UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C.

In the Matter of	
CERTAIN ROBOTIC VACUUM CLEANING DEVICES AND COMPONENTS THEREOF SUCH AS SPARE PARTS	Inv. No. 337-TA-1057

VERIFIED AMENDED COMPLAINT OF IROBOT CORPORATION UNDER SECTION 337 OF THE TARIFF ACT OF 1930, AS AMENDED

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I. INTRODUCTION

1.1 Complainant iRobot Corporation ("iRobot" or "Complainant") requests that the United States International Trade Commission commence an investigation pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337 ("Section 337"), to remedy the unlawful importation into the United States, sale for importation into the United States, and/or sale within the United States after importation by the owner, importer, or consignee (or agents thereof), of certain robotic vacuum cleaning devices and components thereof such as spare parts that infringe valid and enforceable United States patents owned by iRobot.

1.2 The Proposed Respondents are Bissell Homecare, Inc., Hoover Inc., Royal Appliance Manufacturing Co. Inc. d/b/a TTI Floor Care North America, Inc., Bobsweep, Inc., Bobsweep USA, The Black & Decker Corporation, Black & Decker (U.S.) Inc., Shenzhen ZhiYi Technology Co., Ltd. d/b/a iLife, Matsutek Enterprises Co., Ltd., Suzhou Real Power Electric Appliance Co., Ltd., and Shenzhen Silver Star Intelligent Technology Co., Ltd. (collectively "Proposed Respondents"). Upon information and belief, Proposed Respondents have engaged in unfair acts in violation of Section 337 through and in connection with the unlicensed importation into the United States, sale for importation into the United States, and/or sale within the United States after importation of products that infringe one or more claims of U.S. Patent No. 6,809,490 (the "'490 Patent"); one or more claims of U.S. Patent No. 7,155,308 (the "'308 Patent"); one or more claims of U.S. Patent No. 8,474,090 (the "'090 Patent"); one or more claims of U.S. Patent No. 8,600,553 (the "'553 Patent"), one or more claims of U.S. Patent No. 9,038,233 (the "'233 Patent"),[1] and/or one or more claims of U.S. Patent No. 9,486,924 (the

[1] The '233 Patent is related to the '090 Patent pursuant to a continuation application.

"'924 Patent"). The '490, '308, '090, '553, '233, and '924 Patents are collectively referred to herein as "the Asserted Patents."

1.3 Complainant asserts that Proposed Respondents directly infringe, contributorily infringe, and/or induce the infringement of at least the following claims (independent claims in **bold**; collectively, "the Asserted Claims"):

Asserted Patent	Asserted Claims
U.S. Patent No. 6,809,490	**1**, 2, 3, 7, 12, **42**
U.S. Patent No. 7,155,308	**1**, 2, 3, 7, 11, 12, 17, **19**, 20, 28, 34
U.S. Patent No. 8,474,090	**1**, 2, 3, 7, 8, **10**, 11, 14, 15, **17**, 18, 19
U.S. Patent No. 8,600,553	**1**, 2, 4, 8, **11**, 12, 21, 22, **25**
U.S. Patent No. 9,038,233	**1**, 10, 11, 14, **15**, 16
U.S. Patent No. 9,486,924	**1**, 2, 8, 9, **12**, 13

1.4 Certified copies of the Asserted Patents accompany this Complaint as **Exhibits 1-6**. iRobot owns by assignment the entire right, title, and interest in and to these patents. A certified copy of the recorded assignments accompanies this Complaint as **Exhibits 7-12**.

1.5 As required by 19 U.S.C. § 1337(a)(2) and defined by 19 U.S.C. § 1337(a)(3), an industry in the United States exists relating to articles covered by the Asserted Patents.

1.6 Complainant seeks a permanent limited exclusion order, pursuant to Section 337(d), excluding from entry into the United States all of Proposed Respondents' Accused Products (examples of which are described *infra* in Section III) that infringe one or more claims of the Asserted Patents. Complainant also seeks permanent cease and desist orders, pursuant to Section 337(f), directing each Proposed Respondent to cease and desist from activities including, but not limited to, importing, marketing, advertising, demonstrating, warehousing inventory for distribution, offering for sale, selling, distributing, servicing, repairing, maintaining,

programming, updating, or using such Accused Products in the United States. Complainant also seeks the imposition of a bond on any imports during the Presidential review period.

II. COMPLAINANT

2.1 iRobot Corporation ("iRobot") is a corporation organized under the laws of the State of Delaware, with its principal place of business in Bedford, Massachusetts.

2.2 iRobot (formerly IS Robotics, Inc.) was founded in 1990 by Massachusetts Institute of Technology roboticists with the vision of making practical robots a reality. The company has developed some of the world's most important robots, and has a rich history steeped in innovation.

2.3 iRobot robots have revealed mysteries of the Great Pyramid of Giza, found harmful subsea oil in the Gulf of Mexico, and saved thousands of lives in areas of conflict and crisis around the globe. iRobot engineers inspired the first Micro Rovers used by NASA, changing space exploration forever, deployed the first ground robots used by U.S. Forces in conflict, brought the first self-navigating FDA-approved remote presence robots to hospitals and introduced the first practical home robot with Roomba®, forging a path for an entirely new category in home cleaning.

2.4 Since 2002, iRobot has sold more than 15 million home robots. Prior to the sale of its defense and security business unit in 2016, iRobot also sold approximately 6,000 defense and security robots, most of which have been sold to the U.S. military and deployed on missions in Afghanistan and Iraq, and more recently to state, local, and international government entities.

2.5 iRobot is the leader in home robotic cleaning devices, with products delivering convenient, customized, powerful cleaning assistance. Among other product offerings, iRobot develops, manufactures, and sells the well-known Roomba line of products, which have been

recognized as a market leader in robotic vacuum cleaning as well as highly preferred Braava® branded products. iRobot also offers Scooba,® a floor washing robot, Mirra,® a pool cleaning robot, and Looj,® a gutter cleaning robot. As an innovative company always seeking ways to better serve consumers with additional features and functionality, iRobot also offers its HOME App technology for remote monitoring and control of certain Roomba models.

2.6 iRobot is also committed to building a future for Science, Technology, Engineering, and Math (STEM) education in the United States. Its multi-faceted outreach program is a resource for students, parents, and educators to share in iRobot's excitement for the robotics industry and get an inside look at iRobot innovation. iRobot's STEM activities reached over 170,000 students, parents, and educators between 2014 and 2016.

2.7 iRobot has extensive involvement with the U.S. market with its innovative robotic vacuum cleaning devices. As detailed, *infra*, iRobot employs hundreds of persons in the United States who are dedicated to the design, research, development, testing, quality control, and customer care of its robotic vacuum cleaning devices, and related accessories for U.S. customers.

III. PROPOSED RESPONDENTS

A. Bissell Homecare, Inc.

3.1 On information and belief, Bissell Homecare, Inc. is a corporation organized under the laws of the State of Michigan, having a principal place of business located at 2345 Walker Ave., NW, Grand Rapids, Michigan 49544.

3.2 According to its website (https://www.bissell.com/vacuums/robotic-vacuums), Bissell Homecare, Inc., or others on its behalf, offers for sale the SmartClean® line of robotic vacuum cleaning products. *See* **Exhibit 13**. For example, the SmartClean line of products includes at least the Model 1605C and Model 1974 Robotic Vacuums ("Bissell Accused Products"). *See id.* Moreover, according to its website, Bissell has announced as "Available

Soon" an additional robotic vacuum cleaning product, the SmartClean Connected Robotic Vacuum Model 2147, that appears to practice one or more of the Asserted Claims ("Upcoming Bissell Accused Product"). *See* **Exhibit 115**.

3.3 On information and belief, Bissell Homecare, Inc., or others on its behalf, imports the Bissell Accused Products into the United States, sells them for importation into the United States, and/or sells them after importation into the United States.

B. Hoover, Inc.

3.4 On information and belief, Hoover Inc. is a corporation organized under the laws of the State of Delaware, having a principal place of business located at 7005 Cochran Road, Glenwillow, Ohio 44139.

3.5 According to its website (https://hoover.com/products/category/robot-vacuums/), Hoover Inc., or others on its behalf, offers for sale the Quest™ line of robotic vacuum cleaning products. *See* **Exhibit 14**. For example, the Quest line of products includes at least the Quest 700 (Model BH70700), Quest 800 (Model BH70800), and Quest 1000 (Model BH71000) robot vacuums ("Hoover Accused Products"). *See id.*

3.6 On information and belief, Hoover Inc., or others on its behalf, imports the Hoover Accused Products into the United States, sells them for importation into the United States, and/or sells them after importation into the United States.

C. Royal Appliance Manufacturing Co. Inc. d/b/a TTI Floor Care North America, Inc.

3.7 On information and belief, Royal Appliance Manufacturing Co. Inc. is a corporation organized under the laws of the State of Ohio, having a principal place of business located at 7005 Cochran Road, Glenwillow, Ohio 44139. On information and belief, Royal

Appliance Manufacturing Co. Inc. is a subsidiary of Techtronic Industries Company Limited that does business under the name TTI Floor Care North America, Inc. *See* **Exhibits 15**, **16**, **17**.

3.8 On information and belief, Royal Appliance Manufacturing Co. Inc., or others on its behalf, imports the Hoover Accused Products into the United States, sells them for importation into the United States, and/or sells them after importation into the United States.

3.9 For example, the website (https://hoover.com/products/category/robot-vacuums/) at which the Hoover Quest line of products is available for sale, states "Today, Hoover is part of TTI Floor Care North America, headquartered in Glenwillow, OH." *See* **Exhibit 16**. Moreover, the TTI Floor Care North America website has a link to the Hoover sales website and also states "Hoover: We acquired this marquee brand in 2007." *See* **Exhibit 17**.

D. Bobsweep, Inc.

3.10 On information and belief, Bobsweep, Inc. is a Canadian corporation, having a principal place of business located at 1121 Bay St., Suite 709, Toronto, ON M5S3L9, Canada.

3.11 According to its website (http://www.bobsweep.com/), Bobsweep, Inc., or others on its behalf, offers for sale several robotic vacuum cleaning products. *See* **Exhibit 18**. For example, the "Family of bObsweep Robotic Vacuums" includes at least the Bob PetHair Plus,™ bObi Pet,™ bObi Classic,™ Bob PetHair,™ Bob Standard,™ and Junior™ ("Bobsweep Accused Products"). *See id.*

3.12 On information and belief, Bobsweep, Inc., or others on its behalf, imports the Bobsweep Accused Products into the United States, sells them for importation into the United States, and/or sells them after importation into the United States.

E. Bobsweep USA

3.13 On information and belief, Bobsweep USA is a corporation organized under the laws of the State of Nevada, having a principal place of business located at 2360 Corporate Circle, Suite 400, Henderson, Nevada 89074.

3.14 On information and belief, Bobsweep USA, or others on its behalf, imports the Bobsweep Accused Products into the United States, sells them for importation into the United States, and/or sells them after importation into the United States.

3.15 For example, Bobsweep USA has been identified as the consignee of Bobsweep "electrical floor sweeper" products. *See generally* **Exhibit 19**.

F. The Black & Decker Corporation

3.16 On information and belief, The Black & Decker Corporation is a corporation organized under the laws of the State of Maryland, having a principal place of business located at 701 E. Joppa Rd., Towson, Maryland 21286.

3.17 The Black & Decker Corporation, or others on its behalf, offers for sale several robotic vacuum cleaning products. For example, The Black & Decker Corporation sells and offers for sale in the United States at least the Black & Decker BDH5000, Lithium Robotic Vacuum with LED and SMARTECH™ (Model HRV425BL), PET Lithium Robotic Vacuum with LED and SMARTECH™ (Model HRV425BLP), and PET Lithium Robotic Vacuum with SMARTECH™ (Model HRV420BP07) robotic vacuum cleaners ("Black & Decker Accused Products"). *See, e.g.*, **Exhibit 20; Exhibits 116–18**.

3.18 Moreover, according to its website, The Black & Decker Corporation, or others on its behalf, offers for sale the Lithium Robotic Vacuum with LED and SMARTECH™ (Model HRV425BL), the PET Lithium Robotic Vacuum with LED and SMARTECH™ (Model HRV425BLP), and the PET Lithium Robotic Vacuum with SMARTECH™ (Model

HRV420BP07) (collectively, "Newly Released Black & Decker Accused Products"). *See* **Exhibit 21**. On information and belief, The Black & Decker Corporation, or others on its behalf, demonstrated the Newly Released Black & Decker Accused Products at the 2017 Consumer Electronics Show in Las Vegas, Nevada. *See* **Exhibit 22**. The Newly Released Black & Decker Accused Products were available for pre-order in the United States with an expected availability date of June 1, 2017 and are now available for purchase. *See* **Exhibit 23; Exhibits 121–22.**

3.19 On information and belief, The Black & Decker Corporation, or others on its behalf, imports the Black & Decker Accused Products into the United States, sells them for importation into the United States, and/or sells them after importation into the United States.

G. Black & Decker (U.S.) Inc.

3.20 On information and belief, Black & Decker (U.S.) Inc. is a corporation organized under the laws of the State of Maryland, having a principal place of business located at 701 E. Joppa Rd., Towson, Maryland 21286.

3.21 On information and belief, Black & Decker (U.S.) Inc., or others on its behalf, imports the Black & Decker Accused Products into the United States, sells them for importation into the United States, and/or sells them after importation into the United States.

3.22 For example, Black & Decker (U.S.) Inc. is identified on the Black & Decker BDH5000 robotic vacuum cleaner as well as the box in which it is packaged. *See* **Exhibit 24**. Black & Decker (U.S.) is also identified on the PET Lithium Robotic Vacuum with SMARTECH (Model HRV420BP07) vacuum cleaner as well as the box in which it is packaged. *See* **Exhibit 125**. On information and belief, Black & Decker (U.S.) Inc. is an importer of the Black& Decker Accused Products for the United States. *See id.*; **Exhibit 24**.

H. Shenzhen ZhiYi Technology Co., Ltd. d/b/a iLife

3.23 On information and belief, Shenzhen ZhiYi Technology Co., Ltd. d/b/a iLife is a Chinese corporation, having a principal place of business located at 3rd Floor Bld B, Hytera Technology Park, No. 3,4th of Baolong Road, Longgang, ShenZhen 518000, People's Republic of China. On information and belief, Shenzhen ZhiYi Technology Co., Ltd. conducts business under the name iLife and utilizes the website www.iliferobot.com for sales in the United States. *See* **Exhibits 25**, **26**.

3.24 According to its website (http://www.iliferobot.com/), Shenzhen ZhiYi Technology Co., Ltd. d/b/a iLife, or others on its behalf, offers for sale several robotic vacuum cleaning products, including the A-series and V-series. *See* **Exhibits 27**, **28**. For example, the iLife branded robotic vacuum cleaners include at least the A6, A4, A4s, V7, V7s, V5s, V5s Pro, V3s, and V3s Pro robotic vacuum cleaner models ("iLife Accused Products"). *See, e.g.*, *id.*

3.25 On information and belief, Shenzhen ZhiYi Technology Co., Ltd. d/b/a iLife, or others on its behalf, manufactures the iLife Accused Products in the People's Republic of China or another country other than the United States, and then imports them into the United States, sells them for importation into the United States, and/or sells them after importation into the United States.

I. Matsutek Enterprises Co., Ltd.

3.26 On information and belief, Matsutek Enterprises Co., Ltd. is a corporation organized under the laws of Taiwan, having a principal place of business located at 2F, 2, Lane 15 Tzu Chiang Street, New Taipei City, Taiwan 23678.

3.27 On information and belief, Matsutek Enterprises Co., Ltd. manufactures the Bissell Accused Products in Taiwan or another country other than the United States, and then imports them into the United States, sells them for importation into the United States, and/or sells them after importation into the United States.

3.28 For example, certain of the Bissell Accused Products include circuit boards imprinted with the Matsutek Enterprises Co., Ltd. name. *See* **Exhibit 29**. Further, for example, U.S. Customs records show Matsutek Enterprises Co., Ltd. as the supplier and/or shipper to Bissell Homecare Inc. of "1605 Bissell Robot Vacuum," a Bissell Accused Product. *See* **Exhibits 30**, **31**. Additionally, Matsutek Enterprises Co., Ltd. is identified as a manufacturer of Bissell consumer product model numbers 1605 and 1974 robotic vacuum cleaners, both Bissell Accused Products, in disclosures made to the California Energy Commission. *See* **Exhibits 32**, **33**.

J. Suzhou Real Power Electric Appliance Co., Ltd.

3.29 On information and belief, Suzhou Real Power Electric Appliance Co., Ltd. is a Chinese corporation, having a principal place of business located at No 9 Shi Yang Rd, Suzhou New District, Suzhou 215151, People's Republic of China.

3.30 On information and belief, Suzhou Real Power Electric Appliance Co., Ltd. manufactures the Hoover Accused Products and/or components thereof in the People's Republic of China or another country other than the United States, and then imports them into the United States, sells them for importation into the United States, and/or sells them after importation into the United States.

3.31 For example, Suzhou Real Power Electric Appliance Co., Ltd. is identified as a manufacturer of Hoover consumer product model numbers BH 70700 and BH70800 robotic vacuum cleaners, both Hoover Accused Products, in disclosures made to the California Energy Commission. *See* **Exhibits 34**, **35**. Further, for example, U.S. Customs records show Suzhou Real Power Electric Appliance Co., Ltd. as the shipper to Hoover and/or Royal Appliance Manufacturing Co. Inc. of "Vacuum Cleaner Spare Parts – Robots" and similar items. *See*

Exhibit 36.[2] Additionally, a Statement of Compliance filed with the Federal Communications Commission by Hoover, Inc. for the BH70700 robotic vacuum cleaner identifies Suzhou Real Power Electric Appliance Co., Ltd. as "Manufacturer." *See* **Exhibit 37**.

K. Shenzhen Silver Star Intelligent Technology Co., Ltd.

3.32 On information and belief, Shenzhen Silver Star Intelligent Technology Co., Ltd. is a Chinese corporation, having a principal place of business located at Building D, Huiqing Technology Park, DAFU Industrial Area, Guanguang Road, Guanlan Town, Shenzhen, People's Republic of China.

3.33 On information and belief, Shenzhen Silver Star Intelligent Technology Co., Ltd. manufactures Hoover Accused Products, Bobsweep Accused Products, and/or Black & Decker Accused Products in the People's Republic of China or another country other than the United States, and then imports them into the United States, sells them for importation into the United States, and/or sells them after importation into the United States.

3.34 For example, Shenzhen Silver Star Intelligent Technology Co., Ltd. is identified as a manufacturer of Hoover consumer product model number BH 71000 robotic vacuum cleaners, a Hoover Accused Product, in a disclosure made to the California Energy Commission. *See* **Exhibit 38**.

3.35 Further, for example, U.S. Customs records show Shenzhen Silver Star Intelligent Technology Co., Ltd. as the shipper to Bobsweep USA of containers of Bobsweep bObi Pet

[2] Exhibit 36 also identifies The Hoover Co. I, LP as a consignee of robotic vacuum cleaner spare parts manufactured by Suzhou Real Power Electric Appliance Co., Ltd. Because limited corporate information is available for The Hoover Co. I, LP, including its corporate status relative to other Hoover entities and its absence from Hoover's current Dun & Bradstreet corporate family tree, The Hoover Co. I, LP has not been identified as a Proposed Respondent in this Complaint. However, Complainant reserves the right to supplement its allegations should discovery indicate that The Hoover Co. I, LP should be a Proposed Respondent.

devices as well as "Bobsweep PetHair Plus Robotic Vacuums," which are Bobsweep Accused Products. *See* **Exhibit 19**.

3.36 Further, for example, Shenzhen Silver Star Intelligent Technology Co., Ltd. is identified as a manufacturer of Black & Decker consumer product model number BDH5000 robotic vacuum cleaners, a Black & Decker Accused Product, in a disclosure made to the California Energy Commission. *See* **Exhibit 39**. Shenzhen Silver Star Intelligent Technology Co., Ltd. is also identified as a manufacturer of the Black & Decker Lithium Robotic Vacuum with LED and SMARTECH™ (Model HRV425BL), PET Lithium Robotic Vacuum with LED and SMARTECH™ (Model HRV425BLP), and PET Lithium Robotic Vacuum with SMARTECH™ (Model HRV420BP07) robotic vacuum cleaners, Black & Decker Accused Products, in disclosures made to the California Energy Commission. *See* **Exhibits 119–20**.

IV. THE TECHNOLOGY AND PRODUCTS AT ISSUE

4.1 The technologies at issue relate generally to various aspects of robotic vacuum cleaning devices. As explained, *infra*, one or more of the Asserted Patents are directed to various aspects and features of controlling the movement of a robotic vacuum cleaning device, including operational modes to effectively cover a given area, heading and speed settings, and obstacle detection and response. Further, one or more of the Asserted Patents are directed to various components and features of a robotic vacuum cleaning device, such as its sensors, brushes, wheel drives, receptacles, and control circuits. Finally, one or more of the Asserted Patents are directed to messaging and control aspects of a robotic vacuum cleaning device, including scheduling, status alerts, and error conditions.

4.2 Pursuant to 19 C.F.R. § 210.12(a)(12), the accused products are certain robotic vacuum cleaning devices and components thereof such as spare parts, including but not limited

to the Bissell Accused Products, Hoover Accused Products, Bobsweep Accused Products, Black & Decker Accused Products, and iLife Accused Products (collectively, the "Accused Products") that, without permission, implement iRobot's patented technologies as described and claimed in the Asserted Patents.

4.3 A robotic vacuum cleaner is an autonomous device that is operable without human intervention to clean designated areas. One of the primary requirements for an autonomous cleaning device is a self-contained power supply. Such a device has intelligent programming and a limited vacuum cleaning system.

4.4 Many of today's robotic vacuum cleaners are characterized by a power subsystem for providing the energy to power the robot, a motive subsystem to propel the robot for cleaning operations, a control module to control the robot to effect cleaning operations, and a cleaning head subsystem. Robotic vacuum cleaners also include a brush assembly powered by the motive subsystem to sweep up particulates during cleaning operations and a vacuum assembly to ingest the particulates.

4.5 Examples of the Bissell Accused Products include, but are not limited to, the SmartClean Model 1605C and Model 1974 robot vacuum cleaners. Further, on information and belief, upcoming Bissell robotic vacuums, including at least the SmartClean Connected Robotic Vacuum Model 2147 practice one or more of the Asserted Claims.

4.6 Examples of the Hoover Accused Products include, but are not limited to, the Quest 700 (Model BH70700), Quest 800 (Model BH70800), and Quest 1000 (Model BH71000) robot vacuum cleaners.

4.7 Examples of the Bobsweep Accused Products include, but are not limited to, Bob PetHair Plus, bObi Pet, bObi Classic, Bob PetHair, Bob Standard, and Junior robot vacuum cleaners.

4.8 Examples of the Black & Decker Accused Products include, but are not limited to, the BDH5000, Lithium Robotic Vacuum with LED and SMARTECH (Model HRV425BL), the PET Lithium Robotic Vacuum with LED and SMARTECH (Model HRV425BLP), and the PET Lithium Robotic Vacuum with SMARTECH (Model HRV420BP07) robotic vacuum cleaners.

4.9 Examples of the iLife Accused Products include, but are not limited to, the A6, A4, A4s, V7, V7s, V5s, V5s Pro, V3s, and V3s Pro robotic vacuum cleaners.

4.10 On information and belief, the Accused Products are sold for importation into the United States, imported into the United States, and/or sold within the United States after importation by or on behalf of the Proposed Respondents. Discovery may disclose the importation of additional infringing articles.

V. THE ASSERTED PATENTS

A. U.S. Patent No. 6,809,490

1. Identification of the Patent and Ownership by iRobot

5.1 U.S. Patent No. 6,809,490 ("the '490 Patent") is entitled "Method and System for Multi-Mode Coverage for an Autonomous Robot" and was duly and legally issued on October 26, 2004. *See* **Exhibit 1**. The '490 Patent issued from U.S. Patent Application Serial No. 10/167,851, filed June 12, 2002. *Id.* The inventors of the '490 Patent are Joseph L. Jones and Phillip R. Mass. *Id.*

5.2 The '490 Patent has seven independent claims and 35 dependent claims. *Id.* The '490 Patent is valid, enforceable, and currently in full force and effect.

5.3 iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the '490 Patent. Prior to issuance, the '490 Patent inventors assigned all right, title and interest in U.S. Patent Application Serial No. 10/167,851. These assignments are recorded at the United States Patent and Trademark Office at Reel/Frame 014249/705 and 014249/711. *See* **Exhibit 7**.

5.4 This Complaint is accompanied by Appendices A and G containing: A) a certified copy and three additional copies of the prosecution history of the '490 Patent; and B) four copies of examiner-cited references mentioned in that prosecution history.

2. Non-Technical Description of the Patented Invention[3]

5.5 The '490 Patent relates to a control system for a mobile robot to effectively cover a given area by operating in a plurality of modes. In an exemplary embodiment, an autonomous mobile robot can operate in an obstacle following mode, a random bounce mode, or in a spot coverage mode. Additionally, the '490 Patent describes a behavior based architecture for the control system to ensure full coverage.

3. Foreign Counterparts to the '490 Patent

5.6 The following foreign patent(s) and/or patent application(s) are counterparts to the '490 Patent:

Patent/Application No.	Status
EP Patent 1395888	Issued May 18, 2011
CA Patent 2,416,621	Issued September 12, 2006

[3] The non-technical descriptions of the Asserted Patents herein are presented to give a general background of the inventions. Such statements are not intended to be used, nor should be used, for purposes of patent claim interpretation. Complainant presents these statements subject to, and without waiver of, its right to argue that claim terms should be construed in a particular way, as contemplated by claim interpretation jurisprudence and the relevant evidence.

JP 2003-504174	Abandoned
SG Patent 119394	Issued December 28, 2008
HK Reg. 1061013	Issued November 25, 2011

No other foreign patents or patent applications corresponding to the ’490 Patent have been filed, abandoned, withdrawn, or rejected.

4. Licenses

5.7 As required under Commission Rule 210.12(a)(9)(iii), a list of licensed entities is attached to this Complaint as **Confidential Exhibit 40**. There are no other current known licenses to the ’490 patent.

B. U.S. Patent No. 7,155,308

1. Identification of the Patent and Ownership by iRobot

5.8 U.S. Patent No. 7,155,308 (“the ’308 Patent”) is entitled “Robot Obstacle Detection System” and was duly and legally issued on December 26, 2006. *See* **Exhibit 2**. The ’308 Patent issued from U.S. Patent Application Serial No. 10/453,202 filed June 3, 2003. *Id.* The inventor of the ’308 Patent is Joseph L. Jones. *Id.*

5.9 The ’308 Patent has two independent claims and 32 dependent claims. *Id.* The ’308 Patent is valid, enforceable, and currently in full force and effect.

5.10 iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the ’308 Patent. Prior to issuance, the ’308 Patent inventor assigned all right, title and interest in U.S. Patent Application Serial No. 10/453,202. The assignment of the ’308 Patent to iRobot is recorded at the United States Patent and Trademark Office at Reel/Frame 014150/455. *See* **Exhibit 8**.

5.11 This Complaint is accompanied by Appendices B and H containing: C) a certified copy and three additional copies of the prosecution history of the '308 Patent; and D) four copies of examiner-cited references mentioned in that prosecution history.

2. Non-Technical Description of the Patented Invention

5.12 The '308 Patent relates to a robot obstacle detection system that includes a robot housing that navigates with respect to a surface, and a sensor subsystem. The sensor subsystem includes an optical emitter which emits a directed beam having a defined field of emission and a photon detector having a defined field of view which intersects the field of emission of the emitter at a region. A circuit in communication with a detector redirects the robot when the surface does not occupy the region to avoid obstacles. A similar system is employed to detect walls.

3. Foreign Counterparts to the '308 Patent

5.13 There are no foreign patents or patent applications corresponding to the '308 Patent that have been filed, abandoned, withdrawn, or rejected.

4. Licenses

5.14 As required under Commission Rule 210.12(a)(9)(iii), a list of licensed entities is attached to this Complaint as **Confidential Exhibit 40**. There are no other current known licenses to the '308 patent.

C. U.S. Patent No. 8,474,090

1. Identification of the Patent and Ownership by iRobot

5.15 U.S. Patent No. 8,474,090 ("the '090 Patent") is entitled "Autonomous Floor-Cleaning Robot" and duly and legally issued on July 2, 2013. *See* Exhibit 3. The '090 Patent issued from U.S. Patent Application Serial No. 12/201,554, filed on August 29, 2008. *Id.* The

inventors of the ’090 Patent are Joseph L. Jones, Newton E. Mack, David M. Nugent, and Paul E. Sandin. *Id.*

5.16 The ’090 Patent has three independent claims and 17 dependent claims. *Id.* The ’090 Patent is valid, enforceable, and currently in full force and effect.

5.17 iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the ’090 Patent. Prior to issuance, the ’090 Patent inventors assigned all right, title and interest in U.S. Patent Application Serial No. 12/201,554. The assignment of the ’090 Patent to iRobot is recorded at the United States Patent and Trademark Office at Reel/Frame 028625/471. *See* **Exhibit 9**.

5.18 Pursuant to Rule 210.12(c) of the Commission’s Rules of Practice and Procedure, this Complaint is accompanied by Appendices C and I containing: E) a certified copy and three additional copies of the prosecution history of the ’090 Patent; and F) four copies of examiner-cited references mentioned in that prosecution history.

2. Non-Technical Description of the Patented Invention

5.19 The ’090 Patent relates to a floor cleaning robot that includes 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.

3. Foreign Counterparts to the ’090 Patent

5.20 The following foreign patent(s) and/or patent application(s) are counterparts to the '553 Patent:

Patent/Application No.	Status
JP Patent 5767685	Issued February 20, 2014

No other foreign patents or patent applications corresponding to the '090 Patent have been filed, abandoned, withdrawn, or rejected.

4. Licenses

5.21 There are no licensed entities to the '090 patent.

D. U.S. Patent No. 8,600,553

1. Identification of the Patent and Ownership by iRobot

5.22 U.S. Patent No. 8,600,553 ("the '553 Patent") is entitled "Coverage Robot Mobility" and duly and legally issued on December 3, 2013. *See* **Exhibit 4**. The '553 Patent issued from U.S. Patent Application Serial No. 11/758,289, filed on June 5, 2007. *Id.* The inventors of the '553 Patent are Selma Svendsen, Daniel N. Ozick, Christopher M. Casey, Deepak Ramesh Kapoor, Tony L. Campbell, Chikyung Won, Christopher John Morse, and Scott Thomas Burnett. *Id.*

5.23 The '553 Patent has three independent claims and 22 dependent claims. *Id.* The '553 Patent is valid, enforceable, and currently in full force and effect.

5.24 iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the '553 Patent. Prior to issuance, the '553 Patent inventors assigned all right, title and interest in U.S. Patent Application Serial No. 11/758,289. The assignment of the '553 Patent to iRobot is recorded at the United States Patent and Trademark Office at Reel/Frame 020893/176. *See* **Exhibit 10**.

5.25 This Complaint is accompanied by Appendices D and J containing: G) a certified copy and three additional copies of the prosecution history of the '553 Patent; and H) four copies of examiner-cited references mentioned in that prosecution history.

2. Non-Technical Description of the Patented Invention

5.26 The '553 Patent relates to an autonomous coverage robot that includes a drive system, a bump sensor, and a proximity sensor. The drive system is configured to maneuver the robot according to a heading and a speed setting. The bump sensor is responsive to a collision of the robot with an obstacle in a forward direction. A method of navigating an autonomous coverage robot with respect to an object on a floor includes the robot autonomously traversing the floor in a cleaning mode at a full cleaning speed. Upon sensing a proximity of the object forward of the robot, the robot reduces the cleaning speed to a reduced cleaning speed while continuing towards the object until the robot detects a contact with the object. Upon sensing contact with the object, the robot turns with respect to the object and cleans next to the object.

3. Foreign Counterparts to the '553 Patent

5.27 The following foreign patent(s) and/or patent application(s) are counterparts to the '553 Patent:

Patent/Application No.	Status
EP Patent 2120122	Issued November 18, 2009
JP 2010-282185	Abandoned
KR Patent 1300492	Issued September 2, 2013

No other foreign patents or patent applications corresponding to the '553 Patent have been filed, abandoned, withdrawn, or rejected.

4. Licenses

5.28 There are no licensed entities to the ’533 patent.

E. U.S. Patent No. 9,038,233

1. Identification of the Patent and Ownership by iRobot

5.29 U.S. Patent No. 9,038,233 (“the ’233 Patent”) is entitled “Autonomous Floor-Cleaning Robot” and duly and legally issued on May 26, 2015. *See* **Exhibit 5**. The ’233 Patent issued from U.S. Patent Application Serial No. 13/714,546, filed on December 14, 2012. *Id.* The inventors of the ’233 Patent are Joseph L. Jones, Newton E. Mack, David M. Nugent, and Paul E. Sandin. *Id.*

5.30 The ’233 Patent has two independent claims and 19 dependent claims. *Id.* The ’233 Patent is valid, enforceable, and currently in full force and effect.

5.31 iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the ’233 Patent. Prior to issuance, the ’233 Patent inventors assigned all right, title and interest in U.S. Patent Application Serial No. 13/714,546. The assignment of the ’233 Patent to iRobot is recorded at the United States Patent and Trademark Office at Reel/Frame 030046/817. *See* **Exhibit 11**.

5.32 This Complaint is accompanied by Appendices E and K containing: I) a certified copy and three additional copies of the prosecution history of the ’233 Patent; and J) four copies of examiner-cited references mentioned in that prosecution history.

2. Non-Technical Description of the Patented Invention

5.33 The ’233 Patent relates to an autonomous floor-cleaning robot that includes a cleaning head subsystem with a dual-stage brush assembly having counter-rotating, asymmetric brushes. The autonomous floor-cleaning robot further includes a side brush assembly for directing particulates outside the envelope of the robot into the cleaning head subsystem.

3. Foreign Counterparts to the ’233 Patent

5.34 The following foreign patent(s) and/or patent application(s) are counterparts to the '233 Patent:

Patent/Application No.	Status
JP Patent 5809227	Issued November 10, 2015

No other foreign patents or patent applications corresponding to the '233 Patent have been filed, abandoned, withdrawn, or rejected.

4. Licenses

5.35 There are no licensed entities to the '233 patent.

F. U.S. Patent No. 9,486,924

1. Identification of the Patent and Ownership by iRobot

5.36 U.S. Patent No. 9,486,924 ("the '924 Patent") is entitled "Remote Control Scheduler and Method for Autonomous Robotic Device" and duly and legally issued on November 8, 2016. *See* **Exhibit 6**. The '924 Patent issued from U.S. Patent Application Serial No. 14/670,572, filed on March 27, 2015. *Id.* The inventors of the '924 Patent are Zivthan A. Dubrovsky, Gregg W. Landry, Michael J. Halloran, and James Lynch. *Id.*

5.37 The '924 Patent has two independent claims and 17 dependent claims. *Id.* The '924 Patent is valid, enforceable, and currently in full force and effect.

5.38 iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the '924 Patent. Prior to issuance, the '924 Patent inventors assigned all right, title and interest in U.S. Patent Application Serial No. 14/670,572. The assignment of the '924 Patent to iRobot is recorded at the United States Patent and Trademark Office at Reel/Frame 035655/501. *See* **Exhibit 12**.

5.39 This Complaint is accompanied by Appendices F and L containing: K) a certified copy and three additional copies of the prosecution history of the ’924 Patent; and L) four copies of examiner-cited references mentioned in that prosecution history.

2. Non-Technical Description of the Patented Invention

5.40 The ’924 Patent relates to a method of scheduling a robotic device that enables the device to run autonomously based on previously loaded scheduling information. The method consists of a communication device, such as a hand-held remote device, that can directly control the robotic device, or load scheduling information into the robotic device such that it will carry out a defined task at the desired time without the need for further external control. The communication device can also be configured to load a scheduling application program into an existing robotic device, such that the robotic device can receive and implement scheduling information from a user.

