface cleaning operations. The bristles 94B of the main brush 94 provide an enhanced sweeping capability by being specially configured to provide a “flicking” action with respect to particulates

encountered during cleaning operations conducted by the autonomous floor-cleaning robot 10 according to the present invention. For the described embodiment, each bristle 94B has a diameter of approximately 0.010 inches, a length of approximately 0.90 inches, and a free end having a rounded configuration. It has been determined that this configuration provides the optimal flicking action. While bristles having diameters exceeding approximately 0.014 inches would have a longer wear life, such bristles are too stiff to provide a suitable flicking action in the context of the dual-stage brush assembly 90 of the present invention. Bristle diameters that are much less than 0.010 inches are subject to premature wear out of the free ends of such bristles, which would cause a degradation in the sweeping capability of the main brush. In a preferred embodiment, the main brush is set slightly lower than the flapper brush to ensure that the flapper does not contact hard surface floors.

[0076] The vacuum assembly 100 is independently powered by means of the electric motor 46. Operation of the vacuum assembly 100 independently of the self-adjustable brush assembly 90 allows a higher vacuum force to be generated and maintained using a battery-power source than would be possible if the vacuum assembly were operated in dependence with the brush system. In other embodiments, the main brush motor can drive the vacuum. Independent operation is used herein in the context that the inlet for the vacuum assembly 100 is an independent structural unit having dimensions that are not dependent upon the “sweep area” defined by the dual-stage brush assembly 90.

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[0077] The vacuum assembly 100, which is located immediately aft of the dual-stage brush assembly 90, i.e., a trailing edge vacuum, is orientated so that the vacuum inlet is immediately adjacent the main brush 94 of the dual-stage brush assembly 90 and forward facing, thereby enhancing the ingesting or vacuuming effectiveness of the vacuum assembly 100. With reference to ~~Figures~~ FIGS. 7A, 7B, the vacuum assembly 100 comprises a vacuum inlet 102, a vacuum compartment 104, a compartment cover 106, a vacuum chamber 108, an impeller 110, and vacuum channel 112. The vacuum inlet 102 comprises first and second blades 102A, 102B formed of a semi-rigid/compliant plastic or elastomeric material, which are configured and arranged to provide a vacuum inlet 102 of constant size (lateral width and gap-see discussion below), thereby ensuring that the vacuum assembly 100 provides a constant air inflow velocity, which for the described embodiment is approximately 4m/sec.

[0078] The first blade 102A has a generally rectangular configuration, with a width (lateral) dimension such that the opposed ends of the first blade 102A extend beyond the lateral dimension of the dual-stage brush assembly 90. One lateral edge of the first blade 102A is attached to the lower surface of the deck 82 immediately adjacent to but spaced apart from, the main brush 94 (a lateral ridge formed in the deck 82 provides the separation therebetween, in addition to embodying retaining grooves for the bail 88 as described above) in an orientation that is substantially symmetrical to the fore-aft diameter of the autonomous floor-cleaning robot 10. This lateral edge also extends into the vacuum compartment 104 where it is in sealed engagement with the forward edge

of the compartment 104. The first blade 102A is angled forwardly with respect to the bottom surface of the deck 82 and has length such that the free end $102A_{FE}$ of the first blade 102A just grazes the surface to be cleaned.

[0079] The free end $102A_{FE}$ has a castellated configuration that prevents the vacuum inlet 102 from pushing particulates during cleaning operations. Aligned with the castellated segments 102CS of the free end $102A_{FE}$, which are spaced along the width of the first blade 102A, are protrusions 102P having a predetermined height. For the prescribed embodiment, the height of such protrusions 102P is approximately 2mm. The predetermined height of the protrusions 102P defines the "gap" between the first and second blades 102A, 102B.

[0080] The second blade 102B has a planar, unitary configuration that is complementary to the first blade 102A in width and length. The second blade 102B, however, does not have a castellated free end; instead, the free end of the second blade 102B is a straight edge. The second blade 102B is joined in sealed combination with the forward edge of the compartment cover 106 and angled with respect thereto so as to be substantially parallel to the first blade 102A. When the compartment cover 106 is fitted in position to the vacuum compartment 104, the planar surface of the second blade 102B abuts against the plurality of protrusions 102P of the first blade 102A to form the "gap" between the first and second blades 102A, 102B.

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[0081] The vacuum compartment 104, which is in fluid communication with the vacuum inlet 102, comprises a recess formed in the lower surface of the deck 82. This recess includes a compartment floor 104F and a contiguous compartment wall 104CW that delineates the perimeter of the vacuum compartment 104. An aperture 104A is formed through the floor 104, offset to one side of the floor 104F. Due to the location of this aperture 104A, offset from the geometric center of the compartment floor 104F, it is prudent to form several guide ribs 104GR that project upwardly from the compartment floor 104F. These guide ribs 104GR are operative to distribute air inflowing through the gap between the first and second blades 102A, 102B across the compartment floor 104 so that a constant air inflow is created and maintained over the entire gap, i.e., the vacuum inlet 102 has a substantially constant 'negative' pressure (with respect to atmospheric pressure).

[0082] The compartment cover 106 has a configuration that is complementary to the shape of the perimeter of the vacuum compartment 104. The cover 106 is further configured to be press fitted in sealed combination with the contiguous compartment wall 104CW wherein the vacuum compartment 104 and the vacuum cover 106 in combination define the vacuum chamber 108 of the vacuum assembly 100. The compartment cover 106 can be removed to clean any debris from the vacuum channel 112. The compartment cover 106 is preferable fabricated from a clear or smoky plastic material to allow the user to visually determine when clogging occurs.

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[0083] The impeller 110 is mounted in combination with the deck 82 in such a manner that the inlet of the impeller 110 is positioned within the aperture 104A. The impeller 110 is operatively connected to the electric motor 46 so that torque is transferred from the motor 46 to the impeller 110 to cause rotation thereof at a constant speed to withdraw air from the vacuum chamber 108. The outlet of the impeller 110 is integrated in sealed combination with one end of the vacuum channel 112.

[0084] The vacuum channel 112 is a hollow structural member that is either formed as a separate structure and mounted to the deck 82 or formed as an integral part of the deck 82. The other end of the vacuum channel 110 is integrated in sealed combination with the vacuum inlet 86VI of the removable dust cartridge 86. The outer surface of the vacuum channel 112 is complementary in configuration to the external shape of curved arcuate member 86CAM of the removable dust cartridge 86.

[0085] A variety of modifications and variations of the present invention are possible in light of the above teachings. For example, the preferred embodiment described above included a cleaning head subsystem 80 that was self-adjusting, i.e., the deck 82 was automatically pivotable with respect to the chassis 21 during the adjustment mode in response to a predetermined increase in brush torque of the dual-stage brush assembly 90. It will be appreciated that another embodiment of the autonomous floor-cleaning robot according to the present invention is as described hereinabove, with the exception that the cleaning head subsystem is non-adjustable, i.e., the deck is non-pivotable with

respect to the chassis. This embodiment would not include the deck adjusting subassembly described above, i.e., the deck would be rigidly secured to the chassis. Alternatively, the deck could be fabricated as an integral part of the chassis – in which case the deck would be a virtual configuration, i.e., a construct to simplify the identification of components comprising the cleaning head subsystem and their integration in combination with the robot.

[0086] It is therefore to be understood that, within the scope of the appended claims, the present invention may be practiced other than as specifically described herein.

Substitute Specification

AUTONOMOUS FLOOR-CLEANING ROBOT

Cross-Reference to Related Applications

[0001] This is a continuation of U.S. Patent No. 7,571,511 filed April 5, 2004, which is a continuation of U.S. Patent No. 6,883,201 filed December 16, 2002 and which claims priority to U.S. Provisional Patent Application No. 60/345,764 filed January 3, 2002, the disclosures of which are incorporated herein by reference in their entireties. The subject matter of this application is also related to commonly-owned U.S. Patent No. 6,615,439 filed January 24, 2001, U.S. Patent No. 6,809,490 filed June 12, 2002, and U.S. Patent No. 6,690,134 filed January 24, 2002.

Background of the Invention

[0002] (1) Field of the Invention

[0003] The present invention relates to cleaning devices, and more particularly, to an autonomous floor-cleaning robot that comprises a self-adjustable cleaning head subsystem that includes a dual-stage brush assembly having counter-rotating, asymmetric brushes and an adjacent, but independent, vacuum assembly such that the cleaning capability and efficiency of the self-adjustable cleaning head subsystem is optimized while concomitantly minimizing the power requirements thereof. The

autonomous floor-cleaning robot further includes a side brush assembly for directing particulates outside the envelope of the robot into the self-adjustable cleaning head subsystem.

[0004] (2) Description of Related Art

[0005] Autonomous robot cleaning devices are known in the art. For example, U.S. Patent Nos. 5,940,927 and 5,781,960 disclose an Autonomous Surface Cleaning Apparatus and a Nozzle Arrangement for a Self-Guiding Vacuum Cleaner. One of the primary requirements for an autonomous cleaning device is a self-contained power supply - the utility of an autonomous cleaning device would be severely degraded, if not outright eliminated, if such an autonomous cleaning device utilized a power cord to tap into an external power source.

[0006] And, while there have been distinct improvements in the energizing capabilities of self-contained power supplies such as batteries, today's self-contained power supplies are still time-limited in providing power. Cleaning mechanisms for cleaning devices such as brush assemblies and vacuum assemblies typically require large power loads to provide effective cleaning capability. This is particularly true where brush assemblies and vacuum assemblies are configured as combinations, since the brush assembly and/or the vacuum assembly of such combinations typically have not been designed or configured for synergic operation.

[0007] A need exists to provide an autonomous cleaning device that has been designed and configured to optimize the cleaning capability and efficiency of its cleaning mechanisms for synergic operation while concomitantly minimizing or reducing the power requirements of such cleaning mechanisms.

Summary of the Invention

[0008] The present invention provides a cleaning device that is operable without human intervention to clean designated areas.

[0009] The present invention provides an autonomous cleaning device that is designed and configured to optimize the cleaning capability and efficiency of its cleaning mechanisms for synergic operations while concomitantly minimizing the power requirements of such mechanisms.

[0010] The present teachings provide an autonomous floor-cleaning robot comprising a housing infrastructure including a chassis, a power subsystem; for providing the energy to power the autonomous floor-cleaning robot, a motive subsystem operative to propel the autonomous floor-cleaning robot for cleaning operations, a control module operative to control the autonomous floor-cleaning robot to effect cleaning operations, and a self-adjusting cleaning head subsystem that includes a deck mounted in pivotal

combination with the chassis, a brush assembly mounted in combination with the deck and powered by the motive subsystem to sweep up particulates during cleaning operations, a vacuum assembly disposed in combination with the deck and powered by the motive subsystem to ingest particulates during cleaning operations, and a deck height adjusting subassembly mounted in combination with the motive subsystem for the brush assembly, the deck, and the chassis that is automatically operative in response to a change in torque in said brush assembly to pivot the deck with respect to said chassis and thereby adjust the height of the brushes from the floor. The autonomous floor-cleaning robot also includes a side brush assembly mounted in combination with the chassis and powered by the motive subsystem to entrain particulates outside the periphery of the housing infrastructure and to direct such particulates towards the self-adjusting cleaning head subsystem.

Brief Description of the Drawings

[0011] A more complete understanding of the present invention and the attendant features and advantages thereof may be had by reference to the following detailed description of the invention when considered in conjunction with the accompanying drawings wherein:

[0012] FIG. 1 is a schematic representation of an autonomous floor-cleaning robot according to the present invention.

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[0013] FIG. 2 is a perspective view of one embodiment of an autonomous floor-cleaning robot according to the present invention.

[0014] FIG. 2A is a bottom plan view of the autonomous floor-cleaning robot of FIG. 2.

[0015] FIG. 3A is a top, partially-sectioned plan view, with cover removed, of another embodiment of an autonomous floor-cleaning robot according to the present invention.

[0016] FIG. 3B is a bottom, partially-section plan view of the autonomous floor-cleaning robot embodiment of FIG. 3A.

[0017] FIG. 3C is a side, partially sectioned plan view of the autonomous floor-cleaning robot embodiment of FIG. 3A.

[0018] FIG. 4A is a top plan view of the deck and chassis of the autonomous floor-cleaning robot embodiment of FIG. 3A.

[0019] FIG. 4B is a cross-sectional view of FIG. 4A taken along line B-B thereof.

[0020] FIG. 4C is a perspective view of the deck-adjusting subassembly of autonomous floor-cleaning robot embodiment of FIG. 3A.

[0021] FIG. 5A is a first exploded perspective view of a dust cartridge for the autonomous floor-cleaning robot embodiment of FIG. 3A.

[0022] FIG. 5B is a second exploded perspective view of the dust cartridge of FIG. 5A.

[0023] FIG. 6 is a perspective view of a dual-stage brush assembly including a flapper brush and a main brush for the autonomous floor-cleaning robot embodiment of FIG. 3A.

[0024] FIG. 7A is a perspective view illustrating the blades and vacuum compartment for the autonomous floor cleaning robot embodiment of FIG. 3A.

[0025] FIG. 7B is a partial perspective exploded view of the autonomous floor-cleaning robot embodiment of FIG. 7A.

Detailed Description of the Invention

[0026] Referring now to the drawings where like reference numerals identify corresponding or similar elements throughout the several views, FIG. 1 is a schematic representation of an autonomous floor-cleaning robot 10 according to the present invention. The robot 10 comprises a housing infrastructure 20, a power subsystem 30,

a motive subsystem 40, a sensor subsystem 50, a control module 60, a side brush assembly 70, and a self-adjusting cleaning head subsystem 80. The power subsystem 30, the motive subsystem 40, the sensor subsystem 50, the control module 60, the side brush assembly 70, and the self-adjusting cleaning head subsystem 80 are integrated in combination with the housing infrastructure 20 of the robot 10 as described in further detail in the following paragraphs.

[0027] In the following description of the autonomous floor-cleaning robot 10, use of the terminology "forward/fore" refers to the primary direction of motion of the autonomous floor-cleaning robot 10, and the terminology fore-aft axis (see reference characters "FA" in FIGS. 3A, 3B) defines the forward direction of motion (indicated by arrowhead of the fore-aft axis FA), which is coincident with the fore-aft diameter of the robot 10.

[0028] Referring to FIGS. 2, 2A, and 3A-3C, the housing infrastructure 20 of the robot 10 comprises a chassis 21, a cover 22, a displaceable bumper 23, a nose wheel subassembly 24, and a carrying handle 25. The chassis 21 is preferably molded from a material such as plastic as a unitary element that includes a plurality of preformed wells, recesses, and structural members for, inter alia, mounting or integrating elements of the power subsystem 30, the motive subsystem 40, the sensor subsystem 50, the side brush assembly 70, and the self-adjusting cleaning head subsystem 80 in combination with the chassis 21. The cover 22 is preferably molded from a material such as plastic

as a unitary element that is complementary in configuration with the chassis 21 and provides protection of and access to elements/components mounted to the chassis 21 and/or comprising the self-adjusting cleaning head subsystem 80. The chassis 21 and the cover 22 are detachably integrated in combination by any suitable means, e.g., screws, and in combination, the chassis 21 and cover 22 form a structural envelope of minimal height having a generally cylindrical configuration that is generally symmetrical along the fore-aft axis FA.

[0029] The displaceable bumper 23, which has a generally arcuate configuration, is mounted in movable combination at the forward portion of the chassis 21 to extend outwardly therefrom, i.e., the normal operating position. The mounting configuration of the displaceable bumper is such that the bumper 23 is displaced towards the chassis 21 (from the normal operating position) whenever the bumper 23 encounters a stationary object or obstacle of predetermined mass, i.e., the displaced position, and returns to the normal operating position when contact with the stationary object or obstacle is terminated (due to operation of the control module 60 which, in response to any such displacement of the bumper 23, implements a “bounce” mode that causes the robot 10 to evade the stationary object or obstacle and continue its cleaning routine, e.g., initiate a random -- or weighted-random -- turn to resume forward movement in a different direction). The mounting configuration of the displaceable bumper 23 comprises a pair of rotatable support members 23RSM, which are operative to facilitate the movement of the bumper 23 with respect to the chassis 21.

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[0030] The pair of rotatable support members 23RSM are symmetrically mounted about the fore-aft axis FA of the autonomous floor-cleaning robot 10 proximal the center of the displaceable bumper 23 in a V-configuration. One end of each support member 23RSM is rotatably mounted to the chassis 21 by conventional means, e.g., pins/dowel and sleeve arrangement, and the other end of each support member 23RSM is likewise rotatably mounted to the displaceable bumper 23 by similar conventional means. A biasing spring (not shown) is disposed in combination with each rotatable support member 23RSM and is operative to provide the biasing force necessary to return the displaceable bumper 23 (through rotational movement of the support members 23RSM) to the normal operating position whenever contact with a stationary object or obstacle is terminated.

[0031] The embodiment described herein includes a pair of bumper arms 23BA that are symmetrically mounted in parallel about the fore-aft diameter FA of the autonomous floor-cleaning robot 10 distal the center of the displaceable bumper 23. These bumper arms 23BA do not per se provide structural support for the displaceable bumper 23, but rather are a part of the sensor subsystem 50 that is operative to determine the location of a stationary object or obstacle encountered via the bumper 23. One end of each bumper arm 23BA is rigidly secured to the displaceable bumper 23 and the other end of each bumper arm 23BA is mounted in combination with the chassis 21 in a manner, e.g., a slot arrangement such that, during an encounter with a stationary object or

obstacle, one or both bumper arms 23BA are linearly displaceable with respect to the chassis 21 to activate an associated sensor, e.g., IR break beam sensor, mechanical switch, capacitive sensor, which provides a corresponding signal to the control module 60 to implement the "bounce" mode. Further details regarding the operation of this aspect of the sensor subsystem 50, as well as alternative embodiments of sensors having utility in detecting contact with or proximity to stationary objects or obstacles can be found in commonly-owned, co-pending U.S. Patent No. 6,690,134, filed 24 January 2002, entitled Method and System for Multi-Mode Coverage for an Autonomous Robot.

[0032] The nose-wheel subassembly 24 comprises a wheel 24W rotatably mounted in combination with a clevis-shaped arm member 24CM that includes a mounting shaft. The clevis-shaped arm mounting shaft 24CM is disposed in a well in the chassis 21 at the forward end thereof on the fore-aft diameter of the autonomous floor-cleaning robot 10. A biasing spring 24BS (hidden behind a leg of the clevis-shaped arm member 24CM in FIGS. 3C) is disposed in combination with the clevis-shaped arm mounting shaft 24CM and operative to bias the nose-wheel subassembly 24 to an 'extended' position whenever the nose-wheel subassembly 24 loses contact with the surface to be cleaned. During cleaning operations, the weight of the autonomous floor-cleaning robot 10 is sufficient to overcome the force exerted by the biasing spring 24BS to bias the nose-wheel subassembly 24 to a partially retracted or operating position wherein the wheel rotates freely over the surface to be cleaned. Opposed triangular or conical wings 24TW extend outwardly from the ends of the clevis-shaped arm member to

prevent the side of the wheel from catching on low obstacle during turning movements of the autonomous floor-cleaning robot 10. The wings 24TW act as ramps in sliding over bumps as the robot turns.

[0033] Ends 25E of the carrying handle 25 are secured in pivotal combination with the cover 22 at the forward end thereof, centered about the fore-aft axis FA of the autonomous floor-cleaning robot 10. With the autonomous floor-cleaning robot 10 resting on or moving over a surface to be cleaned, the carrying handle 25 lies approximately flush with the surface of the cover 22 (the weight of the carrying handle 25, in conjunction with arrangement of the handle-cover pivot configuration, is sufficient to automatically return the carrying handle 25 to this flush position due to gravitational effects). When the autonomous floor-cleaning robot 10 is picked up by means of the carrying handle 25, the aft end of the autonomous floor-cleaning robot 10 lies below the forward end of the autonomous floor-cleaning robot 10 so that particulate debris is not dislodged from the self-adjusting cleaning head subsystem 80.

[0034] The power subsystem 30 of the described embodiment provides the energy to power individual elements/components of the motive subsystem 40, the sensor subsystem 50, the side brush assembly 70, and the self-adjusting cleaning head subsystem 80 and the circuits and components of the control module 60 via associated circuitry 32-4, 32-5, 32-7, 32-8, and 32-6, respectively (see FIGS. 1) during cleaning operations. The power subsystem 30 for the described embodiment of the autonomous

floor-cleaning robot 10 comprises a rechargeable battery pack 34 such as a NiMH battery pack. The rechargeable battery pack 34 is mounted in a well formed in the chassis 21 (sized specifically for mounting/retention of the battery pack 34) and retained therein by any conventional means, e.g., spring latches (not shown). The battery well is covered by a lid 34L secured to the chassis 21 by conventional means such as screws. Affixed to the lid 34L are friction pads 36 that facilitate stopping of the autonomous floor-cleaning robot 10 during automatic shutdown. The friction pads 36 aid in stopping the robot upon the robot's attempting to drive over a cliff. The rechargeable battery pack 34 is configured to provide sufficient power to run the autonomous floor-cleaning robot 10 for a period of sixty (60) to ninety (90) minutes on a full charge while meeting the power requirements of the elements/components comprising motive subsystem 40, the sensor subsystem 50, the side brush assembly 70, the self-adjusting cleaning head subsystem 80, and the circuits and components of the control module 60.

[0035] The motive subsystem 40 comprises the independent means that: (1) propel the autonomous floor-cleaning robot 10 for cleaning operations; (2) operate the side brush assembly 70; and (3) operate the self-adjusting cleaning head subsystem 80 during such cleaning operations. Such independent means includes right and left main wheel subassemblies 42A, 42B, each subassembly 42A, 42B having its own independently-operated motor $42A_M$, $42B_M$, respectively, an independent electric motor 44 for the side brush assembly 70, and two independent electric motors 46, 48 for the self-adjusting brush subsystem 80, one motor 46 for the vacuum assembly and one

motor 48 for the dual-stage brush assembly.

[0036] The right and left main wheel subassemblies 42A, 42B are independently mounted in wells of the chassis 21 formed at opposed ends of the transverse diameter of the chassis 21 (the transverse diameter is perpendicular to the fore-aft axis FA of the robot 10). Mounting at this location provides the autonomous floor-cleaning robot 10 with an enhanced turning capability, since the main wheel subassemblies 42A, 42B motor can be independently operated to effect a wide range of turning maneuvers, e.g., sharp turns, gradual turns, turns in place.

[0037] Each main wheel subassembly 42A, 42B comprises a wheel $42A_W$, $42B_W$ rotatably mounted in combination with a clevis-shaped arm member $42A_{CM}$, $42B_{CM}$. Each clevis-shaped arm member $42A_{CM}$, $42B_{CM}$ is pivotally mounted to the chassis 21 aft of the wheel axis of rotation (see FIGS. 3C which illustrates the wheel axis of rotation $42A_{AR}$; the wheel axis of rotation for wheel subassembly 42B, which is not shown, is identical), i.e., independently suspended. The aft pivot axis $42A_{PA}$, $42B_{PA}$ (see FIG. 3A) of the main wheel subassemblies 42A, 42B facilitates the mobility of the autonomous floor-cleaning robot 10, i.e., pivotal movement of the subassemblies 42A, 42B through a predetermined arc. The motor $42A_M$, $42B_M$ associated with each main wheel subassembly 42A, 42B is mounted to the aft end of the clevis-shaped arm member $42A_{CM}$, $42B_{CM}$. One end of a tension spring $42B_{TS}$ (the tension spring for the right wheel subassembly 42A is not illustrated, but is identical to the tension spring $42B_{TS}$ of the left

wheel subassembly 42A) is attached to the aft portion of the clevis-shaped arm member $42B_{CM}$ and the other end of the tension spring $42B_{TS}$ is attached to the chassis 21 forward of the respective wheel $42A_W$, $42B_W$.

[0038] Each tension spring is operative to rotatably bias the respective main wheel subassembly 42A, 42B (via pivotal movement of the corresponding clevis-shaped arm member $42A_{CM}$, $42B_{CM}$ through the predetermined arc) to an 'extended' position when the autonomous floor-cleaning robot 10 is removed from the floor (in this 'extended' position the wheel axis of rotation lies below the bottom plane of the chassis 21). With the autonomous floor-cleaning robot 10 resting on or moving over a surface to be cleaned, the weight of autonomous floor-cleaning robot 10 gravitationally biases each main wheel subassembly 42A, 42B into a retracted or operating position wherein axis of rotation of the wheels are approximately coplanar with bottom plane of the chassis 21. The motors $42A_M$, $42B_M$ of the main wheel subassemblies 42A, 42B are operative to drive the main wheels: (1) at the same speed in the same direction of rotation to propel the autonomous floor-cleaning robot 10 in a straight line, either forward or aft; (2) at different speeds (including the situation wherein one wheel is operated at zero speed) to effect turning patterns for the autonomous floor-cleaning robot 10; or (3) at the same speed in opposite directions of rotation to cause the robot 10 to turn in place, i.e., "spin on a dime".

[0039] The wheels $42A_W$, $42B_W$ of the main wheel subassemblies 42A, 42B preferably

have a "knobby" tread configuration $42A_{KT}$, $42B_{KT}$. This knobby tread configuration $42A_{KT}$, $42B_{KT}$ provides the autonomous floor-cleaning robot 10 with enhanced traction, particularly when traversing smooth surfaces and traversing between contiguous surfaces of different textures, e.g., bare floor to carpet or vice versa. This knobby tread configuration $42A_{KT}$, $42B_{KT}$ also prevents tufted fabric of carpets/rugs from being entrapped in the wheels $42A_W$, 42B and entrained between the wheels and the chassis 21 during movement of the autonomous floor-cleaning robot 10. One skilled in the art will appreciate, however, that other tread patterns/configurations are within the scope of the present invention.

[0040] The sensor subsystem 50 comprises a variety of different sensing units that may be broadly characterized as either: (1) control sensing units 52; or (2) emergency sensing units 54. As the names imply, control sensing units 52 are operative to regulate the normal operation of the autonomous floor-cleaning robot 10 and emergency sensing units 54 are operative to detect situations that could adversely affect the operation of the autonomous floor-cleaning robot 10 (e.g., stairs descending from the surface being cleaned) and provide signals in response to such detections so that the autonomous floor-cleaning robot 10 can implement an appropriate response via the control module 60. The control sensing units 52 and emergency sensing units 54 of the autonomous floor-cleaning robot 10 are summarily described in the following paragraphs; a more complete description can be found in commonly-owned, co-pending U.S. Patent No. 6,594,844, filed 24 January 2001, entitled Robot Obstacle Detection System, U.S.

Substitute Specification

Patent No. 6,809,490, filed 12 June 2002, entitled Method and System for Robot Localization and Confinement, and U.S. Patent No. 6,690,134, filed 24 January 2002, entitled Method and System for Multi-Mode Coverage for an Autonomous Robot.

[0041] The control sensing units 52 include obstacle detection sensors 52OD mounted in conjunction with the linearly-displaceable bumper arms 23BA of the displaceable bumper 23, a wall-sensing assembly 52WS mounted in the right-hand portion of the displaceable bumper 23, a virtual wall sensing assembly 52VWS mounted atop the displaceable bumper 23 along the fore-aft diameter of the autonomous floor-cleaning robot 10, and an IR sensor/encoder combination 52WE mounted in combination with each wheel subassembly 42A, 42B.

[0042] Each obstacle detection sensor 52OD includes an emitter and detector combination positioned in conjunction with one of the linearly displaceable bumper arms 23BA so that the sensor 52OD is operative in response to a displacement of the bumper arm 23BA to transmit a detection signal to the control module 60. The wall sensing assembly 52WS includes an emitter and detector combination that is operative to detect the proximity of a wall or other similar structure and transmit a detection signal to the control module 60. Each IR sensor/encoder combination 52WE is operative to measure the rotation of the associated wheel subassembly 42A, 42B and transmit a signal corresponding thereto to the control module 60.

Substitute Specification

[0043] The virtual wall sensing assembly 52VWS includes detectors that are operative to detect a force field and a collimated beam emitted by a stand-alone emitter (the virtual wall unit – not illustrated) and transmit respective signals to the control module 60. The autonomous floor cleaning robot 10 is programmed not to pass through the collimated beam so that the virtual wall unit can be used to prevent the robot 10 from entering prohibited areas, e.g., access to a descending staircase, room not to be cleaned. The robot 10 is further programmed to avoid the force field emitted by the virtual wall unit, thereby preventing the robot 10 from overrunning the virtual wall unit during floor cleaning operations.

[0044] The emergency sensing units 54 include 'cliff detector' assemblies 54CD mounted in the displaceable bumper 23, wheeldrop assemblies 54WD mounted in conjunction with the left and right main wheel subassemblies 42A, 42B and the nose-wheel assembly 24, and current stall sensing units 54CS for the motor $42A_M$, $42B_M$ of each main wheel subassembly 42A, 42B and one for the motors 44, 48 (these two motors are powered via a common circuit in the described embodiment). For the described embodiment of the autonomous floor-cleaning robot 10, four (4) cliff detector assemblies 54CD are mounted in the displaceable bumper 23. Each cliff detector assembly 54CD includes an emitter and detector combination that is operative to detect a predetermined drop in the path of the robot 10, e.g., descending stairs, and transmit a signal to the control module 60. The wheeldrop assemblies 54WD are operative to detect when the corresponding left and right main wheel subassemblies 32A, 32B

and/or the nose-wheel assembly 24 enter the extended position, e.g., a contact switch, and to transmit a corresponding signal to the control module 60. The current stall sensing units 54CS are operative to detect a change in the current in the respective motor, which indicates a stalled condition of the motor's corresponding components, and transmit a corresponding signal to the control module 60.

[0045] The control module 60 comprises the control circuitry (see, e.g., control lines 60-4, 60-5, 60-7, and 60-8 in FIG. 1) and microcontroller for the autonomous floor-cleaning robot 10 that controls the movement of the robot 10 during floor cleaning operations and in response to signals generated by the sensor subsystem 50. The control module 60 of the autonomous floor-cleaning robot 10 according to the present invention is preprogrammed (hardwired, software, firmware, or combinations thereof) to implement three basic operational modes, i.e., movement patterns, that can be categorized as: (1) a “spot-coverage” mode; (2) a “wall/obstacle following” mode; and (3) a “bounce” mode. In addition, the control module 60 is preprogrammed to initiate actions based upon signals received from sensor subsystem 50, where such actions include, but are not limited to, implementing movement patterns (2) and (3), an emergency stop of the robot 10, or issuing an audible alert. Further details regarding the operation of the robot 10 via the control module 60 are described in detail in commonly-owned, co-pending U.S. Patent No. 6,594,844, filed 24 January 2001, entitled Robot Obstacle Detection System, U.S. Patent No. 6,809,490, filed 12 June 2002, entitled Method and System for Robot Localization and Confinement, and U.S.

Patent No. 6,690,134, filed 24 January 2002, entitled Method and System for Multi-Mode Coverage for an Autonomous Robot.

[0046] The side brush assembly 70 is operative to entrain macroscopic and microscopic particulates outside the periphery of the housing infrastructure 20 of the autonomous floor-cleaning robot 10 and to direct such particulates towards the self-adjusting cleaning head subsystem 80. This provides the robot 10 with the capability of cleaning surfaces adjacent to baseboards (during the wall-following mode).

[0047] The side brush assembly 70 is mounted in a recess formed in the lower surface of the right forward quadrant of the chassis 21 (forward of the right main wheel subassembly 42A just behind the right hand end of the displaceable bumper 23). The side brush assembly 70 comprises a shaft 72 having one end rotatably connected to the electric motor 44 for torque transfer, a hub 74 connected to the other end of the shaft 72, a cover plate 75 surrounding the hub 74, a brush means 76 affixed to the hub 74, and a set of bristles 78.

[0048] The cover plate 75 is configured and secured to the chassis 21 to encompass the hub 74 in a manner that prevents the brush means 76 from becoming stuck under the chassis 21 during floor cleaning operations.

[0049] For the embodiment of FIGS. 3A-3C, the brush means 76 comprises opposed

brush arms that extend outwardly from the hub 74. These brush arms 76 are formed from a compliant plastic or rubber material in an "L"/hockey stick configuration of constant width. The configuration and composition of the brush arms 76, in combination, allows the brush arms 76 to resiliently deform if an obstacle or obstruction is temporarily encountered during cleaning operations. Concomitantly, the use of opposed brush arms 76 of constant width is a trade-off (versus using a full or partial circular brush configuration) that ensures that the operation of the brush means 76 of the side brush assembly 70 does not adversely impact (i.e., by occlusion) the operation of the adjacent cliff detector subassembly 54CD (the left-most cliff detector subassembly 54CD in FIG. 3B) in the displaceable bumper 23. The brush arms 76 have sufficient length to extend beyond the outer periphery of the autonomous floor-cleaning robot 10, in particular the displaceable bumper 23 thereof. Such a length allows the autonomous floor-cleaning robot 10 to clean surfaces adjacent to baseboards (during the wall-following mode) without scraping of the wall/baseboard by the chassis 21 and/or displaceable bumper 23 of the robot 10.

[0050] The set of bristles 78 is set in the outermost free end of each brush arm 76 (similar to a toothbrush configuration) to provide the sweeping capability of the side brush assembly 70. The bristles 78 have a length sufficient to engage the surface being cleaned with the main wheel subassemblies 42A, 42B and the nose-wheel subassembly 24 in the operating position.

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[0051] The self-adjusting cleaning head subsystem 80 provides the cleaning mechanisms for the autonomous floor-cleaning robot 10 according to the present invention. The cleaning mechanisms for the preferred embodiment of the self-adjusting cleaning head subsystem 80 include a brush assembly 90 and a vacuum assembly 100.

[0052] For the described embodiment of FIGS. 3A-3C, the brush assembly 90 is a dual-stage brush mechanism, and this dual-stage brush assembly 90 and the vacuum assembly 100 are independent cleaning mechanisms, both structurally and functionally, that have been adapted and designed for use in the robot 10 to minimize the over-all power requirements of the robot 10 while simultaneously providing an effective cleaning capability. In addition to the cleaning mechanisms described in the preceding paragraph, the self-adjusting cleaning subsystem 80 includes a deck structure 82 pivotally coupled to the chassis 21, an automatic deck adjusting subassembly 84, a removable dust cartridge 86, and one or more bails 88 shielding the dual-stage brush assembly 90.

[0053] The deck 82 is preferably fabricated as a unitary structure from a material such as plastic and includes opposed, spaced-apart sidewalls 82SW formed at the aft end of the deck 82 (one of the sidewalls 82SW comprising a U-shaped structure that houses the motor 46, a brush-assembly well 82W, a lateral aperture 82LA formed in the intermediate portion of the lower deck surface, which defines the opening between the dual-stage brush assembly 90 and the removable dust cartridge 86, and mounting

brackets 82MB formed in the forward portion of the upper deck surface for the motor 48.

[0054] The sidewalls 82SW are positioned and configured for mounting the deck 82 in pivotal combination with the chassis 21 by a conventional means, e.g., a revolute joint (see reference characters 82RJ in FIG. 3A). The pivotal axis of the deck 82-chassis 21 combination is perpendicular to the fore-aft axis FA of the autonomous floor-cleaning robot 10 at the aft end of the robot 10 (see reference character 82_{PA} which identifies the pivotal axis in FIG. 3A).

[0055] The mounting brackets 82MB are positioned and configured for mounting the constant-torque motor 48 at the forward lip of the deck 82. The rotational axis of the mounted motor 48 is perpendicular to the fore-aft diameter of the autonomous floor-cleaning robot 10 (see reference character 48RA which identifies the rotational axis of the motor 48 in FIG. 3A). Extending from the mounted motor 48 is a shaft 48S for transferring the constant torque to the input side of a stationary, conventional dual-output gearbox 48B (the housing of the dual-output gearbox 48B is fabricated as part of the deck 82).

[0056] The desk adjusting subassembly 84, which is illustrated in further detail in FIGS. 4A-4C, is mounted in combination with the motor 48, the deck 82 and the chassis 21 and operative, in combination with the electric motor 48, to provide the physical mechanism and motive force, respectively, to pivot the deck 82 with respect to the

chassis 21 about pivotal axis 82_{PA} whenever the dual-stage brush assembly 90 encounters a situation that results in a predetermined reduction in the rotational speed of the dual-stage brush assembly 90. This situation, which most commonly occurs as the autonomous floor-cleaning robot 10 transitions between a smooth surface such as a floor and a carpeted surface, is characterized as the 'adjustment mode' in the remainder of this description.

[0057] The deck adjusting subassembly 84 for the described embodiment of FIG. 3A includes a motor cage 84MC, a pulley 84P, a pulley cord 84C, an anchor member 84AM, and complementary cage stops 84CS. The motor 48 is non-rotatably secured within the motor cage 84MC and the motor cage 84MC is mounted in rotatable combination between the mounting brackets 82MB. The pulley 84P is fixedly secured to the motor cage 84MC on the opposite side of the interior mounting bracket 82MB in such a manner that the shaft 48S of the motor 48 passes freely through the center of the pulley 84P. The anchor member 84AM is fixedly secured to the top surface of the chassis 21 in alignment with the pulley 84P.

[0058] One end of the pulley cord 84C is secured to the anchor member 84AM and the other end is secured to the pulley 84P in such a manner, that with the deck 82 in the 'down' or non-pivoted position, the pulley cord 84C is tensioned. One of the cage stops 84CS is affixed to the motor cage 84MC; the complementary cage stop 84CS is affixed to the deck 82. The complementary cage stops 84CS are in abutting engagement when

the deck 82 is in the 'down' position during normal cleaning operations due to the weight of the self-adjusting cleaning head subsystem 80.

[0059] During normal cleaning operations, the torque generated by the motor 48 is transferred to the dual-stage brush subassembly 90 by means of the shaft 48S through the dual-output gearbox 48B. The motor cage assembly is prevented from rotating by the counter-acting torque generated by the pulley cord 84C on the pulley 84P. When the resistance encountered by the rotating brushes changes, the deck height will be adjusted to compensate for it. If for example, the brush torque increases as the machine rolls from a smooth floor onto a carpet, the torque output of the motor 48 will increase. In response to this, the output torque of the motor 48 will increase. This increased torque overcomes the counter-acting torque exerted by the pulley cord 84C on the pulley 84P. This causes the pulley 84P to rotate, effectively pulling itself up the pulley cord 84C. This in turn, pivots the deck about the pivot axis, raising the brushes, reducing the friction between the brushes and the floor, and reducing the torque required by the dual-stage brush subassembly 90. This continues until the torque between the motor 48 and the counter-acting torque generated by the pulley cord 84C on the pulley 84P are once again in equilibrium and a new deck height is established.

[0060] In other words, during the adjustment mode, the foregoing torque transfer mechanism is interrupted since the shaft 48S is essentially stationary. This condition causes the motor 48 to effectively rotate about the shaft 48S. Since the motor 48 is

non-rotatably secured to the motor cage 84MC, the motor cage 84MC, and concomitantly, the pulley 84P, rotate with respect to the mounting brackets 82MB. The rotational motion imparted to the pulley 84P causes the pulley 84P to 'climb up' the pulley cord 84PC towards the anchor member 84AM. Since the motor cage 84MC is effectively mounted to the forward lip of the deck 82 by means of the mounting brackets 82MB, this movement of the pulley 84P causes the deck 82 to pivot about its pivot axis 82PA to an "up" position (see FIG. 4C). This pivoting motion causes the forward portion of the deck 82 to move away from surface over which the autonomous floor-cleaning robot is traversing.

[0061] Such pivotal movement, in turn, effectively moves the dual-stage brush assembly 90 away from the surface it was in contact with, thereby permitting the dual-stage brush assembly 90 to speed up and resume a steady-state rotational speed (consistent with the constant torque transferred from the motor 48). At this juncture (when the dual-stage brush assembly 90 reaches its steady-state rotational speed), the weight of the forward edge of the deck 82 (primarily the motor 48), gravitationally biases the deck 82 to pivot back to the 'down' or normal state, i.e., planar with the bottom surface of the chassis 21, wherein the complementary cage stops 84CS are in abutting engagement.

[0062] While the deck adjusting subassembly 84 described in the preceding paragraphs is the preferred pivoting mechanism for the autonomous floor-cleaning robot

10 according to the present invention, one skilled in the art will appreciate that other mechanisms can be employed to utilize the torque developed by the motor 48 to induce a pivotal movement of the deck 82 in the adjustment mode. For example, the deck adjusting subassembly could comprise a spring-loaded clutch mechanism such as that shown in FIG. 4C (identified by reference characters SLCM) to pivot the deck 82 to an "up" position during the adjustment mode, or a centrifugal clutch mechanism or a torque-limiting clutch mechanism. In other embodiments, motor torque can be used to adjust the height of the cleaning head by replacing the pulley with a cam and a constant force spring or by replacing the pulley with a rack and pinion, using either a spring or the weight of the cleaning head to generate the counter-acting torque.

[0063] The removable dust cartridge 86 provides temporary storage for macroscopic and microscopic particulates swept up by operation of the dual-stage brush assembly 90 and microscopic particulates drawn in by the operation of the vacuum assembly 100. The removable dust cartridge 86 is configured as a dual chambered structure, having a first storage chamber 86SC1 for the macroscopic and microscopic particulates swept up by the dual-stage brush assembly 90 and a second storage chamber 86SC2 for the microscopic particulates drawn in by the vacuum assembly 100. The removable dust cartridge 86 is further configured to be inserted in combination with the deck 82 so that a segment of the removable dust cartridge 86 defines part of the rear external sidewall structure of the autonomous floor-cleaning robot 10.

[0064] As illustrated in FIGS. 5A-5B, the removable dust cartridge 86 comprises a floor member 86FM and a ceiling member 86CM joined together by opposed sidewall members 86SW. The floor member 86FM and the ceiling member 86CM extend beyond the sidewall members 86SW to define an open end 86OE, and the free end of the floor member 86FM is slightly angled and includes a plurality of baffled projections 86AJ to remove debris entrained in the brush mechanisms of the dual-stage brush assembly 90, and to facilitate insertion of the removable dust cartridge 86 in combination with the deck 82 as well as retention of particulates swept into the removable dust cartridge 86. A backwall member 86BW is mounted between the floor member 86FM and the ceiling member 86CM distal the open end 86OE in abutting engagement with the sidewall members 86SW. The backwall member 86BW has a baffled configuration for the purpose of deflecting particulates angularly therefrom to prevent particulates swept up by the dual-stage brush assembly 90 from ricocheting back into the brush assembly 90. The floor member 86FM, the ceiling member 86CM, the sidewall members 86SW, and the backwall member 86BW in combination define the first storage chamber 86SC1.

[0065] The removable dust cartridge 86 further comprises a curved arcuate member 86CAM that defines the rear external sidewall structure of the autonomous floor-cleaning robot 10. The curved arcuate member 86CAM engages the ceiling member 86CM, the floor member 86F and the sidewall members 86SW. There is a gap formed between the curved arcuate member 86CAM and one sidewall member 86SW that

defines a vacuum inlet 86VI for the removable dust cartridge 86. A replaceable filter 86RF is configured for snap fit insertion in combination with the floor member 86FM. The replaceable filter 86RF, the curved arcuate member 86CAM, and the backwall member 86BW in combination define the second storage chamber 86SC1.

[0066] The removable dust cartridge 86 is configured to be inserted between the opposed spaced-apart sidewalls 82SW of the deck 82 so that the open end of the removable dust cartridge 86 aligns with the lateral aperture 82LA formed in the deck 82. Mounted to the outer surface of the ceiling member 86CM is a latch member 86LM, which is operative to engage a complementary shoulder formed in the upper surface of the deck 82 to latch the removable dust cartridge 86 in integrated combination with the deck 82.

[0067] The bail 88 comprises one or more narrow gauge wire structures that overlay the dual-stage brush assembly 90. For the described embodiment, the bail 88 comprises a continuous narrow gauge wire structure formed in a castellated configuration, i.e., alternating open-sided rectangles. Alternatively, the bail 88 may comprise a plurality of single, open-sided rectangles formed from narrow gauge wire. The bail 88 is designed and configured for press fit insertion into complementary retaining grooves 88A, 88B, respectively, formed in the deck 82 immediately adjacent both sides of the dual-stage brush assembly 90. The bail 88 is operative to shield the dual-stage brush assembly 90 from larger external objects such as carpet tassels, tufted

fabric, rug edges, during cleaning operations, i.e., the bail 88 deflects such objects away from the dual-stage brush assembly 90, thereby preventing such objects from becoming entangled in the brush mechanisms.

[0068] The dual-stage brush assembly 90 for the described embodiment of FIG. 3A comprises a flapper brush 92 and a main brush 94 that are generally illustrated in FIG. 6. Structurally, the flapper brush 92 and the main brush 94 are asymmetric with respect to one another, with the main brush 94 having an O.D. greater than the O.D. of the flapper brush 92. The flapper brush 92 and the main brush 94 are mounted in the deck 82 recess, as described below in further detail, to have minimal spacing between the sweeping peripheries defined by their respective rotating elements. Functionally, the flapper brush 92 and the main brush 94 counter-rotate with respect to one another, with the flapper brush 92 rotating in a first direction that causes macroscopic particulates to be directed into the removable dust cartridge 86 and the main brush 94 rotating in a second direction, which is opposite to the forward movement of the autonomous floor-cleaning robot 10, that causes macroscopic and microscopic particulates to be directed into the removable dust cartridge 86. In addition, this rotational motion of the main brush 94 has the secondary effect of directing macroscopic and microscopic particulates towards the pick-up zone of the vacuum assembly 100 such that particulates that are not swept up by the dual-stage brush assembly 90 can be subsequently drawn up (ingested) by the vacuum assembly 100 due to movement of the autonomous floor-cleaning robot 10.

Substitute Specification

[0069] The flapper brush 92 comprises a central member 92CM having first and second ends. The first and second ends are designed and configured to mount the flapper brush 92 in rotatable combination with the deck 82 and a first output port $48B_{O1}$ of the dual output gearbox 48B, respectively, such that rotation of the flapper brush 92 is provided by the torque transferred from the electric motor 48 (the gearbox 48B is configured so that the rotational speed of the flapper brush 92 is relative to the speed of the autonomous floor-cleaning robot 10 -- the described embodiment of the robot 10 has a top speed of approximately 0.9 ft/sec). In other embodiments, the flapper brush 92 rotates substantially faster than traverse speed either in relation or not in relation to the transverse speed. Axle guards 92AG having a beveled configuration are integrally formed adjacent the first and second ends of the central member 92CM for the purpose of forcing hair and other similar matter away from the flapper brush 92 to prevent such matter from becoming entangled with the ends of the central member 92CM and stalling the dual-stage brush assembly 90.

[0070] The brushing element of the flapper brush 92 comprises a plurality of segmented cleaning strips 92CS formed from a compliant plastic material secured to and extending along the central member 92CM between the internal ends of the axle guards 92AG (for the illustrated embodiment, a sleeve, configured to fit over and be secured to the central member 92CM, has integral segmented strips extending outwardly therefrom). It was determined that arranging these segmented cleaning strips

92CS in a herringbone or chevron pattern provided the optimal cleaning utility (capability and noise level) for the dual-stage brush subassembly 90 of the autonomous floor-cleaning robot 10 according to the present invention. Arranging the segmented cleaning strips 92CS in the herringbone/chevron pattern caused macroscopic particulate matter captured by the strips 92CS to be circulated to the center of the flapper brush 92 due to the rotation thereof. It was determined that cleaning strips arranged in a linear/straight pattern produced an irritating flapping noise as the brush was rotated. Cleaning strips arranged in a spiral pattern circulated captured macroscopic particulates towards the ends of brush, which resulted in particulates escaping the sweeping action provided by the rotating brush.

[0071] For the described embodiment, six (6) segmented cleaning strips 92CS were equidistantly spaced circumferentially about the central member 92CM in the herringbone/chevron pattern. One skilled in the art will appreciate that more or less segmented cleaning strips 92CS can be employed in the flapper brush 90 without departing from the scope of the present invention. Each of the cleaning strips 92S is segmented at prescribed intervals, such segmentation intervals depending upon the configuration (spacing) between the wire(s) forming the bail 88. The embodiment of the bail 88 described above resulted in each cleaning strip 92CS of the described embodiment of the flapper brush 92 having five (5) segments.

[0072] The main brush 94 comprises a central member 94CM (for the described

embodiment the central member 94CM is a round metal member having a spiral configuration) having first and second straight ends (i.e., aligned along the centerline of the spiral). Integrated in combination with the central member 94CM is a segmented protective member 94PM. Each segment of the protective member 94PM includes opposed, spaced-apart, semi-circular end caps 94EC having integral ribs 94IR extending therebetween. For the described embodiment, each pair of semi-circular end caps EC has two integral ribs extending therebetween. The protective member 94PM is assembled by joining complementary semi-circular end caps 94EC by any conventional means, e.g., screws, such that assembled complementary end caps 94EC have a circular configuration.

[0073] The protective member 94PM is integrated in combination with the central member 94CM so that the central member 94CM is disposed along the centerline of the protective member 94PM, and with the first end of the central member 94CM terminating in one circular end cap 94EC and the second end of the central member 94CM extending through the other circular end cap 94EC. The second end of the central member 94CM is mounted in rotatable combination with the deck 82 and the circular end cap 94EC associated with the first end of the central member 94CM is designed and configured for mounting in rotatable combination with the second output port $48B_{O2}$ of the gearbox 48B such that the rotation of the main brush 94 is provided by torque transferred from the electric motor 48 via the gearbox 48B.

Substitute Specification

[0074] Bristles 94B are set in combination with the central member 94CM to extend between the integral ribs 94IR of the protective member 94PM and beyond the O.D. established by the circular end caps 94EC. The integral ribs 94IR are configured and operative to impede the ingestion of matter such as rug tassels and tufted fabric by the main brush 94.

[0075] The bristles 94B of the main brush 94 can be fabricated from any of the materials conventionally used to form bristles for surface cleaning operations. The bristles 94B of the main brush 94 provide an enhanced sweeping capability by being specially configured to provide a "flicking" action with respect to particulates encountered during cleaning operations conducted by the autonomous floor-cleaning robot 10 according to the present invention. For the described embodiment, each bristle 94B has a diameter of approximately 0.010 inches, a length of approximately 0.90 inches, and a free end having a rounded configuration. It has been determined that this configuration provides the optimal flicking action. While bristles having diameters exceeding approximately 0.014 inches would have a longer wear life, such bristles are too stiff to provide a suitable flicking action in the context of the dual-stage brush assembly 90 of the present invention. Bristle diameters that are much less than 0.010 inches are subject to premature wear out of the free ends of such bristles, which would cause a degradation in the sweeping capability of the main brush. In a preferred embodiment, the main brush is set slightly lower than the flapper brush to ensure that the flapper does not contact hard surface floors.

Substitute Specification

[0076] The vacuum assembly 100 is independently powered by means of the electric motor 46. Operation of the vacuum assembly 100 independently of the self-adjustable brush assembly 90 allows a higher vacuum force to be generated and maintained using a battery-power source than would be possible if the vacuum assembly were operated in dependence with the brush system. In other embodiments, the main brush motor can drive the vacuum. Independent operation is used herein in the context that the inlet for the vacuum assembly 100 is an independent structural unit having dimensions that are not dependent upon the "sweep area" defined by the dual-stage brush assembly 90.

[0077] The vacuum assembly 100, which is located immediately aft of the dual-stage brush assembly 90, i.e., a trailing edge vacuum, is orientated so that the vacuum inlet is immediately adjacent the main brush 94 of the dual-stage brush assembly 90 and forward facing, thereby enhancing the ingesting or vacuuming effectiveness of the vacuum assembly 100. With reference to FIGS. 7A, 7B, the vacuum assembly 100 comprises a vacuum inlet 102, a vacuum compartment 104, a compartment cover 106, a vacuum chamber 108, an impeller 110, and vacuum channel 112. The vacuum inlet 102 comprises first and second blades 102A, 102B formed of a semi-rigid/compliant plastic or elastomeric material, which are configured and arranged to provide a vacuum inlet 102 of constant size (lateral width and gap-see discussion below), thereby ensuring that the vacuum assembly 100 provides a constant air inflow velocity, which for the described embodiment is approximately 4m/sec.

[0078] The first blade 102A has a generally rectangular configuration, with a width (lateral) dimension such that the opposed ends of the first blade 102A extend beyond the lateral dimension of the dual-stage brush assembly 90. One lateral edge of the first blade 102A is attached to the lower surface of the deck 82 immediately adjacent to but spaced apart from, the main brush 94 (a lateral ridge formed in the deck 82 provides the separation therebetween, in addition to embodying retaining grooves for the bail 88 as described above) in an orientation that is substantially symmetrical to the fore-aft diameter of the autonomous floor-cleaning robot 10. This lateral edge also extends into the vacuum compartment 104 where it is in sealed engagement with the forward edge of the compartment 104. The first blade 102A is angled forwardly with respect to the bottom surface of the deck 82 and has length such that the free end $102A_{FE}$ of the first blade 102A just grazes the surface to be cleaned.

[0079] The free end $102A_{FE}$ has a castellated configuration that prevents the vacuum inlet 102 from pushing particulates during cleaning operations. Aligned with the castellated segments 102CS of the free end $102A_{FE}$, which are spaced along the width of the first blade 102A, are protrusions 102P having a predetermined height. For the prescribed embodiment, the height of such protrusions 102P is approximately 2mm. The predetermined height of the protrusions 102P defines the “gap” between the first and second blades 102A, 102B.

[0080] The second blade 102B has a planar, unitary configuration that is complementary to the first blade 102A in width and length. The second blade 102B, however, does not have a castellated free end; instead, the free end of the second blade 102B is a straight edge. The second blade 102B is joined in sealed combination with the forward edge of the compartment cover 106 and angled with respect thereto so as to be substantially parallel to the first blade 102A. When the compartment cover 106 is fitted in position to the vacuum compartment 104, the planar surface of the second blade 102B abuts against the plurality of protrusions 102P of the first blade 102A to form the "gap" between the first and second blades 102A, 102B.

[0081] The vacuum compartment 104, which is in fluid communication with the vacuum inlet 102, comprises a recess formed in the lower surface of the deck 82. This recess includes a compartment floor 104F and a contiguous compartment wall 104CW that delineates the perimeter of the vacuum compartment 104. An aperture 104A is formed through the floor 104, offset to one side of the floor 104F. Due to the location of this aperture 104A, offset from the geometric center of the compartment floor 104F, it is prudent to form several guide ribs 104GR that project upwardly from the compartment floor 104F. These guide ribs 104GR are operative to distribute air inflowing through the gap between the first and second blades 102A, 102B across the compartment floor 104 so that a constant air inflow is created and maintained over the entire gap, i.e., the vacuum inlet 102 has a substantially constant 'negative' pressure (with respect to atmospheric pressure).

Substitute Specification

[0082] The compartment cover 106 has a configuration that is complementary to the shape of the perimeter of the vacuum compartment 104. The cover 106 is further configured to be press fitted in sealed combination with the contiguous compartment wall 104CW wherein the vacuum compartment 104 and the vacuum cover 106 in combination define the vacuum chamber 108 of the vacuum assembly 100. The compartment cover 106 can be removed to clean any debris from the vacuum channel 112. The compartment cover 106 is preferable fabricated from a clear or smoky plastic material to allow the user to visually determine when clogging occurs.

[0083] The impeller 110 is mounted in combination with the deck 82 in such a manner that the inlet of the impeller 110 is positioned within the aperture 104A. The impeller 110 is operatively connected to the electric motor 46 so that torque is transferred from the motor 46 to the impeller 110 to cause rotation thereof at a constant speed to withdraw air from the vacuum chamber 108. The outlet of the impeller 110 is integrated in sealed combination with one end of the vacuum channel 112.

[0084] The vacuum channel 112 is a hollow structural member that is either formed as a separate structure and mounted to the deck 82 or formed as an integral part of the deck 82. The other end of the vacuum channel 110 is integrated in sealed combination with the vacuum inlet 86VI of the removable dust cartridge 86. The outer surface of the vacuum channel 112 is complementary in configuration to the external shape of curved

arcuate member 86CAM of the removable dust cartridge 86.

[0085] A variety of modifications and variations of the present invention are possible in light of the above teachings. For example, the preferred embodiment described above included a cleaning head subsystem 80 that was self-adjusting, i.e., the deck 82 was automatically pivotable with respect to the chassis 21 during the adjustment mode in response to a predetermined increase in brush torque of the dual-stage brush assembly 90. It will be appreciated that another embodiment of the autonomous floor-cleaning robot according to the present invention is as described hereinabove, with the exception that the cleaning head subsystem is non-adjustable, i.e., the deck is non-pivotable with respect to the chassis. This embodiment would not include the deck adjusting subassembly described above, i.e., the deck would be rigidly secured to the chassis. Alternatively, the deck could be fabricated as an integral part of the chassis – in which case the deck would be a virtual configuration, i.e., a construct to simplify the identification of components comprising the cleaning head subsystem and their integration in combination with the robot.

[0086] It is therefore to be understood that, within the scope of the appended claims, the present invention may be practiced other than as specifically described herein.

Electronic Acknowledgement Receipt

EFS ID:	7307913
Application Number:	12201554
International Application Number:	
Confirmation Number:	9658
Title of Invention:	Autonomous Floor-Cleaning Robot
First Named Inventor/Applicant Name:	Joseph L. Jones
Customer Number:	74863
Filer:	Jill Elizabeth DeMello
Filer Authorized By:	
Attorney Docket Number:	1007.0013-01000
Receipt Date:	29-MAR-2010
Filing Date:	29-AUG-2008
Time Stamp:	16:43:12
Application Type:	Utility under 35 USC 111(a)

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		AmendmentAFforFiling.pdf	2132033 e768d3a7945c52a48258da25626ace1768a17570	yes	90

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment After Final	1	11
	Miscellaneous Incoming Letter	12	12
	Drawings-only black and white line drawings	13	13
	Specification	14	52
	Specification	53	90

Warnings:	
Information:	
Total Files Size (in bytes):	2132033

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (07-06)
Approved for use through 1/31/2007. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number	Filing Date	☐ To be Mailed
12/201,554	08/29/2008	

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
☒ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A	**310**
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X $ =		OR	X $ =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X $ =			X $ =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).						
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))							
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL	**310**

APPLICATION AS AMENDED – PART II

AMENDMENT 03/29/2010	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	* 10	Minus	** 20	= 0	X $ =		OR	X $52=	0
Independent (37 CFR 1.16(h))	* 3	Minus	***4	= 0	X $ =		OR	X $220=	0
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	**0**

AMENDMENT	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE ($)	ADDITIONAL FEE ($)		RATE ($)	ADDITIONAL FEE ($)
Total (37 CFR 1.16(i))	*	Minus	**	=	X $ =		OR	X $ =	
Independent (37 CFR 1.16(h))	*	Minus	***	=	X $ =		OR	X $ =	
☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
					TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

Legal Instrument Examiner:
/ANGELONA D. JONES/

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/201,554	08/29/2008	Joseph L. Jones	1007.0013-01000	9658

74863 7590 04/09/2010

O'Brien Jones, PLLC (w/iRobot Corp.)
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EXAMINER	
SCRUGGS, ROBERT J	

ART UNIT	PAPER NUMBER
3723	

NOTIFICATION DATE	DELIVERY MODE
04/09/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

info@obrienjones.com
jill.hill@obrienjones.com
michelle.obrien@obrienjones.com

Advisory Action Before the Filing of an Appeal Brief	**Application No.** 12/201,554	**Applicant(s)** JONES ET AL.	
	Examiner ROBERT SCRUGGS	**Art Unit** 3723	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 29 March 2010 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:
   a) ☒ The period for reply expires *3* months from the mailing date of the final rejection.
   b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

   Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☒ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   (a) ☒ They raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ They raise the issue of new matter (see NOTE below);
   (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☒ For purposes of appeal, the proposed amendment(s): a) ☒ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: _____.
   Claim(s) objected to: _____.
   Claim(s) rejected: *78-94*.
   Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
12. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____
13. ☐ Other: _____.

/Joseph J. Hail, III/
Supervisory Patent Examiner, Art Unit 3723

Continuation of 11. does NOT place the application in condition for allowance because: Applicant's amendment filed on March 29, 2010 raises new issues that have not been previously considered and would require further search and examination. Specifically, the applicant's amendment adds that the wheels are connected to a chassis of the robot via a pivoting arm. This new additional structural limitation has not been previously considered and therefore will not be entered.

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Claims 1-97. (Canceled).

98. (New) A floor cleaning robot comprising:

a housing and a chassis;

wheels and at least one motor to drive the wheels disposed at least partially within the housing and configured to move the floor cleaning robot across a floor, each of the wheels being attached to the chassis via a respective arm having a distal end and a proximal end;

a control module disposed within the housing and directing movement of the floor cleaning robot across the floor;

at least one sensor for detecting an obstacle and communicating obstacle information to the control module so that the control module can cause the floor cleaning robot to react to the obstacle;

a removable bin disposed at least partially within the housing and configured to receive particulates; and

a first rotating member configured to direct particulates toward the bin,

wherein one of the wheels is rotatably attached to the distal end of each arm, and the proximal end of each arm is pivotably attached to the chassis,

wherein each wheel is biased to an extended position away from the robot chassis by a spring extending between the arm and the robot chassis, and

wherein, during cleaning, the weight of the floor cleaning robot overcomes a force from the spring biasing the wheels to an extended position.

99. (New) The floor cleaning robot of claim 98, further comprising a second rotating member configured to cooperate with the first rotating member to direct particulates toward the bin.

100. (New) The floor cleaning robot of claim 98, further comprising an air moving system disposed at least partially within the housing and configured to ingest particulates and direct particulates toward the removable bin.

101. (New) The floor cleaning robot of claim 100, wherein the first rotating member cooperates with the air moving system to direct particulates toward the bin.

102. (New) The floor cleaning robot of claim 100, wherein air moved by the air moving system passes through a filter before exiting the housing.

103. (New) The floor cleaning robot of claim 98, wherein the at least one sensor comprises a wheel drop sensor for sensing when one of the wheels of the floor cleaning robot has dropped to an extended position, and

wherein the control module causes the floor cleaning robot to stop moving across the floor when the wheel drop sensor senses that a wheel of the floor cleaning robot has dropped to an extended position.

104. (New) The floor cleaning robot of claim 99, wherein the first rotating member contacts the floor and agitates particulates and directs the particulates toward the second rotating member.

105. (New) The floor cleaning robot of claim 104, wherein the second rotating member is positioned to receive particulates from the first rotating member and direct the particulates toward the removable bin.

106. (New) The floor cleaning robot of claim 98, wherein the first rotating member is a brush.

107. (New) A floor cleaning robot comprising:

a housing and a chassis;

a first wheel and a first arm for attaching the first wheel to the chassis, the first arm having a proximal end pivotably attached to the chassis and a distal end to which the first wheel is rotatably mounted;

a first resilient member connecting the first arm to the chassis and biasing the distal end of the first arm and the first wheel to an extended position;

a second wheel and a second arm for attaching the second wheel to the chassis, the second arm having a proximal end pivotably attached to the chassis and a distal end to which the second wheel is rotatably mounted;

a second resilient member connecting the second arm to the chassis and biasing the distal end of the second arm and the second wheel to an extended position;

at least one motor disposed at least partially within the housing and configured to drive the first and second wheels to move the floor cleaning robot across a floor;

a control module disposed within the housing and directing movement of the floor cleaning robot across the floor;

at least one sensor for detecting an obstacle and communicating obstacle information to the control module so that the control module can cause the floor cleaning robot to react to the obstacle;

a removable bin disposed at least partially within the housing and configured to receive particulates;

a rotating brush configured to agitate particulates and direct particulates toward the removable bin;

wherein, during cleaning, the weight of the floor cleaning robot overcomes a force from the first and second resilient members that biases the wheels to an extended position.

108. (New) The floor cleaning robot of claim 107, wherein the at least one sensor comprises a wheel drop sensor for sensing when one of the wheels of the floor cleaning robot has dropped to an extended position, and

wherein the control module causes the floor cleaning robot to stop moving across the floor when the wheel drop sensor senses that a wheel of the floor cleaning robot has dropped to an extended position.

109. (New) The floor cleaning robot of claim 107, wherein the removable bin is configured to receive particulates directed thereto by the rotating brush and the rotating member, and the particulates pass from the rotating brush to the removable bin without passing through a filter.

110. (New) The floor cleaning robot of claim 107, further comprising an air moving system disposed at least partially within the housing and configured to ingest particulates.

111. (New) The floor cleaning robot of claim 110, wherein the rotating brush cooperates with the air moving system to direct particulates toward the bin.

112. (New) The floor cleaning robot of claim 110, wherein air moved by the air moving system passes through a filter before exiting the housing.

113. (New) The floor cleaning robot of claim 109, wherein the rotating member is disposed at least partially within the housing and is spaced from the floor a greater distance than the rotating brush.

114. (New) A method for directing particulates from a floor into a bin, the method comprising:

driving wheels to move a cleaning robot across a floor, the wheels being attached to a chassis of the cleaning robot by a pivoting arm and being biased to an extended position by a spring extending between the arm and the chassis;

allowing the weight of the cleaning robot to overcome the spring force biasing the wheels to an extended position when the cleaning robot is positioned for use;

sensing obstacles;

causing the cleaning robot to avoid the sensed obstacles;

agitating particulates from the floor and directing the particulates toward a removable bin of the cleaning robot;

generating a negative pressure to direct agitated particulates toward the removable bin; and

holding particulates in the removable bin.

115. (New) The method of claim 114, further comprising filtering air used to direct particulates toward the removable bin after particulates carried by the air are held by the removable bin

116. (New) The method of claim 114, wherein agitating particulates from the floor and directing the particulates toward the removable bin comprises directing the particulates toward a rotating member disposed at least partially within the cleaning robot, and rotating the rotating member to direct particulates toward the removable bin.

117. (New) The method of claim 114, further comprising:

sensing when one of the wheels of the floor cleaning robot has dropped to an extended position; and

causing the floor cleaning robot to stop moving across the floor when the wheel drop sensor senses that a wheel of the floor cleaning robot has dropped to an extended position.

REQUEST FOR CONTINUED EXAMINATION (RCE) TRANSMITTAL

Address to:
Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Application Number: 12/201,554	Confirmation Number: 9658
Filing Date: August 29, 2008	
First Named Inventor: Joseph L. JONES	
Group Art Unit: 3723	
Examiner: R. J. Scruggs	
Attorney Docket Number: 1007.0013-01000	

This is a Request for Continued Examination (RCE) under 37 C.F.R. § 1.114 of the above-identified application.

Request for Continued Examination (RCE) practice under 37 C.F.R. § 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application.

1. **Submission required under 37 C.F.R. § 1.114: Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment.**

   a. ☒ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

      i. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on [Date]_____.

      ii. ☐ Other _____

   b. ☐ **DO NOT ENTER** the amendment(s) previously filed on [Date(s)]_____. An alternate submission is attached.

   c. ☐ Enclosed submission:

      i. ☐ Amendment/Reply

      ii. ☐ Affidavit(s)/Declaration(s)

      iii. ☐ Information Disclosure Statement

      iv. ☐ Other _____

2. Miscellaneous

   a. ☐ Suspension of action on the above-mentioned application is requested under 37 C.F.R. § 1.103(c) for a period of [number] months. (Period of suspension shall not exceed 3 months; fee under 37 C.F.R. § 1.17(i) required.)

   b. ☐ Other _____

3. Fees

   a. ☒ The filing fee is calculated as follows:

      i. ☒ $810.00 RCE fee required under 37 C.F.R. § 1.17(e)

      ii. ☐ Petition for extension of time for ([number] Months) $[Fee]

      iii. ☐ Other _____

   b. ☒ Payment in the amount of $810.00 is being provided via credit card authorization using the U.S. Patent and Trademark Office's Electronic Filing System (EFS).

   c. ☒ The Commissioner is authorized to charge any deficiencies in the filing fees, or credit any overpayments to Deposit Account No. 50-4126.

Signature of Applicant, Attorney, or Agent Required

Name: Jill DeMello Hill	Reg. No.: 42,477
Signature: /Jill DeMello Hill, Reg. No. 42,477/	Date: April 9, 2010

Certificate of Mailing or Transmission

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to Commissioner for Patents, MAIL STOP RCE, P.O. Box 1450, Alexandria, VA. 22313-1450, or facsimile transmitted to the U.S. Patent and Trademark Office on: [Date]

Name: [Text]

Signature:	Date:

Electronic Patent Application Fee Transmittal

Application Number:	12201554
Filing Date:	29-Aug-2008
Title of Invention:	Autonomous Floor-Cleaning Robot
First Named Inventor/Applicant Name:	Joseph L. Jones
Filer:	Jill Elizabeth DeMello/Renee Roberts
Attorney Docket Number:	1007.0013-01000

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
Request for continued examination	1801	1	810	810
		Total in USD ($)		**810**

Electronic Acknowledgement Receipt

EFS ID:	7383821
Application Number:	12201554
International Application Number:	
Confirmation Number:	9658
Title of Invention:	Autonomous Floor-Cleaning Robot
First Named Inventor/Applicant Name:	Joseph L. Jones
Customer Number:	74863
Filer:	Jill Elizabeth DeMello
Filer Authorized By:	
Attorney Docket Number:	1007.0013-01000
Receipt Date:	09-APR-2010
Filing Date:	29-AUG-2008
Time Stamp:	17:36:11
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$810
RAM confirmation Number	4021
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1	Request for Continued Examination (RCE)	2010_04_09_RCE_for_FILING.pdf	443862 8f745c4ae797c77ee95a292210d3bfb3b7eb3331	no	1
Warnings:					
This is not a USPTO supplied RCE SB30 form.					
Information:					
2	Fee Worksheet (PTO-875)	fee-info.pdf	29946 b2f9c2b43c2d2f695b004a0e7cbe7c3369a4aa9b	no	2
Warnings:					
Information:					
			Total Files Size (in bytes):	473808	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

<u>New Applications Under 35 U.S.C. 111</u>
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

<u>National Stage of an International Application under 35 U.S.C. 371</u>
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

<u>New International Application Filed with the USPTO as a Receiving Office</u>
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Mail Room date 4-9-10

RESPONSE UNDER 37 C.F.R. § 1.116
EXPEDITED PROCEDURE REQUESTED
EXAMINING GROUP 3723
PATENT
Customer No. 74,863
Attorney Docket No. 1007.0013-01000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Joseph L. JONES et al.	)	
	)	Group Art Unit: 3723
Application No.: 12/201,554	)	
	)	Examiner: R. J. Scruggs
Filed: August 29, 2008	)	
	)	Confirmation No.: 9658
For: AUTONOMOUS FLOOR CLEANING ROBOT	)	
	)	**BOX AF**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Entered w/RCE

Sir:

ONE. 1

~~AMENDMENT AFTER FINAL~~

In reply to the final Office Action dated January 14, 2010, and pursuant to 37 C.F.R. § 1.116, Applicants propose that this application be amended as follows:

Amendments to the Claims are reflected in the listing of claims in this paper.

Amendments to the Specification are reflected in the attached substitute specification.

Amendments to the Drawings are reflected in the one Replacement Sheet (FIG. 3C).

Remarks follow the amendment sections of this paper.

IDS Form PTO/SB/08: Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				*Application Number*	12/201,554
				Filing Date	August 29, 2008
				First Named Inventor	Joseph L. Jones
				Art Unit	3723
(Use as many sheets as necessary)				*Examiner Name*	R.J. Scruggs
Sheet	1	of	1	*Attorney Docket Number*	1007.0013-01000

U.S. PATENTS AND PUBLISHED U.S. PATENT APPLICATIONS					
Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Issue or Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			

Note: Submission of copies of U.S. Patents and published U.S. Patent Applications is not required.

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] Number[4] Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	Translation[6]

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	Translation[6]
		Prassler et al., "A Short History of Cleaning Robots," Autonomous Robots, Vol. 9, pp. 211-226 (2000).	

Examiner Signature		Date Considered	

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

PTO Notes regarding this form:

[1] Applicant's unique citation designation number (optional).
[2] See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04.
[3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3).
[4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.
[5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible.
[6] Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450**.

Electronic Acknowledgement Receipt

EFS ID:	9634047
Application Number:	12201554
International Application Number:	
Confirmation Number:	9658
Title of Invention:	Autonomous Floor-Cleaning Robot
First Named Inventor/Applicant Name:	Joseph L. Jones
Customer Number:	74863
Filer:	Kari P. Footland
Filer Authorized By:	
Attorney Docket Number:	1007.0013-01000
Receipt Date:	10-MAR-2011
Filing Date:	29-AUG-2008
Time Stamp:	16:58:41
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		2011-03-10_IDS.pdf	1919570 efae4f331bc411d058d64400f5c4860a45ea1cfc	yes	20

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Transmittal Letter	1	2
	Information Disclosure Statement (IDS) Filed (SB/08)	3	4
	NPL Documents	5	20
Warnings:			
Information:			
	Total Files Size (in bytes):	1919570	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PATENT
Customer No. 74,863
Attorney Docket No. 1007.0013-01000

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
	)	
Joseph L. JONES et al.	)	Group Art Unit: 3723
	)	
Application No.: 12/201,554	)	Examiner: R. J. Scruggs
	)	
Filed: August 29, 2008	)	Confirmation No.: 9658
	)	
For: AUTONOMOUS FLOOR-CLEANING ROBOT	)	
	)	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97(b)

Pursuant to 37 C.F.R. §§ 1.56 and 1.97(b), applicants bring to the attention of the Examiner the document on the attached listing. This Information Disclosure Statement is being filed before the mailing date of a first Office Action on the merits following submission of a Request for Continued Examination filed on April 9, 2010.

Applicants respectfully request that the Examiner consider the listed document and indicate that it was considered by making appropriate notations on the attached form.

This submission does not represent that a search has been made or that no better art exists and does not constitute an admission that each or all of the listed documents are material or constitute "prior art." If the Examiner applies any of the documents as prior art against any claim in the application and applicants determine

that the cited documents do not constitute "prior art" under United States law, applicants reserve the right to present to the Office the relevant facts and law regarding the appropriate status of such documents.

Applicants further reserve the right to take appropriate action to establish the patentability of the disclosed invention over the listed documents, should one or more of the documents be applied against the claims of the present application.

If there is any fee due in connection with the filing of this Statement, please charge the fee to our Deposit Account No. 50-4126.

Respectfully submitted,

O'BRIEN JONES^{PLLC}

Dated: March 10, 2011

By:/Kari P. Footland, Reg. No. 55,187/
Attn: Kari P. Footland, Reg. No. 55,187
O'Brien Jones, PLLC
Telephone: (202) 292-4690
E-mail: kari.footland@obrienjones.com

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Joseph L. Jones et al.	Art Unit	: Unknown
Serial No.	: 12/201,554	Examiner	: Unknown
Filed	: August 29, 2008	Conf. No.	: 9658
Title	: AUTONOMOUS FLOOR-CLEANING ROBOT		

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REVOCATION AND NEW POWER OF ATTORNEY

Under 37 CFR §3.73(b), IROBOT CORPORATION, a Delaware corporation, certifies that it is the assignee of the entire right, title, and interest in the patent application referenced above by virtue of:

☒ An assignment from the inventors of the patent application identified above, which assignment was recorded in the Patent and Trademark Office at Reel 028625, Frame 0471 on July 24, 2012.

The undersigned has reviewed all the documents in the chain of title of the patent application identified above and, to the best of undersigned's knowledge and belief, title is in the assignee identified above.

The undersigned, whose title is supplied below, is empowered to act on behalf of the assignee.

The undersigned, acting on behalf of the assignee, hereby revokes all powers of attorney previously granted in the application and appoints the attorney(s) and or agent(s) associated with the Customer Number provided below to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith, said appointment to be to the exclusion of the inventor(s) and his/their attorney(s) and or agent(s) in accordance with the provisions of 37 CFR §3.71, et seq. of the Patent Office Rules of Practice.

PTO Customer Number: 26161

The undersigned also directs all correspondence be addressed to the Customer Number provided below.

PTO Customer Number: 26161

Respectfully submitted,

Date: 7/31/12

GLEN D. WEINSTEIN
iRobot Corporation
Senior Vice President and General Counsel

Fish & Richardson P.C.
Customor Number 26161
P. O. Box 1022
Minneapolis, MN 55440-1022
Telephone: 617-542-5070
Facsimile: 877-769-7945

Electronic Acknowledgement Receipt

EFS ID:	13406479
Application Number:	12201554
International Application Number:	
Confirmation Number:	9658
Title of Invention:	Autonomous Floor-Cleaning Robot
First Named Inventor/Applicant Name:	Joseph L. Jones
Customer Number:	74863
Filer:	John Paul Mello/Meredith Finch
Filer Authorized By:	John Paul Mello
Attorney Docket Number:	1007.0013-01000
Receipt Date:	02-AUG-2012
Filing Date:	29-AUG-2008
Time Stamp:	16:41:57
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Miscellaneous Incoming Letter	0010007Transmittal.PDF	44694 cc51fd00d177f442dd4bc4a71281a45bcc6a13a1	no	1

Warnings:	
Information:	

2	Power of Attorney	POA0010007.pdf	64896 60c725bcdaeb29ad2219f1162acc286ef4eab2c2	no	2

Warnings:	
Information:	
Total Files Size (in bytes):	109590

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Joseph L. Jones et al.	Art Unit	: Unknown
Serial No.	: 12/201,554	Examiner	: Unknown
Filed	: 8/29/2008	Conf. No.	: 9658
Title	: AUTONOMOUS FLOOR-CLEANING ROBOT		

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF REVOCATION AND NEW POWER OF ATTORNEY

A Revocation and New Power of Attorney executed July 31, 2012 is attached in connection with the above-referenced application. Please update the attorney of record and address information accordingly.

Please apply any necessary charges or credits to Deposit Account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: August 2, 2012

/John Paul Mello/
John Paul Mello
Reg. No. 61,400

Fish & Richardson P.C.
PTO Customer Number: 26161
Telephone: 617-542-5070
Facsimile: 617-542-8906

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/201,554	08/29/2008	Joseph L. Jones	09945-0010007 / DP-10J US

CONFIRMATION NO. 9658

26161
FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

POA ACCEPTANCE LETTER

OC000000055843980

Date Mailed: 08/14/2012

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 08/02/2012.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/ddinh/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/201,554	08/29/2008	Joseph L. Jones	1007.0013-01000

CONFIRMATION NO. 9658

POWER OF ATTORNEY NOTICE

74863
O"Brien Jones, PLLC (w/iRobot Corp.)
1951 Kidwell Drive
Suite 740
Tysons Corner, VA 22182

OC000000055843964

Date Mailed: 08/14/2012

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 08/02/2012.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/ddinh/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Joseph L. Jones et al.	Art Unit	: Unknown
Serial No.	: 12/201,554	Examiner	: Unknown
Filed	: August 29, 2008	Conf. No.	: 9658
Title	: AUTONOMOUS FLOOR-CLEANING ROBOT		

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Please consider the references listed on the enclosed PTO-1449 form. Foreign patent documents and non-patent literature are enclosed; cited U.S. patents and patent application publications will be provided on request.

This statement is being filed after the filing of a Request for Continued Examination and before the receipt of a first Office Action on the merits. Please apply any necessary charges or credits to Deposit Account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: September 24, 2012

/Tonya S. Drake/
Tonya S. Drake
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PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	12201554
Filing Date	2008-08-29
First Named Inventor	Jones
Art Unit	
Examiner Name	
Attorney Docket Number	09945-0010007

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1	1	AU2003275566A1	AU	A1	2004-06-03	KAWAGOE		☐
2	2	DE102004038074B3	DE	B3	2005-06-30	Schmidgall		☐
3	3	DE102004041021B3	DE	B3	2005-08-25	Aleker et al		☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12201554
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

4	4	DE102005046813A1	DE	A1	2007-04-05	Schlischka et al		☐
5	5	DE10242257A1	DE	A1	2003-04-24	Köchel et al		☐
6	6	DE10357636A1	DE	A1	2005-07-14	Schlischka et al		☐
7	7	DE199311014U1	DE	U1	1993-10-14	Kurz		☐
8	8	DE2128842C3	DE	C3	1980-12-18	ZIENER et al		☐
9	9	DE3317376A1	DE	A1	1984-11-15	Gerum et al		☐
10	10	DE3404202C2	DE	C2	1992-12-17	Abels		☐
11	11	DE3536907C2	DE	C2	1989-02-23	Yajima		☐
12	12	DE4338841C2	DE	C2	1999-08-05	Dickmann et al		☐
13	13	DE4414683A1	DE	A1	1995-10-19	Arnold et al		☐
14	14	DK198803389A_	DK	A_	1988-12-23	OLSEN		☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

15	15	EP114926A2	EP	A2	1984-08-08	Gremminger		☐
16	16	EP265542A1	EP	A1	1988-05-04	Rathbone et al		☐
17	17	EP281085A2	EP	A2	1988-09-07	Stauffer		☐
18	18	EP286328A1	EP	A1	1988-10-12	Korski et al		☐
19	19	EP294101B1	EP	B1	1993-12-15	Menn et al		☐
20	20	EP307381A3	EP	A3	1990-07-25	Holmquist		☐
21	21	EP352045A2	EP	A2	1990-01-24	Toole		☐
22	22	EP358628A3	EP	A3	1991-05-22	Evans et al		☐
23	23	EP389459A3	EP	A3	1991-10-23	Pong et al		☐
24	24	EP433697A3	EP	A3	1992-12-02	WILLIS et al		☐
25	25	EP437024A1	EP	A1	1991-07-17	Saunders et al		☐

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	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

26	26	EP479273A3	EP	A3	1993-05-26	ANDREW et al		☐
27	27	EP554978A3	EP	A3	1994-03-09	GOBUSH et al		☐
28	28	EP615719A1	EP	A1	1994-09-21	Raimondi		☐
29	29	EP792726B1	EP	B1	1999-06-23	WATANABE et al		☐
30	30	EP845237B1	EP	B1	2000-04-05	Imamura et al		☐
31	31	EP861629A1	EP	A1	1998-09-02	Imamura		☐
32	32	EP930040A3	EP	A3	1999-10-06	Burke et al		☐
33	33	EP1018315A1	EP	A1	2000-07-12	Zahuranec et al		☐
34	34	EP1139847B1	EP	B1	2003-08-06	DYSON et al		☐
35	35	EP1172719A1	EP	A1	2002-01-16	Colens		☐
36	36	EP1228734A3	EP	A3	2003-06-11	Bertola		☐

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	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

37	37	EP1380245A1	EP	A1	2004-01-14	Aleker et al		☐
38	38	EP1380246A3	EP	A3	2005-03-16	Schmidgall et al		☐
39	39	EP1553472A1	EP	A1	2005-07-13	Yeh		☐
40	40	EP1557730A1	EP	A1	2005-07-27	Dünne et al		☐
41	41	EP1642522A3	EP	A3	2007-11-28	Hellrung		☐
42	42	EP1672455A4	EP	A4	2007-12-05	KAWAGOE et al		☐
43	43	EP1836941A3	EP	A3	2009-10-21	Suzuki		☐
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45	45	FR2601443B1	FR	B1	1991-11-29	BUIL		☐
46	46	FR722755A_	FR	A_	1932-03-25	LEVY		☐
47	47	GB2128842B_	GB	B_	1986-04-16	IHNATOWICZ		☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12201554
	Filing Date	2008-08-29
	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

48	48	GB2225221A_	GB	A_	1990-05-30	Meili		☐
49	49	GB2267360B_	GB	B_	1995-12-06	BONSOR et al		☐
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12201554
	Filing Date	2008-08-29
	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☒ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☐ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Rolf Hille/	Date (YYYY-MM-DD)	2012-09-24
Name/Print	Rolf Hille	Registration Number	53912

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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EFS ID:	13816110
Application Number:	12201554
International Application Number:	
Confirmation Number:	9658
Title of Invention:	Autonomous Floor-Cleaning Robot
First Named Inventor/Applicant Name:	Joseph L. Jones
Customer Number:	26161
Filer:	Tonya S. Drake/Mary O'Connor
Filer Authorized By:	Tonya S. Drake
Attorney Docket Number:	09945-0010007 / DP-10J US
Receipt Date:	24-SEP-2012
Filing Date:	29-AUG-2008
Time Stamp:	11:28:39
Application Type:	Utility under 35 USC 111(a)

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53	Foreign Reference	GB2267360.pdf	784310 6d609626849d3aa285470848fe1fd1b872091f8e	no	21
Warnings:					
Information:					
54	Foreign Reference	GB2284957.pdf	686632 c3e8ad2e20e7617fca40a759f693144ab23ca04b	no	21
Warnings:					
Information:					

55	Foreign Reference	EP792726A1.pdf	670891 f578098d660040aa8b525f0093db2837c83d43e6	no	17

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(Not for submission under 37 CFR 1.99)

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Filing Date	2008-08-29
First Named Inventor	Jones
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Attorney Docket Number	09945-0010007

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	1	6604021	B2	2003-08-05	Imai et al	
	2	6604022	B2	2003-08-05	Parker et al	
	3	6609269	B2	2003-08-26	Kasper	
	4	6611734	B2	2003-08-26	Parker et al	
	5	6615434	B1	2003-09-09	Davis et al	
	6	6615885	B1	2003-09-09	Ohm	
	7	6622465	B2	2003-09-23	Jerome et al	
	8	6624744	B1	2003-09-23	Wilson et al	

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	9	6625843	B2	2003-09-30	Kim et al	
	10	6629028	B2	2003-09-30	Paromtchik et al	
	11	6633150	B1	2003-10-14	Wallach et al	
	12	6637546	B1	2003-10-28	Wang	
	13	6639659	B2	2003-10-28	Granger	
	14	6658325	B2	2003-12-02	Zweig	
	15	6658354	B2	2003-12-02	Lin	
	16	6658692	B2	2003-12-09	Lenkiewicz et al	
	17	6661239	B1	2003-12-09	Ozick	
	18	6662889	B2	2003-12-16	De et al	
	19	6668951	B2	2003-12-30	Won	