3. Foreign Counterparts to the ’924 Patent

5.41 There are no foreign patents or patent applications corresponding to the ’924 Patent that have been filed, abandoned, withdrawn, or rejected.

4. Licenses

5.42 There are no licensed entities to the ’924 patent.

VI. SPECIFIC INSTANCES OF UNFAIR IMPORTATION AND SALE

6.1 On information and belief, Proposed Respondents, or others on their behalf, manufacture the Accused Products in China or another country other than the United States and then import them into the United States, sell them for importation into the United States, and/or sell them after importation into the United States.

6.2 On March 7, 2017, a Bissell SmartClean Model 1974 robotic vacuum cleaning device, a Bissell Accused Product, was purchased in the United States at a Target store located at

101 Commerce Way, Woburn, MA 01801. The purchased product specifies that the robotic vacuum cleaning device was "Made in China." *See* **Exhibit 41**.

6.3 As discussed in Section III.I supra, on information and belief, Matsutek Enterprises Co., Ltd. is involved with the manufacture, importation, sale for importation, and/or sale after importation of the Bissell Accused Products. *See* **Exhibits 29-33**. For example, certain of the Bissell Accused Products include circuit boards imprinted with the Matsutek Enterprises Co., Ltd. name. *See* **Exhibit 29**. Further, because U.S. Customs records show Matsutek Enterprises Co., Ltd. as the supplier and/or shipper of "1605 Bissell Robot Vacuum," a Bissell Accused Product, to Bissell Homecare, Inc., Complainant hereby asserts that Matsutek at least imports and/or sells for importation one or more of the accused products. *See* **Exhibits 30, 31**. Additionally, Matsutek Enterprises Co., Ltd. is identified as a manufacturer of Bissell consumer product model numbers 1605 and 1974 robotic vacuum cleaners, both Bissell Accused Products, in disclosures made to the California Energy Commission. *See* **Exhibits 32, 33**. These disclosures indicate that the battery chargers are not provided separately from the robotic vacuum cleaners ("A la carte charger – False"), which is consistent with Complainant's understanding that the manufacturer is the manufacturer of the robotic vacuum cleaner in such disclosures. Moreover, the power measurements required by and disclosed to the California Energy Commission could not be obtained and would not be applicable outside of the combination of a robot, charger, and battery. Thus, these disclosures are further evidence that Matsutek has manufactured accused products and thus sold them for importation and/or imported them into the United States. Claim charts submitted with this Complaint show how the Bissell Accused Products infringe at least one claim of five of the patents at issue. *See* **Exhibits 55-59**.

6.4 On March 10, 2017, a Hoover Quest 800 (Model BH70800) robotic vacuum cleaning device, a Hoover Accused Product, was purchased in the United States online at www.bestbuy.com for pickup at a Best Buy store located at 86 Middlesex Turnpike, Burlington, MA 01803 on March 22, 2017. The purchased product specifies that the robotic vacuum cleaning device was "Made in China." *See* **Exhibit 42**.

6.5 On March 10, 2017, a Hoover Quest 1000 (Model BH71000) robotic vacuum cleaning device, a Hoover Accused Product, was purchased in the United States online at www.target.com. The purchased product was shipped to the iRobot facility in Bedford, Massachusetts. The purchased product specifies that the robotic vacuum cleaning device was "Made in China." *See* **Exhibit 43**.

6.6 As discussed in Section III.C supra, on information and belief, Royal Appliance Mfg. Co. Inc. d/b/a TTI Floor Care North America, Inc., or others on its behalf, is involved with the importation, sale for importation, and/or sale after importation of the Hoover Accused Products. *See* **Exhibits 15-17**. Further, as discussed in Section III.J supra, on information and belief, Suzhou Real Power Electric Appliance Co., Ltd. is involved with the manufacture, importation, sale for importation, and/or sale after importation of Hoover Accused Products and/or components thereof. *See* **Exhibits 34- 37**. For example, with respect to Hoover consumer product model number BH70800 (marketed as the Hoover Quest 800), Suzhou Real Power Electric Appliance Co., Ltd. is identified as a manufacturer of this product in a disclosure made to the California Energy Commission. *See* **Exhibit 35**. This disclosure indicates that the battery chargers are not provided separately from the robotic vacuum cleaners ("A la carte charger – False"), which is consistent with Complainant's understanding that the manufacturer is the manufacturer of the robotic vacuum cleaner in such disclosures. Moreover, the power

measurements required by and disclosed to the California Energy Commission could not be obtained and would not be applicable outside of the combination of a robot, charger, and battery. Thus, this disclosure is further evidence that Suzhou Real Power Appliance Co., Ltd. has manufactured accused products and thus sold them for importation and/or imported them into the United States. Further, for example, U.S. Customs records show Suzhou Real Power Electric Appliance Co., Ltd. as the shipper to Hoover and/or Royal Appliance Manufacturing Co. Inc. of "Vacuum Cleaner Spare Parts – Robots" and similar items. *See* **Exhibit 36**. Additionally, a Statement of Compliance filed with the Federal Communications Commission by Hoover, Inc. for the BH70700 robotic vacuum cleaner identifies Suzhou Real Power Electric Appliance Co., Ltd. as "Manufacturer." *See* **Exhibit 37**. Claim charts submitted with this Complaint show how the Hoover Quest 800 infringes at least one claim of five of the patents at issue. *See* **Exhibits 60-64**. Further, as discussed in Section III.K supra, on information and belief, Shenzhen Silver Star Intelligent Technology Co., Ltd. is involved with the manufacture, importation, sale for importation, and/or sale after importation of Hoover Accused Products. *See* **Exhibit 38**. With respect to Hoover consumer product model number BH71000 (known as the Hoover Quest 1000), Shenzhen Silver Star Intelligent Technology Co., Ltd. is identified as a manufacturer of this product in a disclosure made to the California Energy Commission. *See* **Exhibit 38**. This disclosure indicates that the battery chargers are not provided separately from the robotic vacuum cleaners ("A la carte charger – False"), which is consistent with Complainant's understanding that the manufacturer is the manufacturer of the robotic vacuum cleaner in such disclosures. Moreover, the power measurements required by and disclosed to the California Energy Commission could not be obtained and would not be applicable outside of the combination of a robot, charger, and battery. Thus, this disclosure is further evidence that

Shenzhen Silver Star Intelligent Technology Co., Ltd. has manufactured accused products and thus sold them for importation and/or imported them into the United States. Claim charts submitted with this Complaint show how the Hoover Quest 1000 infringes at least one claim of five of the patents at issue. *See* **Exhibits 60-64**.

6.7 On March 7, 2017, a bObsweep PetHair Robotic Vacuum Cleaner and Mop, a Bobsweep Accused Product, was purchased in the United States online at www.bobsweep.com. The purchased product was shipped to the iRobot facility in Bedford, Massachusetts. The purchased product specifies that the robotic vacuum cleaning device was "Manufactured in China." *See* **Exhibit 44**.

6.8 On March 22, 2017, a bObsweep Classic Robotic Vacuum Cleaner, a Bobsweep Accused Product, was purchased in the United States online at www.bobsweep.com. The purchased product was shipped to the iRobot facility in Bedford, Massachusetts. The purchased product specifies that the robotic vacuum cleaning device was "manufactured in China." *See* **Exhibit 45**.

6.9 As discussed in Section III.E supra, on information and belief, Bobsweep USA, or others on its behalf, is involved with the importation, sale for importation, and/or sale after importation of the Bobsweep Accused Products. *See* **Exhibit 19.** Further, as discussed in Section III.K supra, on information and belief, Shenzhen Silver Star Intelligent Technology Co., Ltd. is involved with the manufacture, importation, sale for importation, and/or sale after importation of the Bobsweep Accused Products. *See id*. With respect to the Bobsweep Accused Products, because Shenzhen Silver Star Intelligent Technology Co., Ltd. is identified as the shipper to Bobsweep USA of Bobsweet bObi Pet Devices as well as "Bobsweep PetHair Plus Robotic Vacuums," Complainant hereby asserts that Shenzhen Silver Star Intelligent Technology Co.,

Ltd. at least sells accused products for importation and/or imports accused products into the United States. *See* **Exhibit 19** Claim charts submitted with this Complaint show how the Bobsweep Accused Products infringe at least one claim of four of the patents at issue. *See* **Exhibits 70-76**.

6.10 On February 24, 2017, a Black & Decker BDH5000 robotic vacuum cleaning device, a Black & Decker Accused Product, was purchased in the United States at a Walmart store located at 777 Brockton Ave, Abington, MA 02351. The purchased product specifies that the robotic vacuum cleaning device was "Made in China." *See* **Exhibit 46**. On May 25, 2017, a PET Lithium Robotic Vacuum with SMARTECH (Model HRV420BP07) robotic vacuum cleaning device, a Black & Decker Accused Product, was purchased in the United States online at www.amazon.com. The purchased product was shipped to counsel for iRobot in Wilmington, Delaware on May 27, 2017. The purchased product specifies that the robotic vacuum cleaning device was "Made in China." *See* **Exhibit 125**.

6.11 As discussed in Section III.G supra, on information and belief, Black & Decker (U.S.) Inc., or others on its behalf, is involved with the importation, sale for importation, and/or sale after importation of the Black & Decker Accused Products. *See* **Exhibit 24.** Further, as discussed in Section III.K supra, on information and belief, Shenzhen Silver Star Intelligent Technology Co., Ltd. is involved with the manufacture, importation, sale for importation, and/or sale after importation of the Black & Decker Accused Products. *See* **Exhibits 39; 119-20**. With respect to the Black & Decker Accused Products, Shenzhen Silver Star Intelligent Technology Co., Ltd. is identified as a manufacturer of Black & Decker consumer product model number BDH5000 and HRV420B robotic vacuum cleaners, Black & Decker Accused Products, in disclosures made to the California Energy Commission. These disclosures indicate that the

battery chargers are not provided separately from the robotic vacuum cleaners ("A la carte charger – False"), which is consistent with Complainant's understanding that the manufacturer is the manufacturer of the robotic vacuum cleaner in such disclosures. Moreover, the power measurements required by and disclosed to the California Energy Commission could not be obtained and would not be applicable outside of the combination of a robot, charger, and battery. Thus, these disclosures are further evidence that Shenzhen Silver Star Intelligent Technology Co., Ltd. has manufactured accused products and thus sold them for importation and/or imported them into the United States. Claim charts submitted with this Complaint show how the Black & Decker Accused products infringe at least one claim of six of the patents at issue. *See* **Exhibits 77-79; 126–31**.

6.12 On March 7, 2017, an iLife V5s robotic vacuum cleaning device, an iLife Accused Product, was purchased in the United States online at www.amazon.com (following redirection from www.iliferobot.com). The purchased product was shipped to the iRobot facility in Bedford, Massachusetts. The purchased product specifies that the robotic vacuum cleaning device was "Made in China." *See* **Exhibit 47**.

6.13 On March 7, 2017, an iLife A6 robotic vacuum cleaning device, an iLife Accused Product, was purchased in the United States online at www.amazon.com (following redirection from www.iliferobot.com). The purchased product was shipped to the iRobot facility in Bedford, Massachusetts. The purchased product specifies that the robotic vacuum cleaning device was "Made in China." *See* **Exhibit 48**.

6.14 On March 8, 2017, an iLife V7 robotic vacuum cleaning device, an iLife Accused Product, was purchased in the United States online at www.gearbest.com. The purchased

product was shipped to the iRobot facility in Bedford, Massachusetts. The purchased product specifies that the robotic vacuum cleaning device was "Made in China." *See* **Exhibit 49**.

6.15 Discovery is expected to reveal additional specific acts of Proposed Respondents' importation, sale for importation, and/or sale after importation of the Accused Products.

VII. UNFAIR ACTS OF PROPOSED RESPONDENTS

A. Infringement of the Asserted Patents

7.1 Upon information and belief, the Proposed Respondents have engaged in unfair trade practices, including the sale for importation, importation, and sale after importation into the United States of certain robotic vacuum cleaning devices and components thereof such as spare parts that infringe the asserted apparatus and method claims of the Asserted Patents. Upon information and belief, the Accused Products directly infringe, contributorily infringe, and/or induce the infringement of at least the asserted claims as specifically set forth in the table below.[4] On information and belief, the Proposed Respondents manufacture, assemble, package and test, and/or purchase the Accused Products outside the United States, specifically, at least in Canada, the People's Republic of China, and/or Taiwan; the Proposed Respondents then sell for importation, import into the United States, and/or sell within the United States after importation, the Accused Products.

7.2 Upon information and belief, the Proposed Respondents' infringing activities relate to the Accused Products as follows:

Table 7.2

Exemplary Accused Products	**Related Proposed Respondents**

[4] Discovery may reveal that Proposed Respondents infringe additional claims of the Asserted Patents. Moreover, on information and belief, the Upcoming Bissell Accused Product will be shown to directly infringe, contributorily infringe, and/or induce the infringement of one or more claims of the Asserted Patents. Complainant reserves all rights to supplement its allegations with respect to the Upcoming Bissell Accused Product.

SmartClean Model 1605C and Model 1974 (each included in "Bissell Accused Products")	Bissell Homecare, Inc.; Matsutek Enterprises Co., Ltd.
Quest 700 (Model BH70700), Quest 800 (Model BH70800), and Quest 1000 (Model BH71000) (each included in "Hoover Accused Products")	Hoover Inc.; Royal Appliance Manufacturing Co. Inc. d/b/a TTI Floor Care North America, Inc.; Suzhou Real Power Electric Appliance Co., Ltd.; Shenzhen Silver Star Intelligent Technology Co., Ltd.
Bob PetHair Plus, bObi Pet, bObi Classic, Bob PetHair, Bob Standard, and Junior (each included in "Bobsweep Accused Products")	Bobsweep, Inc.; Bobsweep USA; Shenzhen Silver Star Intelligent Technology Co., Ltd.
BDH5000, Lithium Robotic Vacuum with LED and SMARTECH (Model HRV425BL), PET Lithium Robotic Vacuum with LED and SMARTECH (Model HRV425BLP), and PET Lithium Robotic Vacuum with SMARTECH (Model HRV420BP07) (each included in "Black & Decker Accused Products")	The Black & Decker Corporation; Black & Decker (U.S.) Inc.; Shenzhen Silver Star Intelligent Technology Co., Ltd.
A6, A4, A4s, V7, V7s, V5s, V5s Pro, V3s, and V3s Pro (each included in "iLife Accused Products")	Shenzhen ZhiYi Technology Co., Ltd. d/b/a iLife

7.3 The Asserted Patents and corresponding asserted claims are listed below (independent claims in **bold**):

Table 7.3

U.S. Patent No.	Infringed Claims[5]	Accused Products
6,809,490	**1**, 2, 3, 7, 12, **42**	Bissell Accused Products
	1, 2, 3, 7, 12, **42**	Hoover Accused Products
	1, 2, 3, 7, 12, **42**	Bobsweep Accused Products
	1, 7, 12, **42**	Black & Decker Accused Products
	1, 2, 3, 7, 12, **42**	iLife Accused Products
7,155,308	**1**, 2, 3, 7, 11, 17, **19**, 20, 28, 34	Bissell Accused Products

[5] One or more of the identified Accused Products infringes each of the identified claims as detailed in the infringement claim charts attached to this Complaint.

	1, 2, 3, 7, 11, 12, 17, **19**, 20, 28, 34	Hoover Accused Products
	1, 2, 3, 7, 11, 12, 17, **19**, 20, 28, 34	Bobsweep Accused Products
	1, 2, 3, 7, 11, 12, 17, **19**, 20, 28, 34	Black & Decker Accused Products
	1, 2, 3, 7, 11, 12, 17, **19**, 20, 28, 34	iLife Accused Products
8,474,090	**1**, 2, 3, 7, **10**, 14, 15, **17**, 18, 19	Bissell Accused Products
	1, 2, 3, 7, 8, **10**, 11, 14, 15, **17**, 18, 19	Hoover Accused Products
	1, 2, 3, 7, 8, **10**, 11, 14, 15, **17**, 18, 19	Bobsweep Accused Products
	1, 2, 3, 7, 8, **10**, 11, 14, 15, **17**, 18, 19	Black & Decker Accused Products
	1, 2, 3, 7, **10**, 14, 15, **17**, 18, 19	iLife Accused Products
8,600,553	**1**, 4, 8, **11**, 21, 22, **25**	Bissell Accused Products
	1, 2, 4, 8, **11**, 12, 21, 22, **25**	Hoover Accused Products
	1, 2, 4, 8, **11**, 12, 21, 22, **25**	Black & Decker Accused Products
	1, 2, 4, 8, **11**, 12, 21, 22, **25**	iLife Accused Products
9,038,233	**1**, 10, 11, 14, **15**, 16	Bissell Accused Products
	1, 10, 11, 14, **15**, 16	Hoover Accused Products
	1, 10, 11, 14, **15**, 16	Bobsweep Accused Products
	1, 10, 11, **15**, 16	Black & Decker Accused Products
	1, 10, 11, 14, **15**, 16	iLife Accused Products
9,486,924	**1**, 2, 8, 9, **12**, 13	Hoover Accused Products
	1, 2, 8, 9, **12**	Black & Decker Accused Products
	1, 2, 8, 9, **12**, 13	iLife Accused Products

7.4 Upon information and belief, the Proposed Respondents directly infringe the asserted claims at least through their sale for importation, importation, and sale after importation into the United States of the Accused Products, and indirectly infringe any asserted claims directed to methods of operating the Accused Products at least by contributing to and/or inducing others to practice the claimed methods in the United States.

7.5 The Proposed Respondents have induced, and continue to induce, direct infringement of the Asserted Patents at least by their customers and/or end users with the specific intent that such customers' and/or end users' acts infringe the Asserted Patents. On information and belief, the Proposed Respondents actively induce others to infringe at least the asserted method claims through their sale of the Accused Products to customers in the United States. Upon information and belief, the Proposed Respondents create and distribute promotional and product literature for the Accused Products that is designed to instruct, encourage, enable, and facilitate the use of the Accused Products in a manner that directly infringes the Asserted Patents. *See, e.g.*, **Exhibits 50**; **51**; **52**; **53**; **54; 123**.

7.6 The Proposed Respondents induce such infringing acts and know or should have known that their actions would induce direct infringement of the Asserted Patents. The Proposed Respondents had actual notice of the Asserted Patents at least upon the filing or service of the original Complaint. The Proposed Respondents' knowledge of their infringement of the Asserted Patents, and their continued sale, offer for sale, importation, and/or sale for importation of the Accused Products constitutes infringement as well as active inducement of others to infringe the Asserted Patents.

7.7 To the extent any Proposed Respondents contend that they do not sell for importation, import, or sell in the United States after importation products that include all of the limitations of the asserted apparatus claims, such Proposed Respondents contributorily infringe certain of the asserted claims through their sale and offers to sell within the United States and/or importation into the United States of components such as spare parts of the Accused Products, constituting a material part of the asserted claims, knowing the same to be especially made or especially adapted for use in an infringement of the Asserted Patents, and not a staple article or

commodity of commerce suitable for substantial non-infringing use. Due to the specific designs of the Accused Products, components thereof such as spare parts do not have any substantial non-infringing uses.

B. Application of Asserted Independent Claims

7.8 The Bissell Accused Products that are sold for importation, imported, and/or sold after importation into the United States by the Proposed Respondents set forth in Table 7.2 infringe, individually as an apparatus and/or when used to practice a method, at least the asserted claims set forth in Table 7.3, either literally—directly or indirectly—or under the doctrine of equivalents. For example, attached to this Complaint are charts that apply, to the Bissell SmartClean Model 1974, asserted independent claims 1 and 42 of the '490 Patent, asserted independent claims 1 and 19 of the'308 Patent, asserted independent claims 1, 10, and 17 of the '090 Patent, asserted independent claims 1, 11, and 25 of the '553 Patent, and asserted independent claims 1 and 15 of the '233 Patent. *See* **Exhibits 55**, **56**, **57**, **58**, and **59**, respectively. Discovery may reveal additional Bissell infringing robotic vacuum cleaning devices and/or components thereof such as spare parts.

7.9 The Hoover Accused Products that are sold for importation, imported, and/or sold after importation into the United States by the Proposed Respondents set forth in Table 7.2 infringe, individually as an apparatus and/or when used to practice a method, at least the asserted claims set forth in Table 7.3, either literally—directly or indirectly—or under the doctrine of equivalents. For example, attached to this Complaint are charts that apply, to the Hoover Quest 800 (Model BH70800) and Hoover Quest 1000 (Model BH71000), one or more of asserted independent claims 1 and 42 of the '490 Patent, asserted independent claims 1 and 19 of the'308 Patent, asserted independent claims 1, 10, and 17 of the '090 Patent, asserted independent claims 1, 11, and 25 of the '553 Patent, asserted independent claims 1 and 15 of the '233 Patent, and

asserted independent claims 1 and 12 of the ’924 Patent. *See* **Exhibits 60**, **65**, **61**, **66**, **67**, **62**, **63**, **68**, **64**, and **69**, respectively. Discovery may reveal additional Hoover infringing robotic vacuum cleaning devices and/or components thereof such as spare parts.

7.10 The Bobsweep Accused Products that are sold for importation, imported, and/or sold after importation into the United States by the Proposed Respondents set forth in Table 7.2 infringe, individually as an apparatus and/or when used to practice a method, at least the asserted claims set forth in Table 7.3, either literally—directly or indirectly—or under the doctrine of equivalents. For example, attached to this Complaint are charts that apply, to the bObsweep PetHair Robotic Vacuum Cleaner and Mop and bObsweep Classic Robotic Vacuum Cleaner, one or more of asserted independent claims 1 and 42 of the ’490 Patent, asserted independent claims 1 and 19 of the’308 Patent, asserted independent claims 1, 10, and 17 of the ’090 Patent, and asserted independent claims 1 and 15 of the ’233 Patent. *See* **Exhibits 70**, **73**, **71**, **74**, **75**, **72**, and **76**, respectively. Discovery may reveal additional Bobsweep infringing robotic vacuum cleaning devices and/or components thereof such as spare parts.

7.11 The Black & Decker Accused Products that are sold for importation, imported, and/or sold after importation into the United States by the Proposed Respondents set forth in Table 7.2 infringe, individually as an apparatus and/or when used to practice a method, at least the asserted claims set forth in Table 7.3, either literally—directly or indirectly—or under the doctrine of equivalents. For example, attached to this Complaint are charts that apply, to the Black & Decker BDH5000 and Model HRV420BP07, one or more of asserted independent claims 1 and 42 of the ’490 Patent, asserted independent claims 1 and 19 of the’308 Patent, asserted independent claims 1, 10, and 17 of the ’090 Patent, asserted independent claims 1, 11, and 25 of the ’553 Patent, asserted independent claims 1 and 15 of the ’233 Patent, and asserted

independent claims 1 and 12 of the ’924 Patent. *See* **Exhibits 77**, **78**, **79**, **126**, **127**, **128**, **129**, **130**, and **131**, respectively. Discovery may reveal additional Black & Decker infringing robotic vacuum cleaning devices and/or components thereof such as spare parts.

7.12 The iLife Accused Products that are sold for importation, imported, and/or sold after importation into the United States by the Proposed Respondents set forth in Table 7.2 infringe, individually as an apparatus and/or when used to practice a method, at least the asserted claims set forth in Table 7.3, either literally—directly or indirectly—or under the doctrine of equivalents. For example, attached to this Complaint are charts that apply, to the iLife V5s, iLife V7, and iLife A6, one or more of asserted independent claims 1 and 42 of the ’490 Patent, asserted independent claims 1 and 19 of the’308 Patent, asserted independent claims 1, 10, and 17 of the ’090 Patent, asserted independent claims 1, 11, and 25 of the ’553 Patent, asserted independent claims 1 and 15 of the ’233 Patent, and asserted independent claims 1 and 12 of the ’924 Patent. *See* **Exhibits 80**, **85**, **81**, **86**, **82**, **87**, **83**, **88**, **84**, and **89**, respectively. Discovery may reveal additional iLife infringing robotic vacuum cleaning devices and/or components thereof such as spare parts.

VIII. CLASSIFICATION UNDER THE HARMONIZED TARIFF SCHEDULE

8.1 The Accused Products are believed to fall within at least the following classification of the Harmonized Tariff Schedule of the United States: 8508.11.0000 (“Vacuum cleaners; parts thereof: With self-contained electric motor: Of a power not exceeding 1,500 W and having a dust bag or other receptacle capacity not exceeding 20 L”). Components of the Accused Products may be classified under at least HTS item number 8508.70.00 (“Vacuum cleaners; parts thereof: Parts”). These classifications are intended for illustration only and are not intended to be restrictive of the Accused Products.

IX. DOMESTIC INDUSTRY

9.1 As required by Section 337(a)(2) and defined by Section 337(a)(3), a domestic industry exists in the United States in connection with articles protected by the ’490, ’308, ’090, ’553, ’233, and ’924 Patents.

A. Technical Prong

9.2 Claim charts demonstrating how exemplary iRobot robotic vacuum cleaning devices practice at least one claim of each of the ’490, ’308, ’090, ’553, ’233, and ’924 Patents are attached as **Exhibits 90** through **105**. The claim charts rely on iRobot’s Roomba 650 as exemplary of its 600-series products, iRobot’s Roomba 860 as exemplary of its 800-series products, and iRobot’s Roomba 980 as exemplary of its 900-series products.[6] iRobot’s robotic vacuum cleaning devices are therefore protected by the ’490, ’308, ’090, ’553, ’233, and ’924 Patents, and a technical domestic industry for those articles exists.

9.3 iRobot’s customers and/or end users also practice at least one claim of each of the ’490, ’308, ’090, ’553, ’233, and ’924 Patents in a manner known and expected by iRobot through their use of iRobot’s Roomba 600-series products, Roomba 800-series products, and Roomba 900-series products. iRobot actively encourages its customers and/or end users to practice at least one claim of each of the ’490, ’308, ’090, ’553, ’233, and ’924 Patents, for example, by providing technical guides, product data sheets, demonstrations, specifications, installation guides, and other forms of support.

[6] Within a given series of iRobot vacuum cleaning robots, the differences between specific products are generally related to aesthetics and/or capacity, such as faceplate color, trim color, handle color, battery charge capacity, and bin capacity; there may also be some differences in features unrelated to the Asserted Patents.

B. Economic Prong

9.4 A domestic industry, under subparts (A), (B), and/or (C) of Section 337(a)(3), exists by virtue of iRobot's significant U.S. investment in plant and equipment, significant employment of U.S. labor and capital, and substantial investment in U.S. exploitation of the Asserted Patents, including through engineering and research and development. iRobot's robotic vacuum cleaning devices are protected by at least the '490, '308, '090, '553, '233, and '924 Patents. iRobot's domestic activities and investments related to the articles protected by the Asserted Patents are described in the Confidential Declaration of Alison Dean, Chief Financial Officer. *See generally* **Confidential Exhibit 106**. In particular, certain of iRobot's robotic vacuum cleaning devices (collectively, "the domestic industry products") are protected by the Asserted Patents. In particular, iRobot's Roomba 600-series, 800-series, and 900-series robots practice claims of the '490, '308, '090, '553, and '233 Patents, and iRobot's Roomba 900-series robots practice claims of the '924 Patent. The domestic industry products account for a significant portion of iRobot's overall revenues and unit output. *See id.* at ¶¶ 4-7.

9.5 iRobot employs at least 520 employees in the United States in its U.S. facilities located in Bedford, Massachusetts and Pasadena, California. iRobot's engineering team designs and develops its innovative line of robotic vacuum cleaning devices in its U.S. facilities. *Id.* at ¶¶ 8-10. iRobot's technical work, *i.e.*, research, design, development, engineering, and testing of the domestic industry products occurs in the United States at these facilities. *Id*. at ¶¶ 10-12.

9.6 iRobot has made and continues to make significant investment in plant and equipment in the United States with respect to articles protected by the Asserted Patents. iRobot has made and continues to make substantial investment in its Bedford, Massachusetts and Pasadena, California facilities. *Id*. at ¶¶ 9-12. iRobot invests significantly in the physical plant

and the equipment located in these U.S. facilities dedicated to research, designing, servicing, and supporting articles protected by the Asserted Patents. *Id.*

9.7 iRobot has made and continues to make significant investments in labor and capital with respect to articles protected by the Asserted Patents. As noted, *supra*, iRobot employs at least 520 employees in its Bedford, Massachusetts and Pasadena, California facilities, many of whom devote substantial person-hours toward the research, design, engineering, service, and support of products protected by the Asserted Patents. Further details of iRobot employment of labor or capital are provided in **Confidential Exhibit 106**.

9.8 iRobot has made and continues to make significant investment in the exploitation of the Asserted Patents. iRobot has invested and continues to invest in the design, research, development, engineering, service, and support of the patented features of the articles covered by the Asserted Patents through its investments in the technical work performed at its U.S. facilities. *Id.* at ¶¶ 13-14. **Confidential Exhibit 106** sets forth in more detail iRobot's significant investment associated with the exploitation of iRobot's rights in the Asserted Patents.

X. RELATED LITIGATION

10.1 Complainant alleged infringement of the Asserted Patents against the Proposed Respondents in five complaints filed in the United States District Court for the District of Massachusetts on April 17, 2017, corresponding to the allegations made herein. Specifically, Complainant filed the following actions:

Table 10.1

District Court Case Caption	Named Defendants	Asserted Patents
iRobot Corporation v. Hoover Inc., et al., Civil Action No. 1:17-cv-10647-LTS (D. Mass.)	Hoover Inc. Royal Appliance Manufacturing Co. Inc. d/b/a TTI Floor Care North America, Inc.; Shenzhen Silver Star Intelligent	'490 Patent; '308 Patent; '090 Patent; '553 Patent;

	Technology Co., Ltd.; Suzhou Real Power Electric Appliance Co., Ltd.	'233 Patent; '924 Patent
iRobot Corporation v. The Black & Decker Corporation, et al., Civil Action No. 1:17-cv-10648-LTS (D. Mass.)	The Black & Decker Corporation; Black & Decker (U.S.) Inc.; Shenzhen Silver Star Intelligent Technology Co., Ltd.	'490 Patent; '308 Patent; '090 Patent
iRobot Corporation v. Bissell Homecare, Inc., et al., Civil Action No. 1:17-cv-10649-LTS (D. Mass.)	Bissell Homecare, Inc.; Matsutek Enterprises Co., Ltd.	'490 Patent; '308 Patent; '090 Patent; '553 Patent; '233 Patent
iRobot Corporation v. Bobsweep, Inc., et al., Civil Action No. 1:17-cv-10651-LTS (D. Mass.)	Bobsweep, Inc.; Bobsweep USA; Shenzhen Silver Star Intelligent Technology Co., Ltd.	'490 Patent; '308 Patent; '090 Patent; '233 Patent
iRobot Corporation v. Shenzhen ZhiYi Technology Co., Ltd., Civil Action No. 1:17-cv-10652-LTS (D. Mass.)	Shenzhen ZhiYi Technology Co., Ltd.	'490 Patent; '308 Patent; '090 Patent; '553 Patent; '233 Patent; '924 Patent

These cases have all been stayed pending resolution of this investigation, pursuant to 28 U.S.C. § 1659(a).

10.2 The Asserted Patents, or the subject matter thereof, have also previously been the subject of court or agency litigation. iRobot brought suit on May 3, 2005 in the United States District Court for the District of Massachusetts against Urus Industrial Corporation and Koolatron in a case styled *iRobot Corp. v. Urus Industrial Corp.*, Civil Action No. 05-cv-10914-RGS (D. Mass.). iRobot sought damages for copyright infringement, trade dress infringement, and patent infringement of U.S. Patent No. 6,594,844, U.S. Patent No. 6,809,490 (an Asserted Patent in the present Complaint), and U.S. Patent No. 6,883,201. A Final Consent Judgment was entered in the case on August 8, 2005.

10.3 A foreign counterpart to U.S. Patent No. 6,809,490—EP1395888—was the subject of litigation in Germany between iRobot, and Shenzhen Silver Star Intelligent Technology Co. Ltd., Shenzhen Silver Star Intelligent Electronic Co. Ltd., Elektrogeräte Solac Vertrieb GmbH, and Electrodomésticos Solac S.A. EP1395888 was the subject of infringement actions in the District Court Düsseldorf (Cases 4a-O-51/13 and 4a-O-65/13) brought between June 2013 and August 2014, and was also the subject of cancellation proceedings in the German Federal Patent Court (Cases 5-Ni-5/14 and 5-Ni-31/14) brought in January 2014 and September 2014, respectively. A preliminary injunction was granted in favor of iRobot by the District Court Düsseldorf (4a O 65/13) in August 2013; that preliminary injunction was confirmed by the court on May 8, 2014 after a hearing on April 8, 2014. An appeal was filed (I-15 U 85/14) but did not proceed to hearing before withdrawal in February 2015. Proceedings in Case 4a-O-65/13 did not proceed due to the bankruptcy of the Solac entities. The first cancellation proceeding before the German Federal Patent Court (5 Ni 5/14) was deemed to be withdrawn in August 2014 due to SSSIT's failure to place the required security bond. The second cancellation proceeding (5-Ni-31/14) was filed after the first cancellation proceeding was deemed withdrawn. All these cases were withdrawn by February 2015 following a business agreement reached between the parties.

XI. REQUESTED EXCLUSION ORDERS

A. Limited Exclusion Order

11.1 Pursuant to Section 337(d), Complainant respectfully requests that a limited exclusion order be entered against the infringing products of each named Proposed Respondent and its subsidiaries and affiliates in order to remedy the Proposed Respondents' violation of Section 337 and to prevent such future violations by Proposed Respondents.

B. Cease and Desist Orders

11.2 Cease and desist orders against all named Proposed Respondents are appropriate under Section 337(f), which provides that the Commission may issue a cease and desist order against any person violating Section 337 in addition to exclusion orders issued under Section 337(d). Accordingly, cease and desist orders directing Proposed Respondents to cease and desist from the importation, marketing, advertising, distribution, and sale of the infringing robotic vacuum cleaning devices and components thereof such as spare parts are appropriate to remedy, and prevent, the violation of Complainant's patent rights.

XII. REQUESTED RELIEF

12.1 WHEREFORE, by reason of the foregoing, Complainant requests that the United States International Trade Commission:

(a) Institute an immediate investigation, pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337(a)(1)(B)(i) and (b)(1), with respect to violation of Section 337 by Proposed Respondents based upon their sale for importation, importation, and/or sale after importation into the United States of certain robotic vacuum cleaning devices and components thereof such as spare parts that infringe one or more of the asserted claims of Complainant's United States Patent No. 6,809,490; United States Patent No. 7,155,308; United States Patent No. 8,474,090; United States Patent No, 8,600,553; United States Patent No. 9,038,233; and United States Patent No. 9,486,924;

(b) Schedule and conduct a hearing on the unlawful acts and, following the hearing, determine that there has been a violation of Section 337;

(c) Issue a permanent limited exclusion order specifically directed to each named Proposed Respondent and each of their respective subsidiaries and affiliates, barring from entry into the United States all Accused Products that infringe one or more of the asserted claims of

Complainant's United States Patent No. 6,809,490; United States Patent No. 7,155,308; United States Patent No. 8,474,090; United States Patent No, 8,600,553; United States Patent No. 9,038,233; and United States Patent No. 9,486,924;

(d) Issue a permanent cease and desist order, pursuant to 19 U.S.C. § 1337(f), directing Proposed Respondents to cease and desist from selling for importation into the United States, importing, selling after importation into the United States, offering for sale, marketing, advertising, demonstrating, sampling, warehousing inventory for distribution, selling, distributing, licensing, testing, providing technical support, use, or other related commercial activity involving imported Accused Products that infringe one or more of the asserted claims of Complainant's United States Patent No. 6,809,490; United States Patent No. 7,155,308; United States Patent No. 8,474,090; United States Patent No, 8,600,553; United States Patent No. 9,038,233; and United States Patent No. 9,486,924;

(e) Impose a bond, pursuant to Section 337(j) of the Tariff Act of 1930, as amended, upon the Proposed Respondents during the Presidential review period; and

(f) Grant such other and further relief as the Commission deems just and proper based on the facts determined by the investigation and the authority of the Commission.

Respectfully submitted,

FISH & RICHARDSON P.C.

Dated: July 20, 2017

/s/ Stephen A. Marshall

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Counsel for Complainant iRobot Corporation

VERIFICATION OF AMENDED COMPLAINT

I, Christian Cerda, declare, in accordance with 19 C.F.R. §§ 210.4 and 210.12(a), under penalty of perjury, that the following statements are true:

1. I am the Chief Operating Officer at iRobot Corporation, and I am duly authorized to sign this Amended Complaint on behalf of the Complainant;

2. I have read the foregoing Amended Complaint;

3. To the best of my knowledge, information, and belief, based upon reasonable inquiry, the foregoing Amended Complaint is well-founded in fact and is warranted by existing law or by a non-frivolous argument for the extension, modification, or reversal of existing law or the establishment of new law;

4. The allegations or other factual contentions have evidentiary support or are likely to have evidentiary support after a reasonable opportunity for further investigation or discovery; and

5. The foregoing Amended Complaint is not being filed for any improper purpose, such as to harass or to cause unnecessary delay or needless increase in the cost of litigation.

Dated: July 20, 2017

Christian Cerda
Chief Operating Officer
iRobot Corporation

CERTIFICATE OF SERVICE

I hereby certify that true and correct copies of the foregoing document, **VERIFIED AMENDED COMPLAINT OF IROBOT CORPORATION UNDER SECTION 337 OF THE TARIFF ACT OF 1930, AS AMENDED,** have been filed and served on this 20th day of July, 2017, on the following:

The Honorable Lisa R. Barton Secretary **U.S. International Trade Commission** 500 E Street SW Washington D.C. 20436	☐ **Via First Class Mail** ☐ **Via Hand Delivery** ☐ **Via Overnight Delivery** ☒ **Via EDIS**
The Honorable Thomas B. Pender Administrative Law Judge **U.S. International Trade Commission** 500 E Street, S.W. Washington, D.C. 20436	☐ **Via First Class Mail** ☒ **Via Hand Delivery** ☐ **Via Overnight Delivery** ☐ **Via Electronic Mail**
Michael Turner Attorney Advisor **U.S. International Trade Commission** 500 E Street, S.W. Washington, D.C. 20436 michael.turner@usitc.gov	☐ **Via First Class Mail** ☐ **Via Hand Delivery** ☐ **Via Overnight Delivery** ☒ **Via Electronic Mail**
Harold H. Davis, Jr. Timothy P. Walker Jas Dhillon Rachel E. Burnim **K&L Gates LLP** Four Embarcadero Center Suite 1200 San Francisco, CA 94111 BISSELL_MATSUTEK@klgates.com *Counsel for Respondents Bissell Homecare, Inc. and Matsutek Enterprises Co., Ltd.*	☐ **Via First Class Mail** ☐ **Via Hand Delivery** ☐ **Via Federal Express** ☒ **Via Electronic Mail**
Kecia J. Reynolds, Esq. **PILLSBURY WINTHROP SHAW PITTMAN LLP**	☐ **Via First Class Mail**

1200 Seventeenth St. NW Washington, DC 20036 Tel: (202) 663-8025 Fax: (202) 663-8007 Email: Pillsbury-1057@pillsburylaw.com *Counsel for Respondents The Black & Decker Corporation, Black & Decker (U.S.) Inc., Shenzhen Silver Star Intelligent Technology Co., Ltd., Hoover Inc., and Royal Appliance Manufacturing Co., d/b/a TTi Floor Care North America, Inc., bObsweep, Inc., and bObsweep USA*	☐ **Via Hand Delivery** ☐ **Via Federal Express** ☒ **Via Electronic Mail**
Mark G. Davis Ronald J. Pabis Patrick J. McCarthy Myomi T. Coad **GREENBERG TRAURIG, LLP** 2101 L Street, N.W. Suite 1000 Washington, D.C. 20037 Telephone: (202) 331-3100 Facsimile: (202) 331-3101 mccarthyp@gtlaw.com ShenzhenZhiyiITCAll@gtlaw.com *Counsel for Respondent Shenzhen Zhiyi Technology Co., Ltd.d/b/a iLife*	☐ **Via First Class Mail** ☐ **Via Hand Delivery** ☐ **Via Federal Express** ☒ **Via Electronic Mail**
Shamita Etienne-Cummings Jason Xu **WHITE & CASE LLP** 701 Thirteenth Street, NW Washington, DC 20005-3807 Telephone: (202) 626-3600 Facsimile: (202) 639-9355 Email: WCiRobotTeam@whitecase.com *Counsel for Respondent Suzhou Real Power Electric Appliance Co., Ltd.*	☐ **Via First Class Mail** ☐ **Via Hand Delivery** ☐ **Via Air Mail** ☒ **Via Electronic Mail**

/s/ Ashley Cox
Ashley Cox

EXHIBIT 116

Complainant iRobot Corporation
337-TA-1057

Black and Decker SmarTech PET Lithium Robot Vacuum with Bluetooth, HRV420BP07

★★★★★ 1 reviews Q&A By: Black+Decker Walmart #: 557359825




$300.93
Was $349.99 Save $49.06
Only 3 left!

Sold at Walmart store

Shipping not available

Free pickup today at Houston
5405 South Rice Avenue Pickup options

Qty: 1 Add to Cart

Add to List Add to Registry

Highlights

Extra-large dustbin holds 2X more pet hair and dirt than the competition, so you can clean more between empties

Extra wide beater bar cleans more area per pass

Read more....

Tell us if something is incorrect

Consider these popular products


$292.98 was $399.99
save $107.01
iRobot Roomba 650 Vacuum Cleaning...
★★★★★ 532
2-Day Shipping


$279.00
iRobot Braava 380t Floor Mopping Robot
★★★★★ 209


$73.94 was $82.15
save $8.21
Pyle Home Pure Clean Smart Robot Vacuum...
★★★★★ 16
2-Day Shipping


$699.00
iRobot Roomba 960 Vacuuming Robot
★★★★★ 429
2-Day Shipping


$899.00
iRobot Roomba 980
★★★★★ 1518
2-Day Shipping


$399.00
Neato Rob
Connecte
2-Day Ship

About this item

About this item

Disclaimer: While we aim to provide accurate product information, it is provided by manufacturers, suppliers and others, and has not been verified by us. See our disclaimer.

Black & Decker Pet Robot Vacuum with SmarTech features lithium ion battery for up to 75-minute runtime and fade-free power; anti-tangle, rubberized beater-bar to lift stubborn debris and pet hair; extra large dustbin for less frequent filling; Bluetooth connectivity through your smartphone

- Anti-Tangle Beater Bar Bristles Lift and Capture Stubborn Debris and Pet Hair
- SmarTech Features You Can Control From a Smart Phone via the Black+Decker App - Receive Troubleshooting Alerts; Schedule Cleaning in App, Manual Drive mode, 3 Different Cleaning Modes, and Battery Status
- Up to 75-Minute Run-Time on the Lithium-Ion Battery system for Fade-Free Power
- High Performance HEPA Filter Captures 99.96% of Pet Dander and Dust Particles
- Extra Large Dustbin Holds 2X More than the Competition
- 2 Side Sweepers Clean Dust and Debris Along Edges and in Corners - Cleans More Area per Pass

Read less

Specifications

Manufacturer Part Number	HRV420BP07
Model	HRV420BP07
Brand	Black+Decker

Sponsored Products

$28.47

$154.11

$99.99 list price $129.99

save $50.00 save $30.00

★★★★★ 12 ★★★★☆ 92 ★★★☆☆ 87 ★★★★★ 1 ★★★★★ 1

2-Day Shipping

Customer Q&A

Get specific details about this product from customers who own it.

Ask a question

Customer reviews

5 out of 5

★★★★★

see all 1 reviews

5 stars 1
4 stars 0
3 stars 0
2 stars 0
1 stars 0

Write a review

Sort by: Most relevant

Fantastic Little Bot

5/22/2017

★★★★★

by Juan

I am new to robot vacuums and did a bunch of research before buying this one. My two criteria were being able to schedule it from my phone and having it actually vacuum well. I have two dogs who shed a lot, and I now vacuum only once a week because it does such a good job cleaning up our downstairs! Also, the "pet" features are fantastic. No hair gets tangled on the bristles. Occasionally it will get stuck under a piece of furniture, or wander into the bathroom and not be able to find the dock again, but the huge dustbin is full every time I come home so I know it has done its job. Make sure to read the quick start guide about preparing the house because if you leave things around on the floor (socks, toys etc.) it will try to eat them. All in all, I highly recommend.

Read less

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1-1 of 1 reviews See all

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Robotic Vacuums


Robotic Vacuum Cleaners


Top Rated Products in…


Irobot Robotic Vacuums

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A limited product warranty is included free for most items. With an optional Walmart Care Plan you can enhance the manufacturer's coverage from the date of purchase. Walmart Product Care Plans cover 100% of the cost for repair or replacement, including shipping charges for the exchange.

We'll show you Care Plan options and pricing at checkout if applicable, or go to www.walmart.com/careplans for more information.
Did you buy this in a Walmart store? Get a warranty for it here.

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★★★★½ 429
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Product Care Plans	Sell on Walmart.com	CA Privacy Rights	Tax Exempt Program	[+] Summer Clothing
Walmart Pay	Careers	Privacy & Security	Contact Us	[+] Vitamins
	@WalmartLabs		Feedback	[+] International Sites
			Store Pickup	Popular Products

To ensure we are able to help you as best we can, please include your reference number: S5GUNJZLOD

EXHIBIT 117

Complainant iRobot Corporation
337-TA-1057

Roll over image to zoom in

BLACK+DECKER

BLACK+DECKER HRV425BLP SMARTECH Lithium Robotic Pet Vacuum

2 customer reviews

Price: $399.99 & FREE Shipping. Details

Coupon

Save an extra $30.00 when you apply this coupon.
Details

In Stock.

Want it tomorrow, July 7? Order within **4 hrs 46 mins** and choose **One-Day Shipping** at checkout. Details
Ships from and sold by Amazon.com. Gift-wrap available.

Style Name: **LED Top**

LED Top | Standard Top

- This unit reduces allergens and irritants and captures 99.96% of pet dander and dust with a high-performance HEPA filter
- AUTOSENSE automatically adjusts suction power from hard floors to carpet
- Anti-tangle bristles capture stubborn pet hair
- Program a cleaning schedule and control your vacuum with the BLACK+DECKER smartphone app
- Lithium Ion battery optimizes performance with up to 90 minutes of runtime

Compare with similar items

Used & new (2) from $341.24 & FREE shipping. Details

iRobot Roomba 650 Robotic Vacuum Cleaner, Black
4.5 stars 5,143
$226.87

BLACK+DECKER HRV425BL SMARTECH Lithium Robotic Vacuum
$379.99 prime

Strong Sturdy Black + Decker Robotic Vacuum Cleaner, BDH5000WM-4
2.5 stars 4
$115.40

Sponsored products related to this item (What's this?)

Page 1 of 33

iRobot Roomba 690 Wi-Fi Connected Robotic Vacuum Cleaner
4 stars 34
$374.00 prime

Dyson V6 Cord Free Vacuum
4 stars 1,087
$211.99 prime

BLACK+DECKER HRV425BL SMARTECH Lithium Robotic Vacuum
$379.99 prime

ILIFE V5s Robotic Vacuum Cleaner with Water Tank Mop, Mopping Floor...
4 stars 806
$179.99 prime

Bissell 2133 Bolt Pet, Handheld Cordless Vacuum
4.5 stars 29
$67.87 prime

Ad feedback

Customers who bought this item also bought

BLACK+DECKER HRV425BL SMARTECH Lithium Robotic Vacuum
$379.99 prime

Customers viewing this page may be interested in these sponsored links (What's this?)

- **BLACK+DECKER® Robotic Vacuum - With LED Lights**
  Customize The Look Of Your **Vac** From Our App. Keeping Up Just Got Easier™
  www.**black**and**decker**.com/
- **Strata Home Appliances - Built By Monoprice**
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- **2017's Top 3 Roombas - We Reviewed the 8 Top Models**
  We Reviewed Every Roomba. See Which one Came out on Top of our Tests.
  reviews.sfgate.com/Roomba/Reviews
- **Top 10 Robot Pet Vacuum 2017 - Get The Best Robot Pet Vacuum**
  Read Our Reviews. Compare Prices. Choose The Best **Robot Pet Vacuum** For You.
  homebest.co/**Robot_Vacuum**/2017_Reviews

Ad feedback

Special offers and product promotions

Style Name: **LED Top**

- Clip this coupon to save $30.00 on this product when you buy from Amazon.com. Here's how (restrictions apply)
- **Save Big On Open-Box & Used Products:** Buy "BLACK+DECKER HRV425BLP SMARTECH Lithium Robotic Pe..." from Amazon Open-Box & Used and save 14% off the $399.99 list [illegible] policy and Prime or FREE Shipping. See all

offers from Amazon Open-Box & Used.

- **No interest if paid in full within 6 months** with the Amazon.com Store Card on any purchase totaling $149 or more. Apply now.

From the manufacturer

View larger

View larger

View larger

View larger

	HRV425BLP	HRV425BL	HRV420BP07
BATTERY	LITHIUM ION	LITHIUM ION	LITHIUM ION
RUNTIME	UP TO 90 MINUTES	UP TO 90 MINUTES	UP TO 75 MINUTES
SELF CHARGING	4 HR - AUTO/DOCK	4 HR - AUTO/DOCK	4 HR - AUTO/DOCK
BLUETOOTH	✓	✓	✓
LED	✓	✓	—
AUTO SENSE	✓	✓	✓
BATTERY SENSE	✓	✓	✓
HEPA FILTER	✓	✓	✓
REMOTE CONTROL	APPLE/ANDROID	APPLE/ANDROID	APPLE/ANDROID
PET HAIR BEATER BAR	✓	—	✓
DUST BIN	1L	1L	1L

View larger

Product description

Style Name:**LED Top**

The BLACK+DECKER HRV425BLP SMARTECH Lithium Robotic Pet Vacuum, with LED and Bluetooth - Keeping Up Just Got Easier! Conveniently control and schedule your vacuum with BLACK+DECKER smartphone app. This vacuum features an XL dustbin that holds 2X more pet hair and dirt than the competition, so you can clean more between empties. The extra wide brush bar cleans more area per pass than the leading robot vacuum in the market, and an anti-tangle bristles capture stubborn pet hair. This unit reduces allergens and irritants and captures 99.96% of pet dander and dust (>0.3 or greater) with a high-performance HEPA filter. AUTOSENSE automatically adjusts suction power from hard floors to carpet, so you get more power when you need it and the lithium Ion battery optimizes performance with up to 90 minutes of runtime. Sensors detect stairs and other drop-offs, and then it automatically docks and recharges so it's ready for the next cleaning. The LED top cover flashed troubleshooting alerts to display the source of errors or maintenance needs, eliminating guesswork - personalize the illuminated LED cover to match your color style! Includes: 1) Robotic Vacuum, 1) Charging base, 1) Charger, 4) Side sweepers, 2) Filters, 1) Pet anti-tangle brush bar, 1) Multi-surface purpose brush bar, 1) Brush cleaning tool, 1) Screwdriver.

Product information

Style Name:**LED Top**

Product Dimensions	13.9 x 10 x 4.3 inches
Item Weight	9 pounds
Shipping Weight	13.5 pounds (View shipping rates and policies)
Manufacturer	BLACK+DECKER
ASIN	B01N16BRGK
Origin	China
Item model number	HRV425BLP
Batteries	1 Lithium ion batteries required. (included)
Customer Reviews	2 customer reviews 3.5 out of 5 stars
Best Sellers Rank	#1,068,003 in Home & Kitchen (See Top 100 in Home & Kitchen) #497 in Home & Kitchen > Vacuums & Floor Care > Vacuums > Robotic Vacuums

Warranty & Support

Manufacturer's warranty can be requested from customer service. Click here to make a request to customer service.

Feedback

If you are a seller for this product, would you like to **suggest updates through seller support?**
Would you like to **tell us about a lower price?**

Related Video Shorts

Customer Review:
Upgrading from Roomi

Compare to similar items

				
	This item BLACK+DECKER HRV425BLP SMARTECH Lithium Robotic Pet Vacuum	BLACK+DECKER HRV425BL SMARTECH Lithium Robotic Vacuum	RolliBot LE-601 Top Ranked 3D Laser Mapping LASEREYE Robot Vacuum: 100% Clean Floors, Cliff and Object Detection, 2D Map with App, Black	ECOVACS DEEBOT M80 Pro Robotic Vacuum Cleaner with Mop and Water Tank, for Hard Floor, Low-pile Carpet, APP Control, Wi-Fi Connected #1 Best Seller
	Add to Cart	Add to Cart	Add to Cart	Add to Cart
Customer Rating	★★★½☆ (2)	☆☆☆☆☆ (0)	★★★★☆ (6)	★★★★½ (43)
Price	$399.99	$379.99	$399.99	$209.98
Shipping	FREE Shipping	FREE Shipping	FREE Shipping	FREE Shipping
Sold By	Amazon.com	Amazon.com	Amazon.com	ECOVACS ROBOTICS
Item Dimensions	10 x 13.9 x 4.33 in	10 x 13.9 x 4.33 in	13.25 x 13.25 x 3.75 in	13.9 x 13.9 x 3.27 in
Item Weight	9 lbs	9 lbs	8.25 lbs	9.7 lbs
Additional Features	cordless	cordless	Vacuums	mopping function, Wi-Fi connected

Sponsored products related to this item (What's this?)

Page 1 of 80

Dyson V6 Cord Free Vacuum
★★★★☆ 1,087
$211.99 ✓prime

Hoover WindTunnel 2 Whole House Rewind Bagless Upright Vacuum UH71250
★★★★☆ 43
$129.99 ✓prime

Dyson Small Ball Multi Floor Upright Vacuum - Corded
★★★★☆ 1,194
$399.00 ✓prime

Dyson Ball Animal 2 Upright Vacuum, Iron/Purple
★★★★½ 90
$398.98 ✓prime

Electrolux EL4021A Black Silent Performer Cyclonic Bag less Canister Vacuum includes...
★★★★☆ 23
$196.14 ✓prime

Ad feedback

Customer questions & answers

Have a question? Search for answers

0 votes

Question: How does it navigate? Random or in lines?

Answer: Random. Seems to miss some spots.
By JOHN D. CAMPBELL on June 20, 2017

Customer reviews

2
3.5 out of 5 stars

5 star	0%
4 star	50%
3 star	50%
2 star	0%
1 star	0%

Share your thoughts with other customers

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See all verified purchase reviews ›

Top customer reviews

Good value but underwhelming
By John G on June 14, 2017
Style Name: Standard Top | Verified Purchase

While it's priced well I'm underwhelmed so far with this robot vacuum. I've tried others before (Roomba 860, Neeto) and felt they did a better overall job cleaning. I was also disappointed that when Black & Decker announced this new line of robot vacuums in January 2017 the main "news" was that the robot would compress the dirt into easy-to-throw-away discs; apparently this feature was dropped, even though it was promoted heavily as the main new feature. It does have a larger capacity than other robot vacuums, but it comes at the expense of being higher than others (meaning it can't get under couches that the others can). The main cleaning issue I have is when it transitions from carpet to wood floor it drops a dust bunny and doesn't always go back for it - ended up with a number of them left on otherwise nicely vacuumed floor. In summary, despite being new it doesn't seem to have advantages over other brands except price; its clearly a good value but not a great one.

Comment | 8 people found this helpful. Was this review helpful to you? Yes No Report abuse

Upgrading from Roomba 560, really good for the price
By Jesse E on June 17, 2017
Style Name: Standard Top

Not bad, upgrading from Roomba 560 at not Roomba price. ~100 minutes of clean time, easier to clean than the Roomba, no voice and only beeps. iPhone app is easy to configure and get started, only connects via Bluetooth; bluetooth range isn't bad and I keep it upstairs but can connect if I walk underneath it from downstairs. Not as loud as the Roomba, can hear distinct change as it adjusts between carpet and hardwood floor. Roomba has had its share of idiotic moments, this seems to force its way under low clearances under the bed and causing me to have to fish it out when it gets stuck.

Seems to clean just as well, if not better than Roomba 560

Read more

1 comment | 14 people found this helpful. Was this review helpful to you? Yes No Report abuse

Search customer reviews

Search

See all verified purchase reviews (newest first) ›

Write a customer review

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This item: BLACK+DECKER HRV425BLP SMARTECH Lithium Robotic Pet Vacuum

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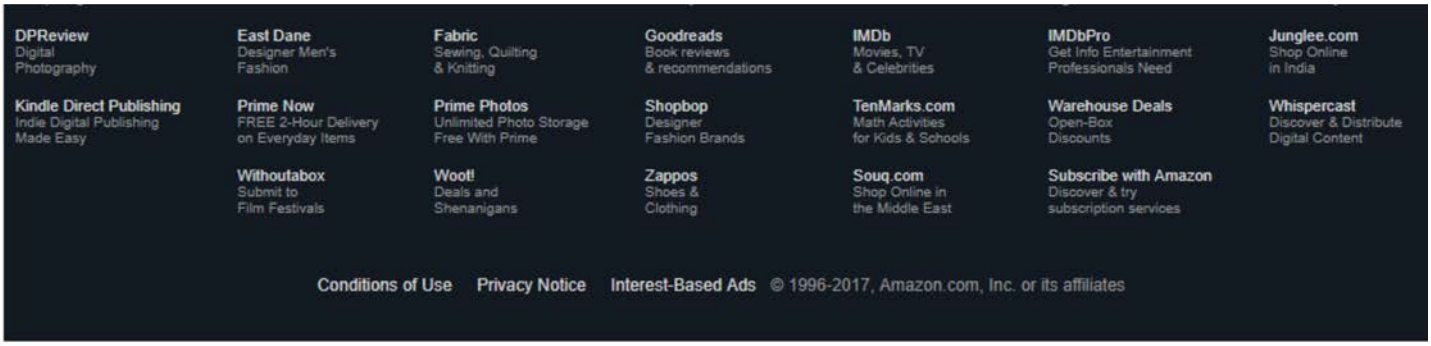
Pages with related products. See and discover other items: wide area vacuum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Shop Online in India
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EXHIBIT 118

Complainant iRobot Corporation
337-TA-1057

Roll over image to zoom in

BLACK+DECKER

BLACK+DECKER HRV425BL SMARTECH Lithium Robotic Vacuum

Be the first to review this item

Price: $379.99 & **FREE Shipping**. Details

Coupon Save an extra $30.00 when you apply this coupon. Details

In Stock.

Want it tomorrow, July 7? Order within **4 hrs 45 mins** and choose **One-Day Shipping** at checkout. Details

Ships from and sold by Amazon.com. Gift-wrap available.

- Three cleaning modes to fit your needs: spot clean, quick and auto or choose manual drive for Full control
- Autosense automatically adjusts suction power from hard floors to carpet
- LED top cover flashes troubleshooting alerts to display the source of errors or maintenance needs
- Program a cleaning schedule and control your vacuum with the black decker smartphone app
- Lithium Ion battery optimizes performance with up to 90 minutes of runtime

Compare with similar items

New (1) from $379.99 & FREE shipping. Details

iRobot Roomba 690 Wi-Fi Connected Robotic Vacuum Cleaner
★★★★☆ 34
$374.00 ✓prime

iRobot Roomba 890 Wi-Fi Connected Robotic Vacuum Cleaner
★★★★☆ 11
$499.99 ✓prime

Robotic Vacuum Cleaner, Minsu 2000mAh Large Capacity Li-battery Smart Automatic Self...
★★★★½ 42
$289.99 ✓prime

Proscenic 790T WIFI Robotic Vacuum Cleaner, Smartphone APP Remote Control, Ultrasonic...
★★★★½ 34
$259.99 ✓prime

Proscenic SUZUKA WIFI Robotic Vacuum Cleaner, Smartphone APP Remote Control, Auto Charging...
★★★★½ 34
$229.99 ✓prime

Ad feedback

Customers also shopped for

Page 1 of 5

Black + Decker BDH2000L 20-Volt Max Lithium Ion Battery Cordless Hand Vacuum
★★★★½ 1,027
$72.67 ✓prime

Hoover Linx BH50010 Cordless Stick Vacuum Cleaner,
★★★★☆ 8,706
$129.00 ✓prime

iRobot Roomba 860 Robotic Vacuum Cleaner
★★★★½ 450
$424.99 ✓prime

Hoover Vacuum Cleaner Air Cordless 20 Volt Lithium Ion 2-in-1 Deluxe Stick and Handheld...
★★★★☆ 845
$124.45 ✓prime

Ryobi P713 ONE + 18-Volt Lithium-Ion Cordless Hand Vacuum for Dust, Soot, Dirt, or Hair at Home or...
★★★★½ 95
$39.99 ✓prime

Customers viewing this page may be interested in these sponsored links (What's this?)

- **BLACK+DECKER® Robotic Vacuum - With LED Lights**
  Customize The Look Of Your **Vac** From Our App. Keeping Up Just Got Easier™
  www.**black**and**decker**.com/
- **Strata Home Appliances - Built By Monoprice**
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- **Black & Decker Vacuum Cleaner - Search Relevant Results Now.**
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  www.homeandgardenideas.com/Answers

Ad feedback

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- **No interest if paid in full within 6 months** with the Amazon.com Store Card on any purchase totaling $149 or more. Apply now.

From the manufacturer

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TROUBLESHOOTING ALERTS
display the source of problems, eliminating guesswork

3 CLEANING MODES
Auto, Quick, Spot

SCHEDULING
for timed, routine cleaning

BATTERY STATUS
at a glance

MANUAL DRIVE
for full control of the cleaning area

BLACK+DECKER

Available on the App Store

ANDROID APP ON Google play

Features available through app

View larger

View larger

	Pet HRV425BL	HRV425BLP	Pet HRV420BP07
BATTERY	LITHIUM ION	LITHIUM ION	LITHIUM ION
RUNTIME	UP TO 90 MINUTES	UP TO 90 MINUTES	UP TO 75 MINUTES
SELF CHARGING	4 HR - AUTO/DOCK	4 HR - AUTO/DOCK	4 HR - AUTO/DOCK
BLUETOOTH	✓	✓	✓
LED	✓	✓	—
AUTO SENSE	✓	✓	✓
BATTERY SENSE	✓	✓	✓
HEPA FILTER	✓	✓	✓
REMOTE CONTROL	APPLE/ANDROID	APPLE/ANDROID	APPLE/ANDROID
PET HAIR BEATER BAR	—	✓	✓
DUST BIN	1L	1L	1L

View larger

Product description

The black decker HRV425BL smartech lithium robotic vacuum, with LED and Bluetooth - keeping up just got easier! conveniently control and schedule your vacuum with black decker smartphone app. This vacuum features an XL dustbin that holds 2x more pet hair and dirt than the competition, so you can clean more between empties. The extra wide brush bar cleans more area per pass than the leading Robot vacuum in the market. You can select from three cleaning modes to fit your needs: spot clean, quick and auto or choose manual Drive for full control of the cleaning area. Autosense automatically adjusts suction power from hard floors to carpet, so you get more power when you need it and the lithium ion battery optimizes performance with up to 90 minutes of runtime. Sensors detect stairs and other drop-offs, and then it automatically docks and recharges so it's ready for the next cleaning. The LED top cover flashed troubleshooting alerts to display the source of Errors or maintenance needs, eliminating guesswork - personalize the illuminated LED cover to match your color style! includes: 1) robotic vacuum, 1) charging base, 1) charger, 4) side Sweepers, 2) filters, 1) Multi-Surface purpose brush bar, 1) brush cleaning tool, 1) screwdriver

Product information

Product Dimensions	13.9 x 10 x 4.3 inches
Item Weight	9 pounds
Shipping Weight	13.3 pounds (View shipping rates and policies)
Manufacturer	BLACK+DECKER
ASIN	B01MUG0D8K
Origin	China
Item model number	HRV425BL
Batteries	1 Lithium ion batteries required. (included)
Customer Reviews	Be the first to review this item 0.0 out of 5 stars
Best Sellers Rank	#1,105,167 in Home & Kitchen (See Top 100 in Home & Kitchen) #515 in Home & Kitchen > Vacuums & Floor Care > Vacuums > Robotic Vacuums

Warranty & Support

Manufacturer's warranty can be requested from customer service. Click here to make a request to customer service.

Feedback

If you are a seller for this product, would you like to **suggest updates through seller support**?
Would you like to **tell us about a lower price**?

Compare to similar items

				
	This item BLACK+DECKER HRV425BL SMARTECH Lithium Robotic Vacuum	ILIFE A4s Robot Vacuum Cleaner with Powerful Suction and Remote Control, Super Quiet	BLACK+DECKER HRV420BP07 SMARTECH Lithium Pet Robotic Vacuum	ECOVACS DEEBOT N79 Robotic Vacuum Cleaner with Strong Suction, for Low-pile Carpet, Hard floor, Wi-Fi Connected
	Add to Cart	Add to Cart	Add to Cart	Add to Cart
Customer Rating	☆☆☆☆☆ (0)	★★★★½ (314)	★★★½☆ (2)	★★★★½ (43)
Price	$379.99	$199.99	$300.93	$199.98
Shipping	FREE Shipping	FREE Shipping	FREE Shipping	FREE Shipping
Sold By	Amazon.com	Avalon Direct	Amazon.com	ECOVACS ROBOTICS
Item Dimensions	10 x 13.9 x 4.33 in	12.2 x 12.2 x 3 in	10 x 13.9 x 4.33 in	13 x 13 x 3.1 in
Item Weight	9 lbs	4.9 lbs	9 lbs	6.7 lbs
Additional Features	cordless	Mini Room, Remote Control, HEPA Filtration, Self-charging	cordless	smartphone control

Sponsored products related to this item (What's this?)

Page 1 of 77


Hoover WindTunnel 2 Whole House Rewind


Dyson V6 Cord Free Vacuum


Electrolux EL4021A Black Silent Performer Cylinder


Dyson Small Ball Multi Floor Upright Vacuum -


Dyson V8 Absolute Cord-Free Vacuum

Bagless Upright Vacuum UH71250
43
$129.99 prime

1,087
$211.99 prime

Bag less Canister Vacuum includes cleaning tools...
23
$196.14 prime

Corded
1,194
$399.00 prime

902
$570.99 prime

Ad feedback

Ad feedback

Customer questions & answers

Have a question? Search for answers

Typical questions asked about products:
- Is the item durable?
- Is this item easy to use?
- What are the dimensions of this item?

Customer reviews

There are no customer reviews yet.

5 star	0%
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3 star	0%
2 star	0%
1 star	0%

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Write a customer review

Set up an Amazon Giveaway

Amazon Giveaway allows you to run promotional giveaways in order to create buzz, reward your audience, and attract new followers and customers. Learn more about Amazon Giveaway

This item: BLACK+DECKER HRV425BL SMARTECH Lithium Robotic Vacuum

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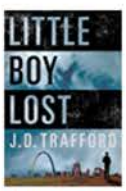
Best Sellers

Page 1 of 9



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$4.99

A Beautiful Poison
› Lydia Kang
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› Amy A. Bartol
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› Rachel Caine
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Ad feedback

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EXHIBIT 119

Complainant iRobot Corporation
337-TA-1057

Small Battery Chargers

Cancel

*Model Number
HRV420B***

Manufacturer
Shenzhen Silver Star Intelligent Technolog

Add Date
04/10/2017

Brand
Black & Decker

*Regulatory Status
N - Non Federally-Regulated

Consumer Product Model Number
HRV402B***

Product Type
Robot Vacuum Cleaner

Compat ble Battery Chemistries
LI - Lithium Ion

A la carte charger
False

Inductive Charger
False

USB-based Charger
False

Battery Backup or Uninterruptable Power Supply
False

Battery Backup (T/F)
None

Uninterruptable Power Supply (T/F)
None

Number of Charger Ports
1

Battery Capacity Watt-hours
27.04

24 Hour Charge and Maintenance Energy Watt-hours
53.27

24 Hour Charge and Maintenance Energy Watt-hours Std
55.26

Average Maintenance Mode Power Consumption Watts
0.69

Maintenance Watts Std

No Battery or Off Mode Power Watts
0.11

No Battery Watts Std

Standby Watts
0.8

Standby Watts Std
1.06

Consumer Product (T/F)
True

Battery Test Procedure Used
B - 10 C.F.R. section 430.23(aa) (Appe

Marking Location
C - Charger

EXHIBIT 120

Complainant iRobot Corporation
337-TA-1057

Small Battery Chargers

Cancel

*Model Number
HRV425B***

Manufacturer
Shenzhen Silver Star Intelligent Technolog

Add Date
04/10/2017

Brand
Black & Decker

*Regulatory Status
N - Non Federally-Regulated

Consumer Product Model Number
HRV425B***

Product Type
Robot Vacuum Cleaner

Compat ble Battery Chemistries
LI - Lithium Ion

A la carte charger
False

Inductive Charger
False

USB-based Charger
False

Battery Backup or Uninterruptable Power Supply
False

Battery Backup (T/F)
None

Uninterruptable Power Supply (T/F)
None

Number of Charger Ports
1

Battery Capacity Watt-hours
30.96

24 Hour Charge and Maintenance Energy Watt-hours
58.72

24 Hour Charge and Maintenance Energy Watt-hours Std
61.54

Average Maintenance Mode Power Consumption Watts
0.67

Maintenance Watts Std

No Battery or Off Mode Power Watts
0.12

No Battery Watts Std

Standby Watts
0.79

Standby Watts Std
1.07

Consumer Product (T/F)
True

Battery Test Procedure Used
B - 10 C.F.R. section 430.23(aa) (Appe

Marking Location
C - Charger

EXHIBIT 121

Complainant iRobot Corporation
337-TA-1057

amazon.com

Final Details for Order #112-8211085-0684241

Print this page for your records.

Order Placed: May 23, 2017
Amazon.com order number: 112-8211085-0684241
Order Total: $364.99

Shipped on June 8, 2017

Items Ordered	Price
1 of: *BLACK+DECKER HRV425BLP SMARTECH Lithium Robotic Pet Vacuum* Sold by: Amazon.com LLC Condition: New	$364.99

Shipping Address:

WILMINGTON, DE 19802-1214
United States

Shipping Speed:
Two-Day Shipping

Item(s) Subtotal:	$364.99
Shipping & Handling:	$0.00
Total before tax:	$364.99
Sales Tax:	$0.00
Total for This Shipment:	**$364.99**

Payment information

Payment Method:
Amazon.com Visa Signature | Last digits: 3872

Billing address

WILMINGTON, DE 19802-1214
United States

Item(s) Subtotal:	$364.99
Shipping & Handling:	$0.00
Total before tax:	$364.99
Estimated tax to be collected:	$0.00
Grand Total:	**$364.99**

Credit Card transactions Amazon.com Visa Signature ending in 3872: June 8, 2017: $364.99

To view the status of your order, return to Order Summary.

EXHIBIT 122

Complainant iRobot Corporation
337-TA-1057

amazon.com

Final Details for Order #112-7918150-2390620

Print this page for your records.

Order Placed: May 25, 2017
Amazon.com order number: 112-7918150-2390620
Order Total: $300.93

Shipped on May 27, 2017

Items Ordered	Price
1 of: *BLACK+DECKER HRV420BP07 SMARTECH Lithium Pet Robotic Vacuum*	$300.93
Sold by: Amazon.com LLC	
Condition: New	

Shipping Address:

WILMINGTON, DE 19802-1214
United States

Shipping Speed:
Two-Day Shipping

Item(s) Subtotal:	$300.93
Shipping & Handling:	$0.00
Total before tax:	$300.93
Sales Tax:	$0.00
Total for This Shipment:	**$300.93**

Payment information

Payment Method:
Amazon.com Visa Signature | Last digits: 3872

Billing address

WILMINGTON, DE 19802-1214
United States

Item(s) Subtotal:	$300.93
Shipping & Handling:	$0.00
Total before tax:	$300.93
Estimated tax to be collected:	$0.00
Grand Total:	**$300.93**

Credit Card transactions Amazon.com Visa Signature ending in 3872: May 27, 2017: $300.93

To view the status of your order, return to Order Summary.