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	20	6670817	B2	2003-12-30	Fournier et al	
	21	6671925	B2	2004-01-06	Field et al	
	22	6677938	B1	2004-01-13	Maynard	
	23	6687571	B1	2004-02-03	Byrne et al	
	24	6690993	B2	2004-02-10	Foulke et al	
	25	6697147	B2	2004-02-24	Ko et al	
	26	6705332	B2	2004-03-16	Field et al	
	27	6711280	B2	2004-03-23	Stafsudd et al	
	28	6732826	B2	2004-05-11	Song et al	
	29	6735811	B2	2004-05-18	Field et al	
	30	6735812	B2	2004-05-18	Hekman et al	

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	31	6737591	B1	2004-05-18	Lapstun et al	
	32	6741364	B2	2004-05-25	Lange et al	
	33	6756703	B2	2004-06-29	Chang	
	34	6760647	B2	2004-07-06	Nourbakhsh et al	
	35	6764373	B1	2004-07-20	Osawa et al	
	36	6769004	B2	2004-07-27	Barrett	
	37	6774596	B1	2004-08-10	Bisset	
	38	6779380	B1	2004-08-24	Nieuwkamp	
	39	6810305	B2	2004-10-26	Kirkpatrick	
	40	6810350	B2	2004-10-26	Blakley	
	41	6832407	B2	2004-12-21	Salem et al	

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	42	6836701	B2	2004-12-28	McKee	
	43	6845297	B2	2005-01-18	Allard	
	44	6848146	B2	2005-02-01	Wright et al	
	45	6854148	B1	2005-02-15	Rief et al	
	46	6856811	B2	2005-02-15	Burdue et al	
	47	6859010	B2	2005-02-22	Jeon et al	
	48	6859682	B2	2005-02-22	Naka et al	
	49	6860206	B1	2005-03-01	Rudakevych et al	
	50	6865447	B2	2005-03-08	Lau et al	
	51	6870792	B2	2005-03-22	Chiappetta	
	52	6871115	B2	2005-03-22	Huang et al	

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	53	6886651	B1	2005-05-03	Slocum et al	
	54	6888333	B2	2005-05-03	Laby	
	55	6906702	B1	2005-06-14	Tanaka et al	
	56	6914403	B2	2005-07-05	Tsurumi	
	57	6917854	B2	2005-07-12	Bayer	
	58	6925357	C1	2010-05-11		
	59	6925679	B2	2005-08-09	Wallach et al	
	60	6929548	B2	2005-08-16	Wang	
	61	6940291	B1	2005-09-06	Ozick	
	62	6941199	B1	2005-09-06	Bottomley et al	
	63	6957712	B2	2005-10-25	Song et al	

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	64	6960986	B2	2005-11-01	Asama et al	
	65	6965211	B2	2005-11-15	Tsurumi	
	66	6968592	B2	2005-11-29	Takeuchi et al	
	67	6975246	B1	2005-12-13	Trudeau	
	68	6980229	B1	2005-12-27	Ebersole	
	69	6985556	B2	2006-01-10	Shanmugavel et al	
	70	6993954	B1	2006-02-07	George et al	
	71	7024280	B2	2006-04-04	Parker et al	
	72	7027893	B2	2006-04-11	Perry et al	
	73	7030768	B2	2006-04-18	Wanie	
	74	7031805	B2	2006-04-18	Lee et al	

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	75	7032469	B2	2006-04-25	Bailey	
	76	7040869	B2	2006-05-09	Beenker	
	77	7051399	B2	2006-05-30	Field et al	
	78	7053578	B2	2006-05-30	Diehl et al	
	79	7054716	B2	2006-05-30	McKee et al	
	80	7055210	B2	2006-06-06	Keppler et al	
	81	7057120	B2	2006-06-06	Ma et al	
	82	7057643	B2	2006-06-06	Iida et al	
	83	7059012	B2	2006-06-13	Song et al	
	84	7065430	B2	2006-06-20	Naka et al	
	85	7066291	B2	2006-06-27	Martins et al	

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	86	7069124	B1	2006-06-27	Whittaker et al	
	87	7079923	B2	2006-07-18	Abramson et al	
	88	7085623	B2	2006-08-01	Siegers	
	89	7113847	B2	2006-09-26	Chmura et al	
	90	7133746	B2	2006-11-07	Abramson et al	
	91	7142198	B2	2006-11-28	Lee	
	92	7148458	B2	2006-12-12	Schell et al	
	93	7155308	B2	2006-12-26	Jones	
	94	7167775	B2	2007-01-23	Abramson et al	
	95	7171285	B2	2007-01-30	Kim et al	
	96	7173391	B2	2007-02-06	Jones et al	

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	97	7174238	B1	2007-02-06	Zweig	
	98	7188000	B2	2007-03-06	Chiappetta et al	
	99	7193384	B1	2007-03-20	Norman et al	
	100	7196487	B2	2007-03-27	Jones et al	
	101	7201786	B2	2007-04-10	Wegelin et al	
	102	7211980	B1	2007-05-01	Bruemmer et al	
	103	7225500	B2	2007-06-05	Diehl et al	
	104	7246405	B2	2007-07-24	Yan	
	105	7248951	B2	2007-07-24	Huldén	
	106	7275280	B2	2007-10-02	Haegermarck et al	
	107	7283892	B1	2007-10-16	Boillot et al	

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	108	7288912	B2	2007-10-30	Landry et al	
	109	7318248	B1	2008-01-15	Yan	
	110	7320149	B1	2008-01-22	Huffman et al	
	111	7321807	B2	2008-01-22	Laski	
	112	7324870	B2	2008-01-29	Lee	
	113	7328196	B2	2008-02-05	Peters	
	114	7332890	B2	2008-02-19	Cohen et al	
	115	7346428	B1	2008-03-18	Huffman et al	
	116	7352153	B2	2008-04-01	Yan	
	117	7359766	B2	2008-04-15	Jeon et al	
	118	7360277	B2	2008-04-22	Moshenrose et al	

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	119	7363108	B2	2008-04-22	Noda et al	
	120	7388879	B2	2008-06-17	Sabe et al	
	121	7389156	B2	2008-06-17	Ziegler et al	
	122	7389166	B2	2008-06-17	Harwig et al	
	123	7408157	B2	2008-08-05	Yan	
	124	7418762	B2	2008-09-02	Arai et al	
	125	7430455	B2	2008-09-30	Casey et al	
	126	7430462	B2	2008-09-30	Chiu et al	
	127	7441298	B2	2008-10-28	Svendsen et al	
	128	7444206	B2	2008-10-28	Abramson et al	
	129	7448113	B2	2008-11-11	Jones et al	

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	130	7459871	B2	2008-12-02	Landry et al	
	131	7467026	B2	2008-12-16	Sakagami et al	
	132	7474941	B2	2009-01-06	Kim et al	
	133	7503096	B2	2009-03-17	Lin	
	134	7515991	B2	2009-04-07	Egawa et al	
	135	7539557	B2	2009-05-26	Yamauchi	
	136	7555363	B2	2009-06-30	Augenbraun et al	
	137	7557703	B2	2009-07-07	Yamada et al	
	138	7568259	B2	2009-08-04	Yan	
	139	7571511	B2	2009-08-11	Jones et al	
	140	7578020	B2	2009-08-25	Jaworski et al	

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	141	7600521	B2	2009-10-13	Woo	
	142	7603744	B2	2009-10-20	Reindle	
	143	7611583	B2	2009-11-03	Buckley et al	
	144	7617557	B2	2009-11-17	Reindle	
	145	7620476	B2	2009-11-17	Morse et al	
	146	7636928	B2	2009-12-22	Uno	
	147	7636982	B2	2009-12-29	Jones et al	
	148	7647144	B2	2010-01-12	Haegermarck	
	149	7650666	B2	2010-01-26	Jang	
	150	7660650	B2	2010-02-09	Kawagoe et al	
	151	7663333	B2	2010-02-16	Jones et al	

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	152	7693605	B2	2010-04-06	Park	
	153	7706917	B1	2010-04-27	Chiappetta et al	
	154	7761954	B2	2010-07-27	Ziegler et al	
	155	7765635	B2	2010-08-03	Park	
	156	7784147	B2	2010-08-31	Burkholder et al	
	157	7801645	B2	2010-09-21	Taylor et al	
	158	7805220	B2	2010-09-28	Taylor et al	
	159	7809944	B2	2010-10-05	Kawamoto	
	160	7832048	B2	2010-11-16	Harwig et al	
	161	7849555	B2	2010-12-14	Hahm et al	
	162	7853645	B2	2010-12-14	Brown et al	

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	163	7920941	B2	2011-04-05	Park et al	
	164	7937800	B2	2011-05-10	Yan	
	165	7957836	B2	2011-06-07	Myeong et al	
	166	8087117	B2	2012-01-03	Kapoor et al	
	167	D258901	S1	1981-04-14	Keyworth	
	168	D278732	S1	1985-05-07	Ohkado	
	169	D292223	S1	1987-10-06	Trumbull	
	170	D298766	S1	1988-11-29	Tanno et al	
	171	D318500	S1	1991-07-23	Malewicki et al	
	172	D345707	S1	1994-04-05	Alister	
	173	D375592	S1	1996-11-12	Ljunggren	

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	174	D464091	S1	2002-10-08	Christianson	
	175	D471243	S1	2003-03-04	Cioffi et al	
	176	D474312	S1	2003-05-06	Stephens et al	
	177	D478884	S1	2003-08-26	Slipy et al	

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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

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☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

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A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Rolf Hille/	Date (YYYY-MM-DD)	2012-09-24
Name/Print	Rolf Hille	Registration Number	53912

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8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	2136324	A_	1938-11-08	JOHN	
	2	2353621	A_	1944-07-11	SAV et al	
	3	2770825	A_	1956-11-20	PULLEN	
	4	2930055	A_	1960-03-29	FALLEN et al	
	5	3119369	A_	1964-01-28	HARLAND et al	
	6	3166138	A_	1965-01-19	DUNN	
	7	3333564	A_	1967-08-01	WATERS	
	8	3375375	A_	1968-03-26	ROBERT et al	

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	9	3381652	A_	1968-05-07	SCHAEFER et al	
	10	3569727	A_	1971-03-09	Aggarwal et al	
	11	3649981	A_	1972-03-21	Woodworth	
	12	3678882	A_	1972-07-25	Kinsella	
	13	3690559	A_	1972-09-12	Rudloff	
	14	3744586	A_	1973-07-10	Leinauer	
	15	3756667	A_	1973-09-04	Bombardier et al	
	16	3809004	A_	1974-05-07	Leonheart	
	17	3816004	A_	1974-06-11	Bignardi	
	18	3845831	A_	1974-11-05	James	
	19	3851349	A_	1974-12-03	Lowder	

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	20	3853086	A_	1974-12-10	Asplund	
	21	3863285	A_	1975-02-04	Hukuba	
	22	3888181	A_	1975-06-10	Kups	
	23	3952361	A_	1976-04-27	Wilkins	
	24	3989311	A_	1976-11-02	Debrey	
	25	3989931	A_	1976-11-02	Phillips	
	26	4012681	A_	1977-03-15	Finger et al	
	27	4070170	A_	1978-01-24	Leinfelt	
	28	4175589	A_	1979-11-27	Nakamura et al	
	29	4175892	A_	1979-11-27	De	
	30	4196727	A_	1980-04-08	Verkaart et al	

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	31	4198727	A_	1980-04-22	Farmer	
	32	4199838	A_	1980-04-29	Simonsson	
	33	4209254	A_	1980-06-24	Reymond et al	
	34	4297578	A_	1981-10-27	Carter	
	35	4305234	A_	1981-12-15	Pichelman	
	36	4309758	A_	1982-01-05	Halsall et al	
	37	4328545	A_	1982-05-04	Halsall et al	
	38	4367403	A_	1983-01-04	Miller	
	39	4401909	A_	1983-08-30	Gorsek	
	40	4416033	A_	1983-11-22	Specht	
	41	4445245	A_	1984-05-01	Lu	

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	42	4465370	A_	1984-08-14	Yuasa et al	
	43	4477998	A_	1984-10-23	You	
	44	4481692	A_	1984-11-13	Kurz	
	45	4482960	A_	1984-11-13	Pryor	
	46	4492058	A_	1985-01-08	Goldfarb et al	
	47	4518437	A_	1985-05-21	Sommer	
	48	4534637	A_	1985-08-13	Suzuki et al	
	49	4575211	A_	1986-03-11	Matsumura et al	
	50	4580311	A_	1986-04-08	Kurz	
	51	4601082	A_	1986-07-22	Kurz	
	52	4618213	A_	1986-10-21	Chen	

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	53	4620285	A_	1986-10-28	Perdue	
	54	4624026	A_	1986-11-25	Olson et al	
	55	4628454	A_	1986-12-09	Ito	
	56	4638445	A_	1987-01-20	Mattaboni	
	57	4644156	A_	1987-02-17	Takahashi et al	
	58	4649504	A_	1987-03-10	Krouglicof et al	
	59	4652917	A_	1987-03-24	Miller	
	60	4654492	A_	1987-03-31	Koerner et al	
	61	4654924	A_	1987-04-07	Getz et al	
	62	4660969	A_	1987-04-28	Sorimachi et al	
	63	4662854	A_	1987-05-05	Fang	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	64	4680827	A_	1987-07-21	Hummel	
	65	4700301	A_	1987-10-13	Dyke	
	66	4703820	A_	1987-11-03	Reinaud	
	67	4709773	A_	1987-12-01	Clement et al	
	68	4710020	A_	1987-12-01	Maddox et al	
	69	4712740	A_	1987-12-15	Duncan et al	
	70	4728801	A_	1988-03-01	O'Connor	
	71	4733343	A_	1988-03-22	Yoneda et al	
	72	4735136	A_	1988-04-05	Lee et al	
	73	4735138	A_	1988-04-05	Gawler et al	
	74	4748336	A_	1988-05-31	Fujie et al	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	75	4748833	A_	1988-06-07	Nagasawa	
	76	4767213	A_	1988-08-30	Hummel	
	77	4769700	A_	1988-09-06	Pryor	
	78	4796198	A_	1989-01-03	Boultinghouse et al	
	79	4806751	A_	1989-02-21	Abe et al	
	80	4813906	A_	1989-03-21	Matsuyama et al	
	81	4817000	A_	1989-03-28	Eberhardt	
	82	4818875	A_	1989-04-04	Weiner	
	83	4829442	A_	1989-05-09	Kadonoff et al	
	84	4829626	A_	1989-05-16	Harkonen et al	
	85	4832098	A_	1989-05-23	Palinkas et al	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	86	4851661	A_	1989-07-25	Everett	
	87	4854006	A_	1989-08-08	Nishimura et al	
	88	4855915	A_	1989-08-08	Dallaire	
	89	4857912	A_	1989-08-15	Everett et al	
	90	4858132	A_	1989-08-15	Holmquist	
	91	4867570	A_	1989-09-19	Sorimachi et al	
	92	4880474	A_	1989-11-14	Koharagi et al	
	93	4891762	A_	1990-01-02	Chotiros	
	94	4905151	A_	1990-02-27	Weiman et al	
	95	4909972	A_	1990-03-20	Britz	
	96	4918441	A_	1990-04-17	Bohman	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	97	4919489	A_	1990-04-24	Kopsco	

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20010004719	A1	2001-06-21	Sommer	
	2	20010013929	A1	2001-08-16	Torsten	
	3	20010020200	A1	2001-09-06	Das et al	
	4	20010025183	A1	2001-09-27	Shahidi	
	5	20010037163	A1	2001-11-01	Allard	
	6	20010043509	A1	2001-11-22	Green et al	
	7	20010045883	A1	2001-11-29	Holdaway et al	
	8	20010047895	A1	2001-12-06	De et al	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	9	20020011367	A1	2002-01-31	Kolesnik	
	10	20020021219	A1	2002-02-21	Edwards	
	11	20020027652	A1	2002-03-07	Paromtchik et al	
	12	20020036779	A1	2002-03-28	Kiyoi et al	
	13	20020081937	A1	2002-06-27	Yamada et al	
	14	20020095239	A1	2002-07-18	Wallach et al	
	15	20020097400	A1	2002-07-25	Jung et al	
	16	20020104963	A1	2002-08-08	Mancevski	
	17	20020108209	A1	2002-08-15	Peterson	
	18	20020112742	A1	2002-08-22	Bredo et al	
	19	20020113973	A1	2002-08-22	Ge	

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	20	20020116089	A1	2002-08-22	Kirkpatrick	
	21	20020124343	A1	2002-09-12	Reed	
	22	20020153185	A1	2002-10-24	Song et al	
	23	20020159051	A1	2002-10-31	Guo	
	24	20020166193	A1	2002-11-14	Kasper	
	25	20020169521	A1	2002-11-14	Goodman et al	
	26	20020189871	A1	2002-12-19	Won	
	27	20030009259	A1	2003-01-09	Hattori et al	
	28	20030023356	A1	2003-01-30	Keable	
	29	20030024986	A1	2003-02-06	Mazz et al	
	30	20030028286	A1	2003-02-06	Glenn et al	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	31	20030030399	A1	2003-02-13	Jacobs	
	32	20030058262	A1	2003-03-27	Sato et al	
	33	20030067451	A1	2003-04-10	TAGG et al	
	34	20030097875	A1	2003-05-29	Lentz et al	
	35	20030124312	A1	2003-07-03	Autumn	
	36	20030126352	A1	2003-07-03	Barrett	
	37	20030146384	A1	2003-08-07	Logsdon et al	
	38	20030159232	A1	2003-08-28	Hekman et al	
	39	20030168081	A1	2003-09-11	Lee et al	
	40	20030175138	A1	2003-09-18	Beenker	
	41	20030193657	A1	2003-10-16	Uomori et al	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	42	20030221114	A1	2003-11-27	Hino et al	
	43	20030229421	A1	2003-12-11	Chmura et al	
	44	20030229474	A1	2003-12-11	Suzuki et al	
	45	20030233171	A1	2003-12-18	Heiligensetzer	
	46	20030233870	A1	2003-12-25	Mancevski	
	47	20030233930	A1	2003-12-25	Ozick	
	48	20040016077	A1	2004-01-29	Song et al	
	49	20040030451	A1	2004-02-12	Solomon	
	50	20040030570	A1	2004-02-12	Solomon	
	51	20040055163	A1	2004-03-25	McCambridge et al	
	52	20040074038	A1	2004-04-22	Im et al	

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	53	20040074044	A1	2004-04-22	Diehl et al	
	54	20040083570	A1	2004-05-06	Song et al	
	55	20040093122	A1	2004-05-13	Galibraith	
	56	20040098167	A1	2004-05-20	Yi et al	
	57	20040111821	A1	2004-06-17	Lenkiewicz et al	
	58	20040113777	A1	2004-06-17	Matsuhira et al	
	59	20040117064	A1	2004-06-17	McDonald	
	60	20040117846	A1	2004-06-17	Karaoguz et al	
	61	20040118998	A1	2004-06-24	Wingett et al	
	62	20040128028	A1	2004-07-01	Miyamoto et al	
	63	20040133316	A1	2004-07-08	Dean	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	64	20040143919	A1	2004-07-29	Wilder	
	65	20040148419	A1	2004-07-29	Chen et al	
	66	20040148731	A1	2004-08-05	Damman et al	
	67	20040153212	A1	2004-08-05	Profio et al	
	68	20040181706	A1	2004-09-16	Chen et al	
	69	20040187249	A1	2004-09-30	Jones et al	
	70	20040187457	A1	2004-09-30	Colens	
	71	20040196451	A1	2004-10-07	Aoyama	
	72	20040204804	A1	2004-10-14	Lee et al	
	73	20040210345	A1	2004-10-21	Noda et al	
	74	20040210347	A1	2004-10-21	Sawada et al	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	75	20040221790	A1	2004-11-11	Sinclair et al	
	76	20040255425	A1	2004-12-23	Arai et al	
	77	20050010330	A1	2005-01-13	Abramson et al	
	78	20050015913	A1	2005-01-27	Kim et al	
	79	20050021181	A1	2005-01-27	Kim et al	
	80	20050028316	A1	2005-02-10	Thomas et al	
	81	20050053912	A1	2005-03-10	Roth et al	
	82	20050055796	A1	2005-03-17	Wright et al	
	83	20050067994	A1	2005-03-31	Jones et al	
	84	20050085947	A1	2005-04-21	Aldred et al	
	85	20050091782	A1	2005-05-05	Gordon et al	

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	86	20050091786	A1	2005-05-05	Wright et al	
	87	20050137749	A1	2005-06-23	Jeon et al	
	88	20050144751	A1	2005-07-07	Kegg et al	
	89	20050150074	A1	2005-07-14	Diehl et al	
	90	20050150519	A1	2005-07-14	Keppler et al	
	91	20050154795	A1	2005-07-14	Kuz et al	
	92	20050163119	A1	2005-07-28	Ito et al	
	93	20050165508	A1	2005-07-28	Kanda et al	
	94	20050166354	A1	2005-08-04	Uehigashi	
	95	20050166355	A1	2005-08-04	Tani	
	96	20050172445	A1	2005-08-11	Diehl et al	

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	97	20050183229	A1	2005-08-25	Uehigashi	
	98	20050183230	A1	2005-08-25	Uehigashi	
	99	20050187678	A1	2005-08-25	Myeong et al	
	100	20050192707	A1	2005-09-01	Park et al	
	101	20050209736	A1	2005-09-22	Kawagoe	
	102	20050211880	A1	2005-09-29	Schell et al	
	103	20050212929	A1	2005-09-29	Schell et al	
	104	20050213082	A1	2005-09-29	DiBernardo et al	
	105	20050213109	A1	2005-09-29	Schell et al	
	106	20050217042	A1	2005-10-06	Reindle	
	107	20050218852	A1	2005-10-06	Landry et al	

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	108	20050222933	A1	2005-10-06	Wesby	
	109	20050229340	A1	2005-10-20	Sawalski et al	
	110	20050229355	A1	2005-10-20	Crouch et al	
	111	20050235451	A1	2005-10-27	Yan	
	112	20050251292	A1	2005-11-10	Casey et al	
	113	20050255425	A1	2005-11-17	Pierson	
	114	20050258154	A1	2005-11-24	Blankenship et al	
	115	20050273967	A1	2005-12-15	Taylor et al	
	116	20050288819	A1	2005-12-29	de	
	117	20060000050	A1	2006-01-05	Cipolla et al	
	118	20060009879	A1	2006-01-12	Lynch et al	

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	119	20060010638	A1	2006-01-19	Shimizu et al	
	120	20060020369	A1	2006-01-26	Taylor et al	
	121	20060020370	A1	2006-01-26	Abramson	
	122	20060021168	A1	2006-02-02	Nishikawa	
	123	20060025134	A1	2006-02-02	Cho et al	
	124	20060037170	A1	2006-02-23	Shimizu	
	125	20060044546	A1	2006-03-02	Lewin et al	
	126	20060060216	A1	2006-03-23	Woo	
	127	20060061657	A1	2006-03-23	Rew et al	
	128	20060064828	A1	2006-03-30	Stein et al	
	129	20060087273	A1	2006-04-27	Ko et al	

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	130	20060089765	A1	2006-04-27	Pack et al	
	131	20060100741	A1	2006-05-11	Jung	
	132	20060107894	A1	2006-05-25	Buckley et al	
	133	20060119839	A1	2006-06-08	Bertin et al	
	134	20060143295	A1	2006-06-29	Costa et al	
	135	20060146776	A1	2006-07-06	Kim	
	136	20060150361	A1	2006-07-13	Aldred et al	
	137	20060184293	A1	2006-08-17	Konandreas et al	
	138	20060185690	A1	2006-08-24	Song et al	
	139	20060190133	A1	2006-08-24	Konandreas et al	
	140	20060190134	A1	2006-08-24	Ziegler et al	

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	141	20060190146	A1	2006-08-24	Morse et al	
	142	20060196003	A1	2006-09-07	Song et al	
	143	20060200281	A1	2006-09-07	Ziegler et al	
	144	20060220900	A1	2006-10-05	Ceskutti et al	
	145	20060229774	A1	2006-10-12	Park et al	
	146	20060259194	A1	2006-11-16	Chiu	
	147	20060259494	A1	2006-11-16	Watson et al	
	148	20060278161	A1	2006-12-14	Burkholder et al	
	149	20060288519	A1	2006-12-28	Jaworski et al	
	150	20060293787	A1	2006-12-28	Kanda et al	
	151	20060293808	A1	2006-12-28	Qian	

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	152	20070006404	A1	2007-01-11	Cheng et al	
	153	20070016328	A1	2007-01-18	Ziegler et al	
	154	20070017061	A1	2007-01-25	Yan	
	155	20070028574	A1	2007-02-08	Yan	
	156	20070032904	A1	2007-02-08	Kawagoe et al	
	157	20070043459	A1	2007-02-22	Abbott et al	
	158	20070061041	A1	2007-03-15	Zweig	
	159	20070061043	A1	2007-03-15	Ermakov et al	
	160	20070114975	A1	2007-05-24	Cohen et al	
	161	20070142964	A1	2007-06-21	Abramson	
	162	20070150096	A1	2007-06-28	Yeh et al	

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	163	20070156286	A1	2007-07-05	YAMAUCHI	
	164	20070157415	A1	2007-07-12	Lee et al	
	165	20070157420	A1	2007-07-12	Lee et al	
	166	20070179670	A1	2007-08-02	Chiappetta et al	
	167	20070226949	A1	2007-10-04	Hahm et al	
	168	20070234492	A1	2007-10-11	Svendsen et al	
	169	20070244610	A1	2007-10-18	Ozick et al	
	170	20070245511	A1	2007-10-25	Hahm et al	
	171	20070250212	A1	2007-10-25	Halloran et al	
	172	20070261193	A1	2007-11-15	Gordon et al	
	173	20070266508	A1	2007-11-22	Jones et al	

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	174	20080007203	A1	2008-01-10	Cohen et al	
	175	20080039974	A1	2008-02-14	Sandin et al	
	176	20080052846	A1	2008-03-06	Kapoor et al	
	177	20080091304	A1	2008-04-17	Ozick et al	
	178	20080109126	A1	2008-05-08	Sandin et al	
	179	20080134458	A1	2008-06-12	Ziegler et al	
	180	20080140255	A1	2008-06-12	Ziegler et al	
	181	20080155768	A1	2008-07-03	Ziegler et al	
	182	20080184518	A1	2008-08-07	Taylor et al	
	183	20080276407	A1	2008-11-13	Schnittman et al	
	184	20080281470	A1	2008-11-13	Gilbert et al	

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	185	20080282494	A1	2008-11-20	Won et al	
	186	20080294288	A1	2008-11-27	YAMAUCHI	
	187	20080302586	A1	2008-12-11	Yan	
	188	20080307590	A1	2008-12-18	Jones et al	
	189	20090007366	A1	2009-01-08	Svendsen et al	
	190	20090038089	A1	2009-02-12	Landry et al	
	191	20090048727	A1	2009-02-19	Hong et al	
	192	20090049640	A1	2009-02-26	Lee et al	
	193	20090055022	A1	2009-02-26	Casey et al	
	194	20090102296	A1	2009-04-23	Greene et al	
	195	20090292393	A1	2009-11-26	Casey et al	

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	196	20100006028	A1	2010-01-14	Buckley et al	
	197	20100011529	A1	2010-01-21	Won et al	
	198	20100049365	A1	2010-02-25	Jones et al	
	199	20100063628	A1	2010-03-11	Landry et al	
	200	20100257690	A1	2010-10-14	JONES et al	
	201	20100257691	A1	2010-10-14	JONES et al	
	202	20100263158	A1	2010-10-21	JONES et al	
	203	20100293742	A1	2010-11-25	CHUNG et al	

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	1	4920060	A_	1990-04-24	Parrent et al	
	2	4920605	A_	1990-05-01	Takashima	
	3	4937912	A_	1990-07-03	Kurz	
	4	4953253	A_	1990-09-04	Fukuda et al	
	5	4954962	A_	1990-09-04	Evans et al	
	6	4955714	A_	1990-09-11	Stotler et al	
	7	4961303	A_	1990-10-09	McCarty et al	
	8	4961304	A_	1990-10-09	Ovsborn et al	

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	9	4967862	A_	1990-11-06	Pong et al	
	10	4971591	A_	1990-11-20	Raviv et al	
	11	4973912	A_	1990-11-27	Kaminski et al	
	12	4977618	A_	1990-12-11	Allen	
	13	4977639	A_	1990-12-18	Takahashi et al	
	14	4986663	A_	1991-01-22	Cecchi et al	
	15	5001635	A_	1991-03-19	Yasutomi et al	
	16	5012886	A_	1991-05-07	Jonas et al	
	17	5018240	A_	1991-05-28	Holman	
	18	5022812	A_	1991-06-11	Coughlan et al	
	19	5023788	A_	1991-06-11	Kitazume et al	

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	20	5024529	A_	1991-06-18	Svetkoff et al	
	21	5032775	A_	1991-07-16	Mizuno et al	
	22	5033151	A_	1991-07-23	Kraft et al	
	23	5033291	A_	1991-07-23	Podoloff et al	
	24	5040116	A_	1991-08-13	Evans et al	
	25	5045769	A_	1991-09-03	Everett	
	26	5049802	A_	1991-09-17	Mintus et al	
	27	5051906	A_	1991-09-24	Evans et al	
	28	5062819	A_	1991-11-05	Mallory	
	29	5090321	A_	1992-02-25	Abouav	
	30	5094311	A_	1992-03-10	Akeel	

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	31	5098262	A_	1992-03-24	Wecker et al	
	32	5105550	A_	1992-04-21	Shenoha	
	33	5111401	A_	1992-05-05	Everett et al	
	34	5127128	A_	1992-07-07	Lee	
	35	5136675	A_	1992-08-04	Hodson	
	36	5144471	A_	1992-09-01	Takanashi et al	
	37	5144714	A_	1992-09-08	Mori et al	
	38	5144715	A_	1992-09-08	Matsuyo et al	
	39	5152028	A_	1992-10-06	Hirano	
	40	5152202	A_	1992-10-06	Strauss	
	41	5155684	A_	1992-10-13	Burke et al	

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	42	5163202	A_	1992-11-17	Kawakami et al	
	43	5163320	A_	1992-11-17	Goshima et al	
	44	5164579	A_	1992-11-17	Pryor et al	
	45	5170352	A_	1992-12-08	McTamaney et al	
	46	5173881	A_	1992-12-22	Sindle	
	47	5182833	A_	1993-02-02	Yamaguchi et al	
	48	5187662	A_	1993-02-16	Kamimura et al	
	49	5202742	A_	1993-04-13	Frank et al	
	50	5206500	A_	1993-04-27	Decker et al	
	51	5216777	A_	1993-06-08	Moro et al	
	52	5222786	A_	1993-06-29	Sovis et al	

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	53	5227985	A_	1993-07-13	DeMenthon	
	54	5233682	A_	1993-08-03	Abe et al	
	55	5251358	A_	1993-10-12	Moro et al	
	56	5276618	A_	1994-01-04	Everett	
	57	5276939	A_	1994-01-11	Uenishi	
	58	5277064	A_	1994-01-11	Knigga et al	
	59	5284452	A_	1994-02-08	Corona	
	60	5307273	A_	1994-04-26	Oh et al	
	61	5310379	A_	1994-05-10	Hippely et al	
	62	5315227	A_	1994-05-24	Pierson et al	
	63	5319827	A_	1994-06-14	Yang	

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	64	5323483	A_	1994-06-21	Baeg	
	65	5331713	A_	1994-07-26	Tipton	
	66	5341186	A_	1994-08-23	Kato	
	67	5341549	A_	1994-08-30	Wirtz et al	
	68	5345649	A_	1994-09-13	Whitlow	
	69	5352901	A_	1994-10-04	Poorman	
	70	5363305	A_	1994-11-08	Cox et al	
	71	5363935	A_	1994-11-15	Schempf et al	
	72	5369838	A_	1994-12-06	Wood et al	
	73	5386862	A_	1995-02-07	Glover et al	
	74	5399951	A_	1995-03-21	Lavallee et al	

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	75	5400244	A_	1995-03-21	Watanabe et al	
	76	5404612	A_	1995-04-11	Ishikawa	
	77	5410479	A_	1995-04-25	Coker	
	78	5435405	A_	1995-07-25	Schempf et al	
	79	5442358	A_	1995-08-15	Keeler et al	
	80	5446445	A_	1995-08-29	Bloomfield et al	
	81	5451135	A_	1995-09-19	Schempf et al	
	82	5465619	A_	1995-11-14	Sotack et al	
	83	5471560	A_	1995-11-28	Allard et al	
	84	5491670	A_	1996-02-13	Weber	
	85	5498948	A_	1996-03-12	Bruni et al	

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	86	5502638	A_	1996-03-26	Takenaka	
	87	5505072	A_	1996-04-09	Oreper	
	88	5510893	A_	1996-04-23	Suzuki	
	89	5511147	A_	1996-04-23	Abdel	
	90	5535476	A_	1996-07-16	Kresse et al	
	91	5537711	A_	1996-07-23	Tseng	
	92	5542148	A_	1996-08-06	Young	
	93	5546631	A_	1996-08-20	Chambon	
	94	5551119	A_	1996-09-03	Worwag	
	95	5551525	A_	1996-09-03	Pack et al	
	96	5608306	A_	1997-03-04	Rybeck et al	

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	97	5608894	A_	1997-03-04	Kawakami et al	
	98	5610488	A_	1997-03-11	Miyazawa	
	99	5613269	A_	1997-03-25	Miwa	
	100	5636402	A_	1997-06-10	Kubo et al	
	101	5642299	A_	1997-06-24	Hardin et al	
	102	5646494	A_	1997-07-08	Han	
	103	5647554	A_	1997-07-15	Ikegami et al	
	104	5682839	A_	1997-11-04	Grimsley et al	
	105	5696675	A_	1997-12-09	Nakamura et al	
	106	5698861	A_	1997-12-16	Oh	
	107	5710506	A_	1998-01-20	Broell et al	

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	108	5714119	A_	1998-02-03	Kawagoe et al	
	109	5717169	A_	1998-02-10	Liang et al	
	110	5717484	A_	1998-02-10	Hamaguchi et al	
	111	5720077	A_	1998-02-24	Nakamura et al	
	112	5732401	A_	1998-03-24	Conway	
	113	5735017	A_	1998-04-07	Barnes et al	
	114	5735959	A_	1998-04-07	Kubo et al	
	115	5742975	A_	1998-04-28	Knowlton et al	
	116	5745235	A_	1998-04-28	Vercammen et al	
	117	5752871	A_	1998-05-19	Tsuzuki	
	118	5756904	A_	1998-05-26	Oreper et al	

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	119	5764888	A_	1998-06-09	Bolan et al	
	120	5767437	A_	1998-06-16	Rogers	
	121	5767960	A_	1998-06-16	Orman	
	122	5777596	A_	1998-07-07	Herbert	
	123	5778486	A_	1998-07-14	Kim	
	124	5781697	A_	1998-07-14	Jeong	
	125	5784755	A_	1998-07-28	Karr et al	
	126	5786602	A_	1998-07-28	Pryor et al	
	127	5793900	A_	1998-08-11	Nourbakhsh et al	
	128	5802665	A_	1998-09-08	Knowlton et al	
	129	5814808	A_	1998-09-29	Takada et al	

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	130	5815884	A_	1998-10-06	Imamura et al	
	131	5819008	A_	1998-10-06	Asama et al	
	132	5819360	A_	1998-10-13	Fujii	
	133	5819936	A_	1998-10-13	Saveliev et al	
	134	5820821	A_	1998-10-13	Kawagoe et al	
	135	5821730	A_	1998-10-13	Drapkin	
	136	5825981	A_	1998-10-20	Matsuda	
	137	5828770	A_	1998-10-27	Leis et al	
	138	5831597	A_	1998-11-03	West et al	
	139	5836045	A_	1998-11-17	Anthony et al	
	140	5839532	A_	1998-11-24	Yoshiji et al	

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	141	5867861	A_	1999-02-09	Kasen et al	
	142	5869910	A_	1999-02-09	Colens	
	143	5894621	A_	1999-04-20	Kubo	
	144	5896611	A_	1999-04-27	Haaga	
	145	5903124	A_	1999-05-11	Kawakami	
	146	5905209	A_	1999-05-18	Oreper	
	147	5907886	A_	1999-06-01	Buscher	
	148	5910700	A_	1999-06-08	Crotzer	
	149	5916008	A_	1999-06-29	Wong	
	150	5924167	A_	1999-07-20	Wright et al	
	151	5933102	A_	1999-08-03	Miller et al	

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	152	5933913	A_	1999-08-10	Wright et al	
	153	5935333	A_	1999-08-10	Davis	
	154	5940346	A_	1999-08-17	Sadowsky et al	
	155	5943933	A_	1999-08-31	Evans et al	
	156	5947225	A_	1999-09-07	Kawakami et al	
	157	5950408	A_	1999-09-14	Schaedler	
	158	5968281	A_	1999-10-19	Wright et al	
	159	5974365	A_	1999-10-26	Mitchell	
	160	5983448	A_	1999-11-16	Wright et al	
	161	5984880	A_	1999-11-16	Lander et al	
	162	5987383	C1	2006-06-13	KELLER et al	

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	163	5989700	A_	1999-11-23	Krivopal	
	164	5991951	A_	1999-11-30	Kubo et al	
	165	5995884	A_	1999-11-30	Allen et al	
	166	5998953	A_	1999-12-07	Nakamura et al	
	167	5998971	A_	1999-12-07	Corbridge	
	168	6000088	A_	1999-12-14	Wright et al	
	169	6009358	A_	1999-12-28	Angott et al	
	170	6012618	A_	2000-01-11	Matsuo	
	171	6021545	A_	2000-02-08	Delgado et al	
	172	6023813	A_	2000-02-15	Thatcher et al	
	173	6023814	A_	2000-02-15	Imamura	

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	174	6025687	A_	2000-02-15	Himeda et al	
	175	6026539	A_	2000-02-22	Mouw et al	
	176	6032327	A_	2000-03-07	Oka et al	
	177	6032542	A_	2000-03-07	Warnick et al	
	178	6036572	A_	2000-03-14	Sze	
	179	6040669	A_	2000-03-21	Hog	
	180	6041472	A_	2000-03-28	Kasen et al	
	181	6046800	A_	2000-04-04	Ohtomo et al	
	182	6049620	A_	2000-04-11	Dickinson et al	
	183	6050648	A_	2000-04-18	Keleny	
	184	6052821	A_	2000-04-18	Chouly et al	

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	185	6055042	A_	2000-04-25	Sarangapani	
	186	6055702	A_	2000-05-02	Imamura et al	
	187	6061868	A_	2000-05-16	Moritsch et al	
	188	6065182	A_	2000-05-23	Wright et al	
	189	6070290	A_	2000-06-06	Schwarze et al	
	190	6073432	A_	2000-06-13	Schaedler	
	191	6076026	A_	2000-06-13	Jambhekar et al	
	192	6076227	A_	2000-06-20	Schallig et al	
	193	6081257	A_	2000-06-27	Zeller	
	194	6088020	A_	2000-07-11	Mor	
	195	6094775	A_	2000-08-01	Behmer	

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	196	6099091	A_	2000-08-08	Campbell	
	197	6101670	C1	2005-07-19		
	198	6101671	A_	2000-08-15	Wright et al	
	199	6108031	A_	2000-08-22	King et al	
	200	6108067	A_	2000-08-22	Okamoto	
	201	6108076	A_	2000-08-22	Hanseder	
	202	6108269	A_	2000-08-22	Kabel	
	203	6108597	A_	2000-08-22	Kirchner et al	
	204	6108859	A_	2000-08-29	Burgoon	
	205	6112143	A_	2000-08-29	Allen et al	
	206	6112996	A_	2000-09-05	Matsuo	

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	207	6119057	A_	2000-09-12	Kawagoe	
	208	6122798	A_	2000-09-26	Kobayashi et al	
	209	6124694	A_	2000-09-26	Bancroft et al	
	210	6125498	A_	2000-10-03	Roberts et al	
	211	6131237	A_	2000-10-17	Kasper et al	
	212	6138063	A_	2000-10-24	Himeda	
	213	6142252	A_	2000-11-07	Kinto et al	
	214	6146041	A_	2000-11-14	Chen et al	
	215	6146278	A_	2000-11-14	Kobayashi	
	216	6154279	A_	2000-11-28	Thayer	
	217	6154694	A_	2000-11-28	Aoki et al	

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	218	6160479	A_	2000-12-12	Åhlen et al	
	219	6167332	A_	2000-12-26	Kurtzberg et al	
	220	6167587	B1	2001-01-02	Kasper et al	
	221	6192548	B1	2001-02-27	Huffman	
	222	6192549	B1	2001-02-27	Kasen et al	
	223	6202243	B1	2001-03-20	Beaufoy et al	
	224	6216307	B1	2001-04-17	Kaleta et al	
	225	6220865	B1	2001-04-24	Macri et al	
	226	6230362	B1	2001-05-15	Kasper et al	
	227	6237741	B1	2001-05-29	Guidetti	
	228	6243913	B1	2001-06-12	Frank et al	

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	229	6263539	B1	2001-07-24	Baig	
	230	6263989	B1	2001-07-24	Won	
	231	6272936	B1	2001-08-14	Oreper et al	
	232	6278918	B1	2001-08-21	Dickson et al	
	233	6279196	B2	2001-08-28	Kasen et al	
	234	6282526	B1	2001-08-28	Ganesh	
	235	6283034	B1	2001-09-04	Miles	
	236	6285778	B1	2001-09-04	Nakajima et al	
	237	6285930	B1	2001-09-04	Dickson et al	
	238	6286181	B1	2001-09-11	Kasper et al	
	239	6300737	B1	2001-10-09	Bergvall et al	

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	240	6321337	B1	2001-11-20	Reshef et al	
	241	6321515	B1	2001-11-27	Colens	
	242	6323570	B1	2001-11-27	Nishimura et al	
	243	6324714	B1	2001-12-04	Walz et al	
	244	6332400	B1	2001-12-25	Meyer	
	245	6362875	B1	2002-03-26	Burkley	
	246	6374155	B1	2002-04-16	Wallach et al	
	247	6374157	B1	2002-04-16	Takamura	
	248	6385515	B1	2002-05-07	Dickson et al	
	249	6388013	B1	2002-05-14	Saraf et al	
	250	6397429	B1	2002-06-04	Legatt et al	

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	251	6400048	B1	2002-06-04	Nishimura et al	
	252	6401294	B2	2002-06-11	Kasper	
	253	6408226	B1	2002-06-18	Byrne et al	
	254	6412141	B1	2002-07-02		
	255	6415203	B1	2002-07-02	Inoue et al	
	256	6418586	B2	2002-07-16	Fulghum	
	257	6421870	B1	2002-07-23	Basham et al	
	258	6427285	B1	2002-08-06	Legatt et al	
	259	6430471	B1	2002-08-06	Kintou et al	
	260	6431296	B1	2002-08-13	Won	
	261	6437227	B1	2002-08-20	Theimer	

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	262	6437465	B1	2002-08-20	Nishimura et al	
	263	6438456	B1	2002-08-20	Feddema et al	
	264	6438793	B1	2002-08-27	Miner et al	
	265	6442476	B1	2002-08-27	Poropat	
	266	6442789	B1	2002-09-03	Legatt et al	
	267	6443509	B1	2002-09-03	Levin et al	
	268	6446302	B1	2002-09-10	Kasper et al	
	269	6454036	B1	2002-09-24	Airey et al	
	270	6473167	B1	2002-10-29	Odell	
	271	6480762	B1	2002-11-12	Uchikubo et al	
	272	6490539	B1	2002-12-03	Dickson et al	

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	273	6491127	B1	2002-12-10	Holmberg et al	
	274	6502657	B2	2003-01-07	Kerrebrock et al	
	275	6504610	B1	2003-01-07	Bauer et al	
	276	6507773	B2	2003-01-14	Parker et al	
	277	6519808	B2	2003-02-18	Legatt et al	
	278	6530102	B1	2003-03-11	Pierce et al	
	279	6530117	B2	2003-03-11	Peterson	
	280	6535793	B2	2003-03-18	Allard	
	281	6540424	B1	2003-04-01	Hall et al	
	282	6540607	B2	2003-04-01	Mokris et al	
	283	6543210	B2	2003-04-08	Rostoucher et al	

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	284	6548982	B1	2003-04-15	Papanikolopoulos et al	
	285	6553612	B1	2003-04-29	Dyson et al	
	286	6556722	B1	2003-04-29	Russell et al	
	287	6556892	B2	2003-04-29	Kuroki et al	
	288	6557104	B2	2003-04-29	Vu et al	
	289	6563130	B2	2003-05-13	Dworkowski et al	
	290	6571422	B1	2003-06-03	Gordon et al	
	291	6572711	B2	2003-06-03	Sclafani et al	
	292	6581239	B1	2003-06-24	Dyson et al	
	293	6584376	B1	2003-06-24	Van	
	294	6586908	B2	2003-07-01	Petersson et al	

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	295	6587573	B1	2003-07-01	Stam et al	
	296	6590222	B1	2003-07-08	Bisset et al	
	297	6594551	B2	2003-07-15	McKinney et al	
	298	6594844	B2	2003-07-22	Jones	

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2	2	GB2344747B_	GB	B_	2002-05-29	DYSON		☐
3	3	GB2404330B_	GB	B_	2005-07-06	PARK et al		☐

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4	4	GB2409966A_	GB	A_	2005-07-20	Kawagoe		☐
5	5	GB2417354A_	GB	A_	2006-02-22	Richards		☐
6	6	GB702426A_	GB	A_	1954-01-13	PULLEN		☐
7	7	JP1118752A_	JP	A_	1989-05-11	OKADA et al		☐
8	8	JP2283343A_	JP	A_	1990-11-20	IWASA		☐
9	9	JP04300516B2	JP	B2	2009-07-22	TAIKI		☐
10	10	JP5046239B_	JP	B_	1993-07-13	SUMYA et al		☐
11	11	JP5095879A_	JP	A_	1993-04-20	KITAGAWA		☐
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12201554
	Filing Date	2008-08-29
	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12201554
	Filing Date	2008-08-29
	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12201554
	Filing Date	2008-08-29
	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

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	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

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	Application Number	12201554
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	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Rolf Hille/	Date (YYYY-MM-DD)	2012-09-24
Name/Print	Rolf Hille	Registration Number	53912

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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EFS ID:	13816402
Application Number:	12201554
International Application Number:	
Confirmation Number:	9658
Title of Invention:	Autonomous Floor-Cleaning Robot
First Named Inventor/Applicant Name:	Joseph L. Jones
Customer Number:	26161
Filer:	Tonya S. Drake/Mary O'Connor
Filer Authorized By:	Tonya S. Drake
Attorney Docket Number:	09945-0010007 / DP-10J US
Receipt Date:	24-SEP-2012
Filing Date:	29-AUG-2008
Time Stamp:	11:47:23
Application Type:	Utility under 35 USC 111(a)

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File Listing:

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	12201554
Filing Date	2008-08-29
First Named Inventor	Jones
Art Unit	
Examiner Name	
Attorney Docket Number	09945-0010007

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	Application Number	12201554
	Filing Date	2008-08-29
	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12201554
	Filing Date	2008-08-29
	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12201554
	Filing Date	2008-08-29
	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12201554
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	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

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	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Rolf Hille/	Date (YYYY-MM-DD)	2012-09-24
Name/Print	Rolf Hille	Registration Number	53912

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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EFS ID:	13816753
Application Number:	12201554
International Application Number:	
Confirmation Number:	9658
Title of Invention:	Autonomous Floor-Cleaning Robot
First Named Inventor/Applicant Name:	Joseph L. Jones
Customer Number:	26161
Filer:	Tonya S. Drake/Mary O'Connor
Filer Authorized By:	Tonya S. Drake
Attorney Docket Number:	09945-0010007 / DP-10J US
Receipt Date:	24-SEP-2012
Filing Date:	29-AUG-2008
Time Stamp:	12:09:39
Application Type:	Utility under 35 USC 111(a)

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3	3	JP2005230032A_	JP	A_	2005-09-02	SAEKI		☐

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	Attorney Docket Number	09945-0010007

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	Attorney Docket Number	09945-0010007

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12201554
	Filing Date	2008-08-29
	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12201554
	Filing Date	2008-08-29
	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

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47	47	JP59112311U_	JP	U_	1984-07-28			☐

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	Attorney Docket Number	09945-0010007

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	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Rolf Hille/	Date (YYYY-MM-DD)	2012-09-24
Name/Print	Rolf Hille	Registration Number	53912

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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EFS ID:	13817188
Application Number:	12201554
International Application Number:	
Confirmation Number:	9658
Title of Invention:	Autonomous Floor-Cleaning Robot
First Named Inventor/Applicant Name:	Joseph L. Jones
Customer Number:	26161
Filer:	Tonya S. Drake/Mary O'Connor
Filer Authorized By:	Tonya S. Drake
Attorney Docket Number:	09945-0010007 / DP-10J US
Receipt Date:	24-SEP-2012
Filing Date:	29-AUG-2008
Time Stamp:	12:38:12
Application Type:	Utility under 35 USC 111(a)

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PTO/SB/08a (01-10)
Approved for use through 07/31/2012. OMB 0651-0031
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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First Named Inventor	Jones
Art Unit	
Examiner Name	
Attorney Docket Number	09945-0010007

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2	2	JP59226909A_	JP	A_	1984-12-20	HASEGAWA et al		☐
3	3	JP60089213U_	JP	U_	1985-06-19			☐

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	Filing Date	2008-08-29
	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

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	Examiner Name	
	Attorney Docket Number	09945-0010007

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23	23	JP7281752A_	JP	A_	1995-10-27	KAWAKAMI et al		☐
24	24	JP7311041A_	JP	A_	1995-11-28	HAMAGUCHI et al		☐
25	25	JP7313417A_	JP	A_	1995-12-05	NAKAMURA et al		☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12201554
	Filing Date	2008-08-29
	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	First Named Inventor	Jones
	Art Unit	
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	First Named Inventor	Jones
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	Attorney Docket Number	09945-0010007

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49	49	JP9269807A_	JP	A_	1997-10-14	NAKAMURA et al		☐
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	Application Number	12201554
	Filing Date	2008-08-29
	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

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Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Rolf Hille/	Date (YYYY-MM-DD)	2012-09-24
Name/Print	Rolf Hille	Registration Number	53912

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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EFS ID:	13819331
Application Number:	12201554
International Application Number:	
Confirmation Number:	9658
Title of Invention:	Autonomous Floor-Cleaning Robot
First Named Inventor/Applicant Name:	Joseph L. Jones
Customer Number:	26161
Filer:	Tonya S. Drake/Mary O'Connor
Filer Authorized By:	Tonya S. Drake
Attorney Docket Number:	09945-0010007 / DP-10J US
Receipt Date:	24-SEP-2012
Filing Date:	29-AUG-2008
Time Stamp:	14:36:49
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Application Number	12201554
Filing Date	2008-08-29
First Named Inventor	Jones
Art Unit	
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Attorney Docket Number	09945-0010007

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2	2	JP9319432A_	JP	A_	1997-12-12	KAWAKAMI		☐
3	3	JP9319434A_	JP	A_	1997-12-12	KAWAGOE et al		☐

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	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

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6	6	WO2002069774A1	WO	A1	2002-09-12	DIEHL et al		☐
7	7	WO2002071175A1	WO	A1	2002-09-12	DIEHL et al		☐
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9	9	WO2002081074A1	WO	A1	2002-10-17	FORMANEK		☐
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	Application Number	12201554
	Filing Date	2008-08-29
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

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23	23	WO2000038028A1	WO	A1	2000-06-29	DYSON		☐
24	24	WO2001080703A1	WO	A1	2001-11-01	KONRAD		☐
25	25	WO2002067752A1	WO	A1	2002-09-06	VUIJK		☐

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	Application Number	12201554
	Filing Date	2008-08-29
	First Named Inventor	Jones
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26	26	WO2002069775A3	WO	A3	2003-05-01	DIEHL et al		☐
27	27	WO2004043215A1	WO	A1	2004-05-27	KAWAGOE		☐
28	28	WO2004059409A1	WO	A1	2004-07-15	DÜNNE et al		☐
29	29	WO2005006935A1	WO	A1	2005-01-27	MAYER et al		☐
30	30	WO2005036292A1	WO	A1	2005-04-21	KAWAGOE et al		☐
31	31	WO2005037496A1	WO	A1	2005-04-28	QIAN		☐
32	32	WO2005055796A2	WO	A2	2005-06-23	SCHLISCHKA et al		☐
33	33	WO2005076545A1	WO	A1	2005-08-18	HABETHA et al		☐
34	34	WO2005077243A1	WO	A1	2005-08-25	ANDRUP et al		☐
35	35	WO2005081074A1	WO	A1	2005-09-01	COHEN et al		☐
36	36	WO2005082223A1	WO	A1	2005-09-09	DÜNNE et al		☐

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37	37	WO2005083541A1	WO	A1	2005-09-09	LANDRY et al		☐
38	38	WO2006061133A1	WO	A1	2006-06-15	DÜNNE et al		☐
39	39	WO2006073248A1	WO	A1	2006-07-13	SHIN et al		☐
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43	43	WO1995030887A1	WO	A1	1995-11-16	IGLSEDER		☐
44	44	WO1996017258A3	WO	A3	1997-02-13	POPOVICH		☐
45	45	WO1998053456A1	WO	A1	1998-11-26	GABAI et al		☐
46	46	WO1999005580A2	WO	A2	1999-02-04	DUSCHEK		☐

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International Application Number:	
Confirmation Number:	9658
Title of Invention:	Autonomous Floor-Cleaning Robot
First Named Inventor/Applicant Name:	Joseph L. Jones
Customer Number:	26161
Filer:	Tonya S. Drake/Mary O'Connor
Filer Authorized By:	Tonya S. Drake
Attorney Docket Number:	09945-0010007 / DP-10J US
Receipt Date:	24-SEP-2012
Filing Date:	29-AUG-2008
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Application Type:	Utility under 35 USC 111(a)

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First Named Inventor	Jones
Art Unit	
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	Attorney Docket Number	09945-0010007

	1	Borges et al. "Optimal Mobile Robot Pose Estimation Using Geometrical Maps", IEEE Transactions on Robotics and Automation, Vol. 18, No. 1, pp. 87-94, February, 2002	☐
	2	Braunstingl et al. "Fuzzy Logic Wall Following of a Mobile Robot Based on the Concept of General Perception" ICAR '95, 7th International Conference on Advanced Robotics, Sant Feliu De Guixols, Spain, pp. 367-376, September, 1995	☐
	3	Bulusu, et al. "Self Configuring Localization systems: Design and Experimental Evaluation", ACM Transactions on Embedded Computing Systems Vol. 3 No.1 pp.24-60, 2003	☐
	4	Caccia, et al. "Bottom-Following for Remotely Operated Vehicles", 5th IFAC conference, Alaborg, Denmark, pp. 245-250 8/1/2000	☐
	5	Chae, et al. "StarLITE: A new artificial landmark for the navigation of mobile robots", http://www.irc.atr.jp/jk-nrs2005/pdf/Starlite.pdf, 4 pages, 2005	☐
	6	Chamberlin et al. "Team 1: Robot Locator Beacon System" NASA Goddard SFC, Design Proposal, 15 pages, 02/17/06	☐
	7	Champy "Physical management of IT assets in Data Centers using RFID technologies", RFID 2005 University, October 12-14, 2005 (NPL0126)	☐
	8	Chiri "Joystick Control for Tiny OS Robot", http://www.eecs.berkeley.edu/Programs/ugrad/superb/papers2002/chiri.pdf. 12 pages, 8/8/2002	☐
	9	Christensen et al. "Theoretical Methods for Planning and Control in Mobile Robotics" 1997 First International Conference on Knowledge-Based Intelligent Electronic Systems, Adelaide, Australia, pp. 81-86, May 21-27, 1997	☐
	10	Andersen et al., "Landmark based navigation strategies", SPIE Conference on Mobile Robots XIII, SPIE Vol. 3525, pp.	☐
	11	Clerentin, et al. "A localization method based on two omnidirectional perception systems cooperation" Proc of IEEE International Conference on Robotics & Automation, San Francisco, CA Vol. 2, pp. 1219-1224, April 2000	☐

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	Examiner Name	
	Attorney Docket Number	09945-0010007

	12	Corke "High Performance Visual serving for robots end-point control". SPIE Vol. 2056 Intelligent robots and computer vision 1993	☐
	13	Cozman et al. "Robot Localization using a Computer Vision Sextant", IEEE International Midwest Conference on Robotics and Automation, pp. 106-111, 1995	☐
	14	D'Orazio, et al. "Model based Vision System for mobile robot position estimation", SPIE Vol. 2058 Mobile Robots VIII, pp.38-49, 1992	☐
	15	De Bakker, et al. "Smart PSD- array for sheet of light range imaging", Proc. Of SPIE Vol 3965, pp. 1-12, 05/15/00	☐
	16	Denning Roboscrub image (1989)	☐
	17	Desaulniers, et al. "An Efficient Algorithm to find a shortest path for a car-like Robot", IEEE Transactions on robotics and Automation Vol.11 No.6, pp. 819-828, December 1995	☐
	18	Dorfmüller-Ulhaas "Optical Tracking From User Motion to 3D Interaction", http://www.cg.tuwien.ac.at/research/publications/2002/Dorfmueller-Ulhaas-thesis, 182 pages, 2002	☐
	19	Dorsch, et al. "Laser Triangulation: Fundamental uncertainty in distance measurement", Applied Optics, Vol. 33 No. 7, pp. 1306-1314, 03/01/94	☐
	20	Dudek, et al. "Localizing A Robot with Minimum Travel" Proceedings of the sixth annual ACM-SIAM symposium on Discrete algorithms, Vol 27 No.2 pp. 583-604, April 1998	☐
	21	Dulimarta, et al. "Mobile Robot Localization in Indoor Environment", Pattern Recognition, Vol. 30, No. 1, pp. 99-111, 1997	☐
	22	EBay "Roomba Timer -> Timed Cleaning- Floorvac Robotic Vacuum", Cgi.ebay.com/ws/eBayISAPI.dll?viewitem&category=43526&item=4375198387&rd=1, 5 pages, 04/20/05	☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12201554
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	First Named Inventor	Jones
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	Examiner Name	
	Attorney Docket Number	09945-0010007

	23	Electrolux "Welcome to the Electrolux trilobite" www.electroluxusa.com/node57.asp?currentURL=node142.asp%3F, 2 pages, 03/18/05	☐
	24	Eren, et al. "Accuracy in position estimation of mobile robots based on coded infrared signal transmission", Proceedings: Integrating Intelligent Instrumentation and Control, Instrumentation and Measurement Technology Conference, 1995. IMTC/95. pp. 548-551, 1995	☐
	25	Eren, et al. "Operation of Mobile Robots in a Structured Infrared Environment", Proceedings. 'Sensing, Processing, Networking', IEEE Instrumentation and Measurement Technology Conference, 1997 (IMTC/97), Ottawa, Canada Vol. 1, pp. 20-25, May 19-21, 1997	☐
	26	Barker, "Navigation by the Stars- Ben Barker 4th Year Project" Power point pp. 1-20	☐
	27	Becker, et al. "Reliable Navigation Using Landmarks " IEEE International Conference on Robotics and Automation, 0-7803-1965-6, pp. 401-406, 1995	☐
	28	Benayad-Cherif, et al., "Mobile Robot Navigation Sensors" SPIE Vol. 1831 Mobile Robots, VII, pp. 378-387, 1992	☐
	29	Facchinetti, Claudio et al. "Using and Learning Vision-Based Self-Positioning for Autonomous Robot Navigation", ICARCV '94, Vol 3 pp.1694-1698, 1994	☐
	30	Betke, et al., "Mobile Robot localization using Landmarks" Proceedings of the IEEE/RSJ/GI International Conference on Intelligent Robots and Systems '94 "Advanced Robotic Systems and the Real World" (IROS '94), Vol.	☐
	31	Facchinetti, Claudio et al. "Self-Positioning Robot Navigation Using Ceiling Images Sequences", ACCV '95, 5 pages, December 5-8, 1995	☐
	32	Fairfield, Nathaniel et al. "Mobile Robot Localization with Sparse Landmarks", SPIE Vol. 4573 pp.148-155, 2002	☐
	33	Favre-Bulle, Bernard "Efficient tracking of 3D – Robot Position by Dynamic Triangulation", IEEE Instrumentation and Measurement Technology Conference IMTC 98 Session on Instrumentation and Measurement in Robotics, Vol. 1, pp. 446-449, May 18-21, 1998	☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	34	Fayman "Exploiting Process Integration and Composition in the context of Active Vision", IEEE Transactions on Systems, Man, and Cybernetics- Part C: Application and reviews, Vol 29 No.1, pp. 73-86, February 1999	☐
	35	Florbot GE Plastics Image (1989-1990)	☐
	36	Franz, et al. "Biomimetric robot navigation", Robotics and Autonomous Systems Vol. 30 pp.133-153, 2000	☐
	37	Fuentes, et al. "Mobile Robotics 1994", University of Rochester. Computer Science Department, TR 588, 44 pages, 12/07/94	☐
	38	Bison, P et al., "Using a structured beacon for cooperative position estimation" Robotics and Autonomous Systems Vol, 29, No. 1, pp.33-40, October, 1999	☐
	39	Fukuda, et al. "Navigation System based on Ceiling Landmark Recognition for Autonomous mobile robot", 1995 IEEE/ RSJ International Conference on Intelligent Robots and Systems 95. 'Human Robot Interaction and Cooperative Robots', Pittsburgh, PA, pp.1466/1471, August 5-9, 1995	☐
	40	Gionis "A hand-held optical surface scanner for environmental Modeling and Virtual Reality", Virtual Reality World, 16 pages 1996	☐
	41	Goncalves et al. "A Visual Front-End for Simultaneous Localization and Mapping", Proceedings of the 2005 IEEE International Conference on Robotics and Automation, Barcelona, Spain, pp. 44-49, April, 2005	☐
	42	Gregg et al. "Autonomous Lawn Care Applications", 2006 Florida Conference on Recent Advances in Robotics, FCRAR 2006, pp. 1-5, May 25-26, 2006	☐
	43	Hamamatsu "SI PIN Diode S5980, S5981 S5870- Multi-element photodiodes for surface mounting", Hamatsu Photonics, 2 pages April 2004	☐
	44	Hammacher Schlemmer "Electrolux Trilobite Robotic Vacuum" www.hammacher.com/publish/71579.asp? promo=xsells, 3 pages, 03/18/05	☐

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	45	Haralick et al. " Pose Estimation from Corresponding Point Data", IEEE Transactions on systems, Man, and Cybernetics, Vol. 19, No. 6, pp. 1426-1446, November, 1989	☐
	46	Hausler "About the Scaling Behaviour of Optical Range Sensors", Fringe '97, Proceedings of the 3rd International Workshop on Automatic Processing of Fringe Patterns, Bremen, Germany, pp. 147-155, September 15-17, 1997	☐
	47	Blaasvaer, et al. "AMOR- An Autonomous Mobile Robot Navigation System", Proceedings of the IEEE International Conference on Systems, Man, and Cybernetics, pp.2266-2271, 1994	☐
	48	Hoag, et al. "Navigation and Guidance in interstellar space", ACTA Astronautica Vol. 2, pp. 513-533 , 02/14/75	☐
	49	Home Robot – UBOT; Microbotusa.com, retrieved from the WWW at www.microrobotusa.com, accessed 12/2/2008	☐
	50	Huntsberger et al. "CAMPOUT: A Control Architecture for Tightly Coupled Coordination of Multirobot Systems for Planetary Surface Exploration", IEEE Transactions on Systems, Man, and Cybernetics – Part A: Systems and Humans, Vol. 33, No. 5, pp. 550-559, September, 2003	☐

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Application Number:	12201554
International Application Number:	
Confirmation Number:	9658
Title of Invention:	Autonomous Floor-Cleaning Robot
First Named Inventor/Applicant Name:	Joseph L. Jones
Customer Number:	26161
Filer:	Tonya S. Drake/Mary O'Connor
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Attorney Docket Number:	09945-0010007 / DP-10J US
Receipt Date:	24-SEP-2012
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	1	Jarosiewicz et al. "Final Report – Lucid", University of Florida, Departmetn of Electrical and Computer Engineering, EEL 5666 – Intelligent Machine Design Laboratory, 50 pages, 08/04/99	☐
	2	Jensfelt, et al. "Active Global Localization for a mobile robot using multiple hypothesis tracking", IEEE Transactions on Robots and Automation Vol 17, No. 5, pp. 748-760, October 2001	☐
	3	Jeong, et al. "An intelligent map-building system for indoor mobile robot using low cost photo sensors", SPIE Vol. 6042 6 pages, 2005	☐
	4	Kahney, "Robot Vacs are in the House," www.wired.com/news/technology/o,1282,59237,00.html, 6 pages, 06/18/03	☐
	5	Karcher USA "RC 3000 Robotics cleaner", www.karcher-usa.com, 3 pages, 03/18/05	☐
	6	Karlsson et al., The vSLAM Algorithm for Robust Localization and Mapping", Proceedings of the 2005 IEEE International Conference on Robotics and Automation, Barcelona, Spain, pp. 24-29, April, 2005	☐
	7	Karlsson, et al "Core Technologies for service Robotics, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2004), Vol. 3, pp. 2979-2984, September 28- October 2, 2004	☐
	8	King "Heplmate-TM- Autonomous mobile Robots Navigation Systems", SPIE Vol. 1388 Mobile Robots pp.190-198, 1990	☐
	9	Kleinberg, The Localization Problem for Mobile Robots", Laboratory for Computer Science, Massachusetts Institute of Technology, 1994 IEEE, pp. 521-531, 1994	☐
	10	Knight, et al., "Localization and Identification of Visual Landmarks", Journal of Computing Sciences in Colleges, Volume 16 Issue 4, 2001 pp. 312-313, May 2001	☐
	11	Kolodko et al. "Experimental System for Real-Time Motion Estimation", Proceedings of the 2003 IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM 2003), pp. 981-986, 2003	☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12201554
	Filing Date	2008-08-29
	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

	12	Komoriya et al., Planning of Landmark Measurement for the Navigation of a Mobile Robot", Proceedings of the 1992 IEEE/RSJ International Cofnerence on Intelligent Robots and Systems, Raleigh, NC pp. 1476-1481, July 7-10, 1992	☐
	13	Koolatron "KOOLVAC- Owner's Manual", 13 pages	☐
	14	Krotov, et al. "Digital Sextant", Downloaded from the internet at: http://www.cs.cmu.edu/~epk/ , 1 page, 1995	☐
	15	Krupa et al. "Autonomous 3-D Positioning of Surgical Instruments in Robotized Laparoscopic Surgery Using Visual Servoing", IEEE Transactions on Robotics and Automation, Vol. 19, No. 5, pp. 842-853, 10/05/03	☐
	16	Kuhl, et al. "Self Localization in Environments using Visual Angles", VRCAI '04 Proceedings of the 2004 ACM SIGGRAPH international conference on Virtual Reality continuum and its applications in industry, pp.472-475, 2004	☐
	17	Kurth, "Range-Only Robot Localization and SLAM with Radio", http://www.ri.cmu.edu/pub_files/pub4/ kurth_derek_2004_1/kurth_derek_2004_1.pdf. 60 pages, May, 2004	☐
	18	Lambrinos, et al. "A mobile robot employing insect strategies for navigation", http://www8.cs.umu.se/kurser/TDBD17/ VT04/dl/Assignment%20Papers/lambrinos-RAS-2000.pdf, 38 pages, 02/19/99	☐
	19	Lang et al. "Visual Measurement of Orientation Using Ceiling Features", 1994 IEEE, pp. 552-555, 1994	☐
	20	Lapin, "Adaptive position estimation for an automated guided vehicle", SPIE Vol. 1831 Mobile Robots VII, pp. 82-94, 1992	☐
	21	LaValle et al. "Robot Motion Planning in a Changing, Partially Predictable Environment", 1994 IEEE International Symposium on Intelligent Control, Columbus, OH, pp. 261-266, August 16-18, 1994	☐
	22	Lee, et al. "Localization Of a Mobile Robot Using the Image of a Moving Object", IEEE Transaction on Industrial Electronics, Vol. 50, No.3 pp. 612-619, June 2003	☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12201554
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	First Named Inventor	Jones
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	Attorney Docket Number	09945-0010007

	23	Lee, et al. "Development of Indoor Navigation system for Humanoid Robot Using Multi-sensors Integration", ION NTM, San Diego, CA pp.798-805, Jan 22-24, 2007	☐
	24	Leonard, et al. "Mobile Robot Localization by tracking Geometric Beacons", IEEE Transaction on Robotics and Automation, Vol. 7, No. 3 pp. 376-382, June 1991	☐
	25	Li et al. "Robost Statistical Methods for Securing Wireless Localization in Sensor Networks", Wireless Information Network Laboratory, Rutgers University	☐
	26	Li et al. "Making a Local Map of Indoor Environments by Swiveling a Camera and a Sonar", Proceedings of the 1999 IEEE/RSJ International Conference on Intelligent Robots and Systems, pp. 954-959, 1999	☐
	27	Lin, et al.. "Mobile Robot Navigation Using Artificial Landmarks", Journal of robotics System 14(2). pp. 93-106, 1997	☐
	28	Linde "Dissertation, "On Aspects of Indoor Localization"" https://eldorado.tu-dortmund.de/handle/2003/22854, University of Dortmund, 138 pages, 08/28/06	☐
	29	Lumelsky, et al. "An Algorithm for Maze Searching with Azimuth Input", 1994 IEEE International Conference on Robotics and Automation, San Diego, CA Vol. 1, pp. 111-116, 1994	☐
	30	Luo et al., "Real-time Area-Covering Operations with Obstacle Avoidance for Cleaning Robots," 2002, IEeE, pg 2359-2364	☐
	31	Ma "Thesis: Documentation On Northstar", California Institute of Technology, 14 pages, 05/17/06	☐
	32	Madsen, et al. "Optimal landmark selection for triangulation of robot position", Journal of Robotics and Autonomous Systems Vol, 13 pp.277-292, 1998	☐
	33	Martishevcky, "The Accuracy of point light target coordinate determination by dissectoral tracking system", SPIE Vol. 2591 pp.25-30	☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	Art Unit	
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	34	Matsutek Enterprises Co. Ltd "Automatic Rechargeable Vacuum Cleaner", http://matsutek.manufacturer.globalsources.com/si/6008801427181/pdtl/Home-vacuum/10..., 04/23/07	☐
	35	McGillem, et al. "Infra-red Lacation System for Navigation and Autonomous Vehicles", 1988 IEEE International Conference on Robotics and Automation, Vol. 2, pp. 1236-1238, April, 24-29, 1988	☐
	36	McGillem,et al. "A Beacon Navigation Method for Autonomous Vehicles", IEEE Transactions on Vehicular Technology, Vol.38, No.3, pp. 132-139, August 1989	☐
	37	Michelson "Autonomous Navigation", 2000 Yearbook of Science & Technology, McGraw-Hill, New York, ISBN 0-07-052771-7, pp. 28 – 30, 1999	☐
	38	Miro, et al. "Towards Vision Based Navigation in Large Indoor Environments", Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems, Beijing, China, pp. 2096-2102, October 9-15, 2006	☐
	39	MobileMag "Samsung Unveils High-tech Robot Vacuum Cleaner", http://www.mobilemag.com/content/100/102/C2261/, 4 pages, 03/18/05	☐
	40	Monteiro, et al. "Visual Servoing for Fast Mobile Robot: Adaptive Estimation of Kinematic Parameters", Proceedings of the IECON '93., International Conference on Industrial Electronics, Maui, HI, pp. 1588-1593, November 15-19, 1993	☐
	41	Moore, et al. "A simple Map-bases Localization strategy using range measurements, SPIE Vol. 5804 pp.612-620, 2005	☐
	42	Munich et al. "SIFT-ing Through Features with ViPR", IEEE Robotics & Automation Magazine, pp. 72-77, September, 2006	☐
	43	Munich et al. "ERSP: A Software Platform and Architecture for the Service Robotics Industry", Intelligent Robots and Systems, 2005. (IROS 2005), pp. 460-467, August 2-6, 2005	☐
	44	Nam, et al. "Real-Time Dynamic Visual Tracking Using PSD Sensors and extended Trapezoidal Motion Planning", Applied Intelligence 10, pp. 53-70, 1999	☐

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	45	Nitu et al. "Optomechatronic System for Position Detection of a Mobile Mini-Robot", IEEE Ttransactions on Industrial Electronics, Vol. 52, No. 4, pp. 969-973, August, 2005	☐
	46	On Robo "Robot Reviews Samsung Robot Vacuum (VC-RP30W)", www.onrobo.com/reviews/AT_Home/vacuum_cleaners/on00vcrb30rosam/index.htm.. 2 pages, 2005	☐
	47	OnRobo "Samsung Unveils Its Multifunction Robot Vacuum", www.onrobo.com/enews/0210/samsung_vacuum.shtml, 3 pages, 03/18/05	☐
	48	Pages et al. "Optimizing Plane-to-Plane Positioning Tasks by Image-Based Visual Servoing and Structured Light", IEEE Transactions on Robotics, Vol. 22, No. 5, pp. 1000-1010, October, 2006	☐
	49	Iirobotics.com "Samsung Unveils Its Multifunction Robot Vacuum", www.iirobotics.com/webpages/hotstuff.php?ubre=111, 3 pages, 3/18/2005	☐
	50	InMach "Intelligent Machines", www.inmach.de/inside.html, 1 page , 11/19/08	☐

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Application Number:	12201554
International Application Number:	
Confirmation Number:	9658
Title of Invention:	Autonomous Floor-Cleaning Robot
First Named Inventor/Applicant Name:	Joseph L. Jones
Customer Number:	26161
Filer:	Tonya S. Drake/Mary O'Connor
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	Filing Date	2008-08-29
	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

	1	Pages et al. "A camera-projector system for robot positioning by visual servoing", Proceedings of the 2006 Conference on Computer Vision and Pattern Recognition Workshop (CVPRW06), 8 pages, June 17-22, 2006	☐
	2	Pages, et al. "Robust decoupled visual servoing based on structured light", 2005 IEEE/RSJ Int. Conf. on Intelligent Robots and Systems, pp. 2676—2681, 2005	☐
	3	Park et al. "A Neural Network Based Real-Time Robot Tracking Controller Using Position Sensitive Detectors," IEEE World Congress on Computational Intelligence., 1994 IEEE International Conference on Neutral Networks, Orlando, Florida pp. 2754-2758, June 27-July 2, 1994	☐
	4	Park, et al. "Dynamic Visual Servo Control of Robot Manipulators using Neutral Networks", The Korean Institute Telematics and Electronics, Vol. 29-B, No. 10, pp. 771-779, October 1992	☐
	5	Paromtchik "Toward Optical Guidance of Mobile Robots"	☐
	6	Paromtchik, et al. "Optical Guidance System for Multiple mobile Robots", Proceedings 2001 ICRA. IEEE International Conference on Robotics and Automation, Vol. 3, pp. 2935-2940 (May 21-26, 2001)	☐
	7	Penna, et al. "Models for Map Building and Navigation", IEEE Transactions on Systems. Man. And Cybernetics. Vol. 23 no. 5, pp. 1276-1301, September/October 1993	☐
	8	Pirjanian "Reliable Reaction", Proceedings of the 1996 IEEE/SICE/RSJ International Conference on Multisensor Fusion and Integration for Intelligent Systems, pp. 158-165, 1996	☐
	9	Pirjanian "Challenges for Standards for consumer Robotics", IEEE Workshop on Advanced Robotics and its Social impacts, pp. 260-264, June 12-15, 2005	☐
	10	Pirjanian et al. "Distributed Control for a Modular, Reconfigurable Cliff Robot", Proceedings of the 2002 IEEE International Conference on Robotics & Automation, Washington, D.C. pp. 4083-4088, May, 2002	☐
	11	Pirjanian et al. "Representation and Execution of Plan Sequences for Multi-Agent Systems", Proceedings of the 2001 IEEE/RSJ International Conference on Intelligent Robots and Systems, Maui, Hawaii, pp. 2117-2123, October 29-November 3, 2001	☐

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	12	Pirjanian et al. "Multi-Robot Target Acquisition using Multiple Objective Behavior Coordination", Proceedings of the 2000 IEEE International Conference on Robotics & Automation, San Francisco, CA, pp. 2696-2702, April, 2000	☐
	13	Pirjanian et al. "A decision-theoretic approach to fuzzy behavior coordination", 1999 IEEE International Symposium on Computational Intelligence in Robotics and Automation, 1999. CIRA '99., Monterey, CA, pp. 101-106, November 8-9, 1999	☐
	14	Pirjanian et al. "Improving Task Reliability by Fusion of Redundant Homogeneous Modules Using Voting Schemes", Proceedings of the 1997 IEEE International Conference on Robotics and Automation, Albuquerque, NM, pp. 425-430, April, 1997	☐
	15	Radio Frequency Identification: Tracking ISS Consumables, Author Unknown, 41 pages (NPL0127)	☐
	16	Remazeilles, et al. "Image based robot navigation in 3D environments", Proc. of SPIE, VOl. 6052, pp. 1-14, 12/06/05	☐
	17	Rives, et al. "Visual servoing based on ellipse features", SPIE Vol. 2056 Intelligent Robots and Computer Vision pp.356-367, 1993	☐
	18	Robotics World Jan 2001: "A Clean Sweep" (January 2001).	☐
	19	Ronnback "On Methods for Assistive Mobile Robots", http://www.openthesis.org/documents/methods-assistive-mobile-robots-595019.html, 218 pages, 01/01/06	☐
	20	Roth-Tabak, et al. "Environment Model for mobile Robots Indoor Navigation", SPIE Vol. 1388 Mobile Robots pp.453-463, 1990	☐
	21	Sadath M Malik et al. "Virtual Prototyping for Conceptual Design of a Tracked Mobile Robot". Electrical and Computer Engineering, Canadian Conference on, IEEE, PI. May 1, 2006, pages 2349-2352.	☐
	22	Sahin, et al. "Development of a Visual Object Localization Module for Mobile Robots", 1999 Third European Workshop on Advanced Mobile Robots, (Eurobot '99), pp. 65-72, 1999	☐

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	23	Salomon, et al. "Low-Cost Optical Indoor Localization system for Mobile Objects without Image Processing", IEEE Conference on Emerging Technologies and Factory Automation, 2006. (ETFA '06), pp. 629-632, September 20-22, 2006	☐
	24	Sato "Range Imaging Based on Moving Pattern Light and Spatio-Temporal Matched Filter", Proceedings International Conference on Image Processing, Vol. 1., Lausanne, Switzerland, pp. 33-36, September 16-19, 1996	☐
	25	Schenker, et al. "Lightweight rovers for Mars science exploration and sample return", Intelligent Robots and Computer Vision XVI, SPIE Proc. 3208, pp. 24-36, 1997	☐
	26	Sebastian Thrun, Learning Occupancy Grid Maps With Forward Sensor Models, School of Computer Science, Carnegie Mellon University, pp. 1-28	☐
	27	Shimoga et al. "Touch and Force Reflection for Telepresence Surgery", Engineering in Medicine and Biology Society, 1994. Engineering Advances: New Opportunities for Biomedical Engineers. Proceedings of the 16th Annual International Conference of the IEEE, Baltimore, MD, pp. 1049-1050, 1994	☐
	28	Sim, et al "Learning Visual Landmarks for Pose Estimation", IEEE International Conference on Robotics and Automation, Vol. 3, Detroit, MI, pp. 1972-1978, May 10-15, 1999	☐
	29	Sobh et al. "Case Studies in Web-Controlled Devices and Remote Manipulation", Automation Congress, 2002 Proceedings of the 5th Biannual World, pp. 435 – 440, 12/10/02	☐
	30	Stella, et al. "Self-Location for Indoor Navigation of Autonomous Vehicles", Part of the SPIE conference on Enhanced and Synthetic Vision SPIE Vol. 3364 pp.298-302, 1998	☐
	31	Summet "Tracking Locations of Moving Hand-held Displays Using Projected Light", Pervasive 2005, LNCS 3468 pp. 37-46 (2005)	☐
	32	Svedman et al. "Structure from Stereo Vision using Unsynchronized Cameras for Simultaneous Localization and Mapping", 2005 IEEE/RSJ International Conference on Intelligent Robots and Systems, pp. 2993-2998, 2005	☐
	33	Takio et al. "Real-Time Position and Pose Tracking Method of Moving Object Using Visual Servo System", 47th IEEE International Symposium on Circuits and Systems, pp. 167-170, 2004	☐

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	Examiner Name	
	Attorney Docket Number	09945-0010007

	34	Teller "Pervasive pose awareness for people, Objects and Robots", http://www.ai.mit.edu/lab/dangerous-ideas/Spring2003/teller-pose.pdf, 6 pages, 04/30/03	☐
	35	Terada et al. "An Acquisition of the Relation between Vision and Action using Self-Organizing Map and Reinforcement Learning", 1998 Second International Conference on Knowledge-Based Intelligent Electronic Systems, Adelaide, Australiam pp. 429-434, April 21-23, 1998	☐
	36	The Sharper Image "e-Vac Robotic Vacuum, S1727 Instructions"www.sharperimage.com, 18 pages	☐
	37	The Sharper Image "Robotic Vacuum Cleaner – Blue" www.Sharperimage.com, 2 pages, 03/18/05	☐
	38	The Sharper Image "E Vac Robotic Vacuum", www.sharperiamge.com/us/en/templates/products/pipmorework1printable.jhtml, 2 pages, 03/18/05	☐
	39	TheRobotStore.com "Friendly Robotics Robotic Vacuum RV400- The Robot Store", www.therobotstore.com/s.nl/sc.9/category.-109/it.A/id.43/.f, 1 page, 04/20/05	☐
	40	TotalVac.com RC3000 RoboCleaner website 3/18/2005	☐
	41	Trebi-Ollennu et al. "Mars Rover Pair Cooperatively Transporting a Long Payload", Proceedings of the 2002 IEEE International Conference on Robotics & Automation, Washington, D.C. pp. 3136-3141, May, 2002	☐
	42	Tribelhorn et al., "Evaluating the Roomba: A low-cost, ubiquitous platform for robotics research and education," 2007, IEEE, pg. 1393-1399	☐
	43	Tse et al. "Design of a Navigation System for a Household Mobile Robot Using Neural Networks", Department of Manufacturing Engg. & Engg. Management, City University of Hong Kong, pp. 2151-2156, 1998	☐
	44	UAMA (Asia) Industrial Co., Ltd. "RobotFamily", 2005	☐

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	45	Watanabe et al. "Position Estimation of Mobile Robots With Internal and External Sensors Using Uncertainty Evolution Technique", 1990 IEEE International Conference on Robotics and Automation, Cincinnati, OH, pp. 2011-2016, May 13-18, 1990	☐
	46	Watts "Robot, boldly goes where no man can", The Times- pp.20, January 1985	☐
	47	Wijk et al. "Triangulation-Based Fusion of Sonar Data with Application in Robot Pose Tracking ", IEEE Transactions on Robotics and Automation, Vol. 16, No. 6, pp. 740-752, 12/2000	☐
	48	Wolf et al. "Robust Vision-based Localization for Mobile Robots Using an Image Retrieval System Based on Invariant Features", Proceedings of the 2002 IEEE International Conference on Robotics & Automation, Washington, D.C. pp. 359-365, May, 2002	☐
	49	Wolf et al. "Robust Vision-Based Localization by Combining an Image-Retrieval System with Monte Carol Localization", IEEE Transactions on Robotics, Vol. 21, No. 2, pp. 208-216, 04/2005	☐
	50	Wong "EIED Online>> Robot Business", ED Online ID# 13114, 17 pages, July 2006	☐

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Application Number:	12201554
International Application Number:	
Confirmation Number:	9658
Title of Invention:	Autonomous Floor-Cleaning Robot
First Named Inventor/Applicant Name:	Joseph L. Jones
Customer Number:	26161
Filer:	Tonya S. Drake/Mary O'Connor
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Attorney Docket Number:	09945-0010007 / DP-10J US
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51	Non Patent Literature	Wong.pdf	3862450 b21b1918990cc207125f0e7126194e0cf5649f0e	no	17
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If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

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PTO/SB/08a (01-10)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	12201554
Filing Date	2008-08-29
First Named Inventor	Jones
Art Unit	
Examiner Name	
Attorney Docket Number	09945-0010007

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	Application Number	12201554
	Filing Date	2008-08-29
	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

	1	Yata et al. "Wall Following Using Angle Information Measured by a Single Ultrasonic Transducer", Proceedings of the 1998 IEEE, International Conference on Robotics & Automation, Leuven, Belgium, pp. 1590-1596, May, 1998	☐
	2	Yun, et al. "Image-Based Absolute Positioning System for Mobile Robot Navigation", IAPR International Workshops SSPR, Hong Kong, pp. 261-269, August 17-19, 2006	☐
	3	Yun, et al. "Robust Positioning a Mobile Robot with Active Beacon Sensors", Lecture Notes in Computer Science, 2006, Volume 4251, pp. 890-897, 2006	☐
	4	Yuta, et al. "Implementation of an Active Optical Range sensor Using Laser Slit for In-Door Intelligent Mobile Robot", IEE/RSJ International workshop on Intelligent Robots and systems (IROS 91) Vol. 1, Osaka, Japan, pp. 415-420, November 3-5, 1991	☐
	5	Zha et al. "Mobile Robot Localization Using Incomplete Maps for Change Detection in a Dynamic Environment", Advanced Intelligent Mechatronics '97. Final Program and Abstracts., IEEE/ASME International Conference, pp. 110, June 16-20, 1997	☐
	6	Zhang, et al. "A Novel Mobile Robot Localization Based on Vision", SPIE Vol. 6279, 6 pages, 01/29/07	☐
	7	Euroflex Intellegente Monstre Mauele (English only except)	☐
	8	Roboking- not just a vacuum cleaner, a robot! January 21, 2004, 5 pages	☐
	9	SVET Computers- New Technologies- Robot vacuum cleaner, 1 page	☐
	10	Popco.net Make your digital life http://www.popco.net/zboard/view.php?id=tr_review&no=40 accessed November 1, 2011	☐
	11	Matsumura Camera Online Shop http://www.rakuten.co.jp/matsucame/587179/711512/ accessed November 1, 2011	☐

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	Filing Date	2008-08-29
	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

	12	Dyson's Robot Vacuum Cleaner - the DC06, May 2, 2004 http://www.gizmag.com/go/1282/ accessed Novmber 11, 2011	☐
	13	Electrolux Trilobite, http://www.electrolux-ui.com:8080/2002%5C822%5C833102EN.pdf 10 pages	☐
	14	Electrolux Trilobite, Time to enjoy life, 38 pages http://www.robocon.co.kr/trilobite/Presentation_Trilobite_Kor_030104.ppt accessed December 22, 2011	☐
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	16	Euroflex January 1, 2006 http://www.euroflex.tv/novita_dett.php?id=15 1 page accessed November 1, 2011	☐
	17	FloorBotics, VR-8 Floor Cleaning Robot, Product Description for Manuafacturers, http://www.consensus.com.au/SoftwareAwards/CSAarchive/CSA2004/CSAart04/FloorBot/F	☐
	18	Friendly Robotics, 18 pages http://www.robotsandrelax.com/PDFs/RV400Manual.pdf accessed December 22, 2011	☐
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	20	Hitachi, May 29, 2003 http://www.hitachi.co.jp/New/cnews/hl_030529_hl_030529.pdf 8 pages	☐
	21	Robot Buying Guide, LG announces the first robotic vacuum cleaner for Korea, April 21, 2003 http://robotbg.com/news/2003/04/22/lg_announces_the_first_robotic_vacu	☐
	22	CleanMate 365, Intelligent Automatic Vacuum Cleaner, Model No. QQ-1, User Manual www.metapo.com/support/user_manual.pdf 11 pages	☐

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	Application Number	12201554
	Filing Date	2008-08-29
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

	23	UBOT, cleaning robot capable of wiping with a wet duster, http://us.aving.net/news/view.php?articleId=23031, 4 pages accessed November 1, 2011	☐
	24	Taipei Times, Robotic vacuum by Matsuhita about ot undergo testing, March 26, 2002 http://www.taipeitimes.com/ News/worldbiz/archives/2002/03/26/0000129338 accessed	☐
	25	Tech-on! http://techon.nikkeibp.co.jp/members/01db/200203/1006501/, 4 pages, accessed November 1, 2011	☐
	26	http://ascii.jp/elem/000/000/330/330024/	☐
	27	IT media http://www.itmedia.co.jp/news/0111/16/robofesta_m.html accessed November 1, 2011	☐
	28	Yujin Robotics, an intelligent cleaning robot 'iclebo Q' AVING USA http://us.aving.net/news/view.php?articleId=7257, 8 pages accessed November 4, 2011	☐
	29	Special Reports, Vacuum Cleaner Robot Operated in Conjunction with 3G Celluar Phone vol 59, No. 9 (2004) 3 pages http://www.toshiba.co.jp/tech/review/2004/09/59_0	☐
	30	Toshiba Corporation 2003, http://warp.ndl.go.jp/info:ndljp/pid/258151/www.soumu.go.jp/joho_tsusin/policyreports/ chousa/netrobot/pdf/030214_1_33_a.pdf 16 pages	☐
	31		☐
	32	McLurkin “The Ants: A community of Microrobots”, Paper submitted for requirements of BSEE at MIT, 5/12/1995	☐
	33	Grumet “Robots Clean House”, Popular Mechanics, N0vember 2003	☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12201554
	Filing Date	2008-08-29
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

	34	McLurkin "Stupid Robot Tricks: A Behavior-based Distributed Algorithm Library for Programming Swarms of Robots, Paper submitted for requirements of BSEE at MIT, May 2004.	☐
	35	Kurs et al, Wireless Power transfer via Strongly Coupled Magnetic Resonances, Downloaded from www.sciencemag. org , August 17, 2007	☐

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	Application Number	12201554
	Filing Date	2008-08-29
	First Named Inventor	Jones
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	Attorney Docket Number	09945-0010007

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

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A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Rolf Hille/	Date (YYYY-MM-DD)	2012-09-24
Name/Print	Rolf Hille	Registration Number	53912

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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EFS ID:	13823863
Application Number:	12201554
International Application Number:	
Confirmation Number:	9658
Title of Invention:	Autonomous Floor-Cleaning Robot
First Named Inventor/Applicant Name:	Joseph L. Jones
Customer Number:	26161
Filer:	Tonya S. Drake/Mary O'Connor
Filer Authorized By:	Tonya S. Drake
Attorney Docket Number:	09945-0010007 / DP-10J US
Receipt Date:	24-SEP-2012
Filing Date:	29-AUG-2008
Time Stamp:	17:33:14
Application Type:	Utility under 35 USC 111(a)

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	: Joseph L. Jones et al.	Art Unit	: 3723
Serial No.	: 12/201,554	Examiner	: Robert J. Scruggs
Filed	: August 29, 2008	Conf. No.	: 9658
Title	: AUTONOMOUS FLOOR-CLEANING ROBOT		

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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Regarding *Euroflex Intellegente Monstre Mauele (English only except)*, the Applicants cannot stipulate that this document is prior art with respect to the present application. Based on the "file save date" of the document, this document is believed to have been publicly available as of March 13, 2006.