EXHIBIT 123

Complainant iRobot Corporation
337-TA-1057

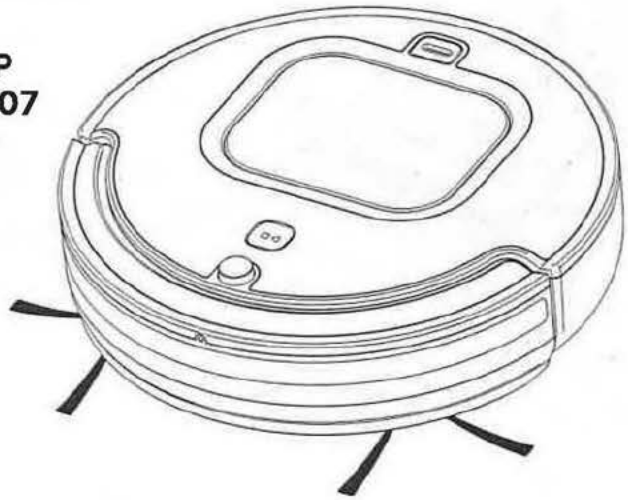
BLACK+ DECKER™

ROBOTIC VACUUM

INSTRUCTION MANUAL

CATALOG NUMBER

HRV425BL
HRV425BLP
HRV420BP07



Thank you for choosing BLACK+DECKER!

PLEASE READ BEFORE RETURNING THIS PRODUCT FOR ANY REASON.

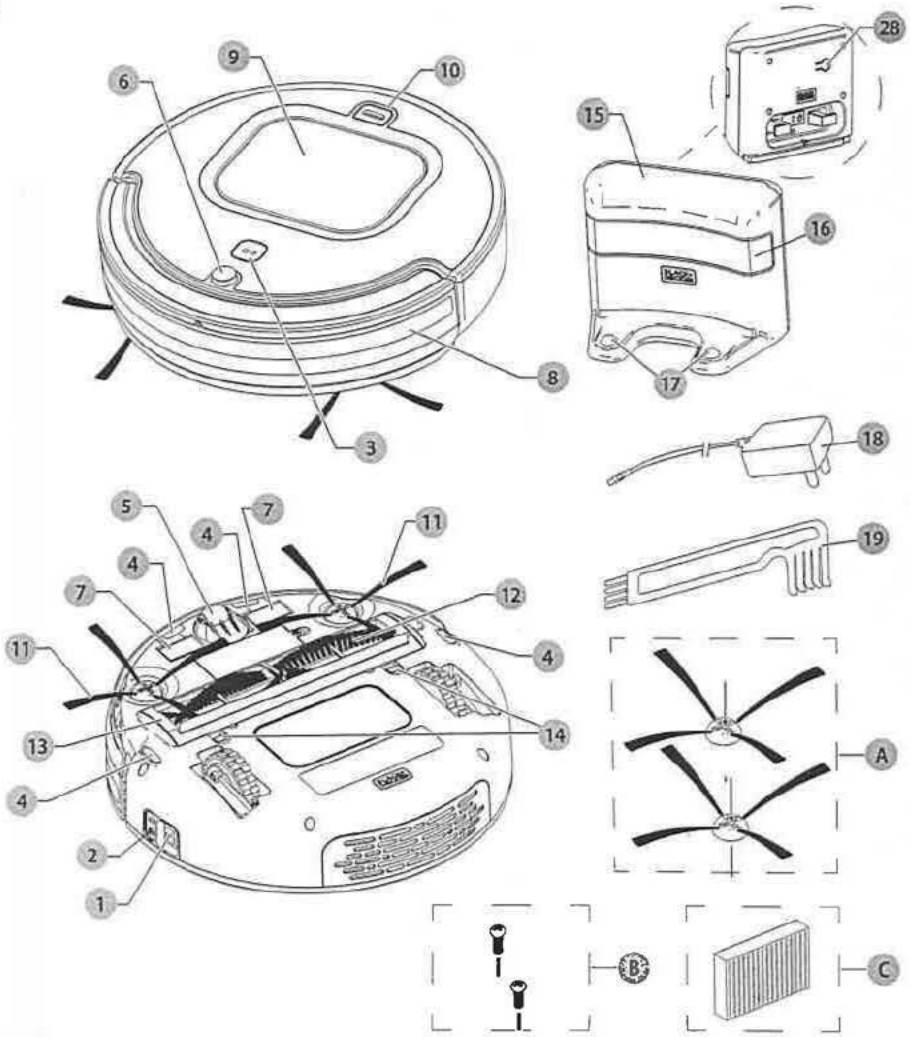
If you have a question or experience a problem with your BLACK+DECKER purchase, go to http://www.blackanddecker.com/instantanswers
If you can't find the answer or do not have access to the Internet, call 1-800-544-6986 from 8 a.m. to 5 p.m. EST Mon. - Fri. to speak with an agent. Please have the catalog number available when you call.

SAVE THIS MANUAL FOR FUTURE REFERENCE.

VEA EL ESPANOL EN LA CONTRAPORTADA.
INSTRUCTIVO DE OPERACIÓN, CENTROS DE SERVICIO Y PÓLIZA DE GARANTÍA.
ADVERTENCIA: LÉASE ESTE INSTRUCTIVO ANTES DE USAR EL PRODUCTO.

To register your new product, call 1-800-544-6986 or visit www.BlackandDecker.com/NewOwner

Fig. A



1. Power switch
2. Charging socket
3. Start/Stop button
4. Ground detection sensor
5. Front wheel
6. Infrared receiver
7. Charging plate
8. Front lens
9. Dust bin
10. Dust bin release button
11. Side brushes
12. Main brush
13. Main brush frame
14. Main brush frame tabs
15. Charging dock
16. Charging dock infrared window
17. Charging electrodes
18. Battery charger
19. Maintenance tool
28. Charging dock pairing button

Additional Accessories

a. Side brushes (2)
b. Side brush screws (2)
c. HEPA filter

IMPORTANT SAFETY INSTRUCTIONS

When using an electrical appliance, basic precautions should always be followed, including the following:

READ ALL INSTRUCTIONS BEFORE USING THIS APPLIANCE

⚠ *WARNING: To reduce the risk of fire, electric shock, or injury:*

⚠ ***WARNING: Read all safety warnings and all instructions.*** *Failure to follow the warnings and instructions listed below may result in electric shock, fire and/or serious injury.*

⚠ ***WARNING:*** *Some household dust contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm such as asbestos and lead in lead based paint.*

- *Do not use outdoors or on wet surfaces.*
- *Do not allow to be used as a toy. Close attention is necessary when used by or near children.*
- *This product is not intended for use by anyone (including children) with inadequate physical, sensory, or mental abilities, or who lack the experience, knowledge or skills to operate the robot. Children should never be left alone with this product.*
- *Turn off the power switch when children or pets are alone with the appliance.*
- *Use only as described in this manual. Use only manufacturer's recommended attachments.*
- *If appliance is not working as it should, has been dropped, damaged, left outdoors, or dropped into water, return it to a service center.*
- *Do not step on or put objects on robot.*
- *Do not handle charger, including charger plug, and charger terminals with wet hands.*
- *This appliance should only be used for dry pick up. Do not use to pick up anything wet or liquids of any kind.*
- *Do not put any object into openings. Do not use with any opening blocked; keep free of dust, lint, hair, and anything that may reduce air flow.*
- *Keep hair, loose clothing, fingers, and all parts of body away from openings and moving parts.*
- *Do not pick up anything that is burning or smoking, such as cigarettes, matches, or hot ashes.*
- *Before use, remove any objects from the floor that may become tangled in the appliance, such as power cords, fragile items, strings, toys, or clothing.*
- *Remove any objects that become lodged in the appliance immediately.*
- *For rugs with tassels or loose fabric, fold them under the rug. The appliance may grab and unravel the rug.*
- *Do not use without dust bin and/or filter in place.*
- *Prevent unintentional starting. Ensure the switch is in the off-position before picking up or carrying the appliance. Carrying the appliance with your finger on the switch or energizing appliance that have the switch on invites accidents.*
- *Under abusive conditions, liquid may be ejected from the battery; avoid contact. If contact accidentally occurs, flush with water. If liquid contacts eyes, additionally seek medical help. Liquid ejected from the battery may cause irritation or burns.*
- *Do not use the vacuum cleaner if damaged or modified. Damaged or modified batteries may exhibit unpredictable behavior resulting in fire, explosion or risk of injury.*
- *Do not expose the vacuum cleaner to fire or excessive temperature. Exposure to fire or temperature above 265°F may cause explosion.*
- *Follow all charging instructions and do not charge the vacuum cleaner outside of the temperature range specified in the instructions. Charging improperly or at temperatures outside of the specified range may decrease the life of the battery.*
- *Have servicing performed by a qualified repair person using only identical replacement parts. This will ensure that the safety of the vacuum cleaner is maintained.*
- *Do not modify or attempt to repair the vacuum cleaner except as indicated in the instructions for use and care.*
- *Do not charge the unit outdoors.*
- *Use only the charger supplied by the manufacturer to recharge.*
- *Do not incinerate the appliance even if it is severely damaged. The batteries can explode in a fire.*
- *This appliance is intended for household use only and not for commercial or industrial use.*
- *Keep sensors clean. Sensors may not work properly if they become blocked.*
- *The sensors on this appliance may not work properly on different floor types. Test the appliance on each surface before allowing it to operate independently.*
- *Shock Hazard. To protect against risk of electrical shock, do not put unit or charging base in water or other liquid.*
- *This appliance should not be used on floors with exposed electrical outlets.*
- *The unit should be placed or mounted away from sinks and hot surfaces.*
- *Plug the charger directly into an electrical outlet.*
- *Use the charger only in a standard electrical outlet (120V/60Hz).*
- *Unplug the charger from outlet before any routine cleaning or maintenance.*
- *Do not look into the air vents when the unit is switched on, as sometimes there is a possibility of small debris being discharged from the air vents, especially after cleaning / replacement of the filter as debris inside the unit can be disturbed.*
- *The infrared signal between the appliance and the charging dock may become compromised if more than*

one robot vacuums are used at the same time, or if used in a location exposed to a halogen lamp.

- *Do not use the vacuum in the following environments:*
  - *Wet*
  - *Flammable*
  - *Explosive*
  - *Corrosive*
  - *Extreme hot*
  - *Extreme cold*
- *This vacuum is for indoor use only.*
- *Do not let this vacuum clean toner from a laser printer or copier.*
- *Do not let this vacuum clean sharp objects, such as glass, it may damage the vacuum.*
- *The charging station should be placed against a wall and on a flat floor surface.*
- *Do not cover the signal window of the charging station.*
- *When storing this vacuum, charge the battery fully, turn off the vacuum and place it in a cool dry place. Unplug the charging station.*
- *Do not lift this vacuum by the front cover.*
- *Only for use with K25V240100X charger or with N501228 charging dock.*

The vacuum is recommended for the following floor surfaces:

- Hardwood/Laminate
- Ceramic/Stone tile
- Low and medium pile carpets (plush carpeting is not recommended)

NOTE: Vacuum may not work on some black carpet and darker floor surfaces, as the sensors may be detecting the surface as a drop off.

Proper room preparation

- *Place the cords from other appliances out of the area to be cleaned.*
- *Do not operate the vacuum in a room where an infant or child is sleeping.*
- *Do not operate the vacuum in an area where there are lit candles or fragile objects on the floor to be cleaned.*
- *Do not operate the vacuum in a room that has lit candles on furniture that the vacuum may accidentally hit or bump into.*
- *Do not allow children to sit on the vacuum.*
- *Do not use the vacuum on a wet surface.*
- *Test the height of thresholds. Robot cannot climb thresholds above 1/2 inch (10-15mm).*

SAVE THESE INSTRUCTIONS

Assembly

1. Remove front lens ‹8› protection film.
2. Ensure the dust bin ‹9› and main brush ‹12› are fitted securely.

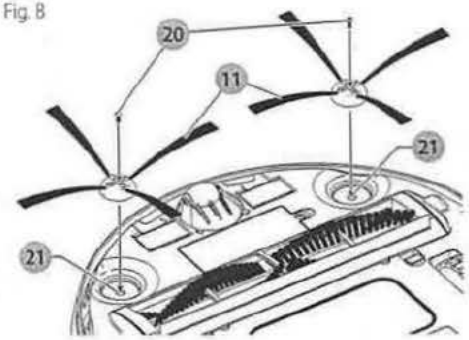
NOTE: The HRV425BLP contains a standard main brush and an anti-tangle pet brush.

- For general daily maintenance cleaning, the standard main brush should be used.
- Use the anti-tangle pet brush in areas where there is pet or long human hair, areas with excessive hair on floor surface, or areas that require a deeper clean.

Installing side brushes (Fig. B)

1. Ensure the power switch ‹1› is in the off position (**O**).
2. Place the vacuum upside down on a flat surface.
3. Locate the side brush retaining screws ‹20› from the packaging.
4. Place the side brushes ‹11› into the brush slots ‹21›.
5. Install side brush retaining screws.

Fig. B



Charging (Fig. C)

Your vacuum can be manually charged via the jack plug or automatically charged via the charging dock.

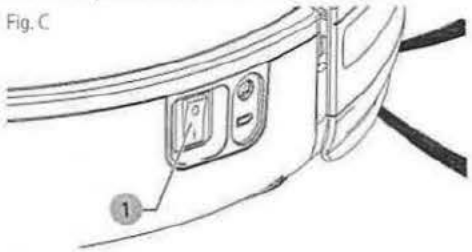
IMPORTANT: The power switch ‹1› **MUST** be in the ON position (**I**) for the vacuum to charge.

- Before first use, the battery must be charged for at least 4-5 hours.

NOTE: While charging, the charger may become warm. This is normal and does not indicate a problem. The appliance can be left connected to the charger indefinitely.

⚠ ***WARNING:*** *Do not charge the battery at ambient temperatures below 50 °F or above 104 °F.*

Fig. C

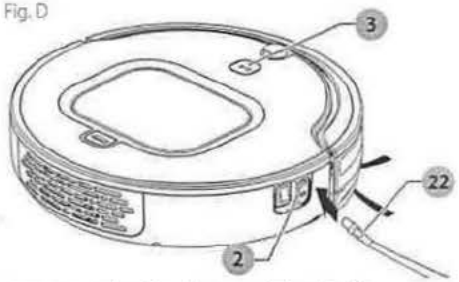


Manually charge (Fig. D)

IMPORTANT: The power switch ‹1› **MUST** be in the ON position (**I**) for the vacuum to charge.

1. Plug the battery charger ‹18› into a wall outlet.
2. Slide the jack plug ‹22› end of the charger into the charging socket ‹2› of the vacuum.
3. The Start/Stop button ‹3› will blink and emit a single short beep, meaning the vacuum is charging. The Start/Stop button LED will turn o… fully charged.

Fig. D



Automatically charge (Fig. E, F)

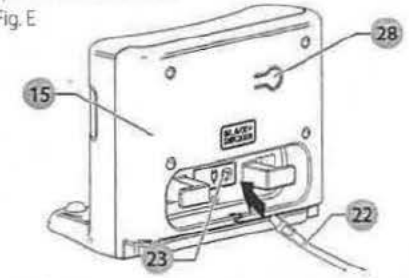
IMPORTANT: The power switch ‹1› **MUST** be in the ON position (**I**) for the vacuum to charge.

1. Plug the battery charger ‹18› into a wall outlet.
2. Slide the jack plug (‹22›) end of the charger into the charging dock's charging socket (‹23›) as shown in **Figure E**.
3. Place the charging dock base on a leveled floor with the back of the charger against a wall.

NOTE: Do not place anything under the charging dock. It will prevent the vacuum from automatically charging.

NOTE: Provide a minimum of 48 inches (122 cm) of clear space around the dock.

Fig. E



4. Place the vacuum on the charging dock so that the charging electrodes ‹17› contact the two charging plates ‹7› as shown in **Figure F**.
5. The Start/Stop button ‹3› will blink and emit a single short beep, indicating the vacuum is charging. The Start/Stop button LED will turn off when the vacuum is fully charged.

NOTE: You can check the charging status of the vacuum from your BLACK+DECKER app.

NOTE: In SPOT and QUICK CLEAN Mode, the vacuum will finish its cleaning cycle and stop and not return to the dock, unless battery level is low, in which case it will search for the dock.

NOTE: In AUTO MODE, the vacuum will search for the charging dock when it is low on battery charge. However, if the room is too large or the vacuum is obstructed from "seeing" the dock, it may fail to find the dock to automatically recharge. If this occurs, place the vacuum on the charging dock as described above.

Fig. F

Using the BLACK+DECKER App to operate your robot vacuum

The BLACK+DECKER App allows you to operate and connect to your robot vacuum from a compatible mobile device. After downloading the App, you connect your device to the vacuum. Then you can use the App to operate the robot.

NOTE: Your mobile device has to be within Bluetooth range to operate the robot

You can use the BLACK+DECKER App to:

- Schedule an auto cleaning to occur on the days and times of your choosing.

NOTE: If at any time, the robot is switched to the OFF position, the scheduling function will need to be restored by reconnecting to the app after the unit has been turned back on.

- Initiate a quick, spot, or manual cleaning.
- Monitor the robot's battery charge level.
- Add another BLACK+DECKER robot vacuum to your device.
- View Troubleshooting FAQ for suggestions on how to solve common problems or errors.
- Create an account to receive promotional materials.
- Disconnect your device from the robot.

To download the BLACK+DECKER App and connect your device, do the following:

1. Download the BLACK+DECKER App, application at:

Download on the App Store | ANDROID APP ON Google play

2. Double-click the BLACK+DECKER App icon to launch the App on your device. An App TERMS AND CONDITIONS page appears.

NOTE: The BLACK+DECKER App is governed by separate terms and conditions available for viewing through the mobile application.

3. Scroll down the App TERMS AND CONDITIONS page to make the Agree button clickable.
4. Click the Agree button to continue. A CREATE ACCOUNT page appears.
5. Take one of the following options on the CREATE ACCOUNT page:
   - Complete and Submit the form if you want to create a Stanley Black & Decker (SBD) user account. SBD will send promotional emails to the email address you specify.
   - Click Skip to continue without creating an SBD user account.
6. ANDROID ONLY: iOS SKIP to the next step. When the Quick Setup screen appears, ensure that the "Enable Bluetooth", "Location Services", and "App Permissions" boxes are checked, and click Continue.
7. On the Select Product screen, click the Robot Vacuum icon to connect the robot vacuum to your mobile device.

   IMPORTANT: *The power switch ‹1› MUST be in the ON position (**I**) for the vacuum to pair*
8. When the Connecting screen appears, press and hold the Start/Stop button ‹3› on the robot vacuum to connect your mobile device to the vacuum. A confirmation message appears when the connection

process completes, followed by an optional tutorial that explains Robot App basics.

To view the App User Guide and Troubleshooting FAQ:

1. Click the Settings icon to launch the Settings page.
2. Click App User Guide to view instructions on how to use BLACK+DECKER App features and screens.
3. Click FAQ to view robot vac troubleshooting tips.

Manually operating the vacuum

- If you choose to operate the vacuum without the app, ensure the power switch ⑪ is in the on position (I).
- Press the Start/Stop button ③ once and unit will commence cleaning in Auto Mode. Press the Start/Stop button ③ again to stop cleaning.
- When the cleaning cycle is completed, the unit will start looking for the dock automatically.

Maintenance

⚠ ***WARNING:*** *Make sure the vacuum is completely dry before using it.*

- *Use only mild soap and damp cloth to clean the vac. Never let any liquid get inside the vac; never immerse any part of the vac into a liquid.*

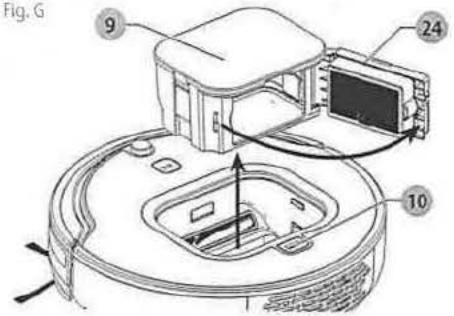
IMPORTANT: To assure product SAFETY and RELIABILITY, repairs, maintenance and adjustment (other than those listed in this manual) should be performed by authorized service centers or other qualified service organizations, always using identical replacement parts.

Emptying the dust bin (Fig. G)

1. Turn the power switch ⑪ off.
2. Press the dust bin release button ⑩ and the dust bin will pop up from the top of the vacuum.
3. Pull out the dust bin.
4. Open the filter door ㉔ and empty the contents of the dust bin.

NOTE: The dust bin can be washed using mild soap and water. Ensure dust bin is completely dry before reinstalling.

Fig. G



Cleaning the filter (Fig. H)

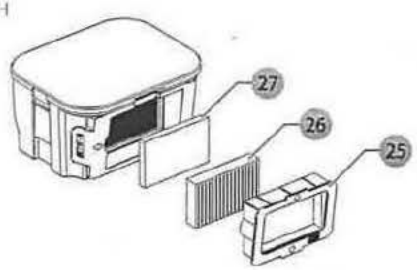
1. Turn the power switch ⑪ off.
2. Remove the dust bin ⑨ as described above.
3. Pull out the blue or purple filter frame ㉕. Remove the pleated filter ㉖ and sponge filter ㉗ with care.
4. To clean the dust from the filters, use the maintenance tool or wash both filters under warm running water.

NOTE: Ensure both filters are completely dry before reinstalling.

5. Reinstall dry filters into the filter frame. Insert the filter frame into the dust bin, and reinstall dust bin into the vacuum.

⚠ ***WARNING:*** *Never use the appliance without the filter. Optimum dust collection will only be achieved with a clean filter.*

Fig. H

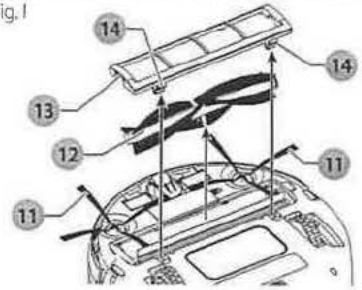


Assembly and removal of the main brush (Fig. I)

1. Turn the power switch ⑪ off.
2. Place the vacuum upside down on a flat surface.
3. Pull up on the two brush frame tabs ⑭ and lift off the main brush frame ⑬.
4. Remove the main brush ⑫.
5. Remove all hair and debris using the maintenance tool ⑲.
6. Assemble in the reverse order.

NOTE: When reinstalling the main brush frame, ensure the side brushes ⑪ are not trapped under the frame.

Fig. I



Cleaning the brushes

1. Turn the power switch ⑪ off.
2. Place the vacuum upside down on a flat surface.

Cleaning the main brush

1. Clean the main brush regularly with the maintenance tool.
2. Remove all hair and debris using the maintenance tool regularly.

Cleaning the side brushes (Fig. B)

1. Remove the side brush retaining screw ⑳.
2. Remove the side brush ⑪, clean the side brush, then clean debris in the slot ㉑.
3. Reinstall side brush and retaining screw.

Cleaning the wheels

1. Clean the wheels regularly
2. Remove all hair and debris using the maintenance tool.

NOTE: If hair is trapped in the front wheel, using a small screwdriver pry out the wheel. Remove any hair or debris and reinstall the front wheel.

Cleaning the wall sensor

1. Turn the power switch ⑪ off.
2. Clean the front lens ⑧ with a clean, dry cloth.

Cleaning the ground detection sensors

1. Turn the power switch ⑪ off.
2. Place the vacuum upside down on a flat surface.
3. Clean the sensor windows ④ with a clean, dry cloth.

Accessories

Recommended accessories for use with your appliance are available from your local dealer or authorized service center. If you need assistance regarding accessories, please call: **1-800-544-6986.**

⚠ ***WARNING:*** *The use of any accessory not recommended for use with this appliance could be hazardous.*

Replacing the filter

The filter should be replaced every 6 months and whenever worn or damaged. Replacement filters are available from your BLACK+DECKER dealer.

The RBRC® Seal

The RBRC® (Rechargeable Battery Recycling Corporation) Seal on the nickel cadmium, nickel metal hydride or lithium-ion batteries (or battery packs) indicates that the costs to recycle these batteries (or battery packs) at the end of their useful life have already been paid by BLACK+DECKER. In some areas, it is illegal to place spent nickel cadmium, nickel metal hydride or lithium-ion batteries in the trash or municipal solid waste stream and the Call 2 Recycle® program provides an environmentally conscious alternative.

Call 2 Recycle, Inc., in cooperation with BLACK+DECKER and other battery users, has established the program in the United States and Canada to facilitate the collection of spent nickel cadmium, nickel metal hydride or lithium-ion batteries. Help protect our environment and conserve natural resources by returning the spent nickel cadmium, nickel metal hydride or lithium-ion batteries to an authorized BLACK+DECKER service center or to your local retailer for recycling. You may also contact your local recycling center for information on where to drop off the spent battery. RBRC® is a registered trademark of Call 2 Recycle, Inc.

This Class B digital apparatus complies with Canadian ICES-003.

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a [illegible] equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This Class B digital apparatus complies with Canadian ICES-003.

One-Year Limited Warranty

Black & Decker (U.S.) Inc. warranties this product to be free from defects in material or workmanship for a period of one (1) year following the date of purchase, provided that the product is used in a home environment. This limited warranty does not cover failures due to abuse, accidental damage or when repairs have been made or attempted by anyone other than BLACK+DECKER and its Authorized Service Centers. A defective product meeting the warranty conditions set forth herein will be replaced or repaired at no charge.

Take or send the product (prepaid) to a BLACK+DECKER owned or authorized Service Center for repair or replacement at BLACK+DECKER's option. Proof of purchase may be required. BLACK+DECKER owned and authorized service centers are listed online at **www.blackanddecker.com**.

This warranty does not apply to accessories. This warranty gives you specific legal rights and you may have other rights which vary from state to state. Should you have any questions, contact the manager of your nearest BLACK+DECKER Service Center. This product is not intended for commercial use, and accordingly, such commercial use of this product will void this warranty. All other guarantees, express or implied, are hereby disclaimed.

LATIN AMERICA: This warranty does not apply to products sold in Latin America. For products sold in Latin America, check country specific warranty information contained in the packaging, call the local company or see the website for such information.

FREE WARNING LABEL REPLACEMENT: If your warning labels become illegible or are missing, call 1-800-544-6986 for a free replacement.

Imported by
Black & Decker (U.S.) Inc.,
701 E. Joppa Rd.
Towson, MD 21286 U.S.A.

BlackandDecker.com
1-800-544-6986

TROUBLESHOOTING

Problem	Possible Cause	Possible Solution
• Vacuum stops cleaning.	• Vacuum is in error state. • Battery charge is low. • Vacuum has completed Quick Clean or Spot mode.	• Clear error (see Error indication patterns table) • Charge battery.
• Vacuum does not charge.	• Charger is not plugged in correctly. • Power switch on vacuum is not ON	• Ensure the charger is fully plugged into outlet and the jack plug is properly plugged into the vacuum or charging dock. • Ensure power switch is "ON".
• Vacuum only moves backwards or moves a few inches before backing up and stopping.	• Floor has dark stripes or spots that the vacuum detects as a drop off. • Sensors are dirty.	• Only use vacuum on recommended surfaces. (see recommended floor surfaces section) • Clean sensors with dry cloth.
• Vacuum keeps moving in small circle.	• A wheel is blocked. • Vacuum is operating in SPOT mode.	• Remove debris from blocked wheel.
• Vacuum does not detect drop offs.	• Sensors are covered.	• Clean sensors with dry cloth.
• Vacuum will not pair with app.	• Vacuum not sufficiently charged. • Bluetooth function on mobile device is not turned on. • Mobile device located too far from vacuum. • Location Services and App Permissions for Locations Services may be turned OFF. (Android Only) • Vacuum and mobile device need to be restarted.	• Ensure the vacuum is fully charged and restart your mobile device. • Ensure Bluetooth function on your mobile device is ON. • Move your mobile device closer to the vacuum. • Go to your mobile devices preferences and turn ON permissions for the BLACK+DECKER APP. • Turn vacuum off and then back on and restart your mobile device. Re-open the BLACK+DECKER App. Attempt to pair the robot vacuum again. Be sure to press and hold the Start/Stop button (3) button on the top of the vacuum for at least five seconds.
• Robot will not return to dock.	• Robot is out of range to "see" the dock. • Robot is obstructed by objects in the cleaning area. • Robot may not be paired to dock.	• Move robot closer to dock. • Clear obstruction from robot's cleaning area. • With the unit turned off, ensure the dock is plugged into a wall outlet. Press and hold the charging dock pairing button (2) and turn the robot power switch (1) to the ON position. Robot will beep twice when pairing is successful.
• Scheduled cleaning will not work.	• Vacuum was not reconnected to app after robot was switched OFF.	• If at any time, the robot is switched to OFF position, the scheduling function needs to be restored by reconnecting to the app after the unit has been turned on.
• Suction power is weak.	• Filters are clogged, dustbin full.	• Clean dustbin and filters.
• Vacuum noise changes during operation.	• Debris in rotating brush, wheel or side brush. • AUTOSENSE in action - vacuum changes suction power from carpet to hard surface.	• Remove debris from brush, wheel or side brush.

SEE YOUR BLACK+DECKER APP FOR OTHER TROUBLESHOOTING DETAILS

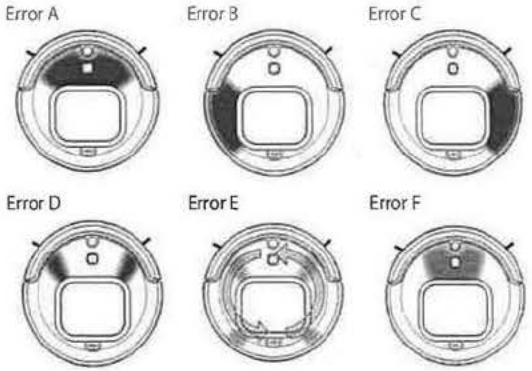
For assistance with your product, visit our website **www.blackanddecker.com** for the location of the service center nearest you or call the BLACK+DECKER help line at **1-800-544-6986.**

Error indication patterns*

* Error indications only apply to HRV425 vacuum models.

NOTE: HRV420BP07(NON-LED UNIT) Errors will be indicated by a short recurring beep

Your robot will indicate several error or status conditions by use of the LEDs. Some of the main errors are:



ERROR CODE	LED PATTERN	POSSIBLE CAUSE	SOLUTION
Error A	Front LEDs flashing Red to OFF.	Main brush stuck.	Clear debris/obstruction from main brush. Press the power button to clear error.
Error B	Left hand side LEDs flashing RED to OFF.	Left wheel stuck.	Clear debris/obstruction from left wheel. Press the power button to clear error.
Error C	Right hand side LEDs flashing RED to OFF.	Right wheel stuck.	Clear debris/obstruction from right wheel. Press the power button to clear error.
Error D	2 front LED sections flashing Red to OFF.	Side Brush stuck.	Clear debris/obstruction from main brush. Press the power button to clear error. **NOTE:** If there is hair wrapped around the side brush, you may need to uninstall and reinstall the side brush.
Error E	All LEDs Spinning Pattern - Orange to OFF.	Dust Bin not fully inserted.	Press down on the dustbin to fully install into vacuum.
Error F	Front center LED sections flashing Blue to OFF.	Unit shut down, battery level too low to return to charging dock automatically.	Manually return robot to charging dock.

To clear an error

1. After debris/obstruction has been removed from the vacuum, clear the error by pressing the Start/Stop button (3).
2. To resume vacuuming, press the Start/Stop button (3) again.

EXHIBIT 124

Complainant iRobot Corporation
337-TA-1057

FOLLOW FOR BEST PERFORMANCE

WARNING TO REDUCE THE RISK OF INJURY, USER MUST READ INSTRUCTION MANUAL BEFORE OPERATING PRODUCT.

Works with: HRV420BP07, HRV425BL and HRV425BLP

SET UP DOCK

- Place docking station flat against wall on level floor
- Plug docking station into outlet
- Leave 4 ft. clear space around dock

TURN UNIT ON

- Unit must be in ON (I) position to charge

CHARGE FULLY BEFORE USE

DOWNLOAD APP

- Control and schedule from your smartphone

BLACK+DECKER

App Store

Google play

PICK UP CLUTTER BEFORE USE

SO ROBOT CAN CLEAN

ROBOT WILL AUTOMATICALLY SWITCH BETWEEN THE FOLLOWING PATTERNS

*Only applies in Spot Mode

EXHIBIT 125

Complainant iRobot Corporation
337-TA-1057

BLACK+ DECKER™

Pet Lithium Ion Robotic Vacuum

Aspirateur robot au lithium-ion pour poils d'animaux
Aspiradora robótica con batería de iones de litio para mascotas

HOLDS
2X MORE DEBRIS
THAN THE COMPETITION*

Retient 2x de débris de plus que les appareils concurrents*
Retiene 2x más suciedad que la competencia*

Cleans More Area Per Pass*
Nettoie une surface plus importante par passage*
Limpia más superficie por pasada*

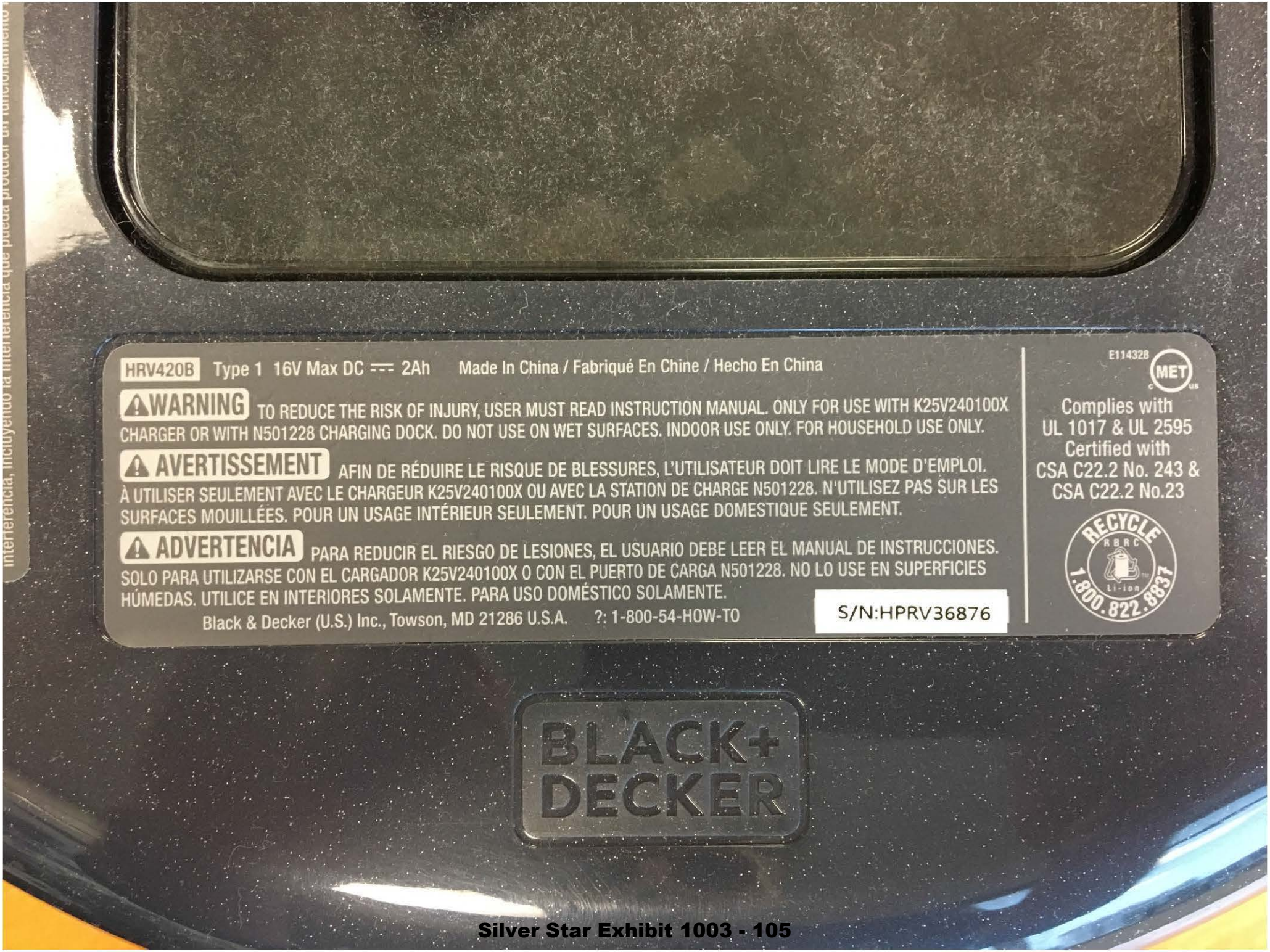
75 MINS
Up to 75 Minutes Runtime
Autonomie jusqu'à 75 minutes
Hasta 75 minutos de tiempo de funcionamiento

Control + Schedule from Your Smartphone
Commande et programmation depuis votre téléphone intelligent
Control y programación desde su teléfono inteligente

Bluetooth®

*Compared to Roomba® 650 | *Par rapport au le Roomba® 650 | *En comparación con Roomba® 650

HRV420BP07


HRV420B Type 1 16V Max DC ⎓ 2Ah Made In China / Fabriqué En Chine / Hecho En China
WARNING TO REDUCE THE RISK OF INJURY, USER MUST READ INSTRUCTION MANUAL. ONLY FOR USE WITH K25V240100X CHARGER OR WITH N501228 CHARGING DOCK. DO NOT USE ON WET SURFACES. INDOOR USE ONLY. FOR HOUSEHOLD USE ONLY.
AVERTISSEMENT AFIN DE RÉDUIRE LE RISQUE DE BLESSURES, L'UTILISATEUR DOIT LIRE LE MODE D'EMPLOI. À UTILISER SEULEMENT AVEC LE CHARGEUR K25V240100X OU AVEC LA STATION DE CHARGE N501228. N'UTILISEZ PAS SUR LES SURFACES MOUILLÉES. POUR UN USAGE INTÉRIEUR SEULEMENT. POUR UN USAGE DOMESTIQUE SEULEMENT.
ADVERTENCIA PARA REDUCIR EL RIESGO DE LESIONES, EL USUARIO DEBE LEER EL MANUAL DE INSTRUCCIONES. SOLO PARA UTILIZARSE CON EL CARGADOR K25V240100X O CON EL PUERTO DE CARGA N501228. NO LO USE EN SUPERFICIES HÚMEDAS. UTILICE EN INTERIORES SOLAMENTE. PARA USO DOMÉSTICO SOLAMENTE.
Black & Decker (U.S.) Inc., Towson, MD 21286 U.S.A. ?: 1-800-54-HOW-TO
S/N:HPRV36876
E114328
MET
Complies with UL 1017 & UL 2595 Certified with CSA C22.2 No. 243 & CSA C22.2 No.23
RECYCLE RBRC Li-ion 1.800.822.8837
BLACK+ DECKER

BLACK+DECKER™

SMARTECH™

Control + Schedule From Your Smart Phone

TROUBLESHOOTING ALERTS
Des alertes de dépannage
Las alertas de resolución de problemas

SCHEDULED CLEANING
Nettoyage prévu
Limpieza programada

MANUAL DRIVE
Entraînement manuel
Impulsión manual

3 CLEANING MODES
3 modes de nettoyage
3 modos de limpieza

BATTERY STATUS
L'état de la batterie
Estado de batería

App Store Google play

These features are available through the BLACK+DECKER mobile app.
Ces fonctionnalités sont disponibles avec l'appli mobile BLACK+DECKER.
Estas características están disponibles con la aplicación para dispositivos móviles BLACK+DECKER.