Regarding *The Sharper Image "e-Vac Robotic Vacuum, S1727 Instructions," www.sharperimage.com, 18 pages*, the Applicants cannot stipulate that this document is prior art with respect to the present application. This document is a manual believed to have been shipped with robots that were first available around June 2004.

Regarding *Koolatron, "KOOLVAC – Owner's Manual, 13 pages* and *koolvac Robotic Vacuum Cleaner Owner's Manual, Koolatron, Undated, 26 pages*, the Applicants cannot stipulate that this document is prior art with respect to the present application. This document is a manual believed to have been shipped with robots that were first available around December of 2004.

Regarding *NorthStar Low-Cost, Indoor Localization, Evolution robotics, Powering Intelligent Products, 2 pages*, the Applicants cannot stipulate that this document is prior art with respect to the present application. Based on metadata, it is believed that this document was publicly available in 2005.

Regarding *Barker, "Navigation by the Stars – Ben Barker 4th Year Project, Power point pp. 1-20*, the Applicants cannot stipulate that this document is prior art with respect to the present application. Based on embedded content creation metadata of the Power Point file, it is believed that this document was publicly available as of November 21, 2004.

Regarding *CleanMate 365, Intelligent Automatic Vacuum Cleaner, Model No. QQ-1, User Manual www.metapo.com/support/user_manual.pdf 11 pages*, the Applicants cannot stipulate that this document is prior art with respect to the present application. This document is a manual believed to have been shipped with robots that were first available around December 2005.

Regarding *FloorBotics, VR-8 Floor Cleaning Robot, Product Description for Manuafacturers, http://www.consensus.com.au/SoftwareAwards/CSAarchive/CSA2004 /CSAart04/FloorBot/FX1%20Product%20Description%2020%20January%202004.pdf*, the Applicants cannot stipulate that this document is prior art with respect to the present application. Based on metadata, this document is believed to have been published on March 15, 2004.

Regarding the citation listed as *Radio Frequency Identification: Tracking ISS Consumables, Author Unknown, 41 pages (NPL0127)*, this reference has been considered and determined immaterial to the pending claims. Accordingly, this reference has not been resubmitted herewith.

Regarding the citation listed as *RoboKing, 54 pages*, this reference has been considered and determined cumulative to references already of record in this application. Accordingly, this reference has not been resubmitted herewith.

This statement is being filed after a request for continued examination and before the mailing of a first Office Action. Please apply any necessary charges or credits to Deposit Account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: October 19, 2012

/Tonya S. Drake/
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30722853.doc

Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No. 09945-0010007	Application No. 12/201,554
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant Joseph L. Jones et al.	
		Filing Date August 29, 2008	Group Art Unit Unknown

U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	1	1,755,054	04-1930	Darst			
	2	1,780,221	11-1930	Buchmann			
	3	1,970,302	08-1934	Gerhardt			
	4	2,302,111	11-1942	Dow et al.			
	5	4,004,313	01-1977	Capra			
	6	5,070,567	12-1991	Holland			
	7	5,911,260	06-1999	Suzuki			
	8	5,995,883	11-1999	Nishikado			
	9	5,996,167	12-1999	Close			
	10	6,030,464	02-2000	Azevedo			
	11	6,276,478	08-2001	Hopkins et al.			
	12	2004/0085037	05-2004	Jones et al.			
	13	2006/0042042	03-2006	Mertes et al.			
	14	2007/0042716	02-2007	Goodall et al.			
	15	2010/0268384	10-2010	Jones et al.			
	16	2010/0312429	12-2010	Jones et al.			
	17	2008/0184518	08/07/2008	Taylor			
	18						
	19						

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation Yes	Translation No
	20	102005046813 A1	04-2007	DE			Translation	
	21	19849978	02-2001	DE			Translation	
	22	102004041021 B3	08-2005	DE				
	23	2213047A	08-1989	GB				
	24	09251318	09-1997	JP				

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		Filing Date August 29, 2008	Group Art Unit Unknown

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation Yes	Translation No
	25	10117973A2	05-1998	JP				
	26	10214114A2	08-1998	JP				
	27	10228316	08-1998	JP			English Abstract	
	28	10240342A2	09-1998	JP				
	29	10240343A2	05-2000	JP			English Abstract	
	30	10260727A2	09-1998	JP				
	31	11065655A2	03-1999	JP				
	32	11085269A2	03-1999	JP			English Abstract	
	33	11102219A2	04-1999	JP			English Abstract	
	34	11212642A2	08-1999	JP			Translation	
	35	11346964A2	12-1999	JP				
	36	2000353014A2	12-2000	JP			English Abstract	
	37	2001087182	04-2001	JP			English Abstract	
	38	2002369778A2	12-2002	JP				
	39	2003190064A2	07-2003	JP				
	40	2005346700A2	12-2005	JP				
	41	2283343A2	11-1984	JP			Translation	
	42	2520732B2	05-1996	JP			Translation	
	43	3051023A2	03-1991	JP				
	44	5054620U	07-1993	JP			Translation	
	45	5091604A2	04-1993	JP				
	46	53110257A2	09-1978	JP				
	47	57014726A2	01-1982	JP			English Abstract	
	48	59033511U	03-1984	JP			English Abstract	
	49	60089213	05-1985	JP				

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Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation Yes	Translation No
	50	61023221A2	01-1986	JP				
	51	7059702A2	03-1995	JP			Translation	
	52	7222705A2	08-1995	JP			Translation	
	53	7281742A2	10-1995	JP			Translation	
	54	7311041A2	11-1995	JP				
	55	7319542A2	12-1995	JP				
	56	8000393B2	01-1996	JP				
	57	8016241A2	01-1996	JP				
	58	8016776B2	02-1996	JP				
	59	8063229A2	03-1996	JP				
	60	8083125A2	03-1996	JP				
	61	8152916A2	06-1996	JP			Translation	
	62	8256960A2	10-1996	JP				
	63	8286741A2	11-1996	JP				
	64	8286744A2	11-1996	JP				
	65	8322774A2	12-1996	JP			English Abstract	
	66	9160644A2	06-1997	JP			Translation	
	67	9179625A2	07-1997	JP			Translation	
	68	9179685A2	07-1997	JP			English Abstract	
	69	9192069A2	07-1997	JP				
	70	9204223A2	08-1997	JP				
	71	9206258A2	08-1997	JP				
	72	9319431A2	12-1997	JP				
	73	JP2006312U1	01-1990	JP				
	74	WO2004058028	07-2004	WIPO			Translation	
	75	WO2005082223A1	09-2005	WIPO			Translation	

Examiner Signature	Date Considered
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		Filing Date August 29, 2008	Group Art Unit Unknown

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Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation Yes	Translation No
	76	05046246	02-1993	JP			Translation	
	77	2002532180	10-2002	JP			English Abstract	
	78	2000342497	12-2000	JP			English Abstract	
	79	2000102499	04-2000	JP			English Abstract	
	80	7047046	02-1995	JP			English Abstract	
	81	2000279353	10-2000	JP			English Abstract	
	82	5084200A2	04-1993	JP			Translation	
	83	2002533797T2	10-2002	JP				X
	84	7334242A2	12-1995	JP			Translation	
	85	7295638A2	11-1995	JP			Translation	
	86	62292126A2	12-1987	JP			Translation	
	87	2000342497A2	12-2000	JP			English Abstract	
	88	2002532180T2	10-2002	JP			English Abstract	
	89	2000102499A2	04-2000	JP			English Abstract	
	90	7047046A2	02-1995	JP			English Abstract	
	91	2000279353A2	10-2000	JP			English Abstract	
	92	1139847B1	08-2003	EP				
	93							
	94							

Other Documents (include Author, Title, Date, and Place of Publication)

Examiner Initial	Desig. ID	Document
	95	Andersen et al., "Landmark based navigation strategies", SPIE Conference on Mobile Robots XIII, SPIE Vol. 3525, pp. 170-181, January 8, 1999.
	96	Ascii, March 25, 2002, http://ascii.jp/elem/000/000/330/330024/ accessed November 1, 2011.

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		Filing Date August 29, 2008	Group Art Unit Unknown

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
	97	Certified copy of U.S. Provisional Application No. 60/605,066 as provided to WIPO in PCT/US2005/030422, corresponding to U.S. National Stage Entry Application No. 11/574,290, U.S. publication 2008/0184518, filing date 08/27/2004.
	98	Certified copy of U.S. Provisional Application No. 60/605,181 as provided to WIPO in PCT/US2005/030422, corresponding to U.S. National Stage Entry Application No. 11/574,290, U.S. publication 2008/0184518, filing date 08/27/2004.
	99	Derek Kurth, "Range-Only Robot Localization and SLAM with Radio", http://www.ri.cmu.edu/pub_files/pub4/kurth_derek_2004_1/kurth_derek_2004_1.pdf. 60 pages, May, 2004, accessed July 27, 2012.
	100	Electrolux Trilobite, January 12, 2001, http://www.electrolux-ui.com:8080/2002%5C822%5C833102EN.pdf, accessed July 2, 2012, 10 pages.
	101	Florbot GE Plastics, 1989-1990, 2 pages, available at http://www.fuseid.com/, accessed September 27, 2012.
	102	Gregg et al., "Autonomous Lawn Care Applications," 2006 Florida Conference on Recent Advances in Robotics, Miami, Florida, May 25-26, 2006, Florida International University, 5 pages.
	103	Hitachi 'Feature', http://kadenfan.hitachi.co.jp/robot/feature/feature.html, 1 page, November 19, 2008
	104	Hitachi, http://www.hitachi.co.jp/New/cnews/hi_030529_hi_030529.pdf, 8 pages, May 29, 2003
	105	Home Robot — UBOT; Microbotusa.com, retrieved from the WWW at www.microrobotusa.com, accessed December 2, 2008
	106	King and Weiman, "Helpmate™ Autonomous Mobile Robots Navigation Systems," SPIE Vol. 1388 Mobile Robots, pp.190-198 (1990)
	107	Li et al. "Robust Statistical Methods for Securing Wireless Localization in Sensor Networks," Information Procesing in Sensor Networks, 2005, Fourth International Symposium on, pp. 91-98, April 2005.
	108	Martishevcky, "The Accuracy of point light target coordinate determination by dissectoral tracking system", SPIE Vol. 2591, pp. 25-30, October 23, 2005.
	109	Maschinemarkt Würzburg 105, Nr. 27, pp. 3, 30, July 5, 1999.
	110	Miwako Doi "Using the symbiosis of human and robots from approaching Research and Development Center," Toshiba Corporation, 16 pages, available at http://warp.ndl.go.jp/info:ndljp/pid/258151/www.soumu.go.jp/joho_tsusin/policyreports/chousa/netrobot/pdf/030214_1_33_a.pdf, February 26, 2003.
	111	Paromtchik "Toward Optical Guidance of Mobile Robots," Proceedings of the Fourth World Multiconference on Systemics, Cybermetics and Informatics, Orlando, FL, USA, July 23, 2000, Vol. IX, pp. 44-49, available at http://emotion.inrialpes.fr/~paromt/infos/papers/paromtchik:asama:sci:2000.ps.gz, accessed July 3, 2012.
	112	Roboking – not just a vacuum cleaner, a robot!, January 21, 2004, infocom.uz/2004/01/21/robokingne-prosto-pyilesos-a-robot/, accessed October 10, 2011, 7 pages.
	113	Sebastian Thrun, "Learning Occupancy Grid Maps With Forward Sensor Models," Autonomous Robots 15, 111-127, September 1, 2003.

Examiner Signature	Date Considered
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Substitute Disclosure Form (PTO-1449)

Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No. 09945-0010007	Application No. 12/201,554
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant Joseph L. Jones et al.	
		Filing Date August 29, 2008	Group Art Unit Unknown

Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
	114	SVET Computers - New Technologies - Robot Vacuum Cleaner, October, 1999, available at http://www.sk.rs/1999/10/sknt01.html, accessed November 1, 2011.
	115	Written Opinion of the International Searching Authority, PCT/US2004/001504, August 20, 2012, 9 pages.
	116	
	117	

Examiner Signature	Date Considered
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	

Electronic Acknowledgement Receipt

EFS ID:	14034394
Application Number:	12201554
International Application Number:	
Confirmation Number:	9658
Title of Invention:	Autonomous Floor-Cleaning Robot
First Named Inventor/Applicant Name:	Joseph L. Jones
Customer Number:	26161
Filer:	Tonya S. Drake/Darlene Morin
Filer Authorized By:	Tonya S. Drake
Attorney Docket Number:	09945-0010007 / DP-10J US
Receipt Date:	19-OCT-2012
Filing Date:	29-AUG-2008
Time Stamp:	18:06:04
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		099450010007IDS.pdf	228776 752f1064f0d80299db32ce4b536089f02681de10	yes	9

	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Information Disclosure Statement (IDS) Form (SB08)		1	3	
	Information Disclosure Statement (IDS) Form (SB08)		4	9	
Warnings:					
Information:					
2	Foreign Reference	JP8083125A2_O_PAIR.pdf	10455304 4b3dca45aae8f776b77141143279c7cb89d344a7	no	14
Warnings:					
Information:					
3	Foreign Reference	JP08152916_OTA_01542617_PAIR.pdf	2860707 3185a2c495d09030885337a0d08303d121e0ba6d	no	30
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4	Foreign Reference	JP8256960A2_O_PAIR.pdf	18222851 8d6819aa1b8ca8d059b4718f1c615005c8a90ec2	no	28
Warnings:					
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5	Foreign Reference	JP8286741A2_O_PAIR.pdf	20881464 bef945aaeb3be76f9dae422d0d7938d8d5478970	no	27
Warnings:					
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6	Foreign Reference	JP8286744A2_O_PAIR.pdf	20730121 99425b91cd1034c02b30842149de7e5232661657	no	25
Warnings:					
Information:					
7	Foreign Reference	JP08322774_OA_01542734_PAIR.pdf	16415925 f9f890ae7a57010b32c53bc5feee2f74ba61e8bf	no	13
Warnings:					
Information:					
8	Foreign Reference	JP09160644_OTA_01542622_PAIR.pdf	12589989 0d488876125e4afd97acf3d10150b05cba26aeed	no	15
Warnings:					
Information:					

9	Foreign Reference	JP09179625_OTA_01542595_PAIR.pdf	2092036 ca27943df05987ca8234765a1b3aa93b1b5fa222	no	22
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10	Foreign Reference	JP9179685A_OA_PAIR.pdf	798132 d9f80b6340199251c20c979039bda403aec3cf6a	no	17
Warnings:					
Information:					
11	Foreign Reference	JP9192069A2_O_PAIR.pdf	5096370 75df2aac9d0359158ce32e87aee5e49430bc7b21	no	6
Warnings:					
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12	Foreign Reference	JP9204223A2_O_PAIR.pdf	10315194 44a8858b4933c62fe08142f6955494b67e8570f1	no	14
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Information:					
13	Foreign Reference	JP09206258_OTA_01542634_PAIR.pdf	2039444 284838b57536e76e770316f15988d343a17193a5	no	25
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Information:					
14	Foreign Reference	JP9319431A2_O_PAIR.pdf	4347790 2907aca70fe2a72b9b14ab8c101547f6d07b9185	no	6
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Information:					
15	Foreign Reference	JP02006312U1_O.pdf	240116 a6dfc429d83502fec00e7a0f93e70e023b346aef	no	7
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16	Foreign Reference	WO04058028A2_OT_PAIR.pdf	2024336 103b7fc54c63c71bb5e6027bfa6704f042c1ce54	no	63
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17	Foreign Reference	WO2005082223_OTA_PAIR.PDF	2701780 2c88b193a320f9ca238597c1436ec04a661fe420	no	53
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18	Foreign Reference	JP05046246_OTA_01547756_PAIR.PDF	2611989 22f27fe0e0058c6b105c2ff610bda540f9b9962e	no	52
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19	Foreign Reference	JP2002532180_OA.pdf	1620327 1bfa3a3b312a707ed153b53450fe4a50de559471	no	35
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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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NOTICE OF ALLOWANCE AND FEE(S) DUE

26161 7590 03/15/2013
FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER
SCRUGGS, ROBERT J

ART UNIT	PAPER NUMBER
3723	

DATE MAILED: 03/15/2013

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/201,554	08/29/2008	Joseph L. Jones	09945-0010007 / DP-10J US	9658

TITLE OF INVENTION: Autonomous Floor-Cleaning Robot

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1770	$300	$0	$2070	06/17/2013

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

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B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

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III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

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(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/201,554	08/29/2008	Joseph L. Jones	09945-0010007 / DP-10J US	9658

TITLE OF INVENTION: Autonomous Floor-Cleaning Robot

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1770	$300	$0	$2070	06/17/2013

EXAMINER	ART UNIT	CLASS-SUBCLASS
SCRUGGS, ROBERT J	3723	015-319000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).
- ❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.
1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. The following fee(s) are submitted:
- ❑ Issue Fee
- ❑ Publication Fee (No small entity discount permitted)
- ❑ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
- ❑ A check is enclosed.
- ❑ Payment by credit card. Form PTO-2038 is attached.
- ❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
- ❑ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.
- ❑ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/201,554	08/29/2008	Joseph L. Jones	09945-0010007 / DP-10J US	9658

26161 7590 03/15/2013
FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

EXAMINER	
SCRUGGS, ROBERT J	

ART UNIT	PAPER NUMBER
3723	

DATE MAILED: 03/15/2013

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 25 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 25 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No.	Applicant(s)	
	12/201,554	JONES ET AL.	
	Examiner	Art Unit	
	ROBERT SCRUGGS	3723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *4/9/10*.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are *98-117*.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date See Continuation Sheet
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/ROBERT SCRUGGS/
Primary Examiner, Art Unit 3723

Continuation of Attachment(s) 3. Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date: 3/10/11, 9/24/12, 10/19/12.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on April 9, 2010 has been entered.

Information Disclosure Statement

2. The information disclosure statements (IDS) submitted on March 10, 2011, September 24, 2012 and October 19, 2012 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements have been considered by the examiner.

Allowable Subject Matter

3. Claims 98-117 are allowed.

4. The following is an examiner's statement of reasons for allowance: The present invention pertains to a floor cleaning robot. It is the examiner's opinion that the art of record considered as a whole, alone or in combination, neither anticipates nor renders obvious of providing a wheel rotatably attached to the distal end of each arm and the proximal end of each arm is pivotably attached to the chassis, wherein each wheel is biased to an extended position away from the robot chassis by a spring extending between the arm and the robot chassis and wherein during cleaning the weight of the

floor cleaning robot overcomes a force from the spring biasing the wheels to an extended position, together in combination with the rest of the limitations or the independent claims.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT SCRUGGS whose telephone number is (571)272-8682. The examiner can normally be reached on Monday-Friday 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on 571-272-4485. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ROBERT SCRUGGS/
Primary Examiner, Art Unit 3723

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	12201554	JONES ET AL.
	Examiner	Art Unit
	ROBERT SCRUGGS	3723

SEARCHED			
Class	Subclass	Date	Examiner
15	319,339,52.1,340.1,356,360	5/20/2009	rs
700	245	5/20/2009	rs
above	updated	3/5/2013	rs

SEARCH NOTES		
Search Notes	Date	Examiner
Inventor name search and text search conducted inUS-PGPUB, USPAT,. USOCR, EPO and JPO	3/5/2013	rs
Forward/backward citation search conducted	3/5/2013	rs

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner
PG-PUB	Same as Above	3/5/2013	rs

	/ROBERT SCRUGGS/ Primary Examiner.Art Unit 3723

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BIB DATA SHEET

CONFIRMATION NO. 9658

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
12/201,554	08/29/2008	015	3723	09945-0010007 / DP-10J US

APPLICANTS

Joseph L. Jones, Acton, MA;
Newton E. Mack, Somerville, MA;
David M. Nugent, Newport, RI;
Paul E. Sandin, Randolph, MA;

**** CONTINUING DATA ***************************

This application is a CON of 10/818,073 04/05/2004 PAT 7,571,511
which is a CON of 10/320,729 12/16/2002 PAT 6,883,201
which claims benefit of 60/345,764 01/03/2002

**** FOREIGN APPLICATIONS ***************************

**** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ****

09/10/2008

Foreign Priority claimed ☐ Yes ☑ No 35 USC 119(a-d) conditions met ☐ Yes ☑ No Verified and Acknowledged /ROBERT J SCRUGGS/ Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		MA	13	20	4

ADDRESS

FISH & RICHARDSON P.C. (BO)
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022
UNITED STATES

TITLE

Autonomous Floor-Cleaning Robot

FILING FEE RECEIVED		
1240	FEES: Authority has been given in Paper No._____ to charge/credit DEPOSIT ACCOUNT No._____ for following:	☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit

IDS Form PTO/SB/08: Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	12/201,554
Filing Date	August 29, 2008
First Named Inventor	Joseph L. Jones
Art Unit	3723
Examiner Name	R.J. Scruggs
Attorney Docket Number	1007.0013-01000

U.S. PATENTS AND PUBLISHED U.S. PATENT APPLICATIONS

Examiner Initials*	Cite No.[1]	Document Number Number-Kind Code[2] *(if known)*	Issue or Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			
		US-			

Note: Submission of copies of U.S. Patents and published U.S. Patent Applications is not required.

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] Number[4] Kind Code[5] *(if known)*	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	Translation[6]

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	Translation[6]
		Prassler et al., "A Short History of Cleaning Robots," Autonomous Robots, Vol. 9, pp. 211-226 (2000).	

Examiner Signature	/Robert Scruggs/	Date Considered	03/05/2013

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	12201554
Filing Date	2008-08-29
First Named Inventor	Jones
Art Unit	
Examiner Name	
Attorney Docket Number	09945-0010007

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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
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Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
1	1	AU2003275566A1	AU	A1	2004-06-03	KAWAGOE		☐
2	2	DE102004038074B3	DE	B3	2005-06-30	Schmidgall		☐
3	3	DE102004041021B3	DE	B3	2005-08-25	Aleker et al		☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

Receipt date: 09/24/2012

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	12201554 12201554 - GAU: 3723
Filing Date	2008-08-29
First Named Inventor	Jones
Art Unit	
Examiner Name	
Attorney Docket Number	09945-0010007

4	4	DE102005046813A1	DE	A1	2007-04-05	Schlischka et al		☐
5	5	DE10242257A1	DE	A1	2003-04-24	Köchel et al		☐
6	6	DE10357636A1	DE	A1	2005-07-14	Schlischka et al		☐
7	7	DE199311014U1	DE	U1	1993-10-14	Kurz		☐
8	8	DE2128842C3	DE	C3	1980-12-18	ZIENER et al		☐
9	9	DE3317376A1	DE	A1	1984-11-15	Gerum et al		☐
10	10	DE3404202C2	DE	C2	1992-12-17	Abels		☐
11	11	DE3536907C2	DE	C2	1989-02-23	Yajima		☐
12	12	DE4338841C2	DE	C2	1999-08-05	Dickmann et al		☐
13	13	DE4414683A1	DE	A1	1995-10-19	Arnold et al		☐
14	14	DK198803389A_	DK	A_	1988-12-23	OLSEN		☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

Receipt date: 09/24/2012	Application Number	12201554	12201554 - GAU: 3723
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**	Filing Date	2008-08-29	
	First Named Inventor	Jones	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	09945-0010007	

15	15	EP114926A2	EP	A2	1984-08-08	Gremminger		☐
16	16	EP265542A1	EP	A1	1988-05-04	Rathbone et al		☐
17	17	EP281085A2	EP	A2	1988-09-07	Stauffer		☐
18	18	EP286328A1	EP	A1	1988-10-12	Korski et al		☐
19	19	EP294101B1	EP	B1	1993-12-15	Menn et al		☐
20	20	EP307381A3	EP	A3	1990-07-25	Holmquist		☐
21	21	EP352045A2	EP	A2	1990-01-24	Toole		☐
22	22	EP358628A3	EP	A3	1991-05-22	Evans et al		☐
23	23	EP389459A3	EP	A3	1991-10-23	Pong et al		☐
24	24	EP433697A3	EP	A3	1992-12-02	WILLIS et al		☐
25	25	EP437024A1	EP	A1	1991-07-17	Saunders et al		☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

Receipt date: 09/24/2012	Application Number	12201554	12201554 - GAU: 3723
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**	Filing Date	2008-08-29	
	First Named Inventor	Jones	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	09945-0010007	

26	26	EP479273A3	EP	A3	1993-05-26	ANDREW et al		☐
27	27	EP554978A3	EP	A3	1994-03-09	GOBUSH et al		☐
28	28	EP615719A1	EP	A1	1994-09-21	Raimondi		☐
29	29	EP792726B1	EP	B1	1999-06-23	WATANABE et al		☐
30	30	EP845237B1	EP	B1	2000-04-05	Imamura et al		☐
31	31	EP861629A1	EP	A1	1998-09-02	Imamura		☐
32	32	EP930040A3	EP	A3	1999-10-06	Burke et al		☐
33	33	EP1018315A1	EP	A1	2000-07-12	Zahuranec et al		☐
34	34	EP1139847B1	EP	B1	2003-08-06	DYSON et al		☐
35	35	EP1172719A1	EP	A1	2002-01-16	Colens		☐
36	36	EP1228734A3	EP	A3	2003-06-11	Bertola		☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

Receipt date: 09/24/2012	Application Number	12201554	12201554 - GAU: 3723
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**	Filing Date	2008-08-29	
	First Named Inventor	Jones	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	09945-0010007	

37	37	EP1380245A1	EP	A1	2004-01-14	Aleker et al		☐
38	38	EP1380246A3	EP	A3	2005-03-16	Schmidgall et al		☐
39	39	EP1553472A1	EP	A1	2005-07-13	Yeh		☐
40	40	EP1557730A1	EP	A1	2005-07-27	Dünne et al		☐
41	41	EP1642522A3	EP	A3	2007-11-28	Hellrung		☐
42	42	EP1672455A4	EP	A4	2007-12-05	KAWAGOE et al		☐
43	43	EP1836941A3	EP	A3	2009-10-21	Suzuki		☐
44	44	ES2238196B1	ES	B1	2006-11-16	BAJONA et al		☐
45	45	FR2601443B1	FR	B1	1991-11-29	BUIL		☐
46	46	FR722755A_	FR	A_	1932-03-25	LEVY		☐
47	47	GB2128842B_	GB	B_	1986-04-16	IHNATOWICZ		☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	Examiner Name		
	Attorney Docket Number	09945-0010007	

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49	49	GB2267360B_	GB	B_	1995-12-06	BONSOR et al		☐
50	50	GB2284957A_	GB	A_	1995-06-21	Clark et al		☐

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Filing Date	2008-08-29
First Named Inventor	Jones
Art Unit	
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Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6604021	B2	2003-08-05	Imai et al	
	2	6604022	B2	2003-08-05	Parker et al	
	3	6609269	B2	2003-08-26	Kasper	
	4	6611734	B2	2003-08-26	Parker et al	
	5	6615434	B1	2003-09-09	Davis et al	
	6	6615885	B1	2003-09-09	Ohm	
	7	6622465	B2	2003-09-23	Jerome et al	
	8	6624744	B1	2003-09-23	Wilson et al	

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Receipt date: 09/24/2012	Application Number	12201554	12201554 - GAU: 3723
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	9	6625843	B2	2003-09-30	Kim et al	
	10	6629028	B2	2003-09-30	Paromtchik et al	
	11	6633150	B1	2003-10-14	Wallach et al	
	12	6637546	B1	2003-10-28	Wang	
	13	6639659	B2	2003-10-28	Granger	
	14	6658325	B2	2003-12-02	Zweig	
	15	6658354	B2	2003-12-02	Lin	
	16	6658692	B2	2003-12-09	Lenkiewicz et al	
	17	6661239	B1	2003-12-09	Ozick	
	18	6662889	B2	2003-12-16	De et al	
	19	6668951	B2	2003-12-30	Won	

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Receipt date: 09/24/2012	Application Number	12201554	12201554 - GAU: 3723
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	20	6670817	B2	2003-12-30	Fournier et al	
	21	6671925	B2	2004-01-06	Field et al	
	22	6677938	B1	2004-01-13	Maynard	
	23	6687571	B1	2004-02-03	Byrne et al	
	24	6690993	B2	2004-02-10	Foulke et al	
	25	6697147	B2	2004-02-24	Ko et al	
	26	6705332	B2	2004-03-16	Field et al	
	27	6711280	B2	2004-03-23	Stafsudd et al	
	28	6732826	B2	2004-05-11	Song et al	
	29	6735811	B2	2004-05-18	Field et al	
	30	6735812	B2	2004-05-18	Hekman et al	

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	31	6737591	B1	2004-05-18	Lapstun et al	
	32	6741364	B2	2004-05-25	Lange et al	
	33	6756703	B2	2004-06-29	Chang	
	34	6760647	B2	2004-07-06	Nourbakhsh et al	
	35	6764373	B1	2004-07-20	Osawa et al	
	36	6769004	B2	2004-07-27	Barrett	
	37	6774596	B1	2004-08-10	Bisset	
	38	6779380	B1	2004-08-24	Nieuwkamp	
	39	6810305	B2	2004-10-26	Kirkpatrick	
	40	6810350	B2	2004-10-26	Blakley	
	41	6832407	B2	2004-12-21	Salem et al	

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	42	6836701	B2	2004-12-28	McKee	
	43	6845297	B2	2005-01-18	Allard	
	44	6848146	B2	2005-02-01	Wright et al	
	45	6854148	B1	2005-02-15	Rief et al	
	46	6856811	B2	2005-02-15	Burdue et al	
	47	6859010	B2	2005-02-22	Jeon et al	
	48	6859682	B2	2005-02-22	Naka et al	
	49	6860206	B1	2005-03-01	Rudakevych et al	
	50	6865447	B2	2005-03-08	Lau et al	
	51	6870792	B2	2005-03-22	Chiappetta	
	52	6871115	B2	2005-03-22	Huang et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	53	6886651	B1	2005-05-03	Slocum et al	
	54	6888333	B2	2005-05-03	Laby	
	55	6906702	B1	2005-06-14	Tanaka et al	
	56	6914403	B2	2005-07-05	Tsurumi	
	57	6917854	B2	2005-07-12	Bayer	
	58	6925357	C1	2010-05-11		
	59	6925679	B2	2005-08-09	Wallach et al	
	60	6929548	B2	2005-08-16	Wang	
	61	6940291	B1	2005-09-06	Ozick	
	62	6941199	B1	2005-09-06	Bottomley et al	
	63	6957712	B2	2005-10-25	Song et al	

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	64	6960986	B2	2005-11-01	Asama et al	
	65	6965211	B2	2005-11-15	Tsurumi	
	66	6968592	B2	2005-11-29	Takeuchi et al	
	67	6975246	B1	2005-12-13	Trudeau	
	68	6980229	B1	2005-12-27	Ebersole	
	69	6985556	B2	2006-01-10	Shanmugavel et al	
	70	6993954	B1	2006-02-07	George et al	
	71	7024280	B2	2006-04-04	Parker et al	
	72	7027893	B2	2006-04-11	Perry et al	
	73	7030768	B2	2006-04-18	Wanie	
	74	7031805	B2	2006-04-18	Lee et al	

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Receipt date: 09/24/2012	Application Number	12201554	12201554 - GAU: 3723
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	75	7032469	B2	2006-04-25	Bailey	
	76	7040869	B2	2006-05-09	Beenker	
	77	7051399	B2	2006-05-30	Field et al	
	78	7053578	B2	2006-05-30	Diehl et al	
	79	7054716	B2	2006-05-30	McKee et al	
	80	7055210	B2	2006-06-06	Keppler et al	
	81	7057120	B2	2006-06-06	Ma et al	
	82	7057643	B2	2006-06-06	Iida et al	
	83	7059012	B2	2006-06-13	Song et al	
	84	7065430	B2	2006-06-20	Naka et al	
	85	7066291	B2	2006-06-27	Martins et al	

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	86	7069124	B1	2006-06-27	Whittaker et al	
	87	7079923	B2	2006-07-18	Abramson et al	
	88	7085623	B2	2006-08-01	Siegers	
	89	7113847	B2	2006-09-26	Chmura et al	
	90	7133746	B2	2006-11-07	Abramson et al	
	91	7142198	B2	2006-11-28	Lee	
	92	7148458	B2	2006-12-12	Schell et al	
	93	7155308	B2	2006-12-26	Jones	
	94	7167775	B2	2007-01-23	Abramson et al	
	95	7171285	B2	2007-01-30	Kim et al	
	96	7173391	B2	2007-02-06	Jones et al	

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	97	7174238	B1	2007-02-06	Zweig	
	98	7188000	B2	2007-03-06	Chiappetta et al	
	99	7193384	B1	2007-03-20	Norman et al	
	100	7196487	B2	2007-03-27	Jones et al	
	101	7201786	B2	2007-04-10	Wegelin et al	
	102	7211980	B1	2007-05-01	Bruemmer et al	
	103	7225500	B2	2007-06-05	Diehl et al	
	104	7246405	B2	2007-07-24	Yan	
	105	7248951	B2	2007-07-24	Huldén	
	106	7275280	B2	2007-10-02	Haegermarck et al	
	107	7283892	B1	2007-10-16	Boillot et al	

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	Examiner Name		
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	108	7288912	B2	2007-10-30	Landry et al	
	109	7318248	B1	2008-01-15	Yan	
	110	7320149	B1	2008-01-22	Huffman et al	
	111	7321807	B2	2008-01-22	Laski	
	112	7324870	B2	2008-01-29	Lee	
	113	7328196	B2	2008-02-05	Peters	
	114	7332890	B2	2008-02-19	Cohen et al	
	115	7346428	B1	2008-03-18	Huffman et al	
	116	7352153	B2	2008-04-01	Yan	
	117	7359766	B2	2008-04-15	Jeon et al	
	118	7360277	B2	2008-04-22	Moshenrose et al	

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	119	7363108	B2	2008-04-22	Noda et al	
	120	7388879	B2	2008-06-17	Sabe et al	
	121	7389156	B2	2008-06-17	Ziegler et al	
	122	7389166	B2	2008-06-17	Harwig et al	
	123	7408157	B2	2008-08-05	Yan	
	124	7418762	B2	2008-09-02	Arai et al	
	125	7430455	B2	2008-09-30	Casey et al	
	126	7430462	B2	2008-09-30	Chiu et al	
	127	7441298	B2	2008-10-28	Svendsen et al	
	128	7444206	B2	2008-10-28	Abramson et al	
	129	7448113	B2	2008-11-11	Jones et al	

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	Examiner Name		
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	130	7459871	B2	2008-12-02	Landry et al	
	131	7467026	B2	2008-12-16	Sakagami et al	
	132	7474941	B2	2009-01-06	Kim et al	
	133	7503096	B2	2009-03-17	Lin	
	134	7515991	B2	2009-04-07	Egawa et al	
	135	7539557	B2	2009-05-26	Yamauchi	
	136	7555363	B2	2009-06-30	Augenbraun et al	
	137	7557703	B2	2009-07-07	Yamada et al	
	138	7568259	B2	2009-08-04	Yan	
	139	7571511	B2	2009-08-11	Jones et al	
	140	7578020	B2	2009-08-25	Jaworski et al	

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	Attorney Docket Number	09945-0010007	

	141	7600521	B2	2009-10-13	Woo	
	142	7603744	B2	2009-10-20	Reindle	
	143	7611583	B2	2009-11-03	Buckley et al	
	144	7617557	B2	2009-11-17	Reindle	
	145	7620476	B2	2009-11-17	Morse et al	
	146	7636928	B2	2009-12-22	Uno	
	147	7636982	B2	2009-12-29	Jones et al	
	148	7647144	B2	2010-01-12	Haegermarck	
	149	7650666	B2	2010-01-26	Jang	
	150	7660650	B2	2010-02-09	Kawagoe et al	
	151	7663333	B2	2010-02-16	Jones et al	

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Receipt date: 09/24/2012

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Examiner Name	
Attorney Docket Number	09945-0010007

	152	7693605	B2	2010-04-06	Park	
	153	7706917	B1	2010-04-27	Chiappetta et al	
	154	7761954	B2	2010-07-27	Ziegler et al	
	155	7765635	B2	2010-08-03	Park	
	156	7784147	B2	2010-08-31	Burkholder et al	
	157	7801645	B2	2010-09-21	Taylor et al	
	158	7805220	B2	2010-09-28	Taylor et al	
	159	7809944	B2	2010-10-05	Kawamoto	
	160	7832048	B2	2010-11-16	Harwig et al	
	161	7849555	B2	2010-12-14	Hahm et al	
	162	7853645	B2	2010-12-14	Brown et al	

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	Examiner Name		
	Attorney Docket Number	09945-0010007	

	163	7920941	B2	2011-04-05	Park et al	
	164	7937800	B2	2011-05-10	Yan	
	165	7957836	B2	2011-06-07	Myeong et al	
	166	8087117	B2	2012-01-03	Kapoor et al	
	167	D258901	S1	1981-04-14	Keyworth	
	168	D278732	S1	1985-05-07	Ohkado	
	169	D292223	S1	1987-10-06	Trumbull	
	170	D298766	S1	1988-11-29	Tanno et al	
	171	D318500	S1	1991-07-23	Malewicki et al	
	172	D345707	S1	1994-04-05	Alister	
	173	D375592	S1	1996-11-12	Ljunggren	

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	174	D464091	S1	2002-10-08	Christianson	
	175	D471243	S1	2003-03-04	Cioffi et al	
	176	D474312	S1	2003-05-06	Stephens et al	
	177	D478884	S1	2003-08-26	Slipy et al	

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	1	2136324	A_	1938-11-08	JOHN	
	2	2353621	A_	1944-07-11	SAV et al	
	3	2770825	A_	1956-11-20	PULLEN	
	4	2930055	A_	1960-03-29	FALLEN et al	
	5	3119369	A_	1964-01-28	HARLAND et al	
	6	3166138	A_	1965-01-19	DUNN	
	7	3333564	A_	1967-08-01	WATERS	
	8	3375375	A_	1968-03-26	ROBERT et al	

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	9	3381652	A_	1968-05-07	SCHAEFER et al	
	10	3569727	A_	1971-03-09	Aggarwal et al	
	11	3649981	A_	1972-03-21	Woodworth	
	12	3678882	A_	1972-07-25	Kinsella	
	13	3690559	A_	1972-09-12	Rudloff	
	14	3744586	A_	1973-07-10	Leinauer	
	15	3756667	A_	1973-09-04	Bombardier et al	
	16	3809004	A_	1974-05-07	Leonheart	
	17	3816004	A_	1974-06-11	Bignardi	
	18	3845831	A_	1974-11-05	James	
	19	3851349	A_	1974-12-03	Lowder	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	20	3853086	A_	1974-12-10	Asplund	
	21	3863285	A_	1975-02-04	Hukuba	
	22	3888181	A_	1975-06-10	Kups	
	23	3952361	A_	1976-04-27	Wilkins	
	24	3989311	A_	1976-11-02	Debrey	
	25	3989931	A_	1976-11-02	Phillips	
	26	4012681	A_	1977-03-15	Finger et al	
	27	4070170	A_	1978-01-24	Leinfelt	
	28	4175589	A_	1979-11-27	Nakamura et al	
	29	4175892	A_	1979-11-27	De	
	30	4196727	A_	1980-04-08	Verkaart et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	31	4198727	A_	1980-04-22	Farmer	
	32	4199838	A_	1980-04-29	Simonsson	
	33	4209254	A_	1980-06-24	Reymond et al	
	34	4297578	A_	1981-10-27	Carter	
	35	4305234	A_	1981-12-15	Pichelman	
	36	4309758	A_	1982-01-05	Halsall et al	
	37	4328545	A_	1982-05-04	Halsall et al	
	38	4367403	A_	1983-01-04	Miller	
	39	4401909	A_	1983-08-30	Gorsek	
	40	4416033	A_	1983-11-22	Specht	
	41	4445245	A_	1984-05-01	Lu	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	42	4465370	A_	1984-08-14	Yuasa et al	
	43	4477998	A_	1984-10-23	You	
	44	4481692	A_	1984-11-13	Kurz	
	45	4482960	A_	1984-11-13	Pryor	
	46	4492058	A_	1985-01-08	Goldfarb et al	
	47	4518437	A_	1985-05-21	Sommer	
	48	4534637	A_	1985-08-13	Suzuki et al	
	49	4575211	A_	1986-03-11	Matsumura et al	
	50	4580311	A_	1986-04-08	Kurz	
	51	4601082	A_	1986-07-22	Kurz	
	52	4618213	A_	1986-10-21	Chen	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

Receipt date: 09/24/2012	Application Number	12201554	12201554 - GAU: 3723
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	53	4620285	A_	1986-10-28	Perdue	
	54	4624026	A_	1986-11-25	Olson et al	
	55	4628454	A_	1986-12-09	Ito	
	56	4638445	A_	1987-01-20	Mattaboni	
	57	4644156	A_	1987-02-17	Takahashi et al	
	58	4649504	A_	1987-03-10	Krouglicof et al	
	59	4652917	A_	1987-03-24	Miller	
	60	4654492	A_	1987-03-31	Koerner et al	
	61	4654924	A_	1987-04-07	Getz et al	
	62	4660969	A_	1987-04-28	Sorimachi et al	
	63	4662854	A_	1987-05-05	Fang	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	Attorney Docket Number	09945-0010007	

	64	4680827	A_	1987-07-21	Hummel	
	65	4700301	A_	1987-10-13	Dyke	
	66	4703820	A_	1987-11-03	Reinaud	
	67	4709773	A_	1987-12-01	Clement et al	
	68	4710020	A_	1987-12-01	Maddox et al	
	69	4712740	A_	1987-12-15	Duncan et al	
	70	4728801	A_	1988-03-01	O'Connor	
	71	4733343	A_	1988-03-22	Yoneda et al	
	72	4735136	A_	1988-04-05	Lee et al	
	73	4735138	A_	1988-04-05	Gawler et al	
	74	4748336	A_	1988-05-31	Fujie et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

Receipt date: 09/24/2012	Application Number	12201554	12201554 - GAU: 3723
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	75	4748833	A_	1988-06-07	Nagasawa	
	76	4767213	A_	1988-08-30	Hummel	
	77	4769700	A_	1988-09-06	Pryor	
	78	4796198	A_	1989-01-03	Boultinghouse et al	
	79	4806751	A_	1989-02-21	Abe et al	
	80	4813906	A_	1989-03-21	Matsuyama et al	
	81	4817000	A_	1989-03-28	Eberhardt	
	82	4818875	A_	1989-04-04	Weiner	
	83	4829442	A_	1989-05-09	Kadonoff et al	
	84	4829626	A_	1989-05-16	Harkonen et al	
	85	4832098	A_	1989-05-23	Palinkas et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

Receipt date: 09/24/2012	Application Number	12201554	12201554 - GAU: 3723
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	86	4851661	A_	1989-07-25	Everett	
	87	4854006	A_	1989-08-08	Nishimura et al	
	88	4855915	A_	1989-08-08	Dallaire	
	89	4857912	A_	1989-08-15	Everett et al	
	90	4858132	A_	1989-08-15	Holmquist	
	91	4867570	A_	1989-09-19	Sorimachi et al	
	92	4880474	A_	1989-11-14	Koharagi et al	
	93	4891762	A_	1990-01-02	Chotiros	
	94	4905151	A_	1990-02-27	Weiman et al	
	95	4909972	A_	1990-03-20	Britz	
	96	4918441	A_	1990-04-17	Bohman	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

Receipt date: 09/24/2012	Application Number	12201554	12201554 - GAU: 3723
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	97	4919489	A_	1990-04-24	Kopsco	

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Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20010004719	A1	2001-06-21	Sommer	
	2	20010013929	A1	2001-08-16	Torsten	
	3	20010020200	A1	2001-09-06	Das et al	
	4	20010025183	A1	2001-09-27	Shahidi	
	5	20010037163	A1	2001-11-01	Allard	
	6	20010043509	A1	2001-11-22	Green et al	
	7	20010045883	A1	2001-11-29	Holdaway et al	
	8	20010047895	A1	2001-12-06	De et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	9	20020011367	A1	2002-01-31	Kolesnik	
	10	20020021219	A1	2002-02-21	Edwards	
	11	20020027652	A1	2002-03-07	Paromtchik et al	
	12	20020036779	A1	2002-03-28	Kiyoi et al	
	13	20020081937	A1	2002-06-27	Yamada et al	
	14	20020095239	A1	2002-07-18	Wallach et al	
	15	20020097400	A1	2002-07-25	Jung et al	
	16	20020104963	A1	2002-08-08	Mancevski	
	17	20020108209	A1	2002-08-15	Peterson	
	18	20020112742	A1	2002-08-22	Bredo et al	
	19	20020113973	A1	2002-08-22	Ge	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

Receipt date: 09/24/2012	Application Number	12201554	12201554 - GAU: 3723
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	20	20020116089	A1	2002-08-22	Kirkpatrick	
	21	20020124343	A1	2002-09-12	Reed	
	22	20020153185	A1	2002-10-24	Song et al	
	23	20020159051	A1	2002-10-31	Guo	
	24	20020166193	A1	2002-11-14	Kasper	
	25	20020169521	A1	2002-11-14	Goodman et al	
	26	20020189871	A1	2002-12-19	Won	
	27	20030009259	A1	2003-01-09	Hattori et al	
	28	20030023356	A1	2003-01-30	Keable	
	29	20030024986	A1	2003-02-06	Mazz et al	
	30	20030028286	A1	2003-02-06	Glenn et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

Receipt date: 09/24/2012	Application Number	12201554	12201554 - GAU: 3723
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	31	20030030399	A1	2003-02-13	Jacobs	
	32	20030058262	A1	2003-03-27	Sato et al	
	33	20030067451	A1	2003-04-10	TAGG et al	
	34	20030097875	A1	2003-05-29	Lentz et al	
	35	20030124312	A1	2003-07-03	Autumn	
	36	20030126352	A1	2003-07-03	Barrett	
	37	20030146384	A1	2003-08-07	Logsdon et al	
	38	20030159232	A1	2003-08-28	Hekman et al	
	39	20030168081	A1	2003-09-11	Lee et al	
	40	20030175138	A1	2003-09-18	Beenker	
	41	20030193657	A1	2003-10-16	Uomori et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

Receipt date: 09/24/2012	Application Number	12201554	12201554 - GAU: 3723
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	42	20030221114	A1	2003-11-27	Hino et al	
	43	20030229421	A1	2003-12-11	Chmura et al	
	44	20030229474	A1	2003-12-11	Suzuki et al	
	45	20030233171	A1	2003-12-18	Heiligensetzer	
	46	20030233870	A1	2003-12-25	Mancevski	
	47	20030233930	A1	2003-12-25	Ozick	
	48	20040016077	A1	2004-01-29	Song et al	
	49	20040030451	A1	2004-02-12	Solomon	
	50	20040030570	A1	2004-02-12	Solomon	
	51	20040055163	A1	2004-03-25	McCambridge et al	
	52	20040074038	A1	2004-04-22	Im et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	53	20040074044	A1	2004-04-22	Diehl et al	
	54	20040083570	A1	2004-05-06	Song et al	
	55	20040093122	A1	2004-05-13	Galibraith	
	56	20040098167	A1	2004-05-20	Yi et al	
	57	20040111821	A1	2004-06-17	Lenkiewicz et al	
	58	20040113777	A1	2004-06-17	Matsuhira et al	
	59	20040117064	A1	2004-06-17	McDonald	
	60	20040117846	A1	2004-06-17	Karaoguz et al	
	61	20040118998	A1	2004-06-24	Wingett et al	
	62	20040128028	A1	2004-07-01	Miyamoto et al	
	63	20040133316	A1	2004-07-08	Dean	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	64	20040143919	A1	2004-07-29	Wilder	
	65	20040148419	A1	2004-07-29	Chen et al	
	66	20040148731	A1	2004-08-05	Damman et al	
	67	20040153212	A1	2004-08-05	Profio et al	
	68	20040181706	A1	2004-09-16	Chen et al	
	69	20040187249	A1	2004-09-30	Jones et al	
	70	20040187457	A1	2004-09-30	Colens	
	71	20040196451	A1	2004-10-07	Aoyama	
	72	20040204804	A1	2004-10-14	Lee et al	
	73	20040210345	A1	2004-10-21	Noda et al	
	74	20040210347	A1	2004-10-21	Sawada et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	75	20040221790	A1	2004-11-11	Sinclair et al	
	76	20040255425	A1	2004-12-23	Arai et al	
	77	20050010330	A1	2005-01-13	Abramson et al	
	78	20050015913	A1	2005-01-27	Kim et al	
	79	20050021181	A1	2005-01-27	Kim et al	
	80	20050028316	A1	2005-02-10	Thomas et al	
	81	20050053912	A1	2005-03-10	Roth et al	
	82	20050055796	A1	2005-03-17	Wright et al	
	83	20050067994	A1	2005-03-31	Jones et al	
	84	20050085947	A1	2005-04-21	Aldred et al	
	85	20050091782	A1	2005-05-05	Gordon et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	86	20050091786	A1	2005-05-05	Wright et al	
	87	20050137749	A1	2005-06-23	Jeon et al	
	88	20050144751	A1	2005-07-07	Kegg et al	
	89	20050150074	A1	2005-07-14	Diehl et al	
	90	20050150519	A1	2005-07-14	Keppler et al	
	91	20050154795	A1	2005-07-14	Kuz et al	
	92	20050163119	A1	2005-07-28	Ito et al	
	93	20050165508	A1	2005-07-28	Kanda et al	
	94	20050166354	A1	2005-08-04	Uehigashi	
	95	20050166355	A1	2005-08-04	Tani	
	96	20050172445	A1	2005-08-11	Diehl et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	97	20050183229	A1	2005-08-25	Uehigashi	
	98	20050183230	A1	2005-08-25	Uehigashi	
	99	20050187678	A1	2005-08-25	Myeong et al	
	100	20050192707	A1	2005-09-01	Park et al	
	101	20050209736	A1	2005-09-22	Kawagoe	
	102	20050211880	A1	2005-09-29	Schell et al	
	103	20050212929	A1	2005-09-29	Schell et al	
	104	20050213082	A1	2005-09-29	DiBernardo et al	
	105	20050213109	A1	2005-09-29	Schell et al	
	106	20050217042	A1	2005-10-06	Reindle	
	107	20050218852	A1	2005-10-06	Landry et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	108	20050222933	A1	2005-10-06	Wesby	
	109	20050229340	A1	2005-10-20	Sawalski et al	
	110	20050229355	A1	2005-10-20	Crouch et al	
	111	20050235451	A1	2005-10-27	Yan	
	112	20050251292	A1	2005-11-10	Casey et al	
	113	20050255425	A1	2005-11-17	Pierson	
	114	20050258154	A1	2005-11-24	Blankenship et al	
	115	20050273967	A1	2005-12-15	Taylor et al	
	116	20050288819	A1	2005-12-29	de	
	117	20060000050	A1	2006-01-05	Cipolla et al	
	118	20060009879	A1	2006-01-12	Lynch et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	119	20060010638	A1	2006-01-19	Shimizu et al	
	120	20060020369	A1	2006-01-26	Taylor et al	
	121	20060020370	A1	2006-01-26	Abramson	
	122	20060021168	A1	2006-02-02	Nishikawa	
	123	20060025134	A1	2006-02-02	Cho et al	
	124	20060037170	A1	2006-02-23	Shimizu	
	125	20060044546	A1	2006-03-02	Lewin et al	
	126	20060060216	A1	2006-03-23	Woo	
	127	20060061657	A1	2006-03-23	Rew et al	
	128	20060064828	A1	2006-03-30	Stein et al	
	129	20060087273	A1	2006-04-27	Ko et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	130	20060089765	A1	2006-04-27	Pack et al	
	131	20060100741	A1	2006-05-11	Jung	
	132	20060107894	A1	2006-05-25	Buckley et al	
	133	20060119839	A1	2006-06-08	Bertin et al	
	134	20060143295	A1	2006-06-29	Costa et al	
	135	20060146776	A1	2006-07-06	Kim	
	136	20060150361	A1	2006-07-13	Aldred et al	
	137	20060184293	A1	2006-08-17	Konandreas et al	
	138	20060185690	A1	2006-08-24	Song et al	
	139	20060190133	A1	2006-08-24	Konandreas et al	
	140	20060190134	A1	2006-08-24	Ziegler et al	

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	141	20060190146	A1	2006-08-24	Morse et al	
	142	20060196003	A1	2006-09-07	Song et al	
	143	20060200281	A1	2006-09-07	Ziegler et al	
	144	20060220900	A1	2006-10-05	Ceskutti et al	
	145	20060229774	A1	2006-10-12	Park et al	
	146	20060259194	A1	2006-11-16	Chiu	
	147	20060259494	A1	2006-11-16	Watson et al	
	148	20060278161	A1	2006-12-14	Burkholder et al	
	149	20060288519	A1	2006-12-28	Jaworski et al	
	150	20060293787	A1	2006-12-28	Kanda et al	
	151	20060293808	A1	2006-12-28	Qian	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	152	20070006404	A1	2007-01-11	Cheng et al	
	153	20070016328	A1	2007-01-18	Ziegler et al	
	154	20070017061	A1	2007-01-25	Yan	
	155	20070028574	A1	2007-02-08	Yan	
	156	20070032904	A1	2007-02-08	Kawagoe et al	
	157	20070043459	A1	2007-02-22	Abbott et al	
	158	20070061041	A1	2007-03-15	Zweig	
	159	20070061043	A1	2007-03-15	Ermakov et al	
	160	20070114975	A1	2007-05-24	Cohen et al	
	161	20070142964	A1	2007-06-21	Abramson	
	162	20070150096	A1	2007-06-28	Yeh et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	163	20070156286	A1	2007-07-05	YAMAUCHI	
	164	20070157415	A1	2007-07-12	Lee et al	
	165	20070157420	A1	2007-07-12	Lee et al	
	166	20070179670	A1	2007-08-02	Chiappetta et al	
	167	20070226949	A1	2007-10-04	Hahm et al	
	168	20070234492	A1	2007-10-11	Svendsen et al	
	169	20070244610	A1	2007-10-18	Ozick et al	
	170	20070245511	A1	2007-10-25	Hahm et al	
	171	20070250212	A1	2007-10-25	Halloran et al	
	172	20070261193	A1	2007-11-15	Gordon et al	
	173	20070266508	A1	2007-11-22	Jones et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	174	20080007203	A1	2008-01-10	Cohen et al	
	175	20080039974	A1	2008-02-14	Sandin et al	
	176	20080052846	A1	2008-03-06	Kapoor et al	
	177	20080091304	A1	2008-04-17	Ozick et al	
	178	20080109126	A1	2008-05-08	Sandin et al	
	179	20080134458	A1	2008-06-12	Ziegler et al	
	180	20080140255	A1	2008-06-12	Ziegler et al	
	181	20080155768	A1	2008-07-03	Ziegler et al	
	182	20080184518	A1	2008-08-07	Taylor et al	
	183	20080276407	A1	2008-11-13	Schnittman et al	
	184	20080281470	A1	2008-11-13	Gilbert et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	185	20080282494	A1	2008-11-20	Won et al	
	186	20080294288	A1	2008-11-27	YAMAUCHI	
	187	20080302586	A1	2008-12-11	Yan	
	188	20080307590	A1	2008-12-18	Jones et al	
	189	20090007366	A1	2009-01-08	Svendsen et al	
	190	20090038089	A1	2009-02-12	Landry et al	
	191	20090048727	A1	2009-02-19	Hong et al	
	192	20090049640	A1	2009-02-26	Lee et al	
	193	20090055022	A1	2009-02-26	Casey et al	
	194	20090102296	A1	2009-04-23	Greene et al	
	195	20090292393	A1	2009-11-26	Casey et al	

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	196	20100006028	A1	2010-01-14	Buckley et al	
	197	20100011529	A1	2010-01-21	Won et al	
	198	20100049365	A1	2010-02-25	Jones et al	
	199	20100063628	A1	2010-03-11	Landry et al	
	200	20100257690	A1	2010-10-14	JONES et al	
	201	20100257691	A1	2010-10-14	JONES et al	
	202	20100263158	A1	2010-10-21	JONES et al	
	203	20100293742	A1	2010-11-25	CHUNG et al	

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	1	4920060	A_	1990-04-24	Parrent et al	
	2	4920605	A_	1990-05-01	Takashima	
	3	4937912	A_	1990-07-03	Kurz	
	4	4953253	A_	1990-09-04	Fukuda et al	
	5	4954962	A_	1990-09-04	Evans et al	
	6	4955714	A_	1990-09-11	Stotler et al	
	7	4961303	A_	1990-10-09	McCarty et al	
	8	4961304	A_	1990-10-09	Ovsborn et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	9	4967862	A_	1990-11-06	Pong et al	
	10	4971591	A_	1990-11-20	Raviv et al	
	11	4973912	A_	1990-11-27	Kaminski et al	
	12	4977618	A_	1990-12-11	Allen	
	13	4977639	A_	1990-12-18	Takahashi et al	
	14	4986663	A_	1991-01-22	Cecchi et al	
	15	5001635	A_	1991-03-19	Yasutomi et al	
	16	5012886	A_	1991-05-07	Jonas et al	
	17	5018240	A_	1991-05-28	Holman	
	18	5022812	A_	1991-06-11	Coughlan et al	
	19	5023788	A_	1991-06-11	Kitazume et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	20	5024529	A_	1991-06-18	Svetkoff et al	
	21	5032775	A_	1991-07-16	Mizuno et al	
	22	5033151	A_	1991-07-23	Kraft et al	
	23	5033291	A_	1991-07-23	Podoloff et al	
	24	5040116	A_	1991-08-13	Evans et al	
	25	5045769	A_	1991-09-03	Everett	
	26	5049802	A_	1991-09-17	Mintus et al	
	27	5051906	A_	1991-09-24	Evans et al	
	28	5062819	A_	1991-11-05	Mallory	
	29	5090321	A_	1992-02-25	Abouav	
	30	5094311	A_	1992-03-10	Akeel	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	31	5098262	A_	1992-03-24	Wecker et al	
	32	5105550	A_	1992-04-21	Shenoha	
	33	5111401	A_	1992-05-05	Everett et al	
	34	5127128	A_	1992-07-07	Lee	
	35	5136675	A_	1992-08-04	Hodson	
	36	5144471	A_	1992-09-01	Takanashi et al	
	37	5144714	A_	1992-09-08	Mori et al	
	38	5144715	A_	1992-09-08	Matsuyo et al	
	39	5152028	A_	1992-10-06	Hirano	
	40	5152202	A_	1992-10-06	Strauss	
	41	5155684	A_	1992-10-13	Burke et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	42	5163202	A_	1992-11-17	Kawakami et al	
	43	5163320	A_	1992-11-17	Goshima et al	
	44	5164579	A_	1992-11-17	Pryor et al	
	45	5170352	A_	1992-12-08	McTamaney et al	
	46	5173881	A_	1992-12-22	Sindle	
	47	5182833	A_	1993-02-02	Yamaguchi et al	
	48	5187662	A_	1993-02-16	Kamimura et al	
	49	5202742	A_	1993-04-13	Frank et al	
	50	5206500	A_	1993-04-27	Decker et al	
	51	5216777	A_	1993-06-08	Moro et al	
	52	5222786	A_	1993-06-29	Sovis et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	53	5227985	A_	1993-07-13	DeMenthon	
	54	5233682	A_	1993-08-03	Abe et al	
	55	5251358	A_	1993-10-12	Moro et al	
	56	5276618	A_	1994-01-04	Everett	
	57	5276939	A_	1994-01-11	Uenishi	
	58	5277064	A_	1994-01-11	Knigga et al	
	59	5284452	A_	1994-02-08	Corona	
	60	5307273	A_	1994-04-26	Oh et al	
	61	5310379	A_	1994-05-10	Hippely et al	
	62	5315227	A_	1994-05-24	Pierson et al	
	63	5319827	A_	1994-06-14	Yang	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	64	5323483	A_	1994-06-21	Baeg	
	65	5331713	A_	1994-07-26	Tipton	
	66	5341186	A_	1994-08-23	Kato	
	67	5341549	A_	1994-08-30	Wirtz et al	
	68	5345649	A_	1994-09-13	Whitlow	
	69	5352901	A_	1994-10-04	Poorman	
	70	5363305	A_	1994-11-08	Cox et al	
	71	5363935	A_	1994-11-15	Schempf et al	
	72	5369838	A_	1994-12-06	Wood et al	
	73	5386862	A_	1995-02-07	Glover et al	
	74	5399951	A_	1995-03-21	Lavallee et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	75	5400244	A_	1995-03-21	Watanabe et al	
	76	5404612	A_	1995-04-11	Ishikawa	
	77	5410479	A_	1995-04-25	Coker	
	78	5435405	A_	1995-07-25	Schempf et al	
	79	5442358	A_	1995-08-15	Keeler et al	
	80	5446445	A_	1995-08-29	Bloomfield et al	
	81	5451135	A_	1995-09-19	Schempf et al	
	82	5465619	A_	1995-11-14	Sotack et al	
	83	5471560	A_	1995-11-28	Allard et al	
	84	5491670	A_	1996-02-13	Weber	
	85	5498948	A_	1996-03-12	Bruni et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	86	5502638	A_	1996-03-26	Takenaka	
	87	5505072	A_	1996-04-09	Oreper	
	88	5510893	A_	1996-04-23	Suzuki	
	89	5511147	A_	1996-04-23	Abdel	
	90	5535476	A_	1996-07-16	Kresse et al	
	91	5537711	A_	1996-07-23	Tseng	
	92	5542148	A_	1996-08-06	Young	
	93	5546631	A_	1996-08-20	Chambon	
	94	5551119	A_	1996-09-03	Worwag	
	95	5551525	A_	1996-09-03	Pack et al	
	96	5608306	A_	1997-03-04	Rybeck et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	97	5608894	A_	1997-03-04	Kawakami et al	
	98	5610488	A_	1997-03-11	Miyazawa	
	99	5613269	A_	1997-03-25	Miwa	
	100	5636402	A_	1997-06-10	Kubo et al	
	101	5642299	A_	1997-06-24	Hardin et al	
	102	5646494	A_	1997-07-08	Han	
	103	5647554	A_	1997-07-15	Ikegami et al	
	104	5682839	A_	1997-11-04	Grimsley et al	
	105	5696675	A_	1997-12-09	Nakamura et al	
	106	5698861	A_	1997-12-16	Oh	
	107	5710506	A_	1998-01-20	Broell et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	108	5714119	A_	1998-02-03	Kawagoe et al	
	109	5717169	A_	1998-02-10	Liang et al	
	110	5717484	A_	1998-02-10	Hamaguchi et al	
	111	5720077	A_	1998-02-24	Nakamura et al	
	112	5732401	A_	1998-03-24	Conway	
	113	5735017	A_	1998-04-07	Barnes et al	
	114	5735959	A_	1998-04-07	Kubo et al	
	115	5742975	A_	1998-04-28	Knowlton et al	
	116	5745235	A_	1998-04-28	Vercammen et al	
	117	5752871	A_	1998-05-19	Tsuzuki	
	118	5756904	A_	1998-05-26	Oreper et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	119	5764888	A_	1998-06-09	Bolan et al	
	120	5767437	A_	1998-06-16	Rogers	
	121	5767960	A_	1998-06-16	Orman	
	122	5777596	A_	1998-07-07	Herbert	
	123	5778486	A_	1998-07-14	Kim	
	124	5781697	A_	1998-07-14	Jeong	
	125	5784755	A_	1998-07-28	Karr et al	
	126	5786602	A_	1998-07-28	Pryor et al	
	127	5793900	A_	1998-08-11	Nourbakhsh et al	
	128	5802665	A_	1998-09-08	Knowlton et al	
	129	5814808	A_	1998-09-29	Takada et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	130	5815884	A_	1998-10-06	Imamura et al	
	131	5819008	A_	1998-10-06	Asama et al	
	132	5819360	A_	1998-10-13	Fujii	
	133	5819936	A_	1998-10-13	Saveliev et al	
	134	5820821	A_	1998-10-13	Kawagoe et al	
	135	5821730	A_	1998-10-13	Drapkin	
	136	5825981	A_	1998-10-20	Matsuda	
	137	5828770	A_	1998-10-27	Leis et al	
	138	5831597	A_	1998-11-03	West et al	
	139	5836045	A_	1998-11-17	Anthony et al	
	140	5839532	A_	1998-11-24	Yoshiji et al	

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	141	5867861	A_	1999-02-09	Kasen et al	
	142	5869910	A_	1999-02-09	Colens	
	143	5894621	A_	1999-04-20	Kubo	
	144	5896611	A_	1999-04-27	Haaga	
	145	5903124	A_	1999-05-11	Kawakami	
	146	5905209	A_	1999-05-18	Oreper	
	147	5907886	A_	1999-06-01	Buscher	
	148	5910700	A_	1999-06-08	Crotzer	
	149	5916008	A_	1999-06-29	Wong	
	150	5924167	A_	1999-07-20	Wright et al	
	151	5933102	A_	1999-08-03	Miller et al	

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	152	5933913	A_	1999-08-10	Wright et al	
	153	5935333	A_	1999-08-10	Davis	
	154	5940346	A_	1999-08-17	Sadowsky et al	
	155	5943933	A_	1999-08-31	Evans et al	
	156	5947225	A_	1999-09-07	Kawakami et al	
	157	5950408	A_	1999-09-14	Schaedler	
	158	5968281	A_	1999-10-19	Wright et al	
	159	5974365	A_	1999-10-26	Mitchell	
	160	5983448	A_	1999-11-16	Wright et al	
	161	5984880	A_	1999-11-16	Lander et al	
	162	5987383	C1	2006-06-13	KELLER et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	163	5989700	A_	1999-11-23	Krivopal	
	164	5991951	A_	1999-11-30	Kubo et al	
	165	5995884	A_	1999-11-30	Allen et al	
	166	5998953	A_	1999-12-07	Nakamura et al	
	167	5998971	A_	1999-12-07	Corbridge	
	168	6000088	A_	1999-12-14	Wright et al	
	169	6009358	A_	1999-12-28	Angott et al	
	170	6012618	A_	2000-01-11	Matsuo	
	171	6021545	A_	2000-02-08	Delgado et al	
	172	6023813	A_	2000-02-15	Thatcher et al	
	173	6023814	A_	2000-02-15	Imamura	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	174	6025687	A_	2000-02-15	Himeda et al	
	175	6026539	A_	2000-02-22	Mouw et al	
	176	6032327	A_	2000-03-07	Oka et al	
	177	6032542	A_	2000-03-07	Warnick et al	
	178	6036572	A_	2000-03-14	Sze	
	179	6040669	A_	2000-03-21	Hog	
	180	6041472	A_	2000-03-28	Kasen et al	
	181	6046800	A_	2000-04-04	Ohtomo et al	
	182	6049620	A_	2000-04-11	Dickinson et al	
	183	6050648	A_	2000-04-18	Keleny	
	184	6052821	A_	2000-04-18	Chouly et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	185	6055042	A_	2000-04-25	Sarangapani	
	186	6055702	A_	2000-05-02	Imamura et al	
	187	6061868	A_	2000-05-16	Moritsch et al	
	188	6065182	A_	2000-05-23	Wright et al	
	189	6070290	A_	2000-06-06	Schwarze et al	
	190	6073432	A_	2000-06-13	Schaedler	
	191	6076026	A_	2000-06-13	Jambhekar et al	
	192	6076227	A_	2000-06-20	Schallig et al	
	193	6081257	A_	2000-06-27	Zeller	
	194	6088020	A_	2000-07-11	Mor	
	195	6094775	A_	2000-08-01	Behmer	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	Attorney Docket Number	09945-0010007	

	196	6099091	A_	2000-08-08	Campbell	
	197	6101670	C1	2005-07-19		
	198	6101671	A_	2000-08-15	Wright et al	
	199	6108031	A_	2000-08-22	King et al	
	200	6108067	A_	2000-08-22	Okamoto	
	201	6108076	A_	2000-08-22	Hanseder	
	202	6108269	A_	2000-08-22	Kabel	
	203	6108597	A_	2000-08-22	Kirchner et al	
	204	6108859	A_	2000-08-29	Burgoon	
	205	6112143	A_	2000-08-29	Allen et al	
	206	6112996	A_	2000-09-05	Matsuo	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	207	6119057	A_	2000-09-12	Kawagoe	
	208	6122798	A_	2000-09-26	Kobayashi et al	
	209	6124694	A_	2000-09-26	Bancroft et al	
	210	6125498	A_	2000-10-03	Roberts et al	
	211	6131237	A_	2000-10-17	Kasper et al	
	212	6138063	A_	2000-10-24	Himeda	
	213	6142252	A_	2000-11-07	Kinto et al	
	214	6146041	A_	2000-11-14	Chen et al	
	215	6146278	A_	2000-11-14	Kobayashi	
	216	6154279	A_	2000-11-28	Thayer	
	217	6154694	A_	2000-11-28	Aoki et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	218	6160479	A_	2000-12-12	Åhlen et al	
	219	6167332	A_	2000-12-26	Kurtzberg et al	
	220	6167587	B1	2001-01-02	Kasper et al	
	221	6192548	B1	2001-02-27	Huffman	
	222	6192549	B1	2001-02-27	Kasen et al	
	223	6202243	B1	2001-03-20	Beaufoy et al	
	224	6216307	B1	2001-04-17	Kaleta et al	
	225	6220865	B1	2001-04-24	Macri et al	
	226	6230362	B1	2001-05-15	Kasper et al	
	227	6237741	B1	2001-05-29	Guidetti	
	228	6243913	B1	2001-06-12	Frank et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	229	6263539	B1	2001-07-24	Baig	
	230	6263989	B1	2001-07-24	Won	
	231	6272936	B1	2001-08-14	Oreper et al	
	232	6278918	B1	2001-08-21	Dickson et al	
	233	6279196	B2	2001-08-28	Kasen et al	
	234	6282526	B1	2001-08-28	Ganesh	
	235	6283034	B1	2001-09-04	Miles	
	236	6285778	B1	2001-09-04	Nakajima et al	
	237	6285930	B1	2001-09-04	Dickson et al	
	238	6286181	B1	2001-09-11	Kasper et al	
	239	6300737	B1	2001-10-09	Bergvall et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	240	6321337	B1	2001-11-20	Reshef et al	
	241	6321515	B1	2001-11-27	Colens	
	242	6323570	B1	2001-11-27	Nishimura et al	
	243	6324714	B1	2001-12-04	Walz et al	
	244	6332400	B1	2001-12-25	Meyer	
	245	6362875	B1	2002-03-26	Burkley	
	246	6374155	B1	2002-04-16	Wallach et al	
	247	6374157	B1	2002-04-16	Takamura	
	248	6385515	B1	2002-05-07	Dickson et al	
	249	6388013	B1	2002-05-14	Saraf et al	
	250	6397429	B1	2002-06-04	Legatt et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	251	6400048	B1	2002-06-04	Nishimura et al	
	252	6401294	B2	2002-06-11	Kasper	
	253	6408226	B1	2002-06-18	Byrne et al	
	254	6412141	B1	2002-07-02		
	255	6415203	B1	2002-07-02	Inoue et al	
	256	6418586	B2	2002-07-16	Fulghum	
	257	6421870	B1	2002-07-23	Basham et al	
	258	6427285	B1	2002-08-06	Legatt et al	
	259	6430471	B1	2002-08-06	Kintou et al	
	260	6431296	B1	2002-08-13	Won	
	261	6437227	B1	2002-08-20	Theimer	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	262	6437465	B1	2002-08-20	Nishimura et al	
	263	6438456	B1	2002-08-20	Feddema et al	
	264	6438793	B1	2002-08-27	Miner et al	
	265	6442476	B1	2002-08-27	Poropat	
	266	6442789	B1	2002-09-03	Legatt et al	
	267	6443509	B1	2002-09-03	Levin et al	
	268	6446302	B1	2002-09-10	Kasper et al	
	269	6454036	B1	2002-09-24	Airey et al	
	270	6473167	B1	2002-10-29	Odell	
	271	6480762	B1	2002-11-12	Uchikubo et al	
	272	6490539	B1	2002-12-03	Dickson et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	273	6491127	B1	2002-12-10	Holmberg et al	
	274	6502657	B2	2003-01-07	Kerrebrock et al	
	275	6504610	B1	2003-01-07	Bauer et al	
	276	6507773	B2	2003-01-14	Parker et al	
	277	6519808	B2	2003-02-18	Legatt et al	
	278	6530102	B1	2003-03-11	Pierce et al	
	279	6530117	B2	2003-03-11	Peterson	
	280	6535793	B2	2003-03-18	Allard	
	281	6540424	B1	2003-04-01	Hall et al	
	282	6540607	B2	2003-04-01	Mokris et al	
	283	6543210	B2	2003-04-08	Rostoucher et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	284	6548982	B1	2003-04-15	Papanikolopoulos et al	
	285	6553612	B1	2003-04-29	Dyson et al	
	286	6556722	B1	2003-04-29	Russell et al	
	287	6556892	B2	2003-04-29	Kuroki et al	
	288	6557104	B2	2003-04-29	Vu et al	
	289	6563130	B2	2003-05-13	Dworkowski et al	
	290	6571422	B1	2003-06-03	Gordon et al	
	291	6572711	B2	2003-06-03	Sclafani et al	
	292	6581239	B1	2003-06-24	Dyson et al	
	293	6584376	B1	2003-06-24	Van	
	294	6586908	B2	2003-07-01	Petersson et al	

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	295	6587573	B1	2003-07-01	Stam et al	
	296	6590222	B1	2003-07-08	Bisset et al	
	297	6594551	B2	2003-07-15	McKinney et al	
	298	6594844	B2	2003-07-22	Jones	

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1	1	GB2300082B_	GB	B_	1999-09-22	ARMOUR		☐
2	2	GB2344747B_	GB	B_	2002-05-29	DYSON		☐
3	3	GB2404330B_	GB	B_	2005-07-06	PARK et al		☐

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4	4	GB2409966A_	GB	A_	2005-07-20	Kawagoe		☐
5	5	GB2417354A_	GB	A_	2006-02-22	Richards		☐
6	6	GB702426A_	GB	A_	1954-01-13	PULLEN		☐
7	7	JP1118752A_	JP	A_	1989-05-11	OKADA et al		☐
8	8	JP2283343A_	JP	A_	1990-11-20	IWASA		☐
9	9	JP04300516B2	JP	B2	2009-07-22	TAIKI		☐
10	10	JP5046239B_	JP	B_	1993-07-13	SUMYA et al		☐
11	11	JP5095879A_	JP	A_	1993-04-20	KITAGAWA		☐
12	12	JP5257527A_	JP	A_	1993-10-08	ABE et al		☐
13	13	JP5285861A_	JP	A_	1993-11-02	OKAMURA		☐
14	14	JP7222705A_	JP	A_	1995-08-22	ADACHI		☐

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15	15	JP8083125A_	JP	A_	1996-03-26	HAN		☐
16	16	JP9160644A_	JP	A_	1997-06-20	SAKAI		☐
17	17	JP9206258A_	JP	A_	1997-08-12	TAJIMA et al		☐
18	18	JP9233712A_	JP	A_	1997-09-05	SAKIYAMA		☐
19	19	JP9251318A_	JP	A_	1997-09-22	KUBO		☐
20	20	JP10027020A_	JP	A_	1998-01-27	KANEFUJI et al		☐
21	21	JP10055215A_	JP	A_	1998-02-24	KAWAGOE		☐
22	22	JP10105233A_	JP	A_	1998-04-24	KAWAGOE		☐
23	23	JP10117973A_	JP	A_	1998-05-12	KAWAGOE		☐
24	24	JP10118963A_	JP	A_	1998-05-12	KAWAGOE		☐
25	25	JP10165738A_	JP	A_	1998-06-23	NAKATANI et al		☐

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26	26	JP10177414A_	JP	A_	1998-06-30	ICHIJIMA		☐
27	27	JP10214114A_	JP	A_	1998-08-11	UENO et al		☐
28	28	JP10240342A_	JP	A_	1998-09-11	HIMEDA		☐
29	29	JP10260727A_	JP	A_	1998-09-29	KAWAGOE		☐
30	30	JP10295595A_	JP	A_	1998-11-10	KAWAGOE		☐
31	31	JP10314088A_	JP	A_	1998-12-02	AOYAMA		☐
32	32	JP11015941A_	JP	A_	1999-01-22	HIMEDA et al		☐
33	33	JP11065655A_	JP	A_	1999-03-09	NAKAMURA et al		☐
34	34	JP11065657A_	JP	A_	1999-03-09	NAKAMURA et al		☐
35	35	JP11102219A_	JP	A_	1999-04-13	HIMEDA et al		☐
36	36	JP11102220A_	JP	A_	1999-04-13	NUKUTSUMA et al		☐

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37	37	JP11174145A_	JP	A_	1999-07-02	KAWAGOE et al		☐
38	38	JP11175149A_	JP	A_	1999-07-02	KAWAGOE et al		☐
39	39	JP11178764A_	JP	A_	1999-07-06	KATO et al		☐
40	40	JP11178765A_	JP	A_	1999-07-06	UENO et al		☐
41	41	JP11212642A_	JP	A_	1999-08-06	UENO et al		☐
42	42	JP11213157A_	JP	A_	1999-08-06	KAWAGOE		☐
43	43	JP11248806A_	JP	A_	1999-09-17	CORBRIDGE		☐
44	44	JP11282532A_	JP	A_	1999-10-15	KATO et al		☐
45	45	JP11282533A_	JP	A_	1999-10-15	TAKIMOTO		☐
46	46	JP11295412A_	JP	A_	1999-10-29	WAKI et al		☐
47	47	JP11346964A_	JP	A_	1999-12-21	OKA et al		☐

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48	48	JP2000047728A_	JP	A_	2000-02-18	HIGO		☐
49	49	JP2000056006A_	JP	A_	2000-02-25	WAKI et al		☐
50	50	JP2000056831A_	JP	A_	2000-02-25	KANEFUJI et al		☐

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Application Number	12201554
Filing Date	2008-08-29
First Named Inventor	Jones
Art Unit	
Examiner Name	
Attorney Docket Number	09945-0010007

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1	1	JP2000066722A_	JP	A_	2000-03-03	HIMEDA		☐
2	2	JP2000075925A_	JP	A_	2000-03-14	HIMEDA et al		☐
3	3	JP2000102499A_	JP	A_	2000-04-11	FUJIMURA et al		☐

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4	4	JP2000275321A_	JP	A_	2000-10-06	SAKATA		☐
5	5	JP2000279353A_	JP	A_	2000-10-10	AOYAMA		☐
6	6	JP2000342497A_	JP	A_	2000-12-12	ICHIJO		☐
7	7	JP2000353014A_	JP	A_	2000-12-19	ICHIJO		☐
8	8	JP2001022443A_	JP	A_	2001-01-26	KAWAGOE		☐
9	9	JP2001067588A_	JP	A_	2001-03-16	ITO et al		☐
10	10	JP2001087182A_	JP	A_	2001-04-03	MARUYAMA et al		☐
11	11	JP2001121455A_	JP	A_	2001-05-08	HOSONUMA et al		☐
12	12	JP2001125641A_	JP	A_	2001-05-11	OSAWA et al		☐
13	13	JP2001197008A_	JP	A_	2001-07-19	OOSHIMO		☐
14	14	JP2001216482A_	JP	A_	2001-08-10	HIROTA et al		☐

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15	15	JP2001265437A_	JP	A_	2001-09-28	KAWAGOE		☐
16	16	JP2001289939A_	JP	A_	2001-10-19	NISHIMOTO et al		☐
17	17	JP2001306170A_	JP	A_	2001-11-02	YAMAGUCHI		☐
18	18	JP2001320781A_	JP	A_	2001-11-16	ASAMA et al		☐
19	19	JP2001508572A_	JP	A_	2001-06-26			☐
20	20	JP2002204769A_	JP	A_	2002-07-23	TAKAGI et al		☐
21	21	JP2002247510A_	JP	A_	2002-08-30	YAMANE		☐
22	22	JP2002333920A_	JP	A_	2002-11-22	KAWAGOE		☐
23	23	JP2002366227A_	JP	A_	2002-12-20	HAJI et al		☐
24	24	JP2002369778A_	JP	A_	2002-12-24	ISHIKAWA		☐
25	25	JP2002532180A_	JP	A_	2002-10-02			☐

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26	26	JP2003010088A_	JP	A_	2003-01-14	KAWAGOE		☐
27	27	JP2003015740A_	JP	A_	2003-01-17	KAWAGOE		☐
28	28	JP2003028528A_	JP	A_	2003-01-29	YAMAGUCHI et al		☐
29	29	JP2003047579A_	JP	A_	2003-02-18	HIRAHARA		☐
30	30	JP2003084994A_	JP	A_	2003-03-20	MIURA et al		☐
31	31	JP2003167628A_	JP	A_	2003-06-13	KAWAGOE		☐
32	32	JP2003180586A_	JP	A_	2003-07-02	EGAWA et al		☐
33	33	JP2003180587A_	JP	A_	2003-07-02	INOUE et al		☐
34	34	JP2003186539A_	JP	A_	2003-07-04	FUNAZAKI		☐
35	35	JP2003190064A_	JP	A_	2003-07-08	KOMURA et al		☐
36	36	JP2003241836A_	JP	A_	2003-08-29	KATSURA et al		☐