HRV420BP07

Tool and accessories made in China.
Battery cells made in Japan,
South Korea, China or Malaysia
with further processing in China.
Charger made in China.

Outil et accessoires fabriqué en Chine.
Eléments de pile fabriqués au Japon,
en Corée du Sud, en Chine ou en Malaisie
et traités par la suite en Chine.
Chargeur fabriqué en Chine.

Herramienta y accesorios fabricada en China.
Celdas de la batería fabricadas en Japón,
Corea del Sur, China o Malasia,
con procesamiento adicional en China.
Cargador fabricado en China.

BLACK & DECKER (U.S.) INC.
701 East Joppa Road
Towson, MD 21286 U.S.A.

U.S. & Canada Only
É.-U. et Canada seulement.

Importado por:
BLACK & DECKER, S.A. DE C.V.
Avenida Antonio Dovali Jaime
70 Torre B Piso 9
Colonia La Fe, Santa Fé,
Delegación Alvaro Obregón,
México D.F. 01210
Tel. (52) 555-326-7100
R.F.C.: BDE810626-1W7

EXHIBIT 126

Complainant iRobot Corporation
337-TA-1057

INFRINGEMENT OF U.S. PATENT NO. 6,809,490
BY BLACK + DECKER'S HRV420BP07 ROBOTIC VACUUM

U.S. 6,809,490	
CLAIM 1 OF THE '490 PATENT	**HRV420BP07**
[A] A mobile robot comprising:	The preamble is not limiting. To the extent the preamble is determined to be limiting, the preamble is met. The Black + Decker HRV420BP07 Robotic Vacuum ("HRV420BP07") is a mobile robot. For example, the HRV420BP07 is a "self-cleaning robotic vacuum." (*See, e.g.*, http://www.blackanddecker.com/en-us/products/home-cleaning/vacuums/robotic-vacuums/pet-lithium-robotic-vacuum-with-smartech/hrv420bp07, ("B+D Product Page") (accessed on May 23, 2017).)
[B] (a) means for moving the robot over a surface;	To the extent that this limitation is treated under 35 U.S.C. § 112, paragraph 6,[1] the '490 Patent discloses structure corresponding to the recited function. For example, the '490 Patent describes that "[a] preferred embodiment of the robot also contains two wheels 20, [and] motors 21 for driving the wheels independently..." (The '490 Patent, col. 5:59-60.) The '490 Patent further describes that a microprocessor is connected to the motors and that "I/O ports of the microprocessor are connected to the sensors and motors of the robot and are the interface connecting it to the internal state of the robot and its environment." (*Id.*, col. 7:49-52.) "The microcontroller 22[,] controlling differential speed at which the individual wheel motors 21 are run, determines the turning radius." (*Id.*, col. 8:8-10.) Moreover, "the robot's microprocessor and control software run a number of behaviors simultaneously. Depending on the situation, control of the robot will be given to one or more various behaviors." (*Id.*, col. 8:59-62.)

[1] Section 112 recites, "[a]n element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." Claim Feature 1[B] is directed to "means" for performing a specified function, *i.e.*, "moving the robot over a surface." This claim chart includes a non-limiting discussion of Section 112; Complainant reserves the right to fully address Section 112 as needed during claim construction.

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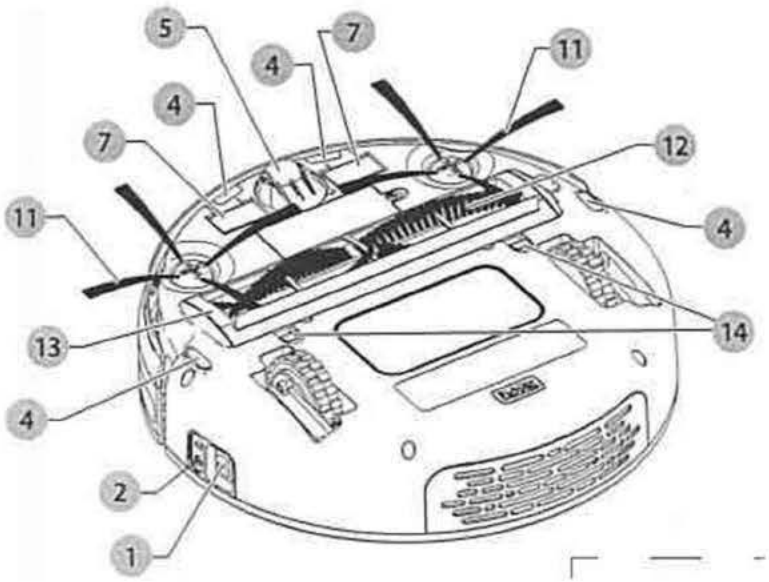
	Turning to the HRV420BP07, the HRV420BP07 includes means for moving the HRV420BP07 over a surface. For example, the HRV420BP07 includes right side and left side rear wheel modules and a front wheel module with wheels and motors to drive the wheels to move the HRV420BP07 across the floor surface. (*See, e.g.*, Black + Decker Robotic Vacuum Instruction Manual – Catalog Number HRV425BL, HRV425BP, HRV420BP07 ("Instruction Manual"), page 2, image below; *see also, e.g.,* rear wheel assembly and front wheel assembly of HRV420BP07, images below.) 

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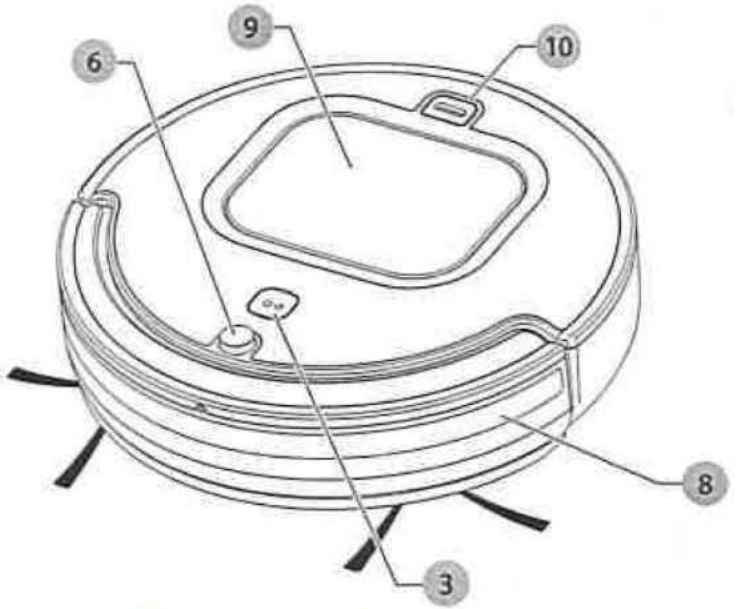
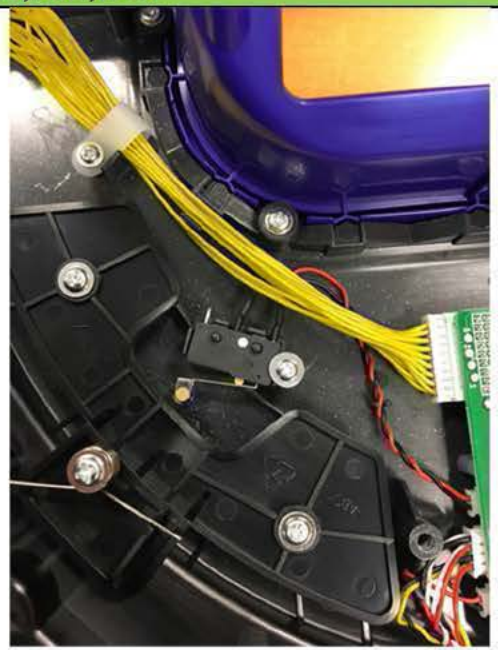
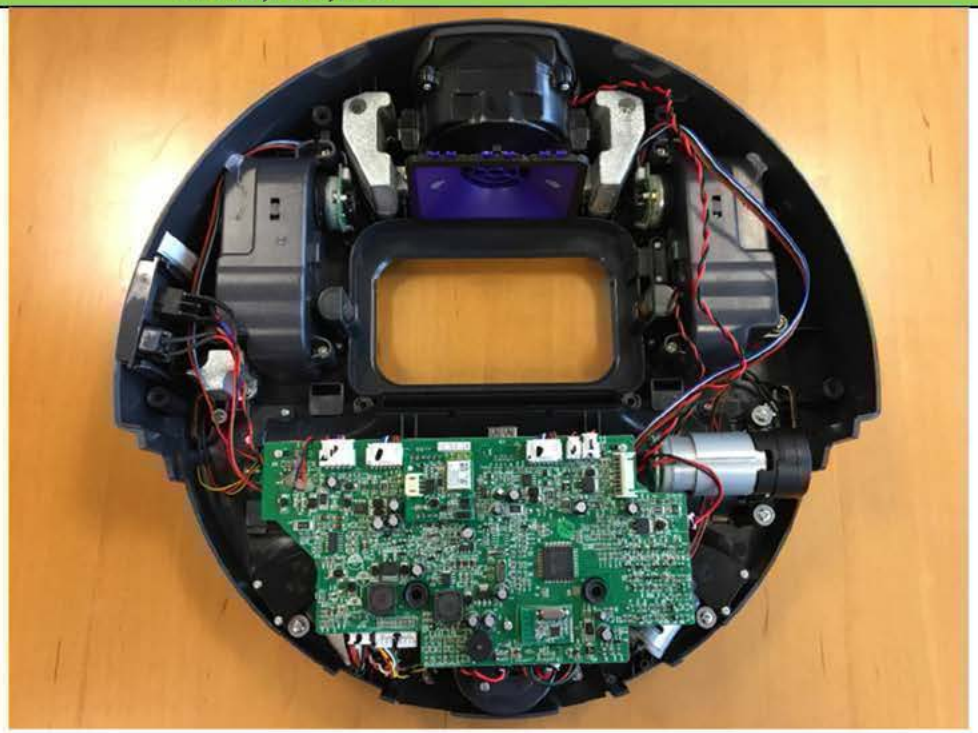
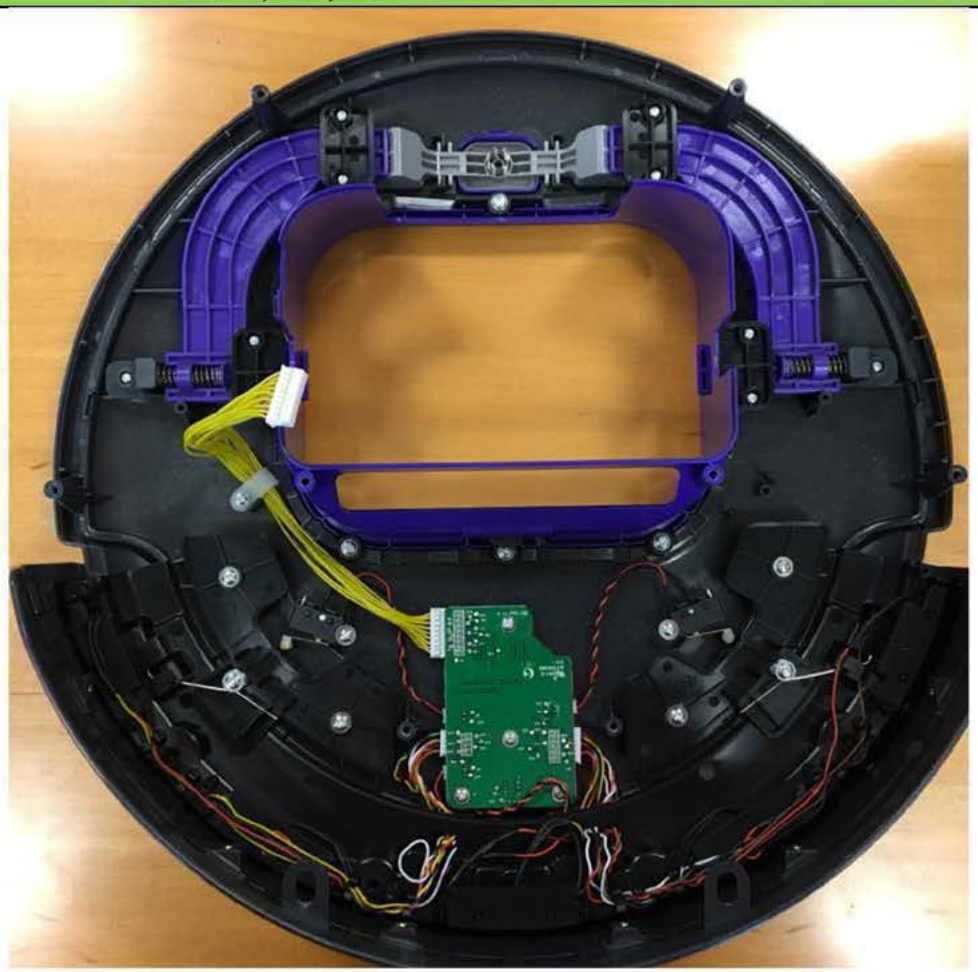
U.S. 6,809,490	
	
[C] (b) an obstacle detection sensor;	The HRV420BP07 includes an obstacle detection sensor.

U.S. 6,809,490	
	For example, the HRV420BP07 includes a bumper and a bump sensor to detect contact between the bumper and an obstacle. (*See, e.g.*, Instruction Manual, page 2, image below.)  A bump sensor associated with the bumper may detect an obstacle, *e.g.*, via contact between the bumper and the obstacle. (*See, e.g.*, bump sensor of HRV420BP07, image below.)

U.S. 6,809,490	
	
[D] (c) and a control system operatively connected to said obstacle detection sensor and said means for moving;	The HRV420BP07 includes a control system operatively connected to said obstacle detection sensor and said means for moving. The HRV420BP07 includes a control system, and the control system of the HRV420BP07 is operatively connected to the obstacle detection sensor. For example, the control system is connected to the bump sensor. (*See, e.g.*, HRV420BP07 with portion of housing removed, images below.)

U.S. 6,809,490	
	

U.S. 6,809,490	
	

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	The control system of the HRV420BP07 is also operatively connected to the motors of the means for moving. (*See, e.g.,* HRV420BP07, showing connectors for a rear wheel motor and front wheel motor, image below.)  
[E] (d) said control system configured to operate the robot in a plurality of operational modes and to select from among the plurality of modes in real time in response to signals generated by the obstacle detection sensor, said	The control system of the HRV420BP07 is configured to operate the HRV420BP07 in a plurality of modes, and to select from among the plurality of modes in real time in response to signals generated by the obstacle detection sensor. The HRV420BP07 is configured to operate in various operational modes, including Auto, Quick, Spot, and Manual Clean. (*See, e.g.*, https://itunes.apple.com/us/app/black-decker/id1097648295?mt=8 (accessed on June 7, 2017) ("iTunes App Page"), image below; *see also, e.g.*, B+D App, images below.)

U.S. 6,809,490	
plurality of operational modes comprising:	**Description** The BLACK+DECKER™ app now supports the all new BLACK+DECKER™ Robot Vacuum and BLACK+DECKER Batteries. You can connect your Robot vacuum with the app via Bluetooth®. Once connected, you can access additional features such as creating and managing cleaning schedules, additional cleaning modes, and direct control of your robot vacuum. • Select 3 different cleaning modes – Auto, Quick, and Spot Clean Choose the option that meets your cleaning needs. Quickly change modes or start and stop cleaning directly from inside the app. • Schedule Automated Cleaning Sessions Clean up at the time that's best for you. Best of all, you don't need to be close by. • Manually control your robot Take your robot vacuum out for a spin by choosing where the robot goes. Also, stop or start cleaning directly from the app. • Choose the color that matches your mood (LED Models) Choose a color for your robot and illuminate the house as it cleans. The HRV420BP07 is programmed with multiple cleaning patterns. "*See, e.g.*, B+D HRV420BP07, HRV425BL and HRV425BLP Packaging Insert) ("Packaging Insert").)

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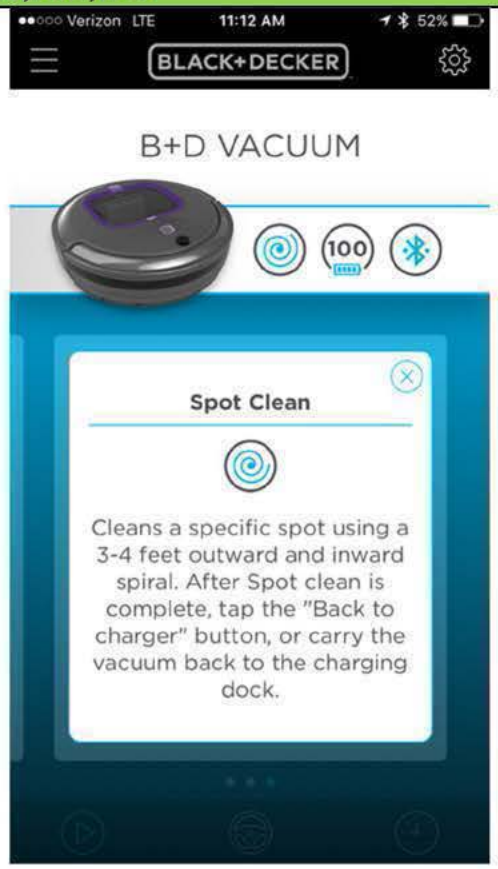
FOLLOW FOR BEST PERFORMANCE
WARNING
Works with: HRV420BP07, HRV425BL and HRV425BLP
SET UP DOCK
TURN UNIT ON
CHARGE FULLY BEFORE USE
DOWNLOAD APP
1
2
3
4
4-5 HOURS
Place docking station flat against wall on level floor
Plug docking station into outlet
Leave 4 ft. clear space around dock
Unit must be in ON (I) position to charge
Control and schedule from your smartphone
PICK UP CLUTTER BEFORE USE
SO ROBOT CAN CLEAN
Toys
Clothes
Cords
Fragile
ROBOT WILL AUTOMATICALLY SWITCH BETWEEN THE FOLLOWING PATTERNS
Rows
Zig-zag
Spiral*

U.S. 6,809,490	
	On information and belief, the control system of the HRV420BP07 is configured to select from among the multiple patterns in real time in response to signals generated by the obstacle detection sensor. Documentary evidence of this claim limitation may depend on discovery concerning the HRV420BP07, including source code for this product. Accordingly, iRobot reserves its rights to supplement its infringement contentions once these materials have been produced and iRobot has had sufficient time to analyze them.
[F] a spot-coverage mode whereby the robot operates in an isolated area,	The modes of the HRV420BP07 include a spot-coverage mode whereby the HRV420BP07 operates in an isolated area. For example, the HRV420BP07 operates in "Spot Clean" mode whereby the robot "cleans in a spiral pattern, from the inside out and back again, for a period of about five (5) minutes." (BLACK + DECKER App User Guide, https://s3.amazonaws.com/sbd-smartech-faqs/VacAppBundle/VacAppGuide.html, ("App User Guide") (accessed on June 6, 2017); *see also, e.g.*, B+D App, image below.)

U.S. 6,809,490	
	
[G] an obstacle following mode whereby said robot travels adjacent to an obstacle, and	The modes of the HRV420BP07 include an obstacle following mode whereby the HRV420BP07 travels adjacent to an obstacle. For example, in at least Auto Clean Mode and Quick Clean Mode the HRV420BP07 "follows a random pattern around the room, vacuuming in a straight line for its maximum distance (the length of an average room) or until it bumps into a wall or other object and turns." (App User Guide.) The HRV420BP07 travels adjacent to an object in at least Auto Clean Mode and Quick Clean Mode. (*See, e.g.*,

U.S. 6,809,490	
	https://www.amazon.com/dp/B01MSBX8UH/ref=twister_B06ZYSR2L1?_encoding=UTF8&psc=1 ("Amazon Sales Page") (accessed on June 7, 2017), image below.)  Documentary evidence of this claim limitation may depend on discovery concerning the HRV420BP07, including source code for that product. Accordingly, iRobot reserves its rights to supplement its infringement contentions once these materials have been produced and iRobot has had sufficient time to analyze them. In addition, on information and belief, the HRV420BP07 is capable of traveling adjacent to an object while vacuuming in a straight line for its maximum distance without bumping into a wall or other object in at least Manual Clean Mode:

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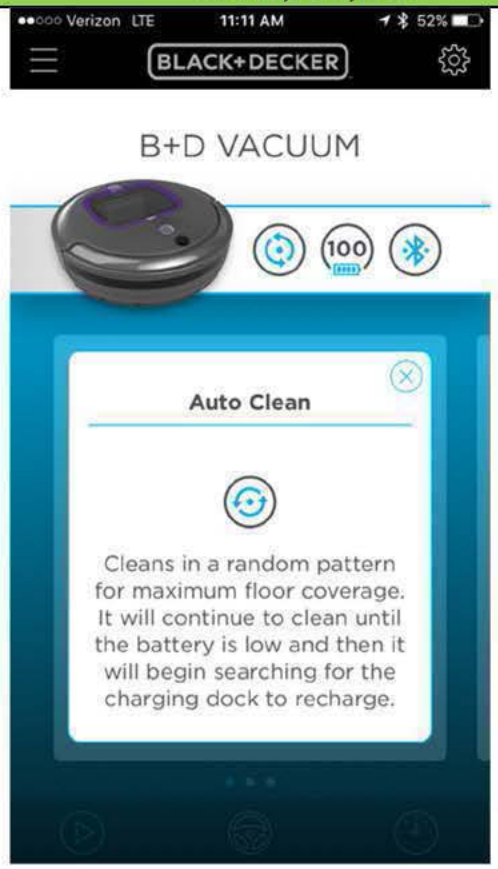
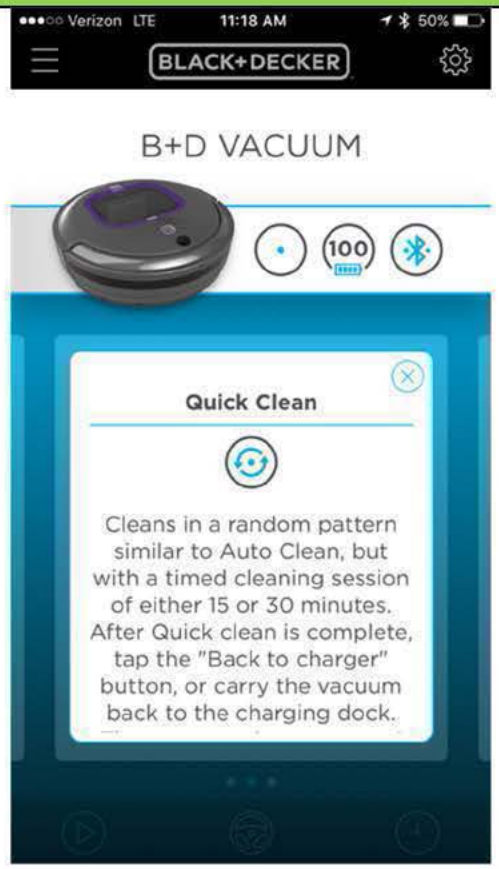
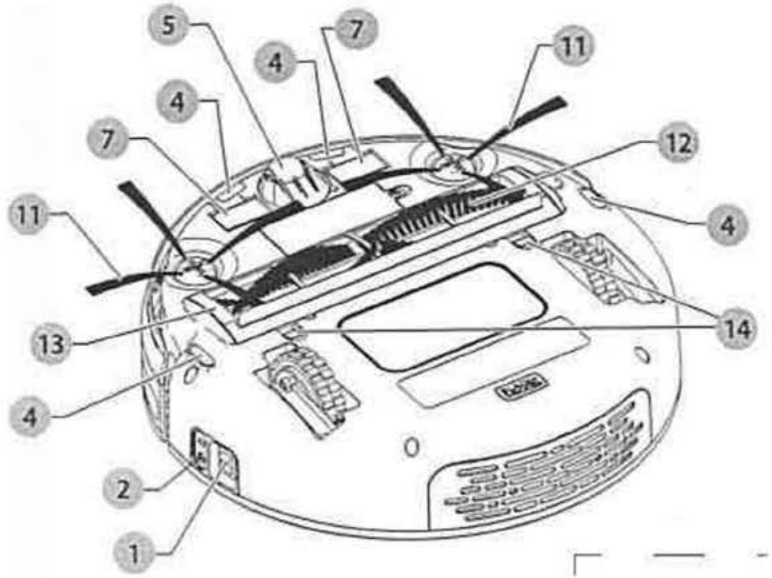
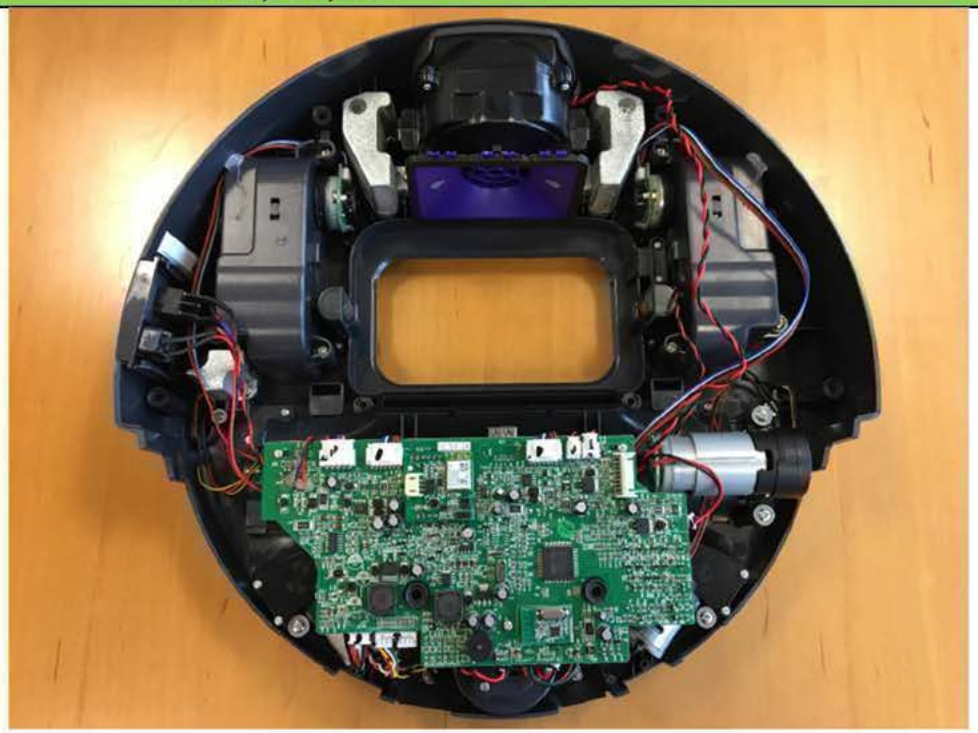
[H] a bounce mode whereby the robot travels substantially in a direction away from an obstacle after encountering the obstacle, and	The modes of the HRV420BP07 include a bounce mode whereby the HRV420BP07 travels substantially in a direction away from an obstacle after encountering the obstacle. For example, in at least Auto Clean Mode and Quick Clean Mode the HRV420BP07 "follows a random pattern around the room, vacuuming in a straight line for its maximum distance (the length of an average room) or until it bumps into a wall or other object and turns." (App User Guide; *see also, e.g.*, B+D App, images below.)

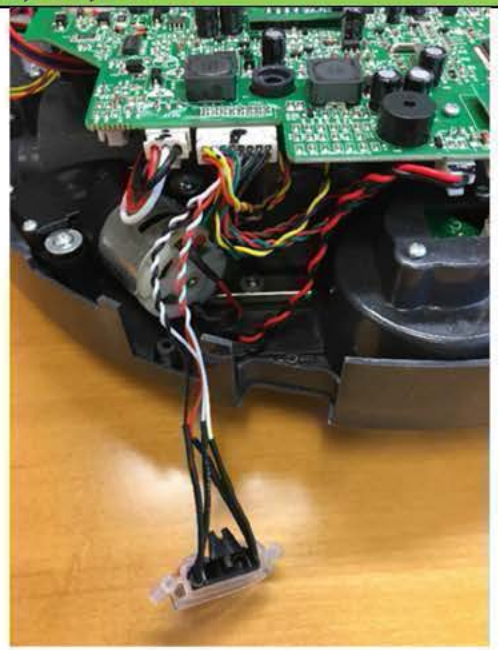
U.S. 6,809,490	
	  In addition, on information and belief, the HRV420BP07 is capable of travelling substantially in a direction away from an obstacle after encountering the obstacle in at least Manual Clean Mode:
[I] wherein, when in the obstacle following mode, the robot travels adjacent to an obstacle for a distance at least	When in the obstacle following mode, the HRV420BP07 travels adjacent to an obstacle for a distance at least twice the work width of the HRV420BP07.

U.S. 6,809,490	
twice the work width of the robot.	For example, on information and belief, the HRV420BP07 will travel adjacent to an obstacle such as a wall for a distance at least twice the work width of the robot. (*See, e.g.*, App User Guide, image below.) **Scheduling an Auto Clean** The robot vac performs in auto clean mode whenever you schedule the auto cleanings to occur. You choose the days and times the auto cleaning occurs. When in auto mode, the robot will vacuum around the room in which it is placed until its battery charge level dips to 15-20%, at which time it will initiate a search for its charging station. During auto cleaning, the robot vac follows a random pattern around the room, vacuuming in a straight line for its maxium distance (the length of an average room) or until it bumps into a wall or other object and turns.
CLAIM 42 OF THE '490 PATENT	**HRV420BP07**
[A] A mobile robot comprising:	The preamble is not limiting. To the extent the preamble is determined to be limiting, the preamble is met. The HRV420BP07 is a mobile robot. *See the evidence cited for element [1A] above, which is incorporated herein by reference.*
[B] (a) means for moving the robot over a surface;	The HRV420BP07 includes means for moving the HRV420BP07 over a surface. *See the discussion and evidence cited for element [1B] above, which is incorporated herein by reference.*
[C] (b) an obstacle detection sensor;	The HRV420BP07 includes an obstacle detection sensor. *See the evidence cited for element [1C] above, which is incorporated herein by reference.*

U.S. 6,809,490	
[D] (c) a cliff sensor; and	The HRV420BP07 includes a cliff sensor. For example, the HRV420BP07's ground detection "[s]ensors detect stairs and other drop-offs." (B+D Product Page; *see also, e.g.,* Instruction Manual, page 5, image below.) 

U.S. 6,809,490	
	1 Power switch 2 Charging socket 3 Start/Stop button 4 Ground detection sensor 5 Front wheel 6 Infrared receiver 7 Charging plate 8 Front lens 9 Dust bin 10 Dust bin release button 11 Side brushes 12 Main brush 13 Main brush frame 14 Main brush frame tabs 15 Charging dock 16 Charging dock infrared window 17 Charging electrodes 18 Battery charger 19 Maintenance tool 28 Charging dock pairing button **Additional Accessories** a. Side brushes (2) b. Side brush screws (2) c. HEPA filter
[E] (d) a control system operatively connected to said obstacle detection sensor, said cliff sensor, and said means for moving;	The HRV420BP07 includes a control system operatively connected to said obstacle detection sensor, said cliff sensor, and said means for moving. For example, the HRV420BP07 is operatively connected to the obstacle detection sensor and means for moving: *See the evidence cited for element [1D] above, which is incorporated herein by reference.* The control system of the HRV420BP07 is also operatively connected to the cliff sensor. (*See e.g.*, HRV420BP07 with portion of housing removed, images below.)

U.S. 6,809,490	
	

U.S. 6,809,490	
	
[F] (e) said control system configured to operate the robot in a plurality of operational modes, said plurality of operational modes comprising:	The control system of the HRV420BP07 is configured to operate the HRV420BP07 in a plurality of operational modes. *See the evidence cited for element [1E] above, which is incorporated herein by reference.*
[G] a spot-coverage mode whereby the robot operates in an isolated area,	The modes of the HRV420BP07 include a spot-coverage mode whereby the HRV420BP07 operates in an isolated area. *See the evidence cited for element [1F] above, which is incorporated herein by reference.*
[H] an obstacle following mode whereby said robot travels adjacent to an obstacle	The modes of the HRV420BP07 include an obstacle following mode whereby the HRV420BP07 travels adjacent to an obstacle for a distance at least twice the work width of the HRV420BP07.