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37	37	JP2003262520A_	JP	A_	2003-09-19	ARAI et al		☐
38	38	JP2003285288A_	JP	A_	2003-10-07	TSURUMI		☐
39	39	JP2003304992A_	JP	A_	2003-10-28	TAKEUCHI et al		☐
40	40	JP2003310509A_	JP	A_	2003-11-05	EGAWA et al		☐
41	41	JP2003330543A_	JP	A_	2003-11-21	SANO		☐
42	42	JP2004123040A_	JP	A_	2004-04-22	OYOKOTA et al		☐
43	43	JP2004148021A_	JP	A_	2004-05-27	ARAI et al		☐
44	44	JP2004160102A_	JP	A_	2004-06-10	KAWAGOE et al		☐
45	45	JP2004166968A_	JP	A_	2004-06-17	HATSUTORI et al		☐
46	46	JP2004174228A_	JP	A_	2004-06-24	KAWAGOE		☐
47	47	JP2004198330A_	JP	A_	2004-07-15	TANAKA et al		☐

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48	48	JP2004219185A_	JP	A_	2004-08-05	SUZUKI		☐
49	49	JP2004351234A_	JP	A_	2004-12-16	SEKIJIMA		☐
50	50	JP2005118354A_	JP	A_	2005-05-12	TERADA		☐

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1	1	JP2005211360A_	JP	A_	2005-08-11	UEHIGASHI		☐
2	2	JP2005224265A_	JP	A_	2005-08-25	TAKENAKA		☐
3	3	JP2005230032A_	JP	A_	2005-09-02	SAEKI		☐

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4	4	JP2005245916A_	JP	A_	2005-09-15	OYOKOTA		☐
5	5	JP2005296511A_	JP	A_	2005-10-27	KASHIWAGI		☐
6	6	JP2005346700A_	JP	A_	2005-12-15	KAWAGOE		☐
7	7	JP2005352707A_	JP	A_	2005-12-22	OKADA et al		☐
8	8	JP2006043071A_	JP	A_	2006-02-16	ARAI et al		☐
9	9	JP2006079145A_	JP	A_	2006-03-23	KAWAGOE et al		☐
10	10	JP2006079157A_	JP	A_	2006-03-23	KAWAGOE et al		☐
11	11	JP2006155274A_	JP	A_	2006-06-15	ARAI et al		☐
12	12	JP2006164223A_	JP	A_	2006-06-22	KIM		☐
13	13	JP2006227673A_	JP	A_	2006-08-31	ANEZAKI		☐
14	14	JP2006247467A_	JP	A_	2006-09-21	KAWAGOE et al		☐

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15	15	JP2006260161A_	JP	A_	2006-09-28	KAWAGOE		☐
16	16	JP2006293662A_	JP	A_	2006-10-26	KAWAGOE		☐
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18	18	JP2007034866A_	JP	A_	2007-02-08	OKADA et al		☐
19	19	JP2007213180A_	JP	A_	2007-08-23	KAWAGOE		☐
20	20	JP2009015611A_	JP	A_	2009-01-22	OYOKOTA		☐
21	21	JP2010198552A_	JP	A_	2010-09-09	KAWAKAMI		☐
22	22	JP3197758A_	JP	A_	1991-08-29	TANI et al		☐
23	23	JP3201903A_	JP	A_	1991-09-03	YUKIMOTO et al		☐
24	24	JP4019586B_	JP	B_	1992-03-30	NAKANO et al		☐
25	25	JP04074285B2	JP	B2	2008-04-09	MOLEX		☐

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26	26	JP4084921A_	JP	A_	1992-03-18	TSUMURA		☐
27	27	JP5023269B_	JP	B_	1993-04-02	GABORU et al		☐
28	28	JP5040519Y2	JP	Y2	1993-10-14			☐
29	29	JP5042076U_	JP	U_	1993-06-08			☐
30	30	JP5046246U_	JP	U_	1993-06-22			☐
31	31	JP5054620U_	JP	U_	1993-07-23			☐
32	32	JP5060049U_	JP	U_	1993-08-06			☐
33	33	JP5091604U_	JP	U_	1993-12-14			☐
34	34	JP5150827A_	JP	A_	1993-06-18	SUGIURA		☐
35	35	JP5150829A_	JP	A_	1993-06-18	SUGIURA		☐
36	36	JP5257533A_	JP	A_	1993-10-08	ONARI et al		☐

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37	37	JP53021869U_	JP	U_	1978-02-23			☐
38	38	JP5302836A_	JP	A_	1993-11-16	MORI et al		☐
39	39	JP53110257A_	JP	A_	1978-09-26	INOHARA et al		☐
40	40	JP5312514A_	JP	A_	1993-11-22	TAGUCHI et al		☐
41	41	JP5341904A_	JP	A_	1993-12-24	MIYATA		☐
42	42	JP57064217A_	JP	A_	1982-04-19	FUJIKI et al		☐
43	43	JP59005315B_	JP	B_	1984-02-03	KAWADA		☐
44	44	JP59033511B_	JP	B_	1984-08-16	SHIBUYA		☐
45	45	JP59094005A_	JP	A_	1984-05-30	ICHIOKA et al		☐
46	46	JP59099308U_	JP	U_	1984-07-05			☐
47	47	JP59112311U_	JP	U_	1984-07-28			☐

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50	50	JP59164973A_	JP	A_	1984-09-18	ITO		☐

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1	1	JP59212924A_	JP	A_	1984-12-01	YASUDA et al		☐
2	2	JP59226909A_	JP	A_	1984-12-20	HASEGAWA et al		☐
3	3	JP60089213U_	JP	U_	1985-06-19			☐

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4	4	JP60211510A_	JP	A_	1985-10-23	MORITOKI		☐
5	5	JP6038912A_	JP	A_	1994-02-15	YOSHIIKE et al		☐
6	6	JP61023221B_	JP	B_	1986-06-04	SUZUKI et al		☐
7	7	JP6105781B_	JP	B_	1994-12-21			☐
8	8	JP61097712A_	JP	A_	1986-05-16	MOTOJO		☐
9	9	JP61160366A_	JP	A_	1986-07-21	IKEDA		☐
10	10	JP6137828A_	JP	A_	1994-05-20	SATO et al		☐
11	11	JP6154143A_	JP	A_	1994-06-03	AZUMI		☐
12	12	JP62070709U_	JP	U_	1987-05-06			☐
13	13	JP62164431U_	JP	U_	1987-10-19			☐
14	14	JP62189057U_	JP	U_	1987-12-01			☐

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15	15	JP62263507A_	JP	A_	1987-11-16	TOJO et al		☐
16	16	JP62263508A_	JP	A_	1987-11-16	YAMAGAMI et al		☐
17	17	JP63079623A_	JP	A_	1988-04-09	FUSHIYA et al		☐
18	18	JP63158032A_	JP	A_	1988-07-01	TOJO et al		☐
19	19	JP63203483A_	JP	A_	1988-08-23	HIROSE		☐
20	20	JP7047046A_	JP	A_	1995-02-21	KUROKI et al		☐
21	21	JP7059702B_	JP	B_	1995-06-28			☐
22	22	JP7270518A_	JP	A_	1995-10-20	TORII et al		☐
23	23	JP7281752A_	JP	A_	1995-10-27	KAWAKAMI et al		☐
24	24	JP7311041A_	JP	A_	1995-11-28	HAMAGUCHI et al		☐
25	25	JP7313417A_	JP	A_	1995-12-05	NAKAMURA et al		☐

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26	26	JP7319542A_	JP	A_	1995-12-08	NAKAMURA et al		☐
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28	28	JP8063229A_	JP	A_	1996-03-08	KAWAKAMI		☐
29	29	JP8084696A_	JP	A_	1996-04-02	AOYAMA et al		☐
30	30	JP8089449A_	JP	A_	1996-04-09	MICHIHASHI		☐
31	31	JP8123548A_	JP	A_	1996-05-17	HIMEDA et al		☐
32	32	JP8256960A_	JP	A_	1996-10-08	KUBO et al		☐
33	33	JP8263137A_	JP	A_	1996-10-11	KAWAGOE et al		☐
34	34	JP8286741A_	JP	A_	1996-11-01	KAWAKAMI et al		☐
35	35	JP8286744A_	JP	A_	1996-11-01	KAWAKAMI et al		☐
36	36	JP8286745A_	JP	A_	1996-11-01	KAWAKAMI et al		☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

Receipt date: 09/24/2012	Application Number	12201554	12201554 - GAU: 3723
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	Art Unit		
	Examiner Name		
	Attorney Docket Number	09945-0010007	

37	37	JP8286747A_	JP	A_	1996-11-01	KAWAKAMI et al		☐
38	38	JP8322774A_	JP	A_	1996-12-10	KUBO et al		☐
39	39	JP8335112A_	JP	A_	1996-12-17	NAKANISHI et al		☐
40	40	JP8339297A_	JP	A_	1996-12-24	IWATA		☐
41	41	JP9044240A_	JP	A_	1997-02-14	YOSHIKAWA et al		☐
42	42	JP9047413A_	JP	A_	1997-02-18	NAKANISHI		☐
43	43	JP9066855A_	JP	A_	1997-03-11	NAKANISHI		☐
44	44	JP9145309A_	JP	A_	1997-06-06	SUZUKI		☐
45	45	JP9192069A_	JP	A_	1997-07-29	SOEJIMA		☐
46	46	JP9204223A_	JP	A_	1997-08-05	KAWAGOE et al		☐
47	47	JP9204224A_	JP	A_	1997-08-05	KAWAGOE et al		☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

Receipt date: 09/24/2012	Application Number	12201554	12201554 - GAU: 3723
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	First Named Inventor	Jones	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	09945-0010007	

48	48	JP9265319A_	JP	A_	1997-10-07	KANEFUJI et al		☐
49	49	JP9269807A_	JP	A_	1997-10-14	NAKAMURA et al		☐
50	50	JP9269810A_	JP	A_	1997-10-14	NAKAMURA et al		☐

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(Not for submission under 37 CFR 1.99)

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Attorney Docket Number	09945-0010007

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1	1	JP9319431A_	JP	A_	1997-12-12	KAWAGOE et al		☐
2	2	JP9319432A_	JP	A_	1997-12-12	KAWAKAMI		☐
3	3	JP9319434A_	JP	A_	1997-12-12	KAWAGOE et al		☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

Receipt date: 09/24/2012	Application Number	12201554	12201554 - GAU: 3723
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**	Filing Date	2008-08-29	
	First Named Inventor	Jones	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	09945-0010007	

4	4	JP9325812A_	JP	A_	1997-12-16	KAWAKAMI et al		☐
5	5	WO2001091623A2	WO	A2	2001-12-06	KIRKPATRICK et al		☐
6	6	WO2002069774A1	WO	A1	2002-09-12	DIEHL et al		☐
7	7	WO2002071175A1	WO	A1	2002-09-12	DIEHL et al		☐
8	8	WO2002075350A1	WO	A1	2002-09-26	HYYPPÄ		☐
9	9	WO2002081074A1	WO	A1	2002-10-17	FORMANEK		☐
10	10	WO2003015220A1	WO	A1	2003-02-20	SEMPE et al		☐
11	11	WO2003024292A2	WO	A2	2003-03-27	KÖCHEL et al		☐
12	12	WO2003040546A1	WO	A1	2003-05-15	HOFMANN		☐
13	13	WO2003062850A2	WO	A2	2003-07-31	ZEITZEW		☐
14	14	WO2003062852A1	WO	A1	2003-07-31	KURODA et al		☐

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	First Named Inventor	Jones	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	09945-0010007	

15	15	WO2004004534A1	WO	A1	2004-01-15	KEPPLER et al		☐
16	16	WO2004005956A1	WO	A1	2004-01-15	DIEHL et al		☐
17	17	WO2004025947A3	WO	A3	2004-05-21	CHIAPPETTA et al		☐
18	18	WO2005098475A1	WO	A1	2005-10-20	SCHELL et al		☐
19	19	WO2005098476A1	WO	A1	2005-10-20	DIBERNARDO et al		☐
20	20	WO2006046400A1	WO	A1	2006-05-04	ZENG		☐
21	21	WO2007065033A2	WO	A2	2007-06-07	SVENDSEN et al		☐
22	22	WO2007137234A2	WO	A2	2007-11-29	WON et al		☐
23	23	WO2000038028A1	WO	A1	2000-06-29	DYSON		☐
24	24	WO2001080703A1	WO	A1	2001-11-01	KONRAD		☐
25	25	WO2002067752A1	WO	A1	2002-09-06	VUIJK		☐

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	Examiner Name		
	Attorney Docket Number	09945-0010007	

26	26	WO2002069775A3	WO	A3	2003-05-01	DIEHL et al		☐
27	27	WO2004043215A1	WO	A1	2004-05-27	KAWAGOE		☐
28	28	WO2004059409A1	WO	A1	2004-07-15	DÜNNE et al		☐
29	29	WO2005006935A1	WO	A1	2005-01-27	MAYER et al		☐
30	30	WO2005036292A1	WO	A1	2005-04-21	KAWAGOE et al		☐
31	31	WO2005037496A1	WO	A1	2005-04-28	QIAN		☐
32	32	WO2005055796A2	WO	A2	2005-06-23	SCHLISCHKA et al		☐
33	33	WO2005076545A1	WO	A1	2005-08-18	HABETHA et al		☐
34	34	WO2005077243A1	WO	A1	2005-08-25	ANDRUP et al		☐
35	35	WO2005081074A1	WO	A1	2005-09-01	COHEN et al		☐
36	36	WO2005082223A1	WO	A1	2005-09-09	DÜNNE et al		☐

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Receipt date: 09/24/2012	Application Number	12201554	12201554 - GAU: 3723
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	Examiner Name		
	Attorney Docket Number	09945-0010007	

37	37	WO2005083541A1	WO	A1	2005-09-09	LANDRY et al		☐
38	38	WO2006061133A1	WO	A1	2006-06-15	DÜNNE et al		☐
39	39	WO2006073248A1	WO	A1	2006-07-13	SHIN et al		☐
40	40	WO2006089307A2	WO	A2	2006-08-24	ZIEGLER et al		☐
41	41	WO2007028049A2	WO	A2	2007-03-08	AUGENBRAUN et al		☐
42	42	WO2007036490A3	WO	A3	2007-05-18	LANG et al		☐
43	43	WO1995030887A1	WO	A1	1995-11-16	IGLSEDER		☐
44	44	WO1996017258A3	WO	A3	1997-02-13	POPOVICH		☐
45	45	WO1998053456A1	WO	A1	1998-11-26	GABAI et al		☐
46	46	WO1999005580A2	WO	A2	1999-02-04	DUSCHEK		☐

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Attorney Docket Number	09945-0010007

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(Not for submission under 37 CFR 1.99)	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

	1	Borges et al. "Optimal Mobile Robot Pose Estimation Using Geometrical Maps", IEEE Transactions on Robotics and Automation, Vol. 18, No. 1, pp. 87-94, February, 2002	☐
	2	Braunstingl et al. "Fuzzy Logic Wall Following of a Mobile Robot Based on the Concept of General Perception" ICAR '95, 7th International Conference on Advanced Robotics, Sant Feliu De Guixols, Spain, pp. 367-376, September, 1995	☐
	3	Bulusu, et al. "Self Configuring Localization systems: Design and Experimental Evaluation", ACM Transactions on Embedded Computing Systems Vol. 3 No.1 pp.24-60, 2003	☐
	4	Caccia, et al. "Bottom-Following for Remotely Operated Vehicles", 5th IFAC conference, Alaborg, Denmark, pp. 245-250 8/1/2000	☐
	5	Chae, et al. "StarLITE: A new artificial landmark for the navigation of mobile robots", http://www.irc.atr.jp/jk-nrs2005/pdf/Starlite.pdf, 4 pages, 2005	☐
	6	Chamberlin et al. "Team 1: Robot Locator Beacon System" NASA Goddard SFC, Design Proposal, 15 pages, 02/17/06	☐
	7	Champy "Physical management of IT assets in Data Centers using RFID technologies", RFID 2005 University, October 12-14, 2005 (NPL0126)	☐
	8	Chiri "Joystick Control for Tiny OS Robot", http://www.eecs.berkeley.edu/Programs/ugrad/superb/papers2002/chiri.pdf. 12 pages, 8/8/2002	☐
	9	Christensen et al. "Theoretical Methods for Planning and Control in Mobile Robotics" 1997 First International Conference on Knowledge-Based Intelligent Electronic Systems, Adelaide, Australia, pp. 81-86, May 21-27, 1997	☐
	10	Andersen et al., "Landmark based navigation strategies", SPIE Conference on Mobile Robots XIII, SPIE Vol. 3525, pp.	☐
	11	Clerentin, et al. "A localization method based on two omnidirectional perception systems cooperation" Proc of IEEE International Conference on Robotics & Automation, San Francisco, CA Vol. 2, pp. 1219-1224, April 2000	☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

Receipt date: 09/24/2012	Application Number	12201554 12201554 - GAU: 3723
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**	Filing Date	2008-08-29
	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

	12	Corke "High Performance Visual serving for robots end-point control". SPIE Vol. 2056 Intelligent robots and computer vision 1993	☐
	13	Cozman et al. "Robot Localization using a Computer Vision Sextant", IEEE International Midwest Conference on Robotics and Automation, pp. 106-111, 1995	☐
	14	D'Orazio, et al. "Model based Vision System for mobile robot position estimation", SPIE Vol. 2058 Mobile Robots VIII, pp.38-49, 1992	☐
	15	De Bakker, et al. "Smart PSD- array for sheet of light range imaging", Proc. Of SPIE Vol 3965, pp. 1-12, 05/15/00	☐
	16	Denning Roboscrub image (1989)	☐
	17	Desaulniers, et al. "An Efficient Algorithm to find a shortest path for a car-like Robot", IEEE Transactions on robotics and Automation Vol.11 No.6, pp. 819-828, December 1995	☐
	18	Dorfmüller-Ulhaas "Optical Tracking From User Motion to 3D Interaction", http://www.cg.tuwien.ac.at/research/publications/2002/Dorfmueller-Ulhaas-thesis, 182 pages, 2002	☐
	19	Dorsch, et al. "Laser Triangulation: Fundamental uncertainty in distance measurement", Applied Optics, Vol. 33 No. 7, pp. 1306-1314, 03/01/94	☐
	20	Dudek, et al. "Localizing A Robot with Minimum Travel" Proceedings of the sixth annual ACM-SIAM symposium on Discrete algorithms, Vol 27 No.2 pp. 583-604, April 1998	☐
	21	Dulimarta, et al. "Mobile Robot Localization in Indoor Environment", Pattern Recognition, Vol. 30, No. 1, pp. 99-111, 1997	☐
	22	EBay "Roomba Timer -> Timed Cleaning- Floorvac Robotic Vacuum", Cgi.ebay.com/ws/eBay|SAP|.dll?viewitem&category=43526&item=4375198387&rd=1, 5 pages, 04/20/05	☐

Receipt date: 09/24/2012	Application Number	12201554 12201554 - GAU: 3723
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**	Filing Date	2008-08-29
	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

	23	Electrolux "Welcome to the Electrolux trilobite" www.electroluxusa.com/node57.asp?currentURL=node142.asp%3F, 2 pages, 03/18/05	☐
	24	Eren, et al. "Accuracy in position estimation of mobile robots based on coded infrared signal transmission", Proceedings: Integrating Intelligent Instrumentation and Control, Instrumentation and Measurement Technology Conference, 1995. IMTC/95. pp. 548-551, 1995	☐
	25	Eren, et al. "Operation of Mobile Robots in a Structured Infrared Environment", Proceedings. 'Sensing, Processing, Networking', IEEE Instrumentation and Measurement Technology Conference, 1997 (IMTC/97), Ottawa, Canada Vol. 1, pp. 20-25, May 19-21, 1997	☐
	26	Barker, "Navigation by the Stars- Ben Barker 4th Year Project" Power point pp. 1-20	☐
	27	Becker, et al. "Reliable Navigation Using Landmarks " IEEE International Conference on Robotics and Automation, 0-7803-1965-6, pp. 401-406, 1995	☐
	28	Benayad-Cherif, et al., "Mobile Robot Navigation Sensors" SPIE Vol. 1831 Mobile Robots, VII, pp. 378-387, 1992	☐
	29	Facchinetti, Claudio et al. "Using and Learning Vision-Based Self-Positioning for Autonomous Robot Navigation", ICARCV '94, Vol 3 pp.1694-1698, 1994	☐
	30	Betke, et al., "Mobile Robot localization using Landmarks" Proceedings of the IEEE/RSJ/GI International Conference on Intelligent Robots and Systems '94 "Advanced Robotic Systems and the Real World" (IROS '94), Vol.	☐
	31	Facchinetti, Claudio et al. "Self-Positioning Robot Navigation Using Ceiling Images Sequences", ACCV '95, 5 pages, December 5-8, 1995	☐
	32	Fairfield, Nathaniel et al. "Mobile Robot Localization with Sparse Landmarks", SPIE Vol. 4573 pp.148-155, 2002	☐
	33	Favre-Bulle, Bernard "Efficient tracking of 3D – Robot Position by Dynamic Triangulation", IEEE Instrumentation and Measurement Technology Conference IMTC 98 Session on Instrumentation and Measurement in Robotics, Vol. 1, pp. 446-449, May 18-21, 1998	☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

Receipt date: 09/24/2012	Application Number	12201554 12201554 - GAU: 3723
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**	Filing Date	2008-08-29
	First Named Inventor	Jones
	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

	34	Fayman "Exploiting Process Integration and Composition in the context of Active Vision", IEEE Transactions on Systems, Man, and Cybernetics- Part C: Application and reviews, Vol 29 No.1, pp. 73-86, February 1999	☐
	35	Florbot GE Plastics Image (1989-1990)	☐
	36	Franz, et al. "Biomimetric robot navigation", Robotics and Autonomous Systems Vol. 30 pp.133-153, 2000	☐
	37	Fuentes, et al. "Mobile Robotics 1994", University of Rochester. Computer Science Department, TR 588, 44 pages, 12/07/94	☐
	38	Bison, P et al., "Using a structured beacon for cooperative position estimation" Robotics and Autonomous Systems Vol, 29, No. 1, pp.33-40, October, 1999	☐
	39	Fukuda, et al. "Navigation System based on Ceiling Landmark Recognition for Autonomous mobile robot", 1995 IEEE/ RSJ International Conference on Intelligent Robots and Systems 95. 'Human Robot Interaction and Cooperative Robots', Pittsburgh, PA, pp.1466/1471, August 5-9, 1995	☐
	40	Gionis "A hand-held optical surface scanner for environmental Modeling and Virtual Reality", Virtual Reality World, 16 pages 1996	☐
	41	Goncalves et al. "A Visual Front-End for Simultaneous Localization and Mapping", Proceedings of the 2005 IEEE International Conference on Robotics and Automation, Barcelona, Spain, pp. 44-49, April, 2005	☐
	42	Gregg et al. "Autonomous Lawn Care Applications", 2006 Florida Conference on Recent Advances in Robotics, FCRAR 2006, pp. 1-5, May 25-26, 2006	☐
	43	Hamamatsu "SI PIN Diode S5980, S5981 S5870- Multi-element photodiodes for surface mounting", Hamatsu Photonics, 2 pages April 2004	☐
	44	Hammacher Schlemmer "Electrolux Trilobite Robotic Vacuum" www.hammacher.com/publish/71579.asp? promo=xsells, 3 pages, 03/18/05	☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

Receipt date: 09/24/2012	Application Number	12201554	12201554 - GAU: 3723
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**	Filing Date	2008-08-29	
	First Named Inventor	Jones	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	09945-0010007	

	45	Haralick et al. " Pose Estimation from Corresponding Point Data", IEEE Transactions on systems, Man, and Cybernetics, Vol. 19, No. 6, pp. 1426-1446, November, 1989	☐
	46	Hausler "About the Scaling Behaviour of Optical Range Sensors", Fringe '97, Proceedings of the 3rd International Workshop on Automatic Processing of Fringe Patterns, Bremen, Germany, pp. 147-155, September 15-17, 1997	☐
	47	Blaasvaer, et al. "AMOR- An Autonomous Mobile Robot Navigation System", Proceedings of the IEEE International Conference on Systems, Man, and Cybernetics, pp.2266-2271, 1994	☐
	48	Hoag, et al. "Navigation and Guidance in interstellar space", ACTA Astronautica Vol. 2, pp. 513-533 , 02/14/75	☐
	49	Home Robot – UBOT; Microbotusa.com, retrieved from the WWW at www.microrobotusa.com, accessed 12/2/2008	☐
	50	Huntsberger et al. "CAMPOUT: A Control Architecture for Tightly Coupled Coordination of Multirobot Systems for Planetary Surface Exploration", IEEE Transactions on Systems, Man, and Cybernetics – Part A: Systems and Humans, Vol. 33, No. 5, pp. 550-559, September, 2003	☐

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First Named Inventor	Jones
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

	1	Jarosiewicz et al. "Final Report – Lucid", University of Florida, Departmetn of Electrical and Computer Engineering, EEL 5666 – Intelligent Machine Design Laboratory, 50 pages, 08/04/99	☐
	2	Jensfelt, et al. "Active Global Localization for a mobile robot using multiple hypothesis tracking", IEEE Transactions on Robots and Automation Vol 17, No. 5, pp. 748-760, October 2001	☐
	3	Jeong, et al. "An intelligent map-building system for indoor mobile robot using low cost photo sensors", SPIE Vol. 6042 6 pages, 2005	☐
	4	Kahney, "Robot Vacs are in the House," www.wired.com/news/technology/o,1282,59237,00.html, 6 pages, 06/18/03	☐
	5	Karcher USA "RC 3000 Robotics cleaner", www.karcher-usa.com, 3 pages, 03/18/05	☐
	6	Karlsson et al., The vSLAM Algorithm for Robust Localization and Mapping", Proceedings of the 2005 IEEE International Conference on Robotics and Automation, Barcelona, Spain, pp. 24-29, April, 2005	☐
	7	Karlsson, et al "Core Technologies for service Robotics, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2004), Vol. 3, pp. 2979-2984, September 28- October 2, 2004	☐
	8	King "HepImate-TM- Autonomous mobile Robots Navigation Systems", SPIE Vol. 1388 Mobile Robots pp.190-198, 1990	☐
	9	Kleinberg, The Localization Problem for Mobile Robots", Laboratory for Computer Science, Massachusetts Institute of Technology, 1994 IEEE, pp. 521-531, 1994	☐
	10	Knight, et al., "Localization and Identification of Visual Landmarks", Journal of Computing Sciences in Colleges, Volume 16 Issue 4, 2001 pp. 312-313, May 2001	☐
	11	Kolodko et al. "Experimental System for Real-Time Motion Estimation", Proceedings of the 2003 IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM 2003), pp. 981-986, 2003	☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

	12	Komoriya et al., Planning of Landmark Measurement for the Navigation of a Mobile Robot", Proceedings of the 1992 IEEE/RSJ International Cofnerence on Intelligent Robots and Systems, Raleigh, NC pp. 1476-1481, July 7-10, 1992	☐
	13	Koolatron "KOOLVAC- Owner's Manual", 13 pages	☐
	14	Krotov, et al. "Digital Sextant", Downloaded from the internet at: http://www.cs.cmu.edu/~epk/ , 1 page, 1995	☐
	15	Krupa et al. "Autonomous 3-D Positioning of Surgical Instruments in Robotized Laparoscopic Surgery Using Visual Servoing", IEEE Transactions on Robotics and Automation, Vol. 19, No. 5, pp. 842-853, 10/05/03	☐
	16	Kuhl, et al. "Self Localization in Environments using Visual Angles", VRCAI '04 Proceedings of the 2004 ACM SIGGRAPH international conference on Virtual Reality continuum and its applications in industry, pp.472-475, 2004	☐
	17	Kurth, "Range-Only Robot Localization and SLAM with Radio", http://www.ri.cmu.edu/pub_files/pub4/ kurth_derek_2004_1/kurth_derek_2004_1.pdf. 60 pages, May, 2004	☐
	18	Lambrinos, et al. "A mobile robot employing insect strategies for navigation", http://www8.cs.umu.se/kurser/TDBD17/ VT04/dl/Assignment%20Papers/lambrinos-RAS-2000.pdf, 38 pages, 02/19/99	☐
	19	Lang et al. "Visual Measurement of Orientation Using Ceiling Features", 1994 IEEE, pp. 552-555, 1994	☐
	20	Lapin, "Adaptive position estimation for an automated guided vehicle", SPIE Vol. 1831 Mobile Robots VII, pp. 82-94, 1992	☐
	21	LaValle et al. "Robot Motion Planning in a Changing, Partially Predictable Environment", 1994 IEEE International Symposium on Intelligent Control, Columbus, OH, pp. 261-266, August 16-18, 1994	☐
	22	Lee, et al. "Localization Of a Mobile Robot Using the Image of a Moving Object", IEEE Transaction on Industrial Electronics, Vol. 50, No.3 pp. 612-619, June 2003	☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	Attorney Docket Number	09945-0010007

	23	Lee, et al. "Development of Indoor Navigation system for Humanoid Robot Using Multi-sensors Integration", ION NTM, San Diego, CA pp.798-805, Jan 22-24, 2007	☐
	24	Leonard, et al. "Mobile Robot Localization by tracking Geometric Beacons", IEEE Transaction on Robotics and Automation, Vol. 7, No. 3 pp. 376-382, June 1991	☐
	25	Li et al. "Robost Statistical Methods for Securing Wireless Localization in Sensor Networks", Wireless Information Network Laboratory, Rutgers University	☐
	26	Li et al. "Making a Local Map of Indoor Environments by Swiveling a Camera and a Sonar", Proceedings of the 1999 IEEE/RSJ International Conference on Intelligent Robots and Systems, pp. 954-959, 1999	☐
	27	Lin, et al.. "Mobile Robot Navigation Using Artificial Landmarks", Journal of robotics System 14(2). pp. 93-106, 1997	☐
	28	Linde "Dissertation, "On Aspects of Indoor Localization"" https://eldorado.tu-dortmund.de/handle/2003/22854, University of Dortmund, 138 pages, 08/28/06	☐
	29	Lumelsky, et al. "An Algorithm for Maze Searching with Azimuth Input", 1994 IEEE International Conference on Robotics and Automation, San Diego, CA Vol. 1, pp. 111-116, 1994	☐
	30	Luo et al., "Real-time Area-Covering Operations with Obstacle Avoidance for Cleaning Robots," 2002, IEeE, pg 2359-2364	☐
	31	Ma "Thesis: Documentation On Northstar", California Institute of Technology, 14 pages, 05/17/06	☐
	32	Madsen, et al. "Optimal landmark selection for triangulation of robot position", Journal of Robotics and Autonomous Systems Vol, 13 pp.277-292, 1998	☐
	33	Martishevcky, "The Accuracy of point light target coordinate determination by dissectoral tracking system", SPIE Vol. 2591 pp.25-30	☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	34	Matsutek Enterprises Co. Ltd "Automatic Rechargeable Vacuum Cleaner", http://matsutek.manufacturer.globalsources.com/si/6008801427181/pdtl/Home-vacuum/10..., 04/23/07	☐
	35	McGillem, et al. "Infra-red Lacation System for Navigation and Autonomous Vehicles", 1988 IEEE International Conference on Robotics and Automation, Vol. 2, pp. 1236-1238, April, 24-29, 1988	☐
	36	McGillem,et al. "A Beacon Navigation Method for Autonomous Vehicles", IEEE Transactions on Vehicular Technology, Vol.38, No.3, pp. 132-139, August 1989	☐
	37	Michelson "Autonomous Navigation", 2000 Yearbook of Science & Technology, McGraw-Hill, New York, ISBN 0-07-052771-7, pp. 28 – 30, 1999	☐
	38	Miro, et al. "Towards Vision Based Navigation in Large Indoor Environments", Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems, Beijing, China, pp. 2096-2102, October 9-15, 2006	☐
	39	MobileMag "Samsung Unveils High-tech Robot Vacuum Cleaner", http://www.mobilemag.com/content/100/102/C2261/, 4 pages, 03/18/05	☐
	40	Monteiro, et al. "Visual Servoing for Fast Mobile Robot: Adaptive Estimation of Kinematic Parameters", Proceedings of the IECON '93., International Conference on Industrial Electronics, Maui, HI, pp. 1588-1593, November 15-19, 1993	☐
	41	Moore, et al. "A simple Map-bases Localization strategy using range measurements, SPIE Vol. 5804 pp.612-620, 2005	☐
	42	Munich et al. "SIFT-ing Through Features with ViPR", IEEE Robotics & Automation Magazine, pp. 72-77, September, 2006	☐
	43	Munich et al. "ERSP: A Software Platform and Architecture for the Service Robotics Industry", Intelligent Robots and Systems, 2005. (IROS 2005), pp. 460-467, August 2-6, 2005	☐
	44	Nam, et al. "Real-Time Dynamic Visual Tracking Using PSD Sensors and extended Trapezoidal Motion Planning", Applied Intelligence 10, pp. 53-70, 1999	☐

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	Attorney Docket Number	09945-0010007

	45	Nitu et al. "Optomechatronic System for Position Detection of a Mobile Mini-Robot", IEEE Ttransactions on Industrial Electronics, Vol. 52, No. 4, pp. 969-973, August, 2005	☐
	46	On Robo "Robot Reviews Samsung Robot Vacuum (VC-RP30W)", www.onrobo.com/reviews/AT_Home/vacuum_cleaners/on00vcrb30rosam/index.htm.. 2 pages, 2005	☐
	47	OnRobo "Samsung Unveils Its Multifunction Robot Vacuum", www.onrobo.com/enews/0210/samsung_vacuum.shtml, 3 pages, 03/18/05	☐
	48	Pages et al. "Optimizing Plane-to-Plane Positioning Tasks by Image-Based Visual Servoing and Structured Light", IEEE Transactions on Robotics, Vol. 22, No. 5, pp. 1000-1010, October, 2006	☐
	49	Iirobotics.com "Samsung Unveils Its Multifunction Robot Vacuum", www.iirobotics.com/webpages/hotstuff.php?ubre=111, 3 pages, 3/18/2005	☐
	50	InMach "Intelligent Machines", www.inmach.de/inside.html, 1 page , 11/19/08	☐

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	Examiner Name	
	Attorney Docket Number	09945-0010007

	1	Pages et al. "A camera-projector system for robot positioning by visual servoing", Proceedings of the 2006 Conference on Computer Vision and Pattern Recognition Workshop (CVPRW06), 8 pages, June 17-22, 2006	☐
	2	Pages, et al. "Robust decoupled visual servoing based on structured light", 2005 IEEE/RSJ Int. Conf. on Intelligent Robots and Systems, pp. 2676—2681, 2005	☐
	3	Park et al. "A Neural Network Based Real-Time Robot Tracking Controller Using Position Sensitive Detectors," IEEE World Congress on Computational Intelligence., 1994 IEEE International Conference on Neutral Networks, Orlando, Florida pp. 2754-2758, June 27-July 2, 1994	☐
	4	Park, et al. "Dynamic Visual Servo Control of Robot Manipulators using Neutral Networks", The Korean Institute Telematics and Electronics, Vol. 29-B, No. 10, pp. 771-779, October 1992	☐
	5	Paromtchik "Toward Optical Guidance of Mobile Robots"	☐
	6	Paromtchik, et al. "Optical Guidance System for Multiple mobile Robots", Proceedings 2001 ICRA. IEEE International Conference on Robotics and Automation, Vol. 3, pp. 2935-2940 (May 21-26, 2001)	☐
	7	Penna, et al. "Models for Map Building and Navigation", IEEE Transactions on Systems. Man. And Cybernetics. Vol. 23 no. 5, pp. 1276-1301, September/October 1993	☐
	8	Pirjanian "Reliable Reaction", Proceedings of the 1996 IEEE/SICE/RSJ International Conference on Multisensor Fusion and Integration for Intelligent Systems, pp. 158-165, 1996	☐
	9	Pirjanian "Challenges for Standards for consumer Robotics", IEEE Workshop on Advanced Robotics and its Social impacts, pp. 260-264, June 12-15, 2005	☐
	10	Pirjanian et al. "Distributed Control for a Modular, Reconfigurable Cliff Robot", Proceedings of the 2002 IEEE International Conference on Robotics & Automation, Washington, D.C. pp. 4083-4088, May, 2002	☐
	11	Pirjanian et al. "Representation and Execution of Plan Sequences for Multi-Agent Systems", Proceedings of the 2001 IEEE/RSJ International Conference on Intelligent Robots and Systems, Maui, Hawaii, pp. 2117-2123, October 29-November 3, 2001	☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	First Named Inventor	Jones
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	Examiner Name	
	Attorney Docket Number	09945-0010007

	12	Pirjanian et al. "Multi-Robot Target Acquisition using Multiple Objective Behavior Coordination", Proceedings of the 2000 IEEE International Conference on Robotics & Automation, San Francisco, CA, pp. 2696-2702, April, 2000	☐
	13	Pirjanian et al. "A decision-theoretic approach to fuzzy behavior coordination", 1999 IEEE International Symposium on Computational Intelligence in Robotics and Automation, 1999. CIRA '99., Monterey, CA, pp. 101-106, November 8-9, 1999	☐
	14	Pirjanian et al. "Improving Task Reliability by Fusion of Redundant Homogeneous Modules Using Voting Schemes", Proceedings of the 1997 IEEE International Conference on Robotics and Automation, Albuquerque, NM, pp. 425-430, April, 1997	☐
	15	Radio Frequency Identification: Tracking ISS Consumables, Author Unknown, 41 pages (NPL0127)	☐
	16	Remazeilles, et al. "Image based robot navigation in 3D environments", Proc. of SPIE, VOl. 6052, pp. 1-14, 12/06/05	☐
	17	Rives, et al. "Visual servoing based on ellipse features", SPIE Vol. 2056 Intelligent Robots and Computer Vision pp.356-367, 1993	☐
	18	Robotics World Jan 2001: "A Clean Sweep" (January 2001).	☐
	19	Ronnback "On Methods for Assistive Mobile Robots", http://www.openthesis.org/documents/methods-assistive-mobile-robots-595019.html, 218 pages, 01/01/06	☐
	20	Roth-Tabak, et al. "Environment Model for mobile Robots Indoor Navigation", SPIE Vol. 1388 Mobile Robots pp.453-463, 1990	☐
	21	Sadath M Malik et al. "Virtual Prototyping for Conceptual Design of a Tracked Mobile Robot". Electrical and Computer Engineering, Canadian Conference on, IEEE, PI. May 1, 2006, pages 2349-2352.	☐
	22	Sahin, et al. "Development of a Visual Object Localization Module for Mobile Robots", 1999 Third European Workshop on Advanced Mobile Robots, (Eurobot '99), pp. 65-72, 1999	☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	Examiner Name	
	Attorney Docket Number	09945-0010007

	23	Salomon, et al. "Low-Cost Optical Indoor Localization system for Mobile Objects without Image Processing", IEEE Conference on Emerging Technologies and Factory Automation, 2006. (ETFA '06), pp. 629-632, September 20-22, 2006	☐
	24	Sato "Range Imaging Based on Moving Pattern Light and Spatio-Temporal Matched Filter", Proceedings International Conference on Image Processing, Vol. 1., Lausanne, Switzerland, pp. 33-36, September 16-19, 1996	☐
	25	Schenker, et al. "Lightweight rovers for Mars science exploration and sample return", Intelligent Robots and Computer Vision XVI, SPIE Proc. 3208, pp. 24-36, 1997	☐
	26	Sebastian Thrun, Learning Occupancy Grid Maps With Forward Sensor Models, School of Computer Science, Carnegie Mellon University, pp. 1-28	☐
	27	Shimoga et al. "Touch and Force Reflection for Telepresence Surgery", Engineering in Medicine and Biology Society, 1994. Engineering Advances: New Opportunities for Biomedical Engineers. Proceedings of the 16th Annual International Conference of the IEEE, Baltimore, MD, pp. 1049-1050, 1994	☐
	28	Sim, et al "Learning Visual Landmarks for Pose Estimation", IEEE International Conference on Robotics and Automation, Vol. 3, Detroit, MI, pp. 1972-1978, May 10-15, 1999	☐
	29	Sobh et al. "Case Studies in Web-Controlled Devices and Remote Manipulation", Automation Congress, 2002 Proceedings of the 5th Biannual World, pp. 435 – 440, 12/10/02	☐
	30	Stella, et al. "Self-Location for Indoor Navigation of Autonomous Vehicles", Part of the SPIE conference on Enhanced and Synthetic Vision SPIE Vol. 3364 pp.298-302, 1998	☐
	31	Summet "Tracking Locations of Moving Hand-held Displays Using Projected Light", Pervasive 2005, LNCS 3468 pp. 37-46 (2005)	☐
	32	Svedman et al. "Structure from Stereo Vision using Unsynchronized Cameras for Simultaneous Localization and Mapping", 2005 IEEE/RSJ International Conference on Intelligent Robots and Systems, pp. 2993-2998, 2005	☐
	33	Takio et al. "Real-Time Position and Pose Tracking Method of Moving Object Using Visual Servo System", 47th IEEE International Symposium on Circuits and Systems, pp. 167-170, 2004	☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	Attorney Docket Number	09945-0010007

	34	Teller "Pervasive pose awareness for people, Objects and Robots", http://www.ai.mit.edu/lab/dangerous-ideas/Spring2003/teller-pose.pdf, 6 pages, 04/30/03	☐
	35	Terada et al. "An Acquisition of the Relation between Vision and Action using Self-Organizing Map and Reinforcement Learning", 1998 Second International Conference on Knowledge-Based Intelligent Electronic Systems, Adelaide, Australiam pp. 429-434, April 21-23, 1998	☐
	36	The Sharper Image "e-Vac Robotic Vacuum, S1727 Instructions"www.sharperimage.com, 18 pages	☐
	37	The Sharper Image "Robotic Vacuum Cleaner – Blue" www.Sharperimage.com, 2 pages, 03/18/05	☐
	38	The Sharper Image "E Vac Robotic Vacuum", www.sharperiamge.com/us/en/templates/products/pipmorework1printable.jhtml, 2 pages, 03/18/05	☐
	39	TheRobotStore.com "Friendly Robotics Robotic Vacuum RV400- The Robot Store", www.therobotstore.com/s.nl/sc.9/category.-109/it.A/id.43/.f, 1 page, 04/20/05	☐
	40	TotalVac.com RC3000 RoboCleaner website 3/18/2005	☐
	41	Trebi-Ollennu et al. "Mars Rover Pair Cooperatively Transporting a Long Payload", Proceedings of the 2002 IEEE International Conference on Robotics & Automation, Washington, D.C. pp. 3136-3141, May, 2002	☐
	42	Tribelhorn et al., "Evaluating the Roomba: A low-cost, ubiquitous platform for robotics research and education," 2007, IEEE, pg. 1393-1399	☐
	43	Tse et al. "Design of a Navigation System for a Household Mobile Robot Using Neural Networks", Department of Manufacturing Engg. & Engg. Management, City University of Hong Kong, pp. 2151-2156, 1998	☐
	44	UAMA (Asia) Industrial Co., Ltd. "RobotFamily", 2005	☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	45	Watanabe et al. "Position Estimation of Mobile Robots With Internal and External Sensors Using Uncertainty Evolution Technique", 1990 IEEE International Conference on Robotics and Automation, Cincinnati, OH, pp. 2011-2016, May 13-18, 1990	☐
	46	Watts "Robot, boldly goes where no man can", The Times- pp.20, January 1985	☐
	47	Wijk et al. "Triangulation-Based Fusion of Sonar Data with Application in Robot Pose Tracking ", IEEE Transactions on Robotics and Automation, Vol. 16, No. 6, pp. 740-752, 12/2000	☐
	48	Wolf et al. "Robust Vision-based Localization for Mobile Robots Using an Image Retrieval System Based on Invariant Features", Proceedings of the 2002 IEEE International Conference on Robotics & Automation, Washington, D.C. pp. 359-365, May, 2002	☐
	49	Wolf et al. "Robust Vision-Based Localization by Combining an Image-Retrieval System with Monte Carol Localization", IEEE Transactions on Robotics, Vol. 21, No. 2, pp. 208-216, 04/2005	☐
	50	Wong "EIED Online>> Robot Business", ED Online ID# 13114, 17 pages, July 2006	☐

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Art Unit	
Examiner Name	
Attorney Docket Number	09945-0010007

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Receipt date: 09/24/2012	Application Number	12201554 12201554 - GAU: 3723
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**	Filing Date	2008-08-29
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	09945-0010007

	1	Yata et al. "Wall Following Using Angle Information Measured by a Single Ultrasonic Transducer", Proceedings of the 1998 IEEE, International Conference on Robotics & Automation, Leuven, Belgium, pp. 1590-1596, May, 1998	☐
	2	Yun, et al. "Image-Based Absolute Positioning System for Mobile Robot Navigation", IAPR International Workshops SSPR, Hong Kong, pp. 261-269, August 17-19, 2006	☐
	3	Yun, et al. "Robust Positioning a Mobile Robot with Active Beacon Sensors", Lecture Notes in Computer Science, 2006, Volume 4251, pp. 890-897, 2006	☐
	4	Yuta, et al. "Implementation of an Active Optical Range sensor Using Laser Slit for In-Door Intelligent Mobile Robot", IEE/RSJ International workshop on Intelligent Robots and systems (IROS 91) Vol. 1, Osaka, Japan, pp. 415-420, November 3-5, 1991	☐
	5	Zha et al. "Mobile Robot Localization Using Incomplete Maps for Change Detection in a Dynamic Environment", Advanced Intelligent Mechatronics '97. Final Program and Abstracts., IEEE/ASME International Conference, pp. 110, June 16-20, 1997	☐
	6	Zhang, et al. "A Novel Mobile Robot Localization Based on Vision", SPIE Vol. 6279, 6 pages, 01/29/07	☐
	7	Euroflex Intellegente Monstre Mauele (English only except)	☐
	8	Roboking- not just a vacuum cleaner, a robot! January 21, 2004, 5 pages	☐
	9	SVET Computers- New Technologies- Robot vacuum cleaner, 1 page	☐
	10	Popco.net Make your digital life http://www.popco.net/zboard/view.php?id=tr_review&no=40 accessed November 1, 2011	☐
	11	Matsumura Camera Online Shop http://www.rakuten.co.jp/matsucame/587179/711512/ accessed November 1, 2011	☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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	Attorney Docket Number	09945-0010007

	12	Dyson's Robot Vacuum Cleaner - the DC06, May 2, 2004 http://www.gizmag.com/go/1282/ accessed Novmber 11, 2011	☐
	13	Electrolux Trilobite, http://www.electrolux-ui.com:8080/2002%5C822%5C833102EN.pdf 10 pages	☐
	14	Electrolux Trilobite, Time to enjoy life, 38 pages http://www.robocon.co.kr/trilobite/Presentation_Trilobite_Kor_030104.ppt accessed December 22, 2011	☐
	15	Facts on the Trilobite http://www.frc.ri.cmu.edu/~hpm/talks/Extras/trilobite.desc.html 2 pages accessed November 1, 2011	☐
	16	Euroflex January 1, 2006 http://www.euroflex.tv/novita_dett.php?id=15 1 page accessed November 1, 2011	☐
	17	FloorBotics, VR-8 Floor Cleaning Robot, Product Description for Manuafacturers, http://www.consensus.com.au/SoftwareAwards/CSAarchive/CSA2004/CSAart04/FloorBot/F	☐
	18	Friendly Robotics, 18 pages http://www.robotsandrelax.com/PDFs/RV400Manual.pdf accessed December 22, 2011	☐
	19	It's eye, 2003 www.hitachi.co.jp/rd/pdf/topics/hitac2003_10.pdf 2 pages	☐
	20	Hitachi, May 29, 2003 http://www.hitachi.co.jp/New/cnews/hl_030529_hl_030529.pdf 8 pages	☐
	21	Robot Buying Guide, LG announces the first robotic vacuum cleaner for Korea, April 21, 2003 http://robotbg.com/news/2003/04/22/lg_announces_the_first_robotic_vacu	☐
	22	CleanMate 365, Intelligent Automatic Vacuum Cleaner, Model No. QQ-1, User Manual www.metapo.com/support/user_manual.pdf 11 pages	☐

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	Attorney Docket Number	09945-0010007

	23	UBOT, cleaning robot capable of wiping with a wet duster, http://us.aving.net/news/view.php?articleId=23031, 4 pages accessed November 1, 2011	☐
	24	Taipei Times, Robotic vacuum by Matsuhita about ot undergo testing, March 26, 2002 http://www.taipeitimes.com/News/worldbiz/archives/2002/03/26/0000129338 accessed	☐
	25	Tech-on! http://techon.nikkeibp.co.jp/members/01db/200203/1006501/, 4 pages, accessed November 1, 2011	☐
	26	http://ascii.jp/elem/000/000/330/330024/	☐
	27	IT media http://www.itmedia.co.jp/news/0111/16/robofesta_m.html accessed November 1, 2011	☐
	28	Yujin Robotics, an intelligent cleaning robot 'iclebo Q' AVING USA http://us.aving.net/news/view.php?articleId=7257, 8 pages accessed November 4, 2011	☐
	29	Special Reports, Vacuum Cleaner Robot Operated in Conjunction with 3G Celluar Phone vol 59, No. 9 (2004) 3 pages http://www.toshiba.co.jp/tech/review/2004/09/59_0	☐
	30	Toshiba Corporation 2003, http://warp.ndl.go.jp/info:ndljp/pid/258151/www.soumu.go.jp/joho_tsusin/policyreports/chousa/netrobot/pdf/030214_1_33_a.pdf 16 pages	☐
	31		☐
	32	McLurkin "The Ants: A community of Microrobots", Paper submitted for requirements of BSEE at MIT, 5/12/1995	☐
	33	Grumet "Robots Clean House", Popular Mechanics, N0vember 2003	☐

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

Receipt date: 09/24/2012	Application Number	12201554 12201554 - GAU: 3723
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	Attorney Docket Number	09945-0010007

	34	McLurkin "Stupid Robot Tricks: A Behavior-based Distributed Algorithm Library for Programming Swarms of Robots, Paper submitted for requirements of BSEE at MIT, May 2004.	☐
	35	Kurs et al, Wireless Power transfer via Strongly Coupled Magnetic Resonances, Downloaded from www.sciencemag.org , August 17, 2007	☐

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Issue Classification

Application/Control No.	Applicant(s)/Patent Under Reexamination
12201554	JONES ET AL.
Examiner	**Art Unit**
ROBERT SCRUGGS	3723

ORIGINAL		INTERNATIONAL CLASSIFICATION														
CLASS	SUBCLASS	CLAIMED									NON-CLAIMED					
15	319	A	4	7	L	5 / 00 (2006.01)										

CROSS REFERENCE(S)					
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)				
15	360				

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
-	1	-	18	-	35	-	52	-	69	-	86	8	103		
-	2	-	19	-	36	-	53	-	70	-	87	3	104		
-	3	-	20	-	37	-	54	-	71	-	88	4	105		
-	4	-	21	-	38	-	55	-	72	-	89	9	106		
-	5	-	22	-	39	-	56	-	73	-	90	10	107		
-	6	-	23	-	40	-	57	-	74	-	91	11	108		
-	7	-	24	-	41	-	58	-	75	-	92	12	109		
-	8	-	25	-	42	-	59	-	76	-	93	14	110		
-	9	-	26	-	43	-	60	-	77	-	94	15	111		
-	10	-	27	-	44	-	61	-	78	-	95	16	112		
-	11	-	28	-	45	-	62	-	79	-	96	13	113		
-	12	-	29	-	46	-	63	-	80	-	97	17	114		
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-	14	-	31	-	48	-	65	-	82	2	99	19	116		
-	15	-	32	-	49	-	66	-	83	5	100	20	117		
-	16	-	33	-	50	-	67	-	84	6	101				

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 20	
/ROBERT SCRUGGS/ Primary Examiner.Art Unit 3723 (Primary Examiner)	03/05/2013 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
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	Examiner	**Art Unit**
	ROBERT SCRUGGS	3723

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

-	17	-	34	-	51	-	68	-	85	7	102				

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 20	
/ROBERT SCRUGGS/ Primary Examiner.Art Unit 3723 (Primary Examiner)	03/05/2013 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1

Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney Docket No. 09945-0010007	Application No. 12/201,554
Information Disclosure Statement by Applicant (Use several sheets if necessary)		Applicant Joseph L. Jones et al.	
(37 CFR §1.98(b))		Filing Date August 29, 2008	Group Art Unit Unknown

U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
	1	1,755,054	04-1930	Darst			
	2	1,780,221	11-1930	Buchmann			
	3	1,970,302	08-1934	Gerhardt			
	4	2,302,111	11-1942	Dow et al.			
	5	4,004,313	01-1977	Capra			
	6	5,070,567	12-1991	Holland			
	7	5,911,260	06-1999	Suzuki			
	8	5,995,883	11-1999	Nishikado			
	9	5,996,167	12-1999	Close			
	10	6,030,464	02-2000	Azevedo			
	11	6,276,478	08-2001	Hopkins et al.			
	12	2004/0085037	05-2004	Jones et al.			
	13	2006/0042042	03-2006	Mertes et al.			
	14	2007/0042716	02-2007	Goodall et al.			
	15	2010/0268384	10-2010	Jones et al.			
	16	2010/0312429	12-2010	Jones et al.			
	17	2008/0184518	08/07/2008	Taylor			
	18						
	19						

Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation Yes	Translation No
	20	102005046813 A1	04-2007	DE			Translation	
	21	19849978	02-2001	DE			Translation	
	22	102004041021 B3	08-2005	DE				
	23	2213047A	08-1989	GB				
	24	09251318	09-1997	JP				

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Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation Yes	Translation No
	25	10117973A2	05-1998	JP				
	26	10214114A2	08-1998	JP				
	27	10228316	08-1998	JP			English Abstract	
	28	10240342A2	09-1998	JP				
	29	10240343A2	05-2000	JP			English Abstract	
	30	10260727A2	09-1998	JP				
	31	11065655A2	03-1999	JP				
	32	11085269A2	03-1999	JP			English Abstract	
	33	11102219A2	04-1999	JP			English Abstract	
	34	11212642A2	08-1999	JP			Translation	
	35	11346964A2	12-1999	JP				
	36	2000353014A2	12-2000	JP			English Abstract	
	37	2001087182	04-2001	JP			English Abstract	
	38	2002369778A2	12-2002	JP				
	39	2003190064A2	07-2003	JP				
	40	2005346700A2	12-2005	JP				
	41	2283343A2	11-1984	JP			Translation	
	42	2520732B2	05-1996	JP			Translation	
	43	3051023A2	03-1991	JP				
	44	5054620U	07-1993	JP			Translation	
	45	5091604A2	04-1993	JP				
	46	53110257A2	09-1978	JP				
	47	57014726A2	01-1982	JP			English Abstract	
	48	59033511U	03-1984	JP			English Abstract	
	49	60089213	05-1985	JP				

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Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation Yes	Translation No
	50	61023221A2	01-1986	JP				
	51	7059702A2	03-1995	JP			Translation	
	52	7222705A2	08-1995	JP			Translation	
	53	7281742A2	10-1995	JP			Translation	
	54	7311041A2	11-1995	JP				
	55	7319542A2	12-1995	JP				
	56	8000393B2	01-1996	JP				
	57	8016241A2	01-1996	JP				
	58	8016776B2	02-1996	JP				
	59	8063229A2	03-1996	JP				
	60	8083125A2	03-1996	JP				
	61	8152916A2	06-1996	JP			Translation	
	62	8256960A2	10-1996	JP				
	63	8286741A2	11-1996	JP				
	64	8286744A2	11-1996	JP				
	65	8322774A2	12-1996	JP			English Abstract	
	66	9160644A2	06-1997	JP			Translation	
	67	9179625A2	07-1997	JP			Translation	
	68	9179685A2	07-1997	JP			English Abstract	
	69	9192069A2	07-1997	JP				
	70	9204223A2	08-1997	JP				
	71	9206258A2	08-1997	JP				
	72	9319431A2	12-1997	JP				
	73	JP2006312U1	01-1990	JP				
	74	WO2004058028	07-2004	WIPO			Translation	
	75	WO2005082223A1	09-2005	WIPO			Translation	

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	76	05046246	02-1993	JP			Translation	
	77	2002532180	10-2002	JP			English Abstract	
	78	2000342497	12-2000	JP			English Abstract	
	79	2000102499	04-2000	JP			English Abstract	
	80	7047046	02-1995	JP			English Abstract	
	81	2000279353	10-2000	JP			English Abstract	
	82	5084200A2	04-1993	JP			Translation	
	83	2002533797T2	10-2002	JP				X
	84	7334242A2	12-1995	JP			Translation	
	85	7295638A2	11-1995	JP			Translation	
	86	62292126A2	12-1987	JP			Translation	
	87	2000342497A2	12-2000	JP			English Abstract	
	88	2002532180T2	10-2002	JP			English Abstract	
	89	2000102499A2	04-2000	JP			English Abstract	
	90	7047046A2	02-1995	JP			English Abstract	
	91	2000279353A2	10-2000	JP			English Abstract	
	92	1139847B1	08-2003	EP				
	93							
	94							

Other Documents (include Author, Title, Date, and Place of Publication)

Examiner Initial	Desig. ID	Document
	95	Andersen et al., "Landmark based navigation strategies", SPIE Conference on Mobile Robots XIII, SPIE Vol. 3525, pp. 170-181, January 8, 1999.
	96	Ascii, March 25, 2002, http://ascii.jp/elem/000/000/330/330024/ accessed November 1, 2011.

Examiner Signature /Robert Scruggs/	Date Considered 03/05/2013

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Examiner Initial	Desig. ID	Document
	97	Certified copy of U.S. Provisional Application No. 60/605,066 as provided to WIPO in PCT/US2005/030422, corresponding to U.S. National Stage Entry Application No. 11/574,290, U.S. publication 2008/0184518, filing date 08/27/2004.
	98	Certified copy of U.S. Provisional Application No. 60/605,181 as provided to WIPO in PCT/US2005/030422, corresponding to U.S. National Stage Entry Application No. 11/574,290, U.S. publication 2008/0184518, filing date 08/27/2004.
	99	Derek Kurth, "Range-Only Robot Localization and SLAM with Radio", http://www.ri.cmu.edu/pub_files/pub4/kurth_derek_2004_1/kurth_derek_2004_1.pdf. 60 pages, May, 2004, accessed July 27, 2012.
	100	Electrolux Trilobite, January 12, 2001, http://www.electrolux-ui.com:8080/2002%5C822%5C833102EN.pdf, accessed July 2, 2012, 10 pages.
	101	Florbot GE Plastics, 1989-1990, 2 pages, available at http://www.fuseid.com/, accessed September 27, 2012.
	102	Gregg et al., "Autonomous Lawn Care Applications," 2006 Florida Conference on Recent Advances in Robotics, Miami, Florida, May 25-26, 2006, Florida International University, 5 pages.
	103	Hitachi 'Feature', http://kadenfan.hitachi.co.jp/robot/feature/feature.html, 1 page, November 19, 2008
	104	Hitachi, http://www.hitachi.co.jp/New/cnews/hi_030529_hi_030529.pdf, 8 pages, May 29, 2003
	105	Home Robot — UBOT; Microbotusa.com, retrieved from the WWW at www.microrobotusa.com, accessed December 2, 2008
	106	King and Weiman, "Helpmate™ Autonomous Mobile Robots Navigation Systems," SPIE Vol. 1388 Mobile Robots, pp.190-198 (1990)
	107	Li et al. "Robust Statistical Methods for Securing Wireless Localization in Sensor Networks," Information Procesing in Sensor Networks, 2005, Fourth International Symposium on, pp. 91-98, April 2005.
	108	Martishevcky, "The Accuracy of point light target coordinate determination by dissectoral tracking system", SPIE Vol. 2591, pp. 25-30, October 23, 2005.
	109	Maschinemarkt Würzburg 105, Nr. 27, pp. 3, 30, July 5, 1999.
	110	Miwako Doi "Using the symbiosis of human and robots from approaching Research and Development Center," Toshiba Corporation, 16 pages, available at http://warp.ndl.go.jp/info:ndljp/pid/258151/www.soumu.go.jp/joho_tsusin/policyreports/chousa/netrobot/pdf/030214_1_33_a.pdf, February 26, 2003.
	111	Paromtchik "Toward Optical Guidance of Mobile Robots," Proceedings of the Fourth World Multiconference on Systemics, Cybermetics and Informatics, Orlando, FL, USA, July 23, 2000, Vol. IX, pp. 44-49, available at http://emotion.inrialpes.fr/~paromt/infos/papers/paromtchik:asama:sci:2000.ps.gz, accessed July 3, 2012.
	112	Roboking – not just a vacuum cleaner, a robot!, January 21, 2004, infocom.uz/2004/01/21/robokingne-prosto-pyilesos-a-robot/, accessed October 10, 2011, 7 pages.
	113	Sebastian Thrun, "Learning Occupancy Grid Maps With Forward Sensor Models," Autonomous Robots 15, 111-127, September 1, 2003.

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Other Documents (include Author, Title, Date, and Place of Publication)		
Examiner Initial	Desig. ID	Document
	114	SVET Computers - New Technologies - Robot Vacuum Cleaner, October, 1999, available at http://www.sk.rs/1999/10/sknt01.html, accessed November 1, 2011.
	115	Written Opinion of the International Searching Authority, PCT/US2004/001504, August 20, 2012, 9 pages.
	116	
	117	

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/Robert Scruggs/	03/05/2013

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EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L6	995	(15/319).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/03/05 10:31
L7	1445	(15/339).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/03/05 10:31
L8	531	(15/52.1).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/03/05 10:31
L9	693	(15/340.1).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/03/05 10:31
L10	93	(15/356).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/03/05 10:31
L11	105	(15/360).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/03/05 10:31
L12	3348	(700/245).CCLS.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/03/05 10:31
L14	1	("20080307590").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2013/03/05 10:55
L15	184088	wheel with arm	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	AND	ON	2013/03/05 10:55
L16	1	14 (wheel with arm)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	AND	ON	2013/03/05 10:55
L17	0	14 (wheel with arm with pivot)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	AND	ON	2013/03/05 10:55

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	263	(jones adj joseph).inv.	US-PGPUB; USPAT; UPAD	AND	ON	2013/03/05 10:15
L2	78	1 (robot or autonomous)	US-PGPUB; USPAT; UPAD	AND	ON	2013/03/05 10:16
L3	17	2 (wheel same (spring or bias))	US-PGPUB; USPAT; UPAD	AND	ON	2013/03/05 10:17
L4	0	2 ((wheel same (spring or bias)).clm.)	US-PGPUB; USPAT; UPAD	AND	ON	2013/03/05 10:19
L5	0	1 ((wheel same (spring or bias)).clm.)	US-PGPUB; USPAT; UPAD	AND	ON	2013/03/05 10:19
L13	16	"15"/$.ccls. ((wheel with (spring or bias) with pivot).clm.)	US-PGPUB; USPAT; UPAD	AND	ON	2013/03/05 10:33

3/ 5/ 2013 11:14:55 AM
H:\ EAST\ Workspaces\ 12201554.wsp

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

26161 7590 03/15/2013

FISH & RICHARDSON P.C.
P.O. BOX 1022
MINNEAPOLIS, MN 55440-1022

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)

(Signature)

(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/201,554	08/29/2008	Joseph L. Jones	09945-0010007 / DP-10J US	9658

TITLE OF INVENTION: AUTONOMOUS FLOOR-CLEANING ROBOT

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	LARGE	$1780	$300	$0	$2080	06/17/2013

EXAMINER	ART UNIT	CLASS-SUBCLASS
SCRUGGS, ROBERT J	3723	015-319000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

[ ] Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

[ ] "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

1 Fish & Richardson P.C.

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE
iRobot Corporation

(B) RESIDENCE: (CITY and STATE OR COUNTRY)
Bedford, MA

Please check the appropriate assignee category or categories (will not be printed on the patent): **[ ]** Individual [X] Corporation or other private group entity [ ] Government

4a. The following fee(s) are submitted:

[X] Issue Fee

[X] Publication Fee (No small entity discount permitted)

[ ] Advance Order - # of Copies _____

4b. Payment of Fee(s): (**Please first reapply any previously paid issue fee shown above**)

[ ] A check in the amount of the fee(s) is enclosed.

[ ] Payment by credit card. Form PTO-2038 is attached.

[X] The Director is hereby authorized to charge the required fee(s), or credit any overpayment, to Deposit Account Number 06-1050

5. **Change in Entity Status** (from status indicated above)

[ ] Applicant certifying micro entity status. See 37 CFR 1.29 — **NOTE**: Absent a valid certification of Micro Entity Status (see form PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

[ ] Applicant asserting small entity status. See 37 CFR 1.27. — **NOTE**: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

[ ] Applicant changing to regular undiscounted fee status. — **NOTE**: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

The Director of the USPTO is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.
NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature /Kelly M. McGlashen/ Date May 16, 2013

Typed or printed name KellyM McGlashen Registration No. 60,927

30766075

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant :	Joseph L. Jones et al.	Art Unit :	3723
Serial No. :	12/201,554	Examiner :	Robert J. Scruggs
Filed :	August 29, 2008	Confirmation No.:	9658

Title : AUTONOMOUS FLOOR-CLEANING ROBOT

MAIL STOP ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

COMMENTS ON EXAMINER'S REASONS FOR ALLOWANCE

It is recognized that in accordance with M.P.E.P. § 1302.14, the Examiner's reasons for allowance need not set forth all of the details as to why the claims are allowed. In the above-referenced application, it is not conceded that the Examiner's stated reasons for allowance are the only reasons for which the claims are allowable. The Examiner's reasons for allowance indicate that particular claim elements are not disclosed or suggested by the prior art of record, yet the claims may be patentable for other reasons as well, including the inventive combination of all of the recited claim elements. It is not conceded that the specific limitations identified by the Examiner are necessary to distinguish the art of record or to satisfy the requirements of 35 U.S.C. § 112. Moreover, the Examiner does not assert, and it would not be conceded, that the Examiner's reasons have any bearing on the patentability of claims in any other applications directed to the disclosed subject matter.

In addition, each dependent claim stands on its own and may be allowable on its own merits. In particular, each dependent claim may be allowable on the basis of a combination of some of the features recited in the dependent claim and its base claim(s), which combination of features may not include all of the limitations identified in the Examiner's reasons for allowance.

Please apply any necessary charges or credits to Deposit Account 06-1050, referencing the above attorney docket number.

.

Respectfully submitted,

Date: May 16, 2013

/Kelly M. McGlashen/
Kelly M. McGlashen
Reg. No. 60,927

Customer Number 26161
Fish & Richardson P.C.
Telephone: (212) 765-5070
Facsimile: (877) 769-7945

30766078

Electronic Patent Application Fee Transmittal

Application Number:	12201554
Filing Date:	29-Aug-2008
Title of Invention:	Autonomous Floor-Cleaning Robot
First Named Inventor/Applicant Name:	Joseph L. Jones
Filer:	Kelly McGlashen
Attorney Docket Number:	09945-0010007 / DP-10J US

Filed as Large Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl Issue Fee	1501	1	1780	1780
Publ. Fee- Early, Voluntary, or Normal	1504	1	300	300

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**2080**

Electronic Acknowledgement Receipt

EFS ID:	15791205
Application Number:	12201554
International Application Number:	
Confirmation Number:	9658
Title of Invention:	Autonomous Floor-Cleaning Robot
First Named Inventor/Applicant Name:	Joseph L. Jones
Customer Number:	26161
Filer:	Kelly McGlashen/Nick Halverson
Filer Authorized By:	Kelly McGlashen
Attorney Docket Number:	09945-0010007 / DP-10J US
Receipt Date:	16-MAY-2013
Filing Date:	29-AUG-2008
Time Stamp:	10:45:48
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$2080
RAM confirmation Number	9476
Deposit Account	061050
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)

1	Transmittal Letter	09945-0010007ResponseNOA.pdf	61490 94ac0cb045903ff4f439296952da9e0270ad7ff6	no	1
Warnings:					
Information:					
2	Issue Fee Payment (PTO-85B)	09945-0010007PartB.pdf	107709 fd23b3db3aee0794c512b5e7feb5debf1508db08	no	1
Warnings:					
Information:					
3	Post Allowance Communication - Incoming	09945-0010007comments.pdf	65355 5aa2379abc74d4975f6a3e24ec2334504702a393	no	2
Warnings:					
Information:					
4	Fee Worksheet (SB06)	fee-info.pdf	31760 a7150801e03ea2935dbb4359c2deae03d9f97c4f	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	266314		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant :	Joseph L. Jones et al.	Art Unit :	3723
Serial No. :	12/201,554	Examiner :	Robert J. Scruggs
Filed :	August 29, 2008	Confirmation No.:	9658

Title : AUTONOMOUS FLOOR-CLEANING ROBOT

MAIL STOP ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO NOTICE OF ALLOWANCE

In response to the Notice of Allowance mailed March 15, 2013, enclosed is a completed Part B - Fee(s) Transmittal and Comments on Examiner's Reasons for Allowance.

The issue fee and publication fees in the amount of $2080 are being paid concurrently herewith. In addition, please apply any other necessary charges or credits to Deposit Account 06-1050, referencing the above attorney docket number.

Respectfully submitted,

Date: May 16, 2013

/Kelly M. McGlashen/
Kelly M. McGlashen
Reg. No. 60,927

Customer Number 26161
Fish & Richardson P.C.
Telephone: (212) 765-5070
Facsimile: (877) 769-7945

30766074

Receipt date: 09/24/2012

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	12201554 12201554 - GAU: 3723
Filing Date	2008-08-29
First Named Inventor	Jones
Art Unit	
Examiner Name	
Attorney Docket Number	09945-0010007

	218	6160479	A_	2000-12-12	~~Åhlen et al~~ Ahlen, et al.	
Change(s) applied to document, /A.E.G./ 4/3/2013	219	6167332	A_	2000-12-26	Kurtzberg et al	
	220	6167587	B1	2001-01-02	Kasper et al	
	221	6192548	B1	2001-02-27	Huffman	
	222	6192549	B1	2001-02-27	Kasen et al	
	223	6202243	B1	2001-03-20	Beaufoy et al	
	224	6216307	B1	2001-04-17	Kaleta et al	
	225	6220865	B1	2001-04-24	Macri et al	
	226	6230362	B1	2001-05-15	Kasper et al	
	227	6237741	B1	2001-05-29	Guidetti	
	228	6243913	B1	2001-06-12	Frank et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

Receipt date: 09/24/2012	Application Number	12201554	12201554 - GAU: 3723
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Filing Date	2008-08-29	
(Not for submission under 37 CFR 1.99)	First Named Inventor	Jones	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	09945-0010007	

	251	6400048	B1	2002-06-04	Nishimura et al	
	252	6401294	B2	2002-06-11	Kasper	
	253	6408226	B1	2002-06-18	Byrne et al	
Change(s) applied to document, /A.E.G./ 4/3/2013	254	6412141	B1	2002-07-02	Kasper, et al.	
	255	6415203	B1	2002-07-02	Inoue et al	
	256	6418586	B2	2002-07-16	Fulghum	
	257	6421870	B1	2002-07-23	Basham et al	
	258	6427285	B1	2002-08-06	Legatt et al	
	259	6430471	B1	2002-08-06	Kintou et al	
	260	6431296	B1	2002-08-13	Won	
	261	6437227	B1	2002-08-20	Theimer	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

Receipt date: 09/24/2012

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	12201554 12201554 - GAU: 3723
Filing Date	2008-08-29
First Named Inventor	Jones
Art Unit	
Examiner Name	
Attorney Docket Number	09945-0010007

	196	6099091	A_	2000-08-08	Campbell	
Change(s) applied to document, /A.E.G./ 4/3/2013	197	6101670	C1	~~2005-07-13~~ 08/2000	Song	
	198	6101671	A_	2000-08-15	Wright et al	
	199	6108031	A_	2000-08-22	King et al	
	200	6108067	A_	2000-08-22	Okamoto	
	201	6108076	A_	2000-08-22	Hanseder	
	202	6108269	A_	2000-08-22	Kabel	
	203	6108597	A_	2000-08-22	Kirchner et al	
	204	6108859	A_	2000-08-29	Burgoon	
	205	6112143	A_	2000-08-29	Allen et al	
	206	6112996	A_	2000-09-05	Matsuo	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

Receipt date: 09/24/2012	Application Number	12201554	12201554 - GAU: 3723
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**	Filing Date	2008-08-29	
	First Named Inventor	Jones	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	09945-0010007	

	53	6886651	B1	2005-05-03	Slocum et al	
	54	6888333	B2	2005-05-03	Laby	
	55	6906702	B1	2005-06-14	Tanaka et al	
	56	6914403	B2	2005-07-05	Tsurumi	
	57	6917854	B2	2005-07-12	Bayer	
	58	6925357	C1	~~2010-05-11~~ 08/2005	Wang, et al.	
	59	6925679	B2	2005-08-09	Wallach et al	
	60	6929548	B2	2005-08-16	Wang	
	61	6940291	B1	2005-09-06	Ozick	
	62	6941199	B1	2005-09-06	Bottomley et al	
Change(s) applied to document, /A.E.G./ 4/3/2013	63	6957712	B2	2005-10-25	Song et al	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

Notice of References Cited	Application/Control No. 12/201,554	Applicant(s)/Patent Under Reexamination JONES ET AL.	
	Examiner ROBERT SCRUGGS	Art Unit 3723	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,493,612	12-2002	Bisset et al.	701/23
*	B	US-6,276,478	08-2001	Hopkins et al.	180/164
*	C	US-6,482,252	11-2002	Conrad et al.	96/57
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

Change(s) applied to document, /J.M.S./ 4/23/2013

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N	JP6327598	11/1994	JP	Takemoto	
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Receipt date: 09/24/2012	Application Number	12201554	12201554 - GAU: 3723
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**	Filing Date	2008-08-29	
	First Named Inventor	Jones	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	09945-0010007	

	174	D464091	S1	2002-10-08	Christianson	
	175	D471243	S1	2003-03-04	Cioffi et al	
	176	D474312	S1	2003-05-06	Stephens et al	
	177	D478884	S1	2003-08-26	Slipy et al	

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Change(s) applied to document, /J1M.S./ 4/23/2013	1	USRE28268E1	US	E1	1974-12-10	Autrand		☐

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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

Receipt date: 09/24/2012

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	12201554 12201554 - GAU: 3723
Filing Date	2008-08-29
First Named Inventor	Jones
Art Unit	
Examiner Name	
Attorney Docket Number	09945-0010007

	284	6548982	B1	2003-04-15	Papanikolopoulos et al	
	285	6553612	B1	2003-04-29	Dyson et al	
	286	6556722	B1	2003-04-29	Russell et al	
	287	6556892	B2	2003-04-29	Kuroki et al	
	288	6557104	B2	2003-04-29	Vu et al	
	289	6563130	B2	2003-05-13	Dworkowski et al	
	290	6571422	B1	2003-06-03	Gordon et al	
	291	6572711	B2	2003-06-03	Sclafani et al	
	292	6581239	B1	2003-06-24	Dyson et al	
	293	6584376	B1	2003-06-24	Van Kommer	
Change(s) applied to document /N.A./ 5/30/2013	294	6586908	B2	2003-07-01	Petersson et al	

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Receipt date: 09/24/2012

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	12201554 12201554 - GAU: 3723
Filing Date	2008-08-29
First Named Inventor	Jones
Art Unit	
Examiner Name	
Attorney Docket Number	09945-0010007

	108	20050222933	A1	2005-10-06	Wesby	
	109	20050229340	A1	2005-10-20	Sawalski et al	
	110	20050229355	A1	2005-10-20	Crouch et al	
	111	20050235451	A1	2005-10-27	Yan	
	112	20050251292	A1	2005-11-10	Casey et al	
	113	20050255425	A1	2005-11-17	Pierson	
	114	20050258154	A1	2005-11-24	Blankenship et al	
	115	20050273967	A1	2005-12-15	Taylor et al	
	116	20050288819	A1	2005-12-29	de Guzman	
	117	20060000050	A1	2006-01-05	Cipolla et al	
	118	20060009879	A1	2006-01-12	Lynch et al	

Change(s) applied to document.
N.A.
5/30/2013

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

IDS Form PTO/SB/08: Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 8 of 13

Complete if Known	
Application Number	12/201,554
Filing Date	August 29, 2008
First Named Inventor	Joseph L. Jones
Art Unit	3723
Examiner Name	TBA
Attorney Docket Number	1007.0013-01000

Change(s) ~~applied~~ to document, N.A./ 5/30/2013

U.S. PATENTS AND PUBLISHED U.S. PATENT APPLICATIONS

		US-6,690,134	02-10-2004	Jones et al.	
		US-6,741,054	05-25-2004	Koselka et al.	
		US-6,748,297	06-08-2004	Song et al.	
		US-6,781,338	08-24-2004	Jones et al.	
		US-6,809,490	10-26-2004	Jones et al.	
		US-6,830,120	12-14-2004	Yashima et al.	
		US-6,883,201	04-26-2005	Jones et al.	
		US-6,956,348	10-18-2005	Landry et al.	
		US-6,841,963	01-11-2005	Song et al.	
		US-6,901,624	06 ~~01-12~~-2005	Mori et al.	
		US-6,938,298	09 ~~01-13~~-2005	Turbjorn Aasen	
		US-6,965,209	11 ~~01-14~~-2005	Jones et al.	
		US-6,971,140	01-15-2005	Se Wan Kim	
		US-2005/204717	09-22-2005	Colens	
		US-7,206,677	04-17-2007	Hulden	
		US-7,085,624	08-01-2006	Aldred et al.	
		US-7,024,278	04-04-2006	Chiapetta et al.	
		US-6,999,850	02-14-2006	McDonald	
		US-6,611,738	08-26-2003	Raffner	
		US-6,496,755	12-17-2002	Wallach et al.	
		US-5,467,273	11-14-1995	Faibish et al.	
		US-5,465,525	11-14-1995	Mifune et al.	
		US-5,321,614	06-14-1994	Ashworth	
		US-5,309,592	05-1994	Hiratsuka	
		US-5,787,545	08-1998	Colens	
		US-7,013,527	03-2006	Thomas et al.	

Note: Submission of copies of U.S. Patents and published U.S. Patent Applications is not required.

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Country Code[3] Number[4] Kind Code[5] (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	Translation[6]
		WO 00/04430	01-27-2000	Bottomley et al.		
		WO 00/38029	06-29-2000	Bisset et al.		
		WO 00/78410 A1	12-28-2000	Colens		
		WO 01/06904 A1	02-01-2001	Clark et al.		

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

IDS Form PTO/SB/08: Substitute for form 1449A/PTO

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Sheet 6 of 13

Complete if Known	
Application Number	12/201,554
Filing Date	August 29, 2008
First Named Inventor	Joseph L. Jones
Art Unit	3723
Examiner Name	TBA
Attorney Docket Number	1007.0013-01000

Change(s) applied to document, /N.A./ 5/30/2013

U.S. PATENTS AND PUBLISHED U.S. PATENT APPLICATIONS					
		US-5,204,814	04-1993	Noonan et al.	
		US-5,239,720	08-31-1993	Wood et al.	
		US-5,303,448	04-19-1994	Hennessey et al.	
		US-5,319,828	06-14-1994	Waldhauser et al.	
		US-5,261,139	11-1993	Lewis	
		US-5,279,672	01-1994 ~~01-1964~~	~~Belker, Jr. et al.~~ Betker et al.	
		US-5,284,522	02-1994	Kobayashi et al.	
		US-5,293,955	03-15-1994	Lee	
		US-5,324,948	06-28-1994	Dudar et al.	
		US-5,341,540	08-1994	Soupert et al.	
		US-5,353,224	10-1994	Lee et al.	
		US-5,369,347	11-29-1994	Yoo	
		US-5,440,216	08-08-1995	Kim	
		US-5,444,965	08-29-1995	Colens	
		US-5,446,356	08-1995	Kim	
		US-5,454,129	10-03-1995	Kell	
		US-5,455,982	10-10-1995	Armstrong et al.	
		US-5,467,273	11-1995	Faibish et al.	
		US-5,497,529	03-12-1996	Boesi	
		US-5,507,067	04-1996	Hoekstra et al.	
		US-5,515,572	05-1996	Hoekstra et al.	
		US-5,534,762	07-09-1996	Kim	
		US-5,537,017	07-1996	Feiten et al.	
		US-5,539,953	07-1996	Kurz	
		US-5,542,146	08-1996	Hoekstra et al.	
		US-5,548,511	08-1996	Bancroft	
		US-5,553,349	09-1996	Kilstrom et al.	
		US-5,555,587	09-17-1996	Guha	
		US-5,560,077	10-01-1996	Crotchett	
		US-5,568,589	10-1996	Hwang	
		US-5,611,106	03-18-1997	Richard F. Wulff	
		US-5,611,108	03-18-1997	Knowlton et al.	
		US-5,613,261	03-1997	Kawakami et al.	
		US-5,621,291	04-15-1997	Lee	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

IDS Form PTO/SB/08: Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 4 of 13

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Application Number	12/201,554
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First Named Inventor	Joseph L. Jones
Art Unit	3723
Examiner Name	TBA
Attorney Docket Number	1007.0013-01000

Change(s) applied to document, /N.A./ 5/30/2013

U.S. PATENTS AND PUBLISHED U.S. PATENT APPLICATIONS

		US-2003/0060928	03-2003	Abramson et al.	
		US-2003/0120389	06-26-2003	Abramson et al.	
		US-2003/0137268	07-24-2003	Papanikolopoulos et al.	
		US-2003/0019071 01-2003	~~05-30-2006~~	Field et al.	
		US-2003/0192144	10-2003	Song et al.	
		US-2003/0216834	11-20-2003	Allard	
		US-2003/0233177	12-18-2003	Johnson et al.	
		US-2004/0020000	02-05-2004	Jones	
		US-2004/0030571	02-12-2004	Solomon	
		US-2004/0031113	02-19-2004	Wosewick et al.	
		US-2004/0030450	02-12-2004	Solomon	
		US-2004/0030449	02-12-2004	Solomon	
		US-2004/0030448	02-12-2004	Solomon	
		US-2004/0049877 03-2004	~~04-26-2005~~	Jones et al.	
		US-2004/0068416	04-08-2004	Solomon	
		US-2004/0068415	04-08-2004	Solomon	
		US-2004/0068351	04-08-2004	Solomon	
		US-2004/0076324	04-22-2004	Burl et al.	
		US-2004/0088079	05-06-2004	Lavarec et al.	
		US-2004/0111184	06-10-2004	Chiappetta et al.	
		US-2004/0134337	07-15-2004	Solomon	
		US-2004/0134336	07-15-2004	Solomon	
		US-2004/0158357	08-12-2004	Lee et al.	
		US-2004/0156541	08-12-2004	Jeon et al.	
		US-2004/0200505	10-14-2004	Taylor et al.	
		US-2004/0211444	10-28-2004	Taylor et al.	
		US-2004/0204792	10-2004	Taylor et al.	
		US-2004/0236468	11-2004	Taylor et al.	
		US-2004/0244138	12-09-2004	Taylor et al.	
		US-2005/0000543	01-06-2005	Taylor et al.	
		US-2005/0010331	01-13-2005	Taylor et al.	
		US-2005/0156562	07-21-2005	Cohen et al.	
		US-D 510,066	09-27-2005	Hickey et al.	
		US-3,457,575	07-1969	Bienek	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /RS/

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Complete if Known	
Application Number	12/201,554
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First Named Inventor	Joseph L. Jones
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U.S. PATENTS AND PUBLISHED U.S. PATENT APPLICATIONS

		US-6,038,501	03-14-2000	Kawakami	
		US-6,076,025	06-13-2000	Ueno et al.	
		US-6,076,226	06-20-2000	Reed	
		US-6,240,342 B1	05-29-2001	Fiegert et al.	
		US-6,261,379 B1	07-17-2001	Conrad et al.	
		US-6,327,741 B1	12-11-2001	Reed	
		US-6,339,735 B1	01-15-2002	Peless et al.	
		US-6,389,329 B1	05-14-2002	Colens	
		US-6,381,802 B2	05-07-2002	Park	
		US-6,457,206 B1	10-01-2002	Judson	
		US-6,459,955 B1	10-01-2002	Bartsch et al.	
		US-6,465,982 B1	10-15-2002	Bergvall et al.	
		US-6,481,515 B1	11-19-2002	Kirkpatrick et al.	
		US-6,493,612 B1	12-10-2002	Bisset et al.	
		US-6,493,613 B2	12-10-2002	Peless et al.	
		US-6,525,509 B1	02-25-2003	Petersson et al.	
		US-6,571,415 B2	06-03-2003	Gerber et al.	
		US-6,601,265 B1	08-05-2003	Burlington	
		US-6,605,156 B1	08-12-2003	Clark et al.	
		US-4,556,313	12-03-1985	Miller et al.	
		US-4,887,415	12-19-1989	Martin	
		US-4,893,025	01-09-1990	Lee	
		US-5,002,145	03-26-1991	Wakaumi et al.	
		US-5,142,985	09-01-1992	Stearns et al.	
		US-5,208,521	05-04-1993	Aoyama	
		US-5,279,672	01-18-1994	Betker, Jr. et al.	
		US-5,446,356	08-29-1995	Kim	
		US-5,569,589	10-1996	~~Hwang~~ Hiraoka et al.	
		US-5,652,489	07-29-1997	Kawakami	
		US-5,812,267	09-22-1998	Everett, Jr. et al.	
		US-6,226,830 B1	05-08-2001	Hendricks et al.	
		US-4,119,900	10-10-1978	Kremnitz	
		US-4,700,427	10-20-1987	Knepper	
		US-5,353,224	10-04-1994	Lee et al.	

Change(s) applied to document,
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ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment is 25 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site http://pair.uspto.gov for additional applicants):

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12/201,554	8474090	3723	9200

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Correspondence Address/Fee Address Change

The following fields have been set to Customer Number 108858 on 01/30/2015

- **Correspondence Address**
- **Maintenance Fee Address**

The address of record for Customer Number 108858 is:

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