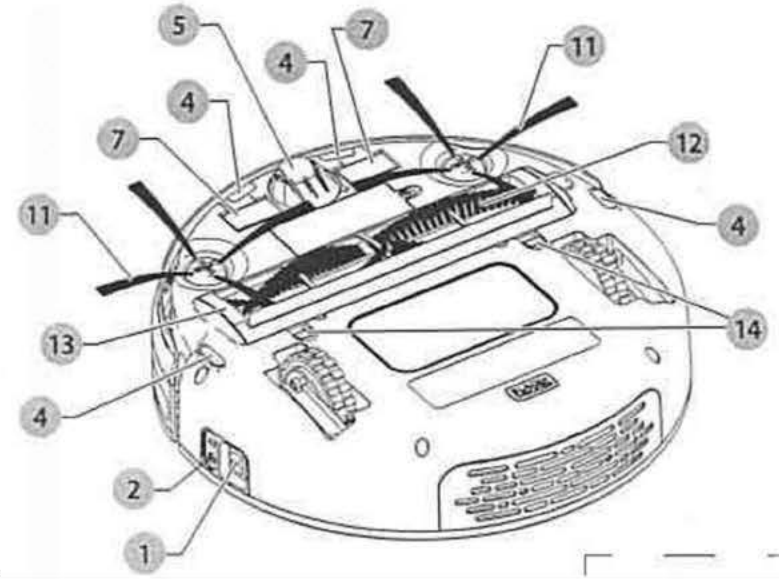
U.S. 6,809,490	
for a distance at least twice the work width of the robot, and	*See the evidence cited for elements [1G] and [1I] above, which is incorporated herein by reference.*
[I] a bounce mode whereby the robot travels substantially in a direction away from an obstacle after encountering the obstacle.	The modes of the HRV420BP07 include a bounce mode whereby the HRV420BP07 travels substantially in a direction away from an obstacle after encountering the obstacle. *See the evidence cited for element [1H] above, which is incorporated herein by reference.*

EXHIBIT 127

Complainant iRobot Corporation
337-TA-1057

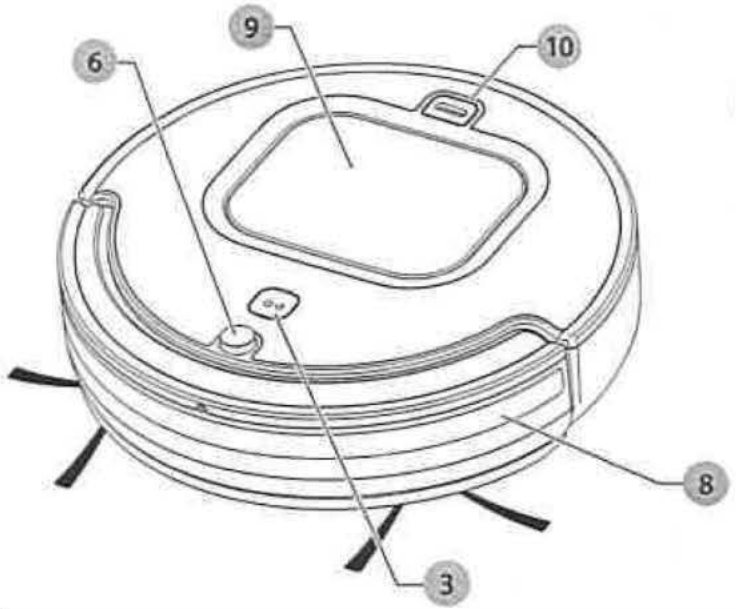
INFRINGEMENT CLAIM CHART OF U.S. PATENT NO. 7,155,308
BY BLACK + DECKER'S HRV420BP07 ROBOTIC VACUUM

U.S. 7,155,308	
CLAIM 1 OF THE '308 PATENT	**HRV420BP07**
[A] A sensor subsystem for an autonomous robot which rides on a surface, the sensor subsystem comprising:	The preamble is not limiting. To the extent the preamble is determined to be limiting, the preamble is met. The Black + Decker HRV420BP07 Robotic Vacuum ("HRV420BP07") includes a sensor subsystem for an autonomous robot which rides on a surface. For example, the HRV420BP07 is a "self-cleaning robotic vacuum," (http://www.blackanddecker.com/en-us/products/home-cleaning/vacuums/robotic-vacuums/pet-lithium-robotic-vacuum-with-smartech/hrv420bp07, ("B+D Product Page") (accessed on May 23, 2017).) In addition, the HRV420BP07 "[s]ensors detect stairs and other drop-offs." (*Id.*)
[B] an optical emitter which emits a directed optical beam having a defined field of emission;	The HRV420BP07 includes an optical emitter which emits a directed optical beam having a defined field of emission. For example, the optical emitter can be an emitter of a ground detection sensor of the HRV420BP07 or an emitter of the wall sensors of the HRV420BP07.

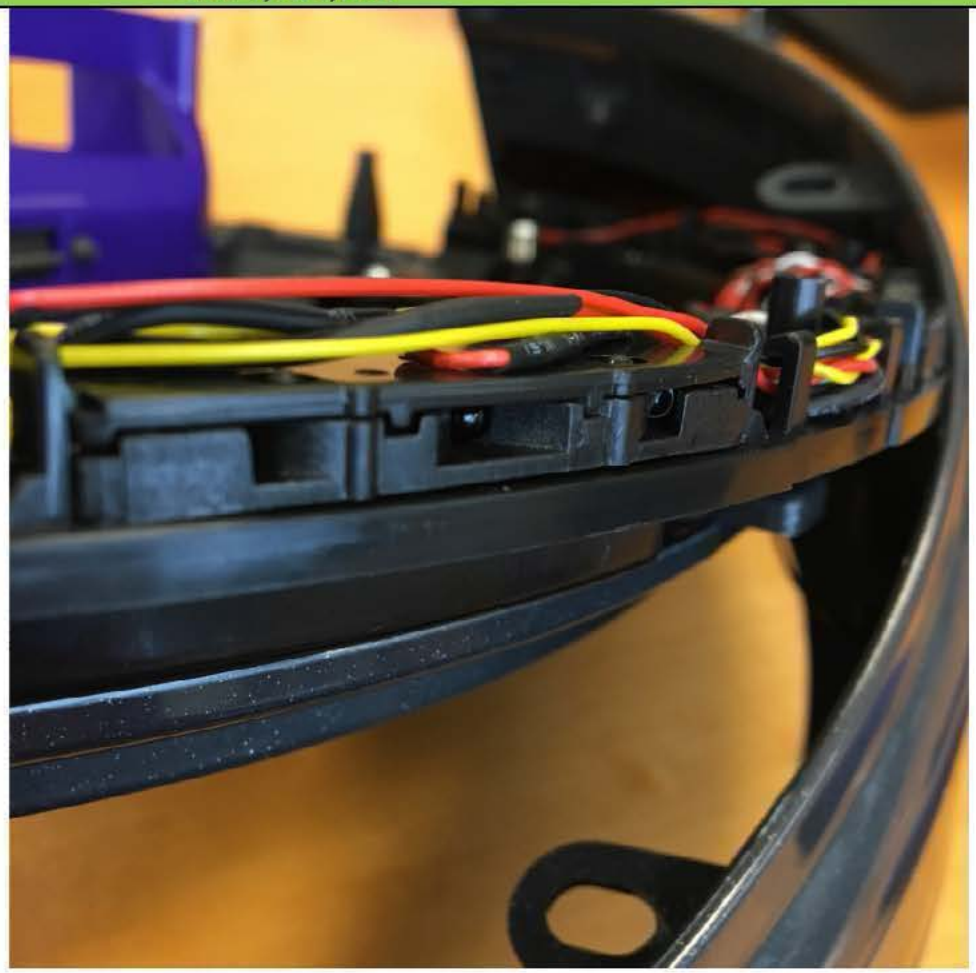
U.S. 7,155,308	
	The sensor subsystem of the HRV420BP07 includes ground detection sensors. (*See, e.g.*, Black + Decker Robotic Vacuum Instruction Manual – Catalog Number HRV425BL, HRV425BLP, HRV420BP07 ("Instruction Manual"), page 2, image below.) 

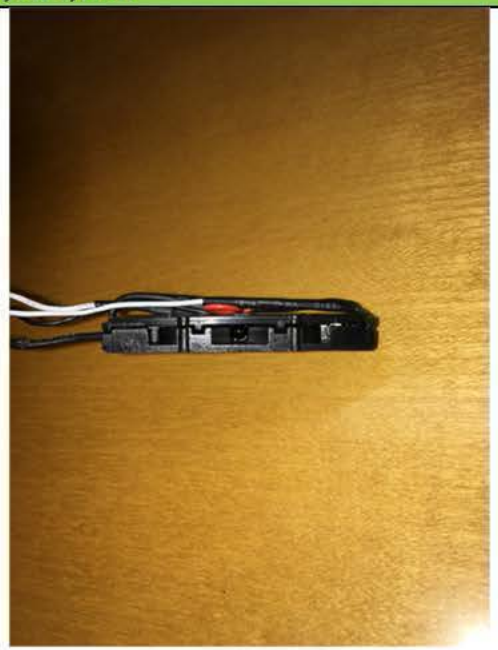
U.S. 7,155,308	
	1 Power switch 2 Charging socket 3 Start/Stop button 4 Ground detection sensor 5 Front wheel 6 Infrared receiver 7 Charging plate 8 Front lens 9 Dust bin 10 Dust bin release button 11 Side brushes 12 Main brush 13 Main brush frame 14 Main brush frame tabs 15 Charging dock 16 Charging dock infrared window 17 Charging electrodes 18 Battery charger 19 Maintenance tool 28 Charging dock pairing button **Additional Accessories** a. Side brushes (2) b. Side brush screws (2) c. HEPA filter Each of the ground detection sensors includes an optical emitter to emit a directed optical beam. (*See, e.g.*, https://www.amazon.com/dp/B01MSBX8UH/ref=twister_B06ZYSR2L1?_encoding=UTF8&psc=1 ("Amazon Sales Page") (accessed on June 7, 2017), image below.) The optical emitter has a defined field of emission, *e.g.*, defined by a position and/or orientation of the optical emitter, or by the emitter itself, or openings on the surface of the HRV420BP07.

U.S. 7,155,308	
	

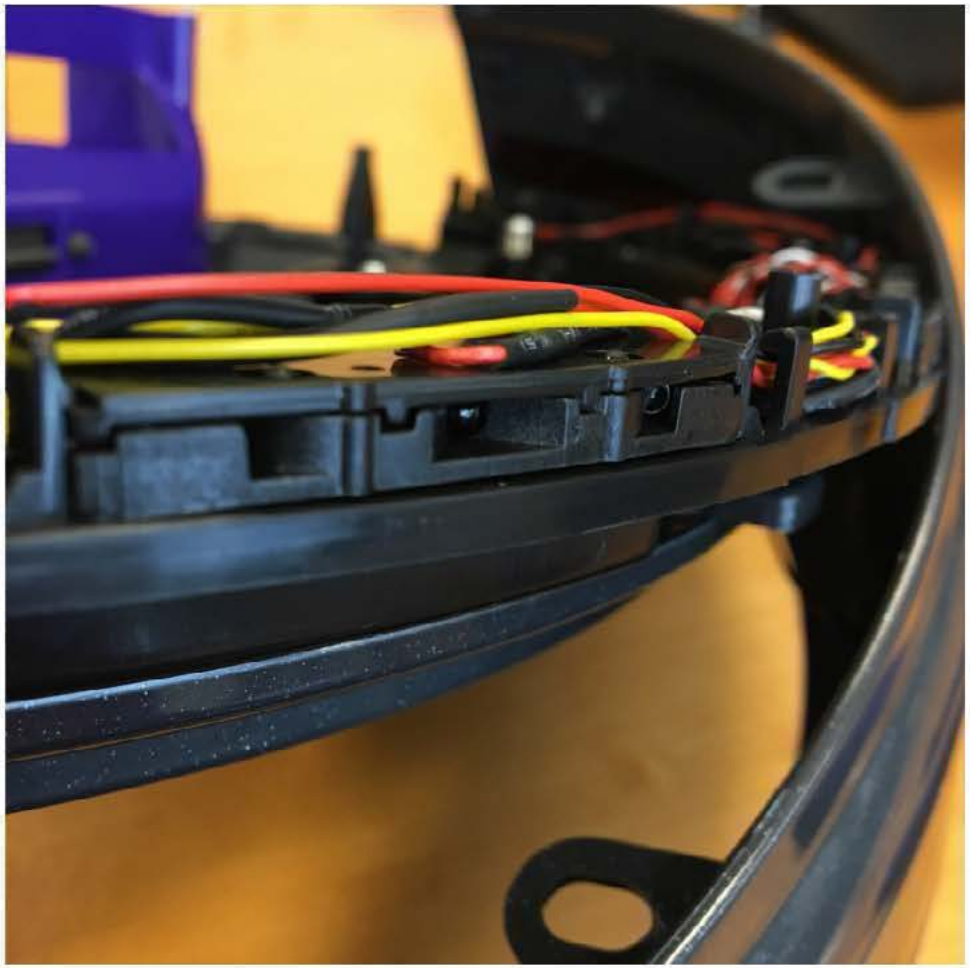
U.S. 7,155,308	
	The HRV420BP07 also includes wall sensors behind a front lens. (*See, e.g.*, Instruction Manual, page 2, image below) 

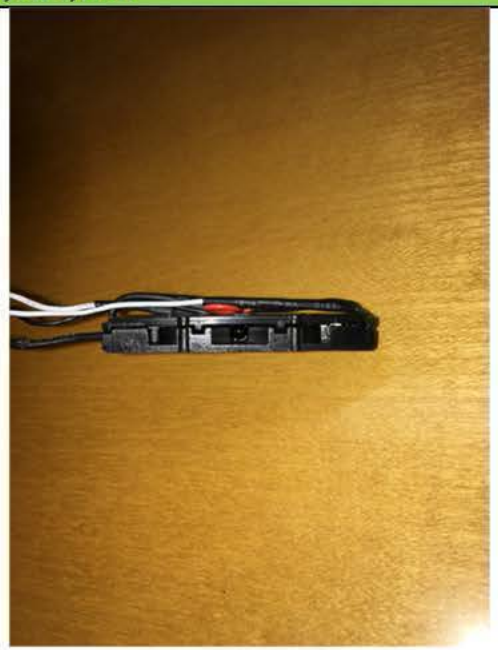
U.S. 7,155,308	
	1 Power switch 2 Charging socket 3 Start/Stop button 4 Ground detection sensor 5 Front wheel 6 Infrared receiver 7 Charging plate 8 Front lens 9 Dust bin 10 Dust bin release button 11 Side brushes 12 Main brush 13 Main brush frame 14 Main brush frame tabs 15 Charging dock 16 Charging dock infrared window 17 Charging electrodes 18 Battery charger 19 Maintenance tool 28 Charging dock pairing button **Additional Accessories** a. Side brushes (2) b. Side brush screws (2) c. HEPA filter Each of the wall sensors includes an optical emitter to emit a directed optical beam away from a surface of the HRV420BP07. (*See, e.g.*, wall sensors of HRV420BP07, images below.) The optical emitter has a defined field of emission, *e.g.*, defined by a position and/or orientation of the optical emitter, or by the emitter itself, or openings on the surface of the HRV420BP07.

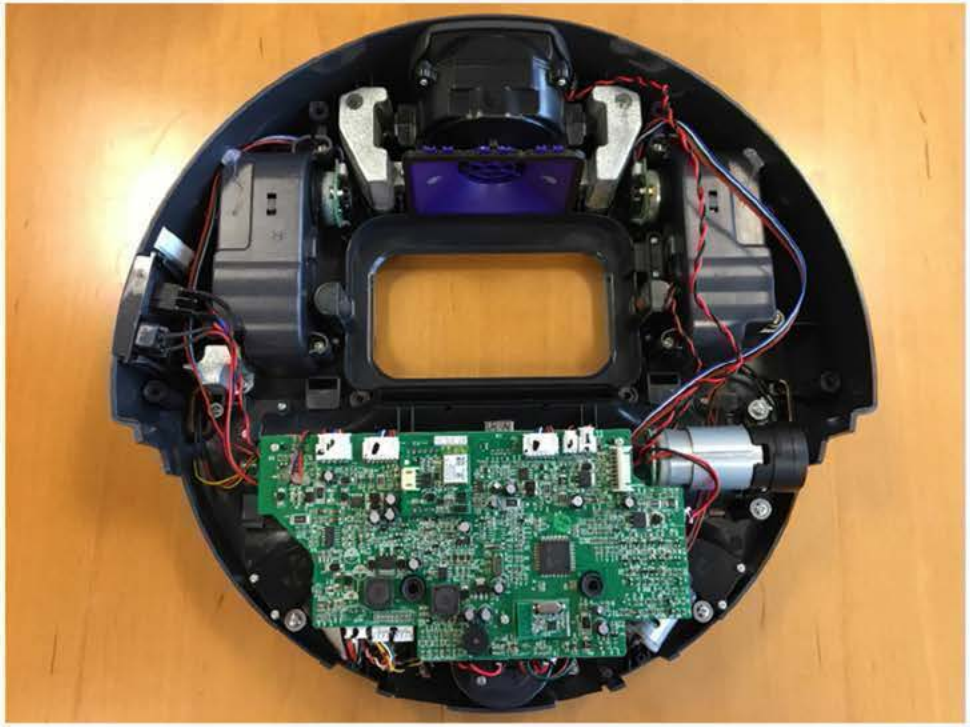
U.S. 7,155,308	
	

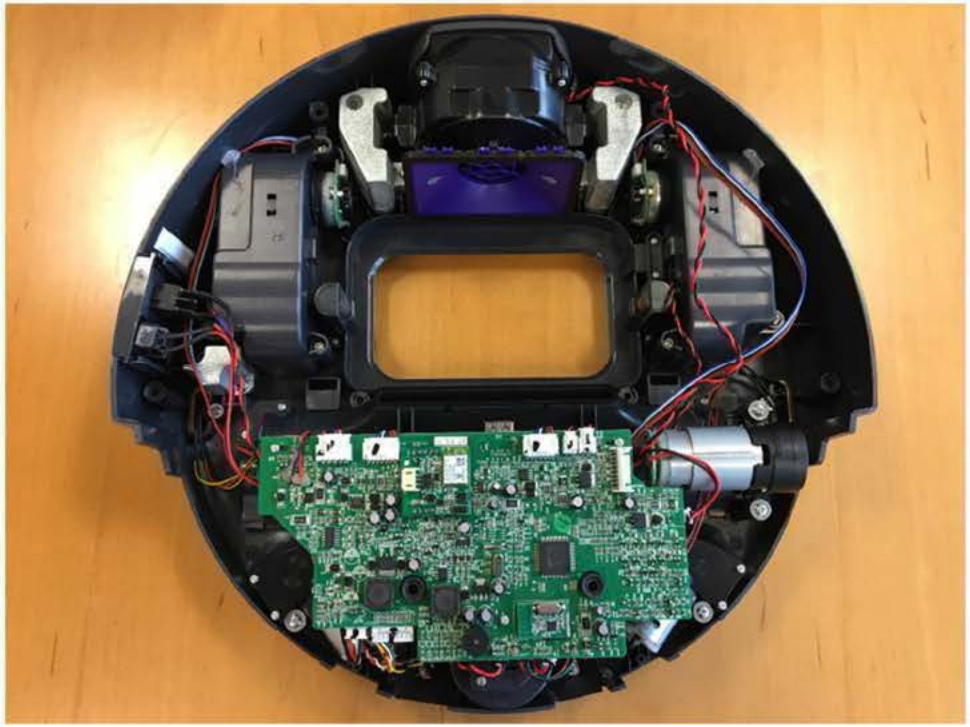
U.S. 7,155,308	
	
[C] a photon detector having a defined field of view which intersects the field of emission of the emitter at a region; and	The HRV420BP07 also includes a photon detector having a defined field of view which intersects the field of emission of the emitter at a region. For example, the photon detector can be a photon detector of the aforementioned ground detection sensor or wall sensor. Each of the ground detection sensors of the HRV420BP07 includes a photon detector. (*See, e.g.*, ground sensor of HRV420BP07, images below.) The photon detector has a defined field of view, *e.g.*, defined by a position and/or orientation of the photon detector, by the detector itself, or by openings on the surface of the HRV420BP07.

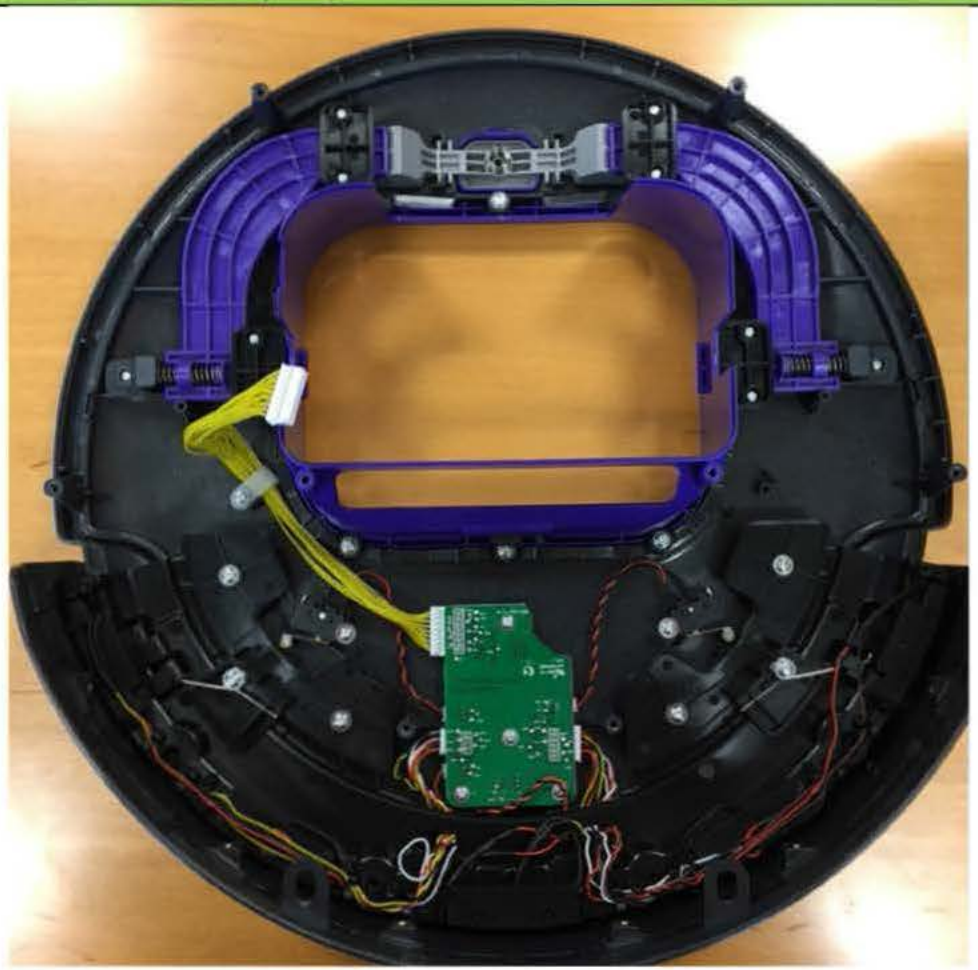
U.S. 7,155,308	
	 The defined field of view of the photon detector intersects the field of emission of the emitter at a region. For example, the optical emitter and the photon detector both face downward from the bottom surface of the HRV420BP07 and are proximate one another such that the field of emission of the optical emitter and the field of view of the photon detector intersect at a region below the HRV420BP07. Each of the wall sensors of the HRV420BP07 includes a photon detector. (*See, e.g.*, wall sensors of HRV420BP07, image below.) The photon detector has a defined field of view, *e.g.*, defined by a position and/or orientation of the photon detector, or by the detector itself, or by openings on the surface of the HRV420BP07.

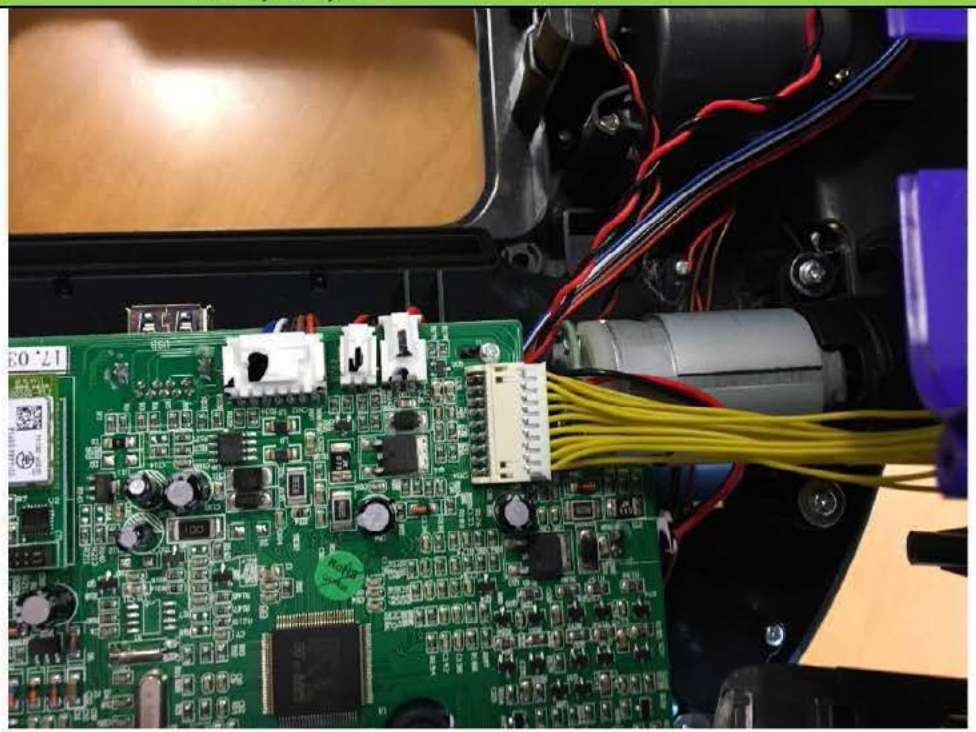
U.S. 7,155,308	
	

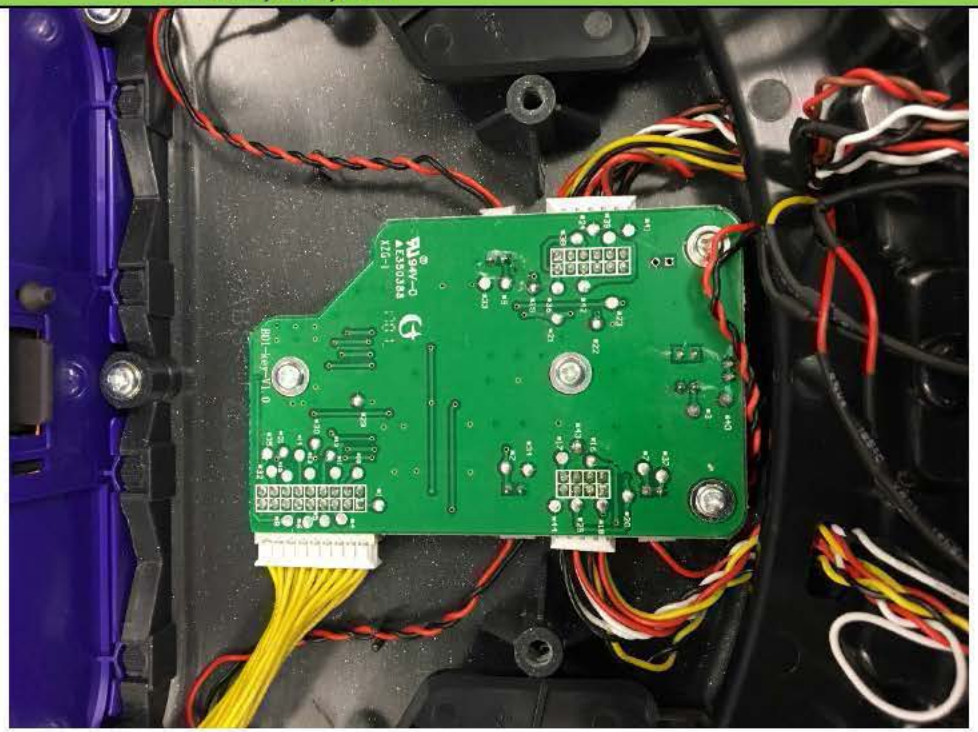
U.S. 7,155,308	
	 The defined field of view of the photon detector intersects the field of emission of the emitter at a region. For example, the optical emitter and the photon detector both face outward from the HRV420BP07 and are angled such that the field of view of the optical emitter and the field of view of the photon detector intersect at a region outward of the HRV420BP07.
[D] a circuit in communication with the detector providing an output	The HRV420BP07 also includes a circuit in communication with the detector providing an output when an object is not present in the region thereby re-directing the autonomous robot.

U.S. 7,155,308	
when an object is not present in the region thereby re-directing the autonomous robot.	(*See, e.g.,* HRV420BP07 with portion of housing removed, image below.)  For example, the circuit can be in communication with the detector of the aforementioned ground detection sensor or the detector of the wall sensor.

U.S. 7,155,308	
	The circuit is in communication with the detector of the ground detection sensor, *e.g.*, via wires connecting the circuit and the detector. (*See, e.g.,* HRV420BP07 with portion of housing removed, image below.)  The circuit provides an output to re-direct the HRV420BP07 when an object is not present in the region at which the field of view of the detector intersects the field of emission of the emitter. For example, the HRV420BP07 "[s]ensors detect stairs and other drop-offs." (B+D Product Page.) In another example, a circuit is in communication with the detector of the proximity sensor. (*See, e.g.,* HRV420BP07 with portion of housing removed, image below.)

U.S. 7,155,308	
	

U.S. 7,155,308	
	

U.S. 7,155,308	
	 The circuit provides an output when an object is not present in the region at which the field of view of the detector intersects the field of emission of the emitter. For example, the HRV420BP07 is re-directed based upon the presence or lack thereof of an object (*e.g.*, a surface, such as a wall) in the region.

U.S. 7,155,308	
CLAIM 19 OF THE '308 PATENT	**HRV420BP07**
[A] A sensor subsystem for an autonomous robot, the sensor subsystem comprising:	The preamble is not limiting. To the extent the preamble is determined to be limiting, the preamble is met. *See the evidence cited for element [1A] above, which is incorporated herein by reference.*
[B] at least two emitters, each for emitting a beam having a field of emission toward a surface upon which the autonomous robot travels;	The HRV420BP07 includes at least two emitters, each for emitting a beam having a field of emission toward a surface upon which the HRV420BP07 travels. For example, the at least two emitters can be emitters of ground detection sensors of the HRV420BP07 or emitters of wall sensors of the HRV420BP07, as discussed above with reference to Claim 1. *See the evidence cited for element [1B] above, which is incorporated herein by reference.*
[C] at least two photon detectors, each having a field of view which intersects at least one field of emission at a region; and	The HRV420BP07 includes at least two photon detectors, each having a field of view which intersects at least one field of emission at a region. For example, the at least two photon detectors can be photon detectors of the ground detection sensors or photon detectors of the wall sensors, as discussed above with reference to Claim 1. *See the evidence cited for element [1C] above, which is incorporated herein by reference.*
[D] a circuit in communication with the detectors to re-direct the autonomous robot when the	The HRV420BP07 includes a circuit in communication with the detectors to re-direct the autonomous robot when the surface is not present in at least one region. For example, the circuit can be in communication with the detectors of the ground detection sensors or the detectors of the wall sensors, as discussed above with reference to Claim 1.

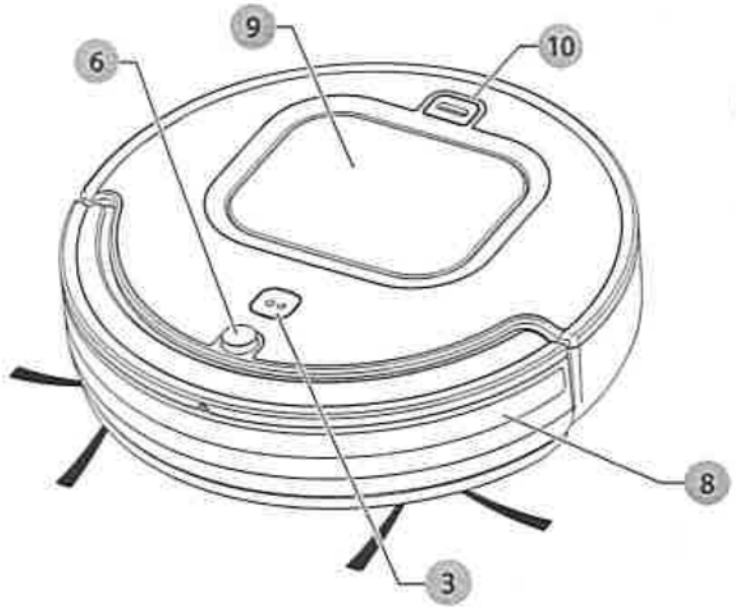
U.S. 7,155,308	
surface is not present in at least one region.	*See the evidence cited for element [1D] above, which is incorporated herein by reference.*

EXHIBIT 128

Complainant iRobot Corporation
337-TA-1057

INFRINGEMENT OF U.S. PATENT NO. 8,474,090
BY BLACK + DECKER'S HRV420BP07 ROBOTIC VACUUM

U.S. 8,474,090	
CLAIM 1 OF THE '090 PATENT	**HRV420BP07**
[A] A floor cleaning robot comprising:	The preamble is not limiting. To the extent the preamble is determined to be limiting, the preamble is met. The Black + Decker HRV420BP07 Robotic Vacuum ("HRV420BP07") is a floor cleaning robot. For example, the HRV420BP07 is a "self-cleaning robotic vacuum," (*See, e.g.*, http://www.blackanddecker.com/en-us/products/home-cleaning/vacuums/robotic-vacuums/pet-lithium-robotic-vacuum-with-smartech/hrv420bp07, ("B+D Product Page") (accessed on June 23, 2017).)
[B] a housing and a chassis;	The HRV420BP07 includes a housing and a chassis. (*See, e.g.*, Black + Decker Robotic Vacuum Instruction Manual – Catalog Number HRV425BL, HRV425BLP, HRV420BP07 ("Instruction Manual"), page 2, images below.)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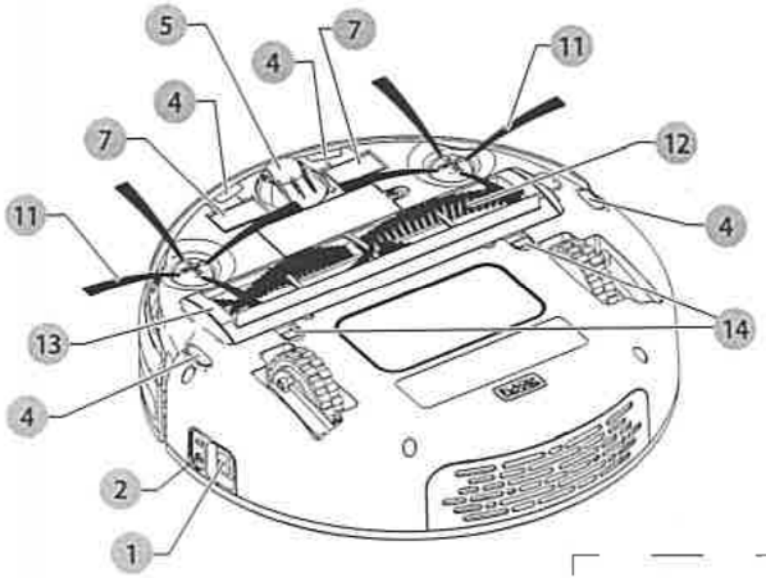
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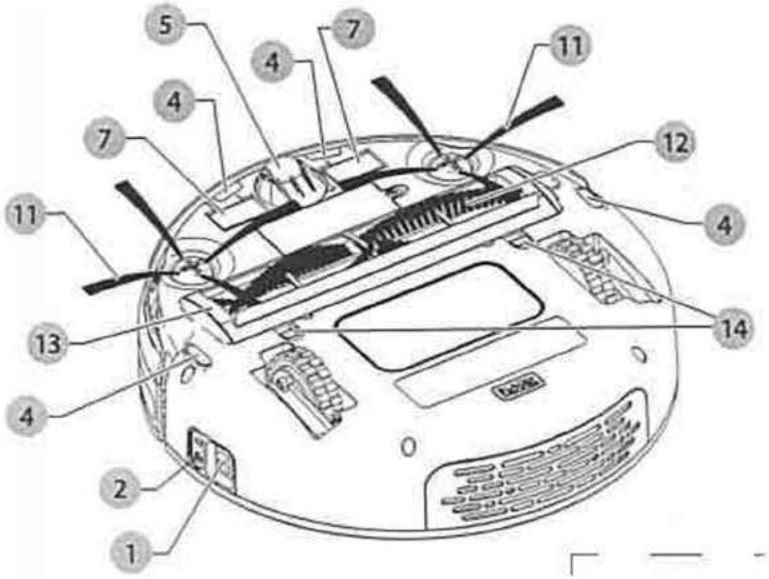
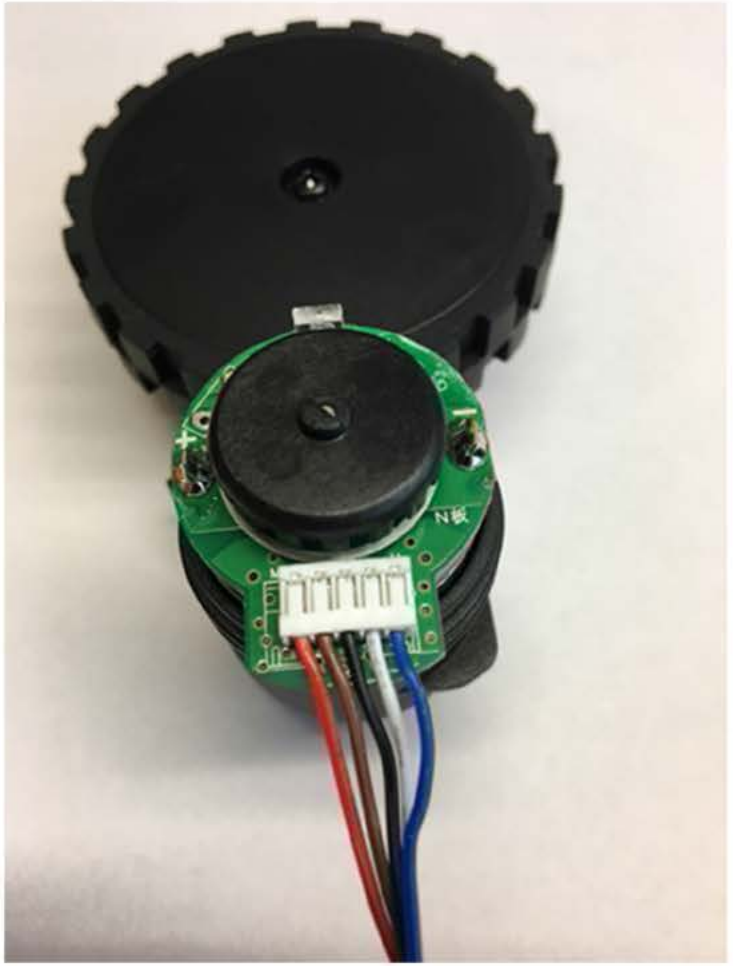
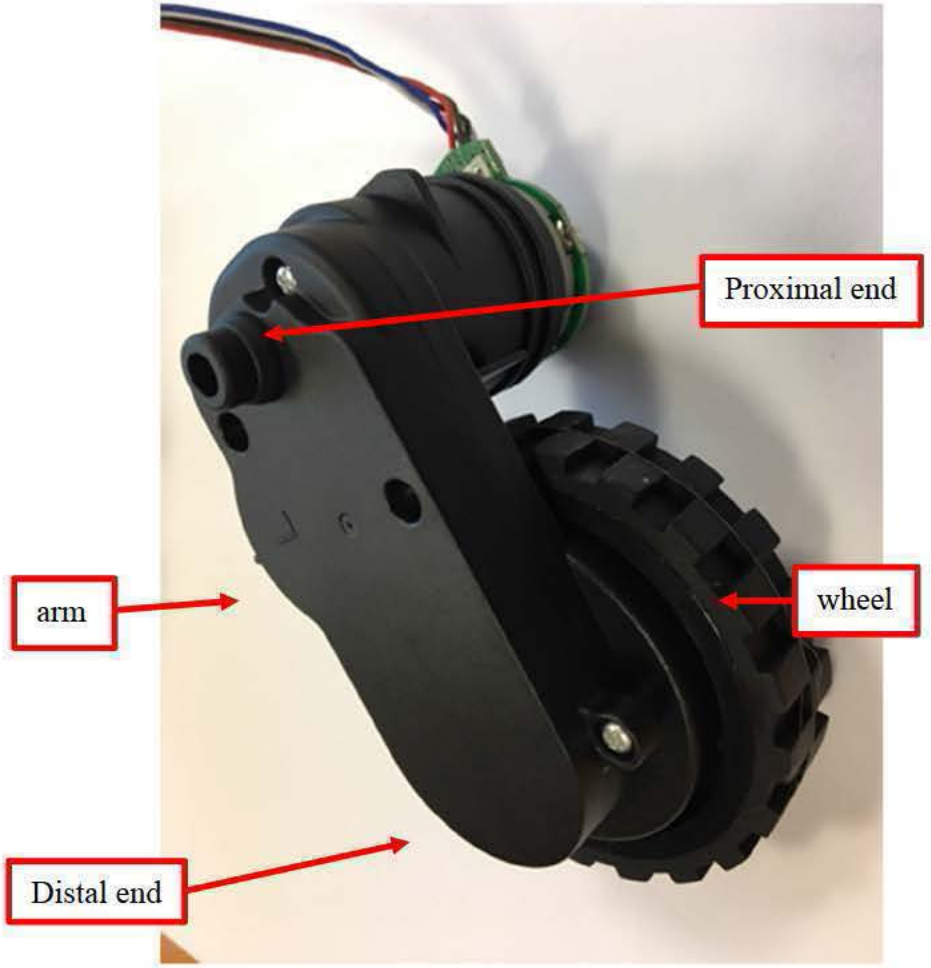
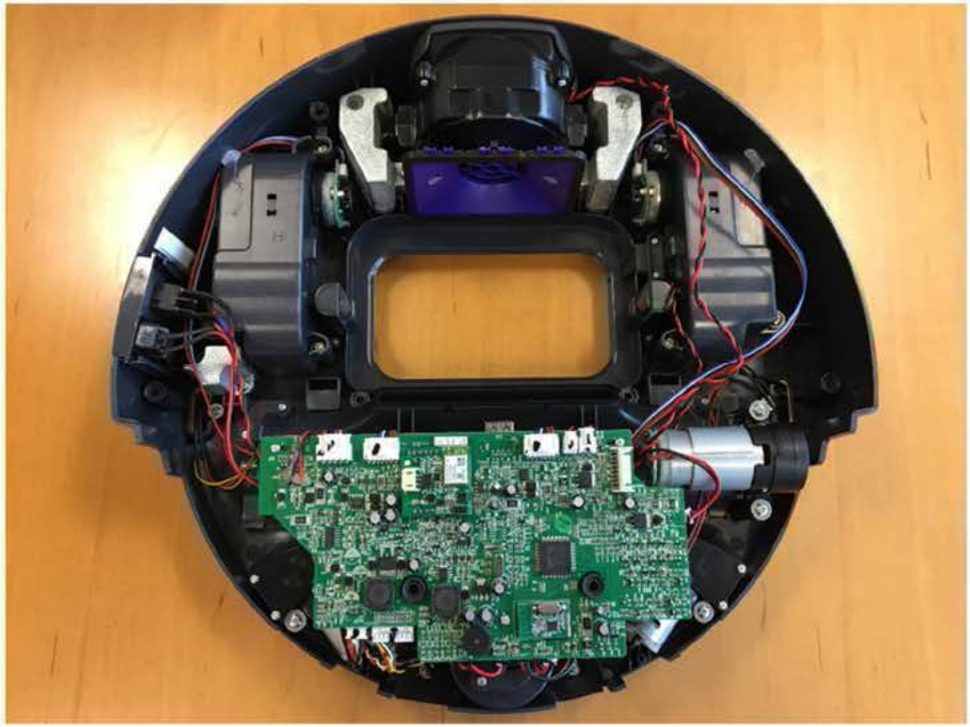
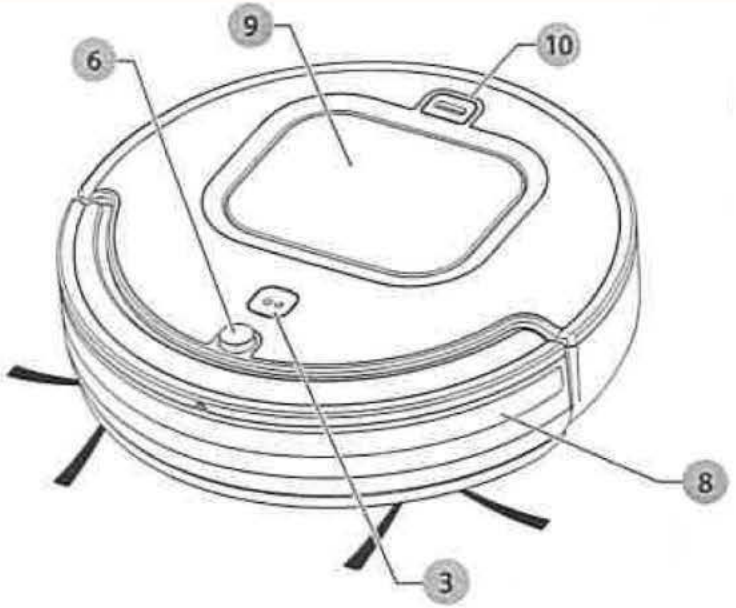
U.S. 8,474,090	
[C] wheels and at least one motor to drive the wheels disposed at least partially within the housing and configured to move the floor cleaning robot across a floor,	The HRV420BP07 includes wheels and at least one motor to drive the wheels disposed at least partially within the housing and configured to move the HRV420BP07 across a floor. For example, the HRV420BP07 includes at least two wheels. (*See, e.g.*, Instruction Manual, page 2, image below.) 

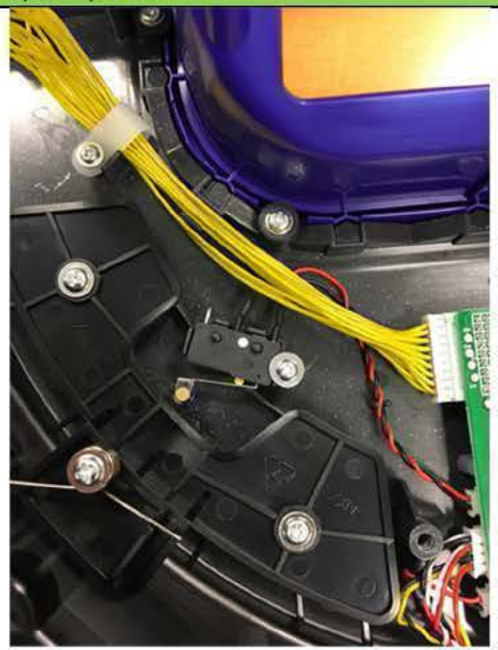
U.S. 8,474,090	
	The HRV420BP07 includes at least one motor to drive the wheels and configured to move the HRV420BP07 across a floor. (*See, e.g.*, wheel assembly of HRV420BP07, image below.) 

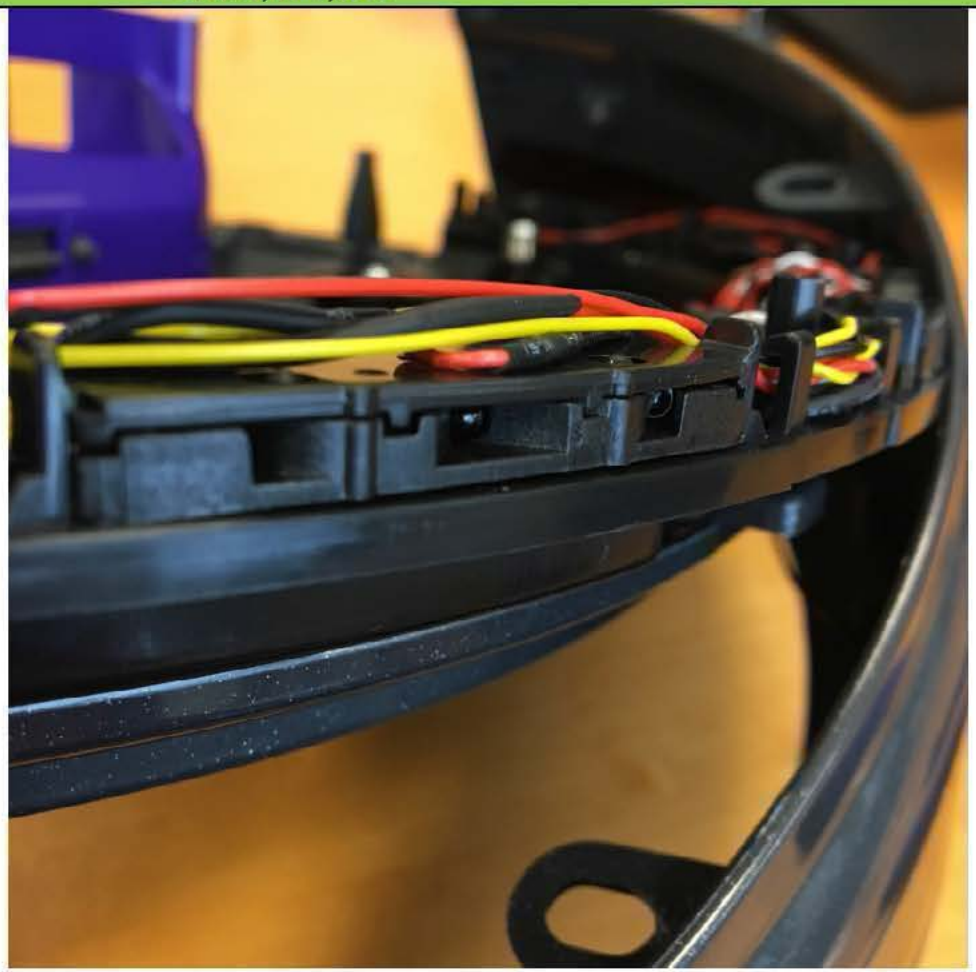
U.S. 8,474,090	
[D] each of the wheels being attached to the chassis via a respective arm having a distal end and a proximal end;	Each of the aforementioned wheels of the HRV420BP07 is attached to the chassis via a respective arm having a distal end and a proximal end. (*See, e.g.,* wheel assembly of HRV420BP07, image below (annotations added).) 

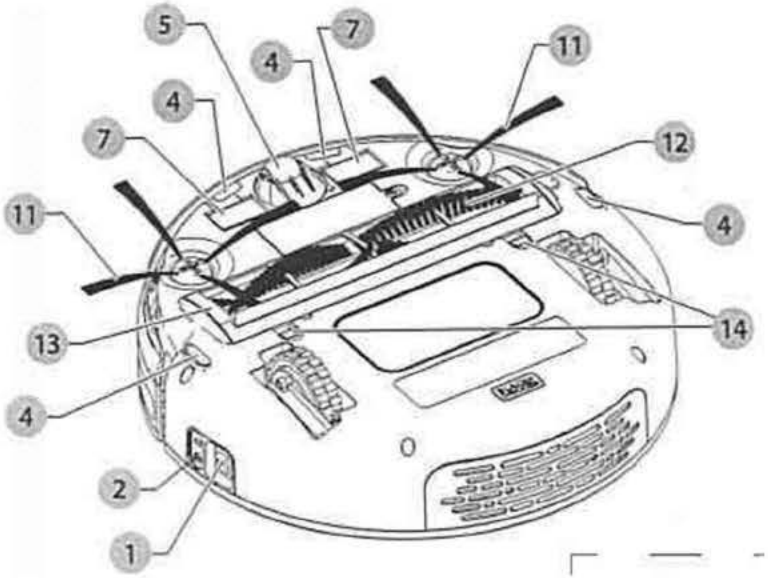
U.S. 8,474,090	
[E] a control module disposed within the housing and directing movement of the floor cleaning robot across the floor;	The HRV420BP07 includes a control module disposed within the housing and directing movement of the HRV420BP07 across the floor. (*See, e.g.,* HRV420BP07 with portion of housing removed, image below.) 

U.S. 8,474,090	
	The control module is connected to the at least one motor of the HRV420BP07 and thus can control operation of the at least one motor to direct movement of the HRV420BP07 across the floor. (*See, e.g.,* HRV420BP07, showing connectors for the motor.) 
[F] 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;	The HRV420BP07 includes at least one sensor for detecting an obstacle and communicating obstacle information to the control module so that the control module can cause the HRV420BP07 to react to the obstacle. In one example, the HRV420BP07 includes a bumper. (*See, e.g.*, Instruction Manual, page 2, image below.)

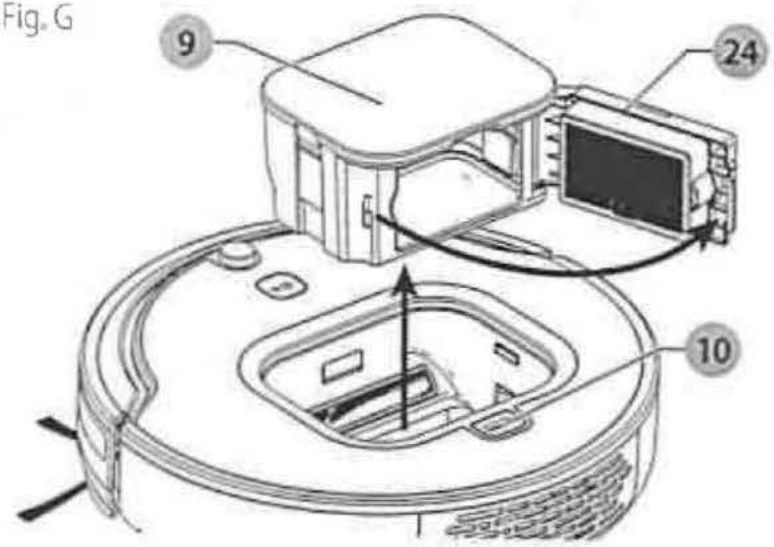
U.S. 8,474,090	
	 A bump sensor associated with the bumper may detect an obstacle, *e.g.*, via contact between the bumper and the obstacle. (*See, e.g.,* bump sensor of HRV420BP07, image below.)

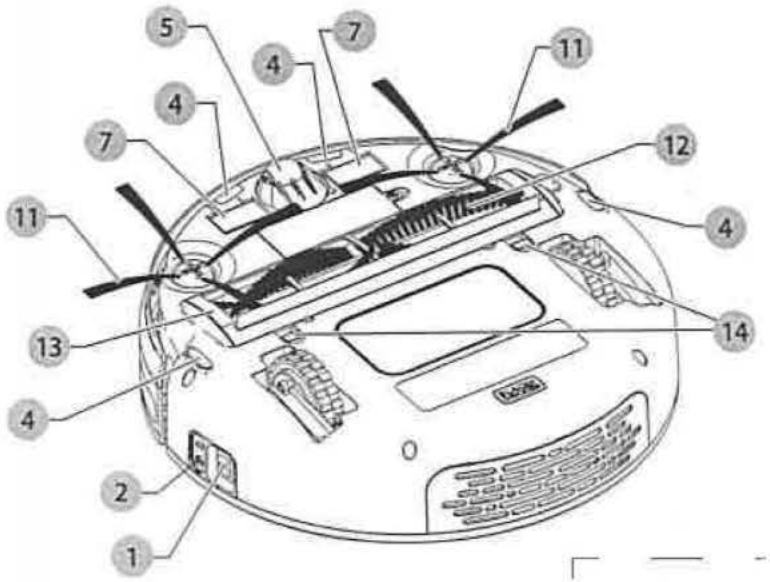
U.S. 8,474,090	
	 In this example, the bump sensor may communicate obstacle information to a control module to cause the HRV420BP07 to react to the obstacle. For example, the bump sensor can detect an obstacle, *e.g.*, a wall surface, when the bumper contacts the wall surface and moves relatives to the obstacle. On information and belief, when the bumper contacts a wall surface, the HRV420BP07 moves away from the wall surface. The HRV420BP07 also contains a wall sensor for detecting an obstacle. (*See, e.g.,* the HRV420BP07 with a portion of the housing removed, showing wall sensor, image below.)

U.S. 8,474,090	
	 On information and belief, in this example, the wall sensor may communicate obstacle information to the control module. The obstacle information communicated to the control module may cause the HRV420BP07 to react to the obstacle. For example, on information and belief, the HRV420BP07 may react to the obstacle, *e.g.*, a wall surface, using the wall sensor.

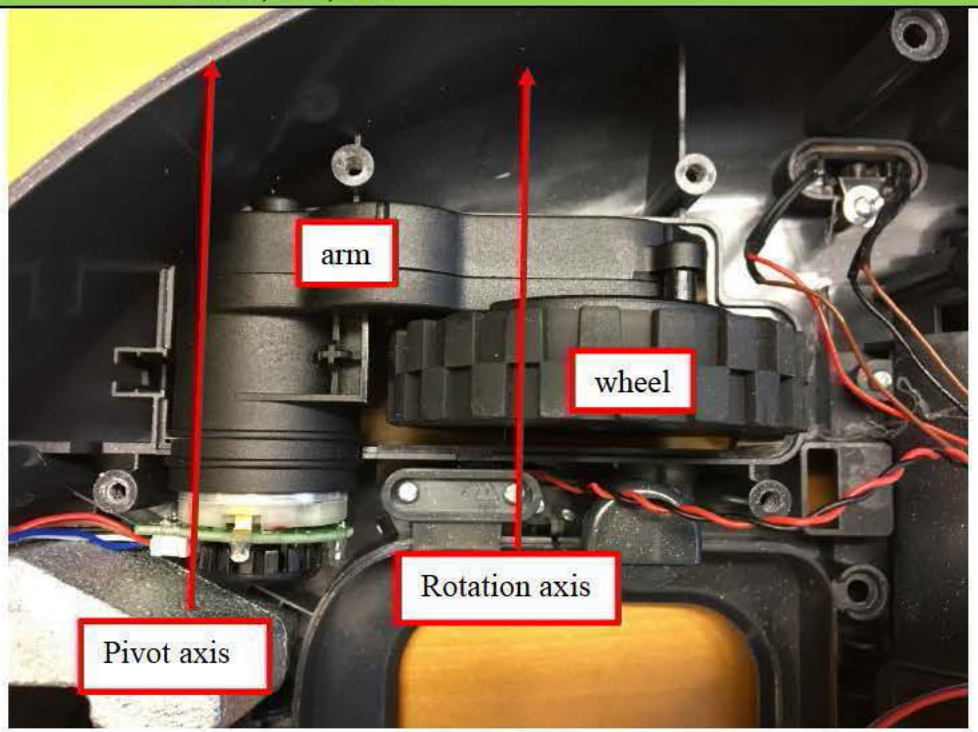
U.S. 8,474,090	
	The HRV420BP07 also includes a ground detection sensor. (*See, e.g.*, Instruction Manual, page 2, image below.)  1 Power switch 2 Charging socket 3 Start/Stop button 4 Ground detection sensor 5 Front wheel 6 Infrared receiver 7 Charging plate 8 Front lens 9 Dust bin 10 Dust bin release button 11 Side brushes 12 Main brush 13 Main brush frame 14 Main brush frame tabs 15 Charging dock 16 Charging dock infrared window 17 Charging electrodes 18 Battery charger 19 Maintenance tool 28 Charging dock pairing button **Additional Accessories** a. Side brushes (2) b. Side brush screws (2) c. HEPA filter

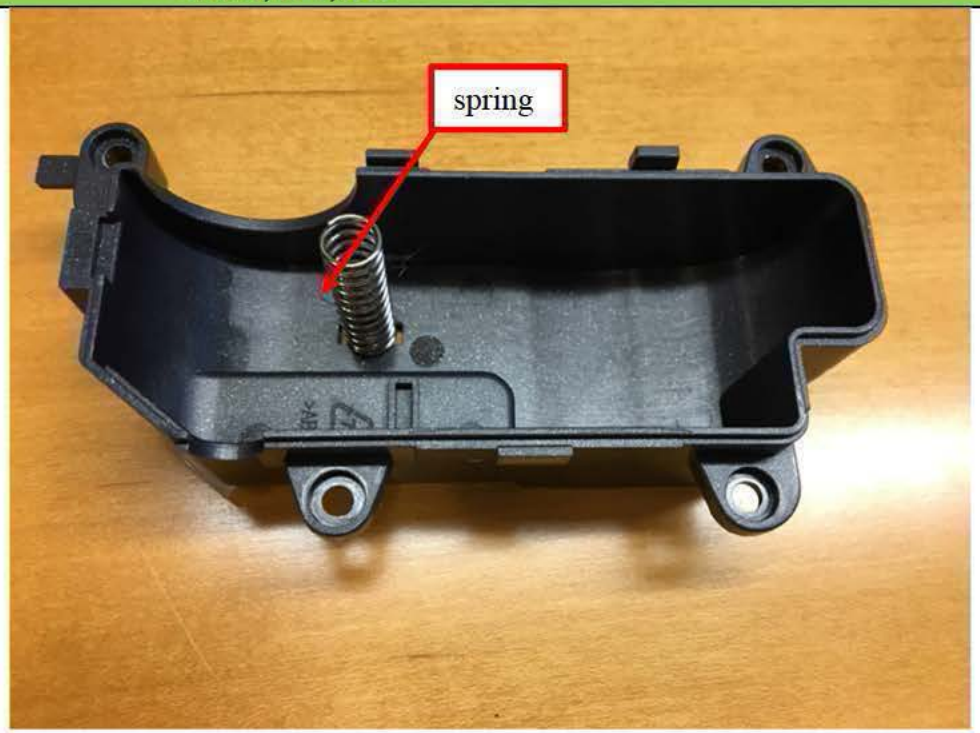
U.S. 8,474,090	
	The ground detection sensor may communicate obstacle information to the control module. The obstacle information communicated to the control module may cause the HRV420BP07 to react to the obstacle. For example, the HRV420BP07 "[s]ensors detect stairs and other drop-offs." (B+D Product Page.)
[G] a removable bin disposed at least partially within the housing and configured to receive particulates; and	The HRV420BP07 includes a removable bin disposed at least partially within the housing and configured to receive particulates. For example, the HRV420BP07 "Extra-large dustbin holds 2X more pet hair and dirt than the competition, so you can clean more between empties." (B+D Product Page; *see also, e.g.*, Instruction Manual, page 6, image below.)

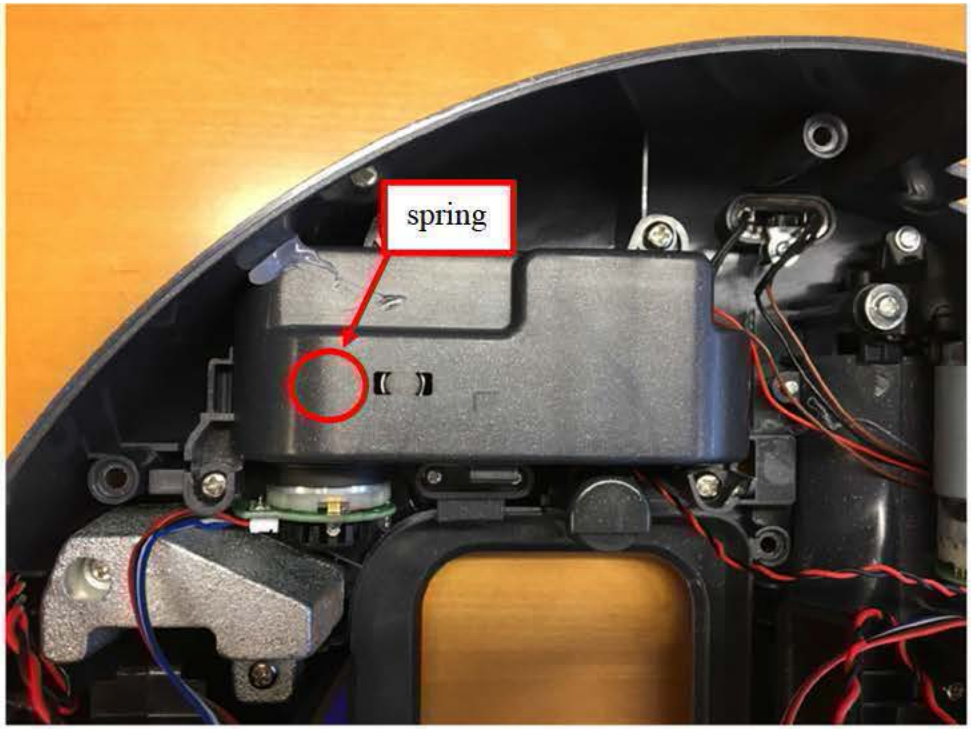
U.S. 8,474,090	
	Emptying the dust bin (Fig. G) 1. Turn the power switch ⑬ off. 2. Press the dust bin release button ⑩ and the dust bin will pop up from the top of the vacuum. 3. Pull out the dust bin. 4. Open the filter door ㉔ and empty the contents of the dust bin. **NOTE:** The dust bin can be washed using mild soap and water. Ensure dust bin is completely dry before reinstalling. Fig. G 

U.S. 8,474,090	
[H] a first rotating member configured to direct particulates toward the bin,	The HRV420BP07 includes a first rotating member configured to direct particulates toward the bin. For example, the HRV420BP07 includes side brushes and a main brush. (*See, e.g.*, Instruction Manual, page 2, image below.) "Side sweepers clean dust and debris along edges and in corners." (B+D Product Page.) 

U.S. 8,474,090	
	1 Power switch 2 Charging socket 3 Start/Stop button 4 Ground detection sensor 5 Front wheel 6 Infrared receiver 7 Charging plate 8 Front lens 9 Dust bin 10 Dust bin release button 11 Side brushes 12 Main brush 13 Main brush frame 14 Main brush frame tabs 15 Charging dock 16 Charging dock infrared window 17 Charging electrodes 18 Battery charger 19 Maintenance tool 28 Charging dock pairing button **Additional Accessories** a. Side brushes (2) b. Side brush screws (2) c. HEPA filter Each side brush rotates to direct particulates (*e.g.*, dust and debris) toward the bin. In another example, the first rotating member corresponds to the main brush, which rotates to direct particulates (*e.g.*, dust and debris) toward the bin.
[I] 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,	At least one of the wheels of the HRV420BP07 is rotatably attached to the distal end of each arm, and the proximal end of each arm is pivotably attached to the chassis. For example, the wheel is rotatable about a rotation axis, and the proximal end of the arm is pivotable about a pivot axis. (*See, e.g.,* wheel assembly of HRV420BP07, image below (annotations added).)

U.S. 8,474,090	
	
[J] 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	Each aforementioned wheels of the HRV420BP07 is biased to an extended position away from the robot chassis by a spring extending between the arm and the robot chassis. (*See, e.g.,* wheel assembly of HRV420BP07, images below (annotations added).)

U.S. 8,474,090	
	

U.S. 8,474,090	
	

U.S. 8,474,090	
[K] wherein, during cleaning, the weight of the floor cleaning robot overcomes a force from the spring biasing the wheels to an extended position.	During cleaning, the weight of the HRV420BP07 overcomes a force from the spring biasing the wheels to an extended position. For example, when the HRV420BP07 is positioned on the floor with the wheels positioned on the floor, the wheels are in retracted positions. The weight of the HRV420BP07 thus overcomes the force from the spring biasing the wheels to the extended position. (*See, e.g.,* wheel assembly of HRV420BP07, images below.) 

U.S. 8,474,090	
	
CLAIM 10 OF THE '090 PATENT	**HRV420BP07**
[A] A floor cleaning robot comprising:	The preamble is not limiting. To the extent the preamble is determined to be limiting, the preamble is met. The HRV420BP07 is a floor cleaning robot. *See the evidence cited for element [1A] above, which is incorporated herein by reference.*
[B] a housing and a chassis;	The HRV420BP07 includes a housing and a chassis.

U.S. 8,474,090	
	See the evidence cited for element [1B] above, which is incorporated herein by reference.
[C] 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;	The HRV420BP07 includes 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. *See the evidence cited for elements [1D] and [1I] above, which is incorporated herein by reference.*
[D] 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;	The HRV420BP07 includes 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. *See the evidence cited for element [1J] above, which is incorporated herein by reference.*
[E] 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;	The HRV420BP07 includes 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. *See the evidence cited for elements [1D] and [1I] above, which is incorporated herein by reference.*
[F] 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;	The HRV420BP07 includes 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. *See the evidence cited for element [1J] above, which is incorporated herein by reference.*

U.S. 8,474,090	
[G] 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;	The HRV420BP07 includes at least one motor disposed at least partially within the housing and configured to drive the first and second wheels to move the HRV420BP07 across a floor. *See the evidence cited for element [1C] above, which is incorporated herein by reference.*
[H] a control module disposed within the housing and directing movement of the floor cleaning robot across the floor;	The HRV420BP07 includes a control module disposed within the housing and directing movement of the HRV420BP07 across the floor. *See the evidence cited for element [1E] above, which is incorporated herein by reference.*
[I] 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;	The HRV420BP07 includes at least one sensor for detecting an obstacle and communicating obstacle information to the control module so that the control module can cause the HRV420BP07 to react to the obstacle. *See the evidence cited for element [1F] above, which is incorporated herein by reference.*
[J] a removable bin disposed at least partially within the housing and configured to receive particulates;	The HRV420BP07 includes a removable bin disposed at least partially within the housing and configured to receive particulates. *See the evidence cited for element [1G] above, which is incorporated herein by reference.*
[K] a rotating brush configured to agitate particulates and direct	The HRV420BP07 includes a rotating brush configured to agitate particulates and direct particulates toward the removable bin.

U.S. 8,474,090	
particulates toward the removable bin;	*See the evidence cited for element [1H] above, which is incorporated herein by reference.*
[L] 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.	During cleaning, the weight of the HRV420BP07 overcomes a force from the first and second resilient members that biases the wheels to an extended position. *See the evidence cited for element [1K] above, which is incorporated herein by reference.*
CLAIM 17 OF THE '090 PATENT	**HRV420BP07**
[A] A method for directing particulates from a floor into a bin, the method comprising:	The preamble is not limiting. To the extent the preamble is determined to be limiting, the preamble is met. The HRV420BP07 practices a method for directing particulates from a floor into a bin. For example, the HRV420BP07 "features an XL dustbin that holds 2X more pet hair and dirt than the competition, so you can clean more between empties." (B+D Product Page.) The HRV420BP07's "[e]xtra wide beater bar cleans more area per pass* than the leading robot vacuum in the market." (*Id.*) The HRV420BP07's "[s]ide sweepers clean dust and debris along edges and in corners." (*Id.*) The side brushes and/or main brush rotate to direct particulates (*e.g.*, dust, debris, and pet hair) toward the bin. (*See, e.g.*, Action Video, at 0:45–1:00, image below.)

U.S. 8,474,090	
	
[B] 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;	The method practiced by the HRV420BP07 includes driving wheels to move a HRV420BP07 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. *See the evidence cited for elements [1D], [1I], and [1J] above, which is incorporated herein by reference.*
[C] allowing the weight of the cleaning robot to overcome the spring force biasing the wheels to an extended position when the	The method practiced by the HRV420BP07 includes allowing the weight of the HRV420BP07 to overcome the spring force biasing the wheels to an extended position when the HRV420BP07 is positioned for use. *See the evidence cited for element [1K] above, which is incorporated herein by reference.*

U.S. 8,474,090	
cleaning robot is positioned for use;	
[D] sensing obstacles;	The method practiced by the HRV420BP07 includes sensing obstacles. *See the evidence cited for element [1F] above, which is incorporated herein by reference.*
[E] causing the cleaning robot to avoid the sensed obstacles;	The method practiced by the HRV420BP07 includes causing the HRV420BP07 to avoid sensed obstacles. *See the evidence cited for element [1F] above, which is incorporated herein by reference, and which discusses how the HRV420BP07's sensors cause the HRV420BP07 to avoid sensed objects.*
[F] agitating particulates from the floor and directing the particulates toward a removable bin of the cleaning robot;	The method practiced by the HRV420BP07 includes agitating particulates from the floor and directing the particulates toward a removable bin of the HRV420BP07. *See the evidence cited for element [1F] above, which is incorporated herein by reference, and which discusses how the HRV420BP07's side brushes and/or main brush agitate particulates from the floor and directs them toward a removable bin of the HRV420BP07.*
[G] generating a negative pressure to direct agitated particulates toward the removable bin; and	The method practiced by the HRV420BP07 includes generating a negative pressure to direct agitated particulates toward the removable bin. For example, the HRV420BP07 includes a vacuum system that generates a negative pressure. In particular, the HRV420BP07 features "AUTOSENSE™" which "automatically adjusts suction power from hard floors to carpet, so you get more power when you need it and long battery life too." (B+D Product Page; *see also, e.g.*, HRV420BP07, image below).

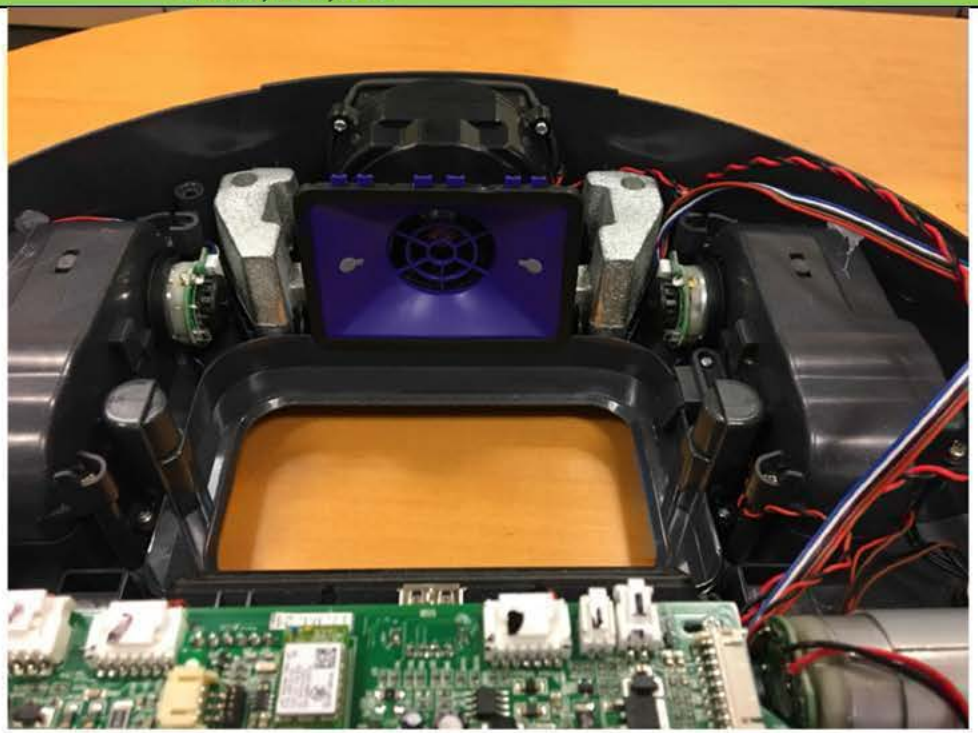
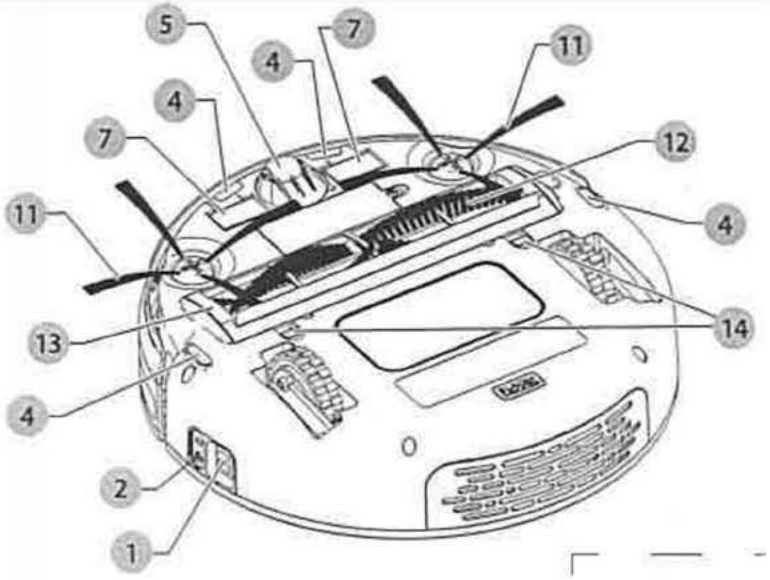
U.S. 8,474,090	
	
[H] holding particulates in the removable bin.	The method practiced by the HRV420BP07 includes holding particulates in the removable bin. *See the evidence cited for element [1G] above, which is incorporated herein by reference.*

EXHIBIT 129

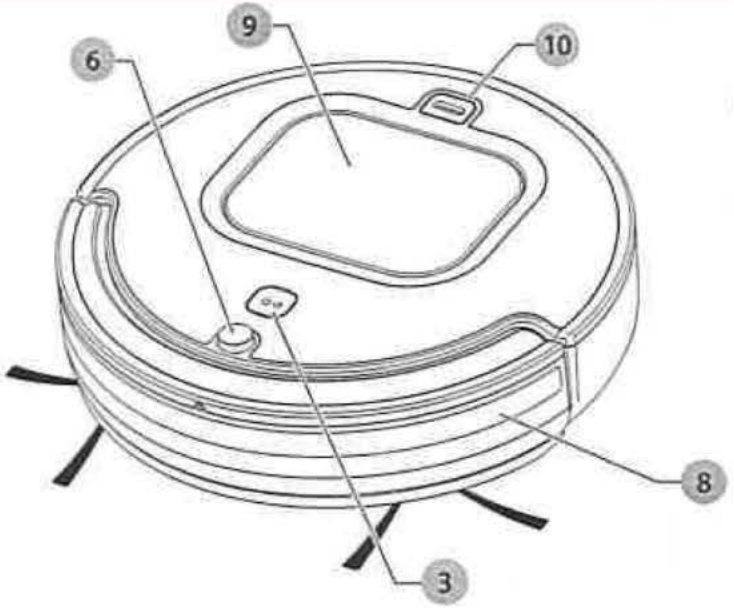
Complainant iRobot Corporation
337-TA-1057

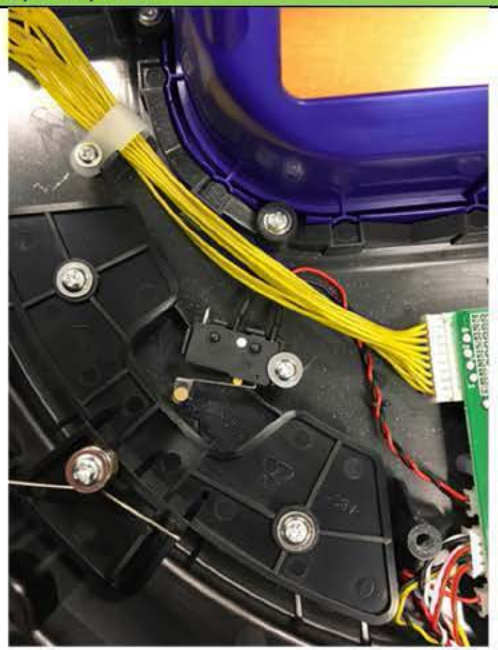
INFRINGEMENT OF U.S. PATENT NO. 8,600,553
BY BLACK + DECKER'S HRV420BP07 ROBOTIC VACUUM

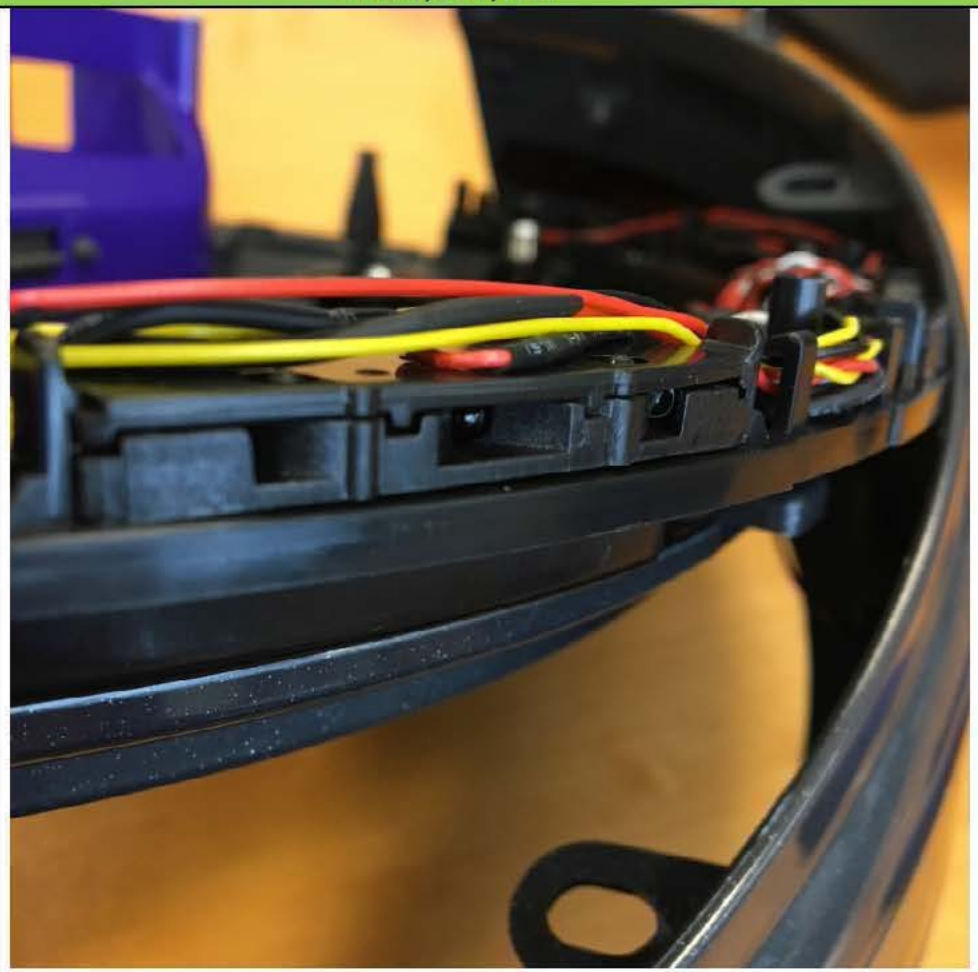
U.S. 8,600,553	
CLAIM 1 OF THE '553 PATENT	**HRV420BP07**
[A] An autonomous coverage robot comprising:	The preamble is not limiting. To the extent the preamble is determined to be limiting, the preamble is met. The Black + Decker HRV420BP07 Robotic Vacuum ("HRV420BP07") is an autonomous coverage robot. For example, the HRV420BP07 is a "self-cleaning robotic vacuum." (*See, e.g.*, http://www.blackanddecker.com/en-us/products/home-cleaning/vacuums/robotic-vacuums/pet-lithium-robotic-vacuum-with-smartech/hrv420bp07, ("B+D Product Page") (accessed on June 23, 2017).)
[B] a drive system configured to maneuver the robot according to a heading setting and a speed setting;	The HRV420BP07 includes a drive system configured to maneuver the robot according to a heading setting and a speed setting. For example, the HRV420BP07 includes wheels. (*See, e.g.*, Black + Decker Robotic Vacuum Instruction Manual – Catalog Number HRV425BL, HRV425BLP, HRV420BP07 ("Instruction Manual"), page 2, image below.)

U.S. 8,600,553	
	 The HRV420BP07 includes motors to drive the wheels and maneuver the HRV420BP07 according to a heading setting and a speed setting. (*See, e.g.,* HRV420BP07, images below.)

U.S. 8,600,553	
	 
[C] a bump sensor responsive to a collision of the robot with an obstacle in a forward direction; and	The HRV420BP07 includes a bump sensor responsive to a collision of the HRV420BP07 with an obstacle in a forward direction. For example, the HRV420BP07 includes a bumper. (*See, e.g.*, Instruction Manual, page 2, image below.)

U.S. 8,600,553	
	 The HRV420BP07 includes a bump sensor mounted relative to the bumper such that it is responsive to a collision of the HRV420BP07 in a forward direction. (*See, e.g.,* bump sensor of HRV420BP07, image below.)

U.S. 8,600,553	
	
[D] a proximity sensor responsive to a potential obstacle forward of the robot;	The HRV420BP07 includes a proximity sensor responsive to a potential obstacle forward of the robot. For example, the HRV420BP07's wall sensors includes an optical sensor directed in a forward direction to detect an obstacle forward of the HRV420BP07. (*See, e.g.,* HRV420BP07 with a portion of the housing removed, image below.)

U.S. 8,600,553	
	

U.S. 8,600,553	
[E] wherein the drive system is configured to reduce the speed setting in response to a signal from the proximity sensor indicating detection of a potential obstacle, while continuing to advance the robot according to the heading setting;	The drive system of the HRV420BP07 is configured to reduce the speed setting in response to a signal from the proximity sensor indicating detection of a potential obstacle, while continuing to advance the HRV420BP07 according to the heading setting. For example, on information and belief, when the proximity sensor detects an obstacle while the HRV420BP07 is advancing in a forward direction, the HRV420BP07 continues to advance in the forward direction at a reduced speed.
[F] wherein the drive system is configured to increase the speed setting if the drive system does not receive a subsequent signal indicating the presence of an obstacle while continuing to advance according to the heading setting and the reduced speed setting; and	The drive system of the HRV420BP07 is configured to increase the speed setting if the drive system does not receive a subsequent signal indicating the presence of an obstacle while continuing to advance according to the heading setting and the reduced speed setting. For example, on information and belief, when the proximity sensor detects an obstacle while the HRV420BP07 is advancing in a forward direction, the HRV420BP07 continues to advance in the forward direction at a reduced speed. If the drive system does not receive a subsequent signal indicating the presence of an obstacle while the HRV420BP07 is advancing at the reduced speed, the HRV420BP07 increases its speed.
[G] wherein the drive system is configured to alter the heading setting in response to a signal received from the bump sensor indicating contact with an obstacle.	The drive system of the HRV420BP07 is configured to alter the heading setting in response to a signal received from the bump sensor indicating contact with an obstacle. For example, when the bump sensor detects that the HRV420BP07 has contacted an obstacle, the heading setting of the HRV420BP07 is altered. The HRV420BP07 "follows a random pattern around the room, vacuuming in a straight line for its maximum distance (the length of an average room) or until it bumps into a wall or other object and turns." (BLACK + DECKER App User Guide, https://s3.amazonaws.com/sbd-smartech-faqs/VacAppBundle/VacAppGuide.html, ("App User Guide") (accessed on June 6, 2017).

U.S. 8,600,553	
CLAIM 11 OF THE '553 PATENT	**HRV420BP07**
[A] A method of navigating an autonomous coverage robot with respect to an object on a floor, the method comprising the robot:	The preamble is not limiting. To the extent the preamble is determined to be limiting, the preamble is met. The HRV420BP07 provides a method of navigating an autonomous coverage robot with respect to an object on a floor. For example, the HRV420BP07 is a "self-cleaning robotic vacuum," (B+D Product Page), and a user can "[c]onveniently program a cleaning schedule and control your self-cleaning robotic vacuum with the BLACK+DECKER smartphone app." (*Id.*; *see also, e.g.*, B+D HRV420BP07, HRV425BL and HRV425BLP Packaging Insert) ("Packaging Insert"), image below.)

U.S. 8,600,553	
	
[B] autonomously traversing the floor in a cleaning mode at a cleaning speed;	The method provided by the HRV420BP07 includes autonomously traversing the floor in a cleaning mode at a cleaning speed.

U.S. 8,600,553	
	For example, the HRV420BP07 can operate in various modes at a cleaning speed. (*See, e.g.*, https://itunes.apple.com/us/app/black-decker/id1097648295?mt=8, ("iTunes App Page") (accessed on June 7, 2017), image below; *see also, e.g.*, B+D App, images below.) **Description** The BLACK+DECKER™ app now supports the all new BLACK+DECKER™ Robot Vacuum and BLACK+DECKER Batteries. You can connect your Robot vacuum with the app via Bluetooth®. Once connected, you can access additional features such as creating and managing cleaning schedules, additional cleaning modes, and direct control of your robot vacuum. • Select 3 different cleaning modes – Auto, Quick, and Spot Clean Choose the option that meets your cleaning needs. Quickly change modes or start and stop cleaning directly from inside the app. • Schedule Automated Cleaning Sessions Clean up at the time that's best for you. Best of all, you don't need to be close by. • Manually control your robot Take your robot vacuum out for a spin by choosing where the robot goes. Also, stop or start cleaning directly from the app. • Choose the color that matches your mood (LED Models) Choose a color for your robot and illuminate the house as it cleans.
[C] upon sensing a proximity of the object forward of the robot, reducing the cleaning speed to a reduced speed while continuing towards the object;	The method provided by the HRV420BP07 includes upon sensing a proximity of the object forward of the HRV420BP07, reducing the cleaning speed to a reduced speed while continuing towards the object. *See the evidence cited for element [1E] above, which is incorporated herein by reference.*
[D] in response to not sensing the presence of the object while advancing at the	The method provided by the HRV420BP07 includes in response to not sensing the presence of the object while advancing at the reduced speed, increasing the speed setting.

U.S. 8,600,553	
reduced speed, increasing the speed setting; and	*See the evidence cited for element [1F] above, which is incorporated herein by reference.*
[E] in response to sensing contact with the object, turning with respect to the object and cleaning next to the object.	The method provided by the HRV420BP07 includes in response to sensing contact with the object, turning with respect to the object and cleaning next to the object. For example, on information and belief, in at least Auto Clean Mode and Quick Clean Mode. the HRV420BP07, in response to sensing contact with an object, turns with respect to the object and cleans next to the object. (*See, e.g.*, App User Guide, image below) **Scheduling an Auto Clean** The robot vac performs in auto clean mode whenever you schedule the auto cleanings to occur. You choose the days and times the auto cleaning occurs. When in auto mode, the robot will vacuum around the room in which it is placed until its battery charge level dips to 15-20%, at which time it will initiate a search for its charging station. During auto cleaning, the robot vac follows a random pattern around the room, vacuuming in a straight line for its maxium distance (the length of an average room) or until it bumps into a wall or other object and turns.
CLAIM 25 OF THE '553 PATENT	**HRV420BP07**
[A] An autonomous coverage robot comprising:	The preamble is not limiting. To the extent the preamble is determined to be limiting, the preamble is met. The HRV420BP07 is an autonomous coverage robot. *See the evidence cited for element [1A] above, which is incorporated herein by reference.*

U.S. 8,600,553	
[B] a drive system configured to maneuver the robot according to a heading setting and a speed setting;	The HRV420BP07 includes a drive system configured to maneuver the robot according to a heading setting and a speed setting. *See the evidence cited for element [1B] above, which is incorporated herein by reference.*
[C] a bump sensor responsive to a collision of the robot with an obstacle in a forward direction; and	The HRV420BP07 includes a bump sensor responsive to a collision of the robot with an obstacle in a forward direction. *See the evidence cited for element [1C] above, which is incorporated herein by reference.*
[D] a proximity sensor responsive to a potential obstacle forward of the robot;	The HRV420BP07 includes a proximity sensor responsive to a potential obstacle forward of the robot. *See the evidence cited for element [1D] above, which is incorporated herein by reference.*
[E] wherein the drive system is configured to reduce the speed setting in response to a signal from the proximity sensor indicating detection of a potential obstacle, while continuing to advance the robot according to the heading setting;	The drive system of the HRV420BP07 is configured to reduce the speed setting in response to a signal from the proximity sensor indicating detection of a potential obstacle, while continuing to advance the robot according to the heading setting. *See the evidence cited for element [1E] above, which is incorporated herein by reference.*
[F] wherein the drive system is configured to increase the speed setting if the drive system does not receive a signal from the bump sensor within an elapsed time after the speed setting is reduced; and	The drive system of the HRV420BP07 is configured to increase the speed setting if the drive system does not receive a signal from the bump sensor within an elapsed time after the speed setting is reduced. *See the evidence cited for element [1F] above, which is incorporated herein by reference.*

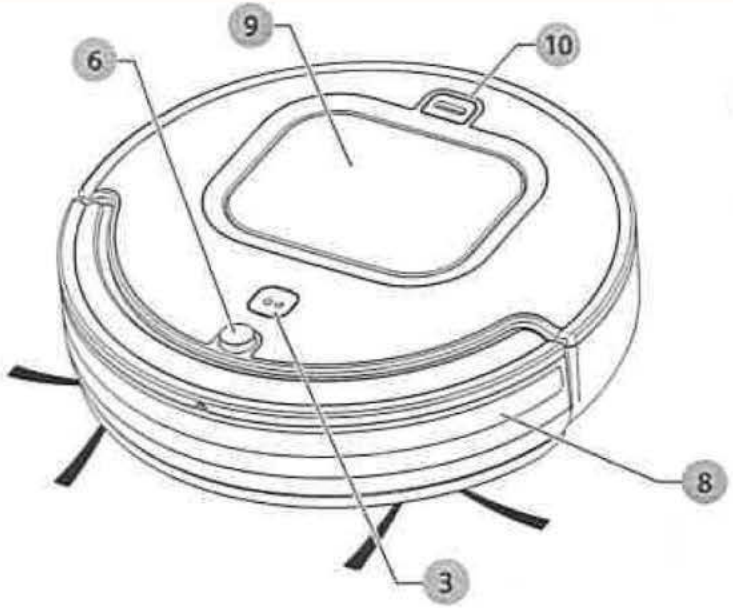
U.S. 8,600,553	
[G] wherein the drive system is configured to alter the heading setting in response to a signal received from the bump sensor indicating contact with an obstacle.	The drive system of the HRV420BP07 is configured to alter the heading setting in response to a signal received from the bump sensor indicating contact with an obstacle. *See the evidence cited for element [1G] above, which is incorporated herein by reference.*

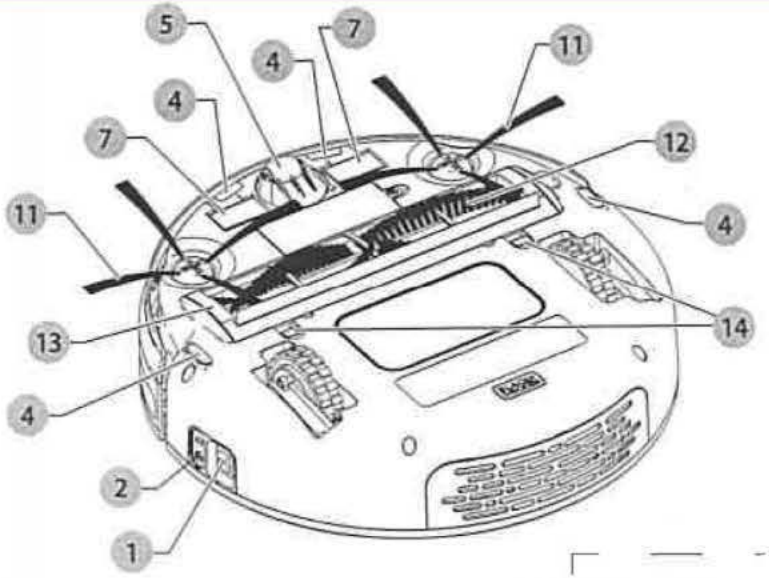
EXHIBIT 130

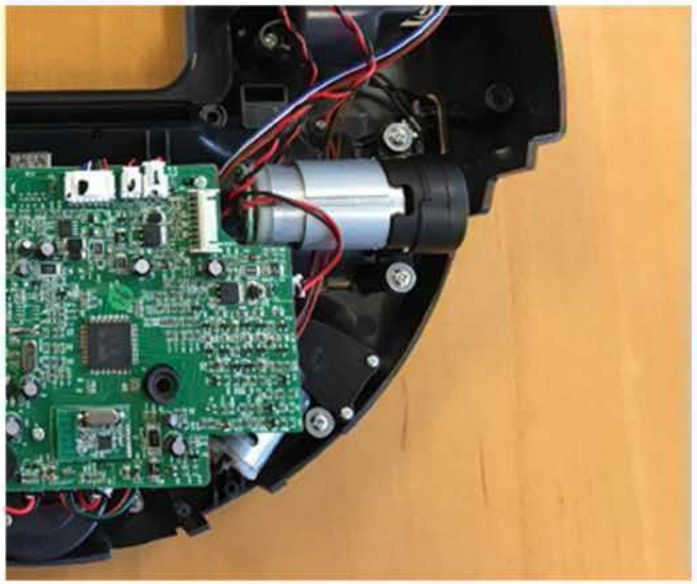
Complainant iRobot Corporation
337-TA-1057

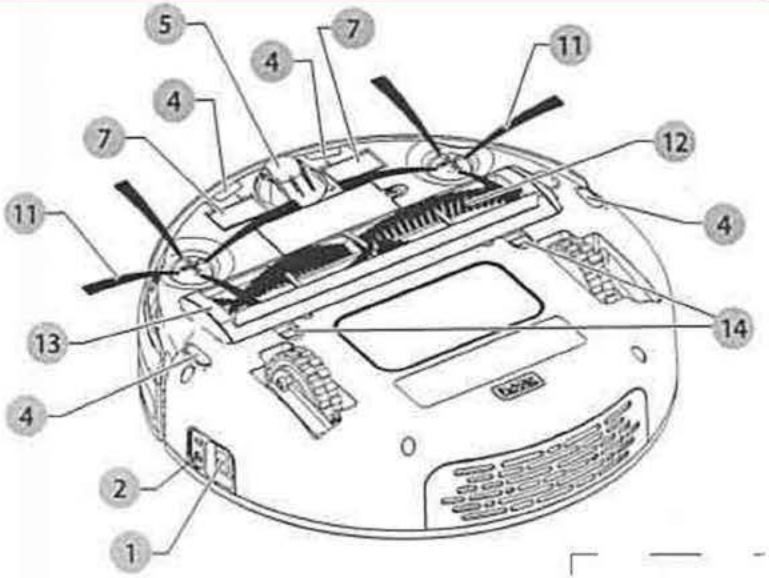
INFRINGEMENT OF U.S. PATENT NO. 9,038,233
BY BLACK + DECKER'S HRV420BP07 ROBOTIC VACUUM

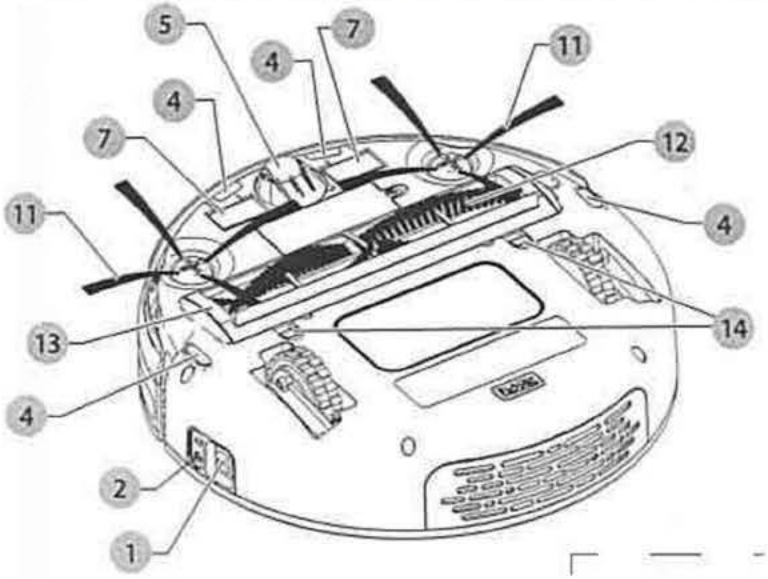
U.S. 9,038,233	
CLAIM 1 OF THE '233 PATENT	**HRV420BP07**
[A] A self-propelled floor-cleaning robot comprising	The preamble is not limiting. To the extent the preamble is determined to be limiting, the preamble is met. The Black + Decker HRV420BP07 Robotic Vacuum ("HRV420BP07") is a self-propelled cleaning robot. For example, the HRV420BP07 is a "self-cleaning robotic vacuum." (*See, e.g.*, http://www.blackanddecker.com/en-us/products/home-cleaning/vacuums/robotic-vacuums/pet-lithium-robotic-vacuum-with-smartech/hrv420bp07, ("B+D Product Page") (accessed on May 23, 2017).)
[B] a housing defining a housing perimeter;	The HRV420BP07 includes a housing defining a housing perimeter. (*See, e.g.*, Black + Decker Robotic Vacuum Instruction Manual – Catalog Number HRV425BL, HRV425BLP, HRV420BP07 ("Instruction Manual"), page 2, image below.)

U.S. 9,038,233	
	
[C] a powered primary brush assembly disposed within the housing perimeter and positioned to engage a floor surface, the primary brush assembly being configured to rotate about an axis generally parallel to the floor surface;	The HRV420BP07 includes a powered primary brush assembly disposed within the housing perimeter and positioned to engage a floor surface, the primary brush assembly being configured to rotate about an axis generally parallel to the floor surface. The powered brush assembly of the HRV420BP07 is disposed within the housing perimeter, positioned to engage the floor surface, and is configured to rotate about an axis generally parallel to the floor surface. For example, the powered primary brush assembly can include the main brush of the HRV420BP07. (*See, e.g.*, Instruction Manual, page 2, image below (annotations added).) The main brush is configured to rotate about an axis generally parallel to a bottom surface of the HRV420BP07, which is generally parallel to the floor surface. (*See, e.g.*, *id.*) The main brush is positioned to engage the floor surface.

U.S. 9,038,233	
	 1 Power switch 2 Charging socket 3 Start/Stop button 4 Ground detection sensor 5 Front wheel 6 Infrared receiver 7 Charging plate 8 Front lens 9 Dust bin 10 Dust bin release button 11 Side brushes 12 Main brush 13 Main brush frame 14 Main brush frame tabs 15 Charging dock 16 Charging dock infrared window 17 Charging electrodes 18 Battery charger 19 Maintenance tool 28 Charging dock pairing button **Additional Accessories** a. Side brushes (2) b. Side brush screws (2) c. HEPA filter

U.S. 9,038,233	
	The primary brush assembly of the HRV420BP07 is a powered primary brush assembly. For example, the main brush is driven by a motor, as shown below: 
[D] a cliff detector carried by the housing and configured to direct a beam toward the floor surface and to respond to a falling edge of the floor surface; and	The HRV420BP07 includes a cliff detector carried by the housing and configured to direct a beam toward the floor surface and to respond to a falling edge of the floor surface. (*See, e.g.*, Instruction Manual, page 2, image below.)

U.S. 9,038,233	
	 1 Power switch 2 Charging socket 3 Start/Stop button 4 Ground detection sensor 5 Front wheel 6 Infrared receiver 7 Charging plate 8 Front lens 9 Dust bin 10 Dust bin release button 11 Side brushes 12 Main brush 13 Main brush frame 14 Main brush frame tabs 15 Charging dock 16 Charging dock infrared window 17 Charging electrodes 18 Battery charger 19 Maintenance tool 28 Charging dock pairing button **Additional Accessories** a. Side brushes (2) b. Side brush screws (2) c. HEPA filter

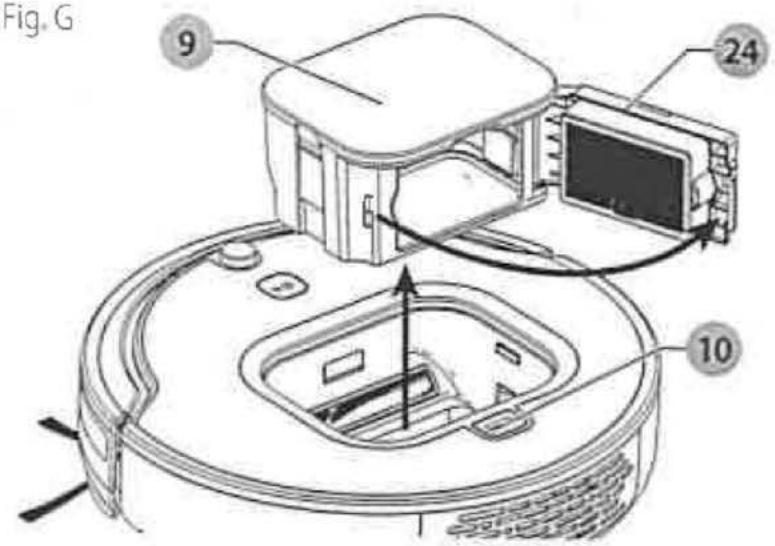
U.S. 9,038,233	
	The cliff detector is configured to direct a beam toward the floor surface and configured to respond to a falling edge of the floor surface. For example, the HRV420BP07 "[s]ensors detect stairs and other drop-offs." (B+D Product Page)
[E] a powered side brush extending beyond the housing perimeter and positioned to brush floor surface debris from beyond the housing perimeter,	The HRV420BP07 includes a powered side brush extending beyond the housing perimeter and positioned to brush floor surface debris from beyond the housing perimeter. For example, the HRV420BP07 includes "(2) Side sweepers clean dust and debris along edges and in corners." (B+D Product Page; *see also, e.g.*, Instruction Manual, page 2, showing side brushes.) 

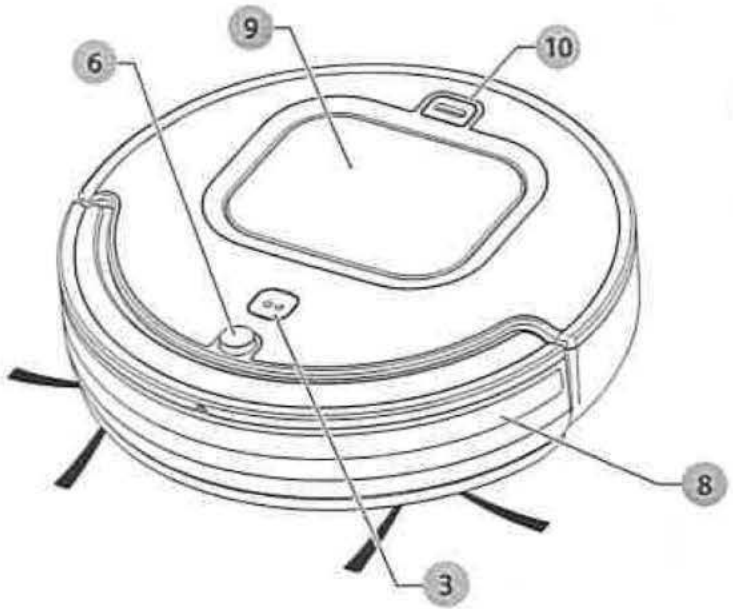
U.S. 9,038,233	
	1 Power switch 2 Charging socket 3 Start/Stop button 4 Ground detection sensor 5 Front wheel 6 Infrared receiver 7 Charging plate 8 Front lens 9 Dust bin 10 Dust bin release button 11 Side brushes 12 Main brush 13 Main brush frame 14 Main brush frame tabs 15 Charging dock 16 Charging dock infrared window 17 Charging electrodes 18 Battery charger 19 Maintenance tool 28 Charging dock pairing button **Additional Accessories** a. Side brushes (2) b. Side brush screws (2) c. HEPA filter The side brushes are powered side brushes. For example, the HRV420BP07 includes motors to drive the side brushes. (*See, e.g.*, HRV420BP07 with portion of housing removed, image below (annotations added).)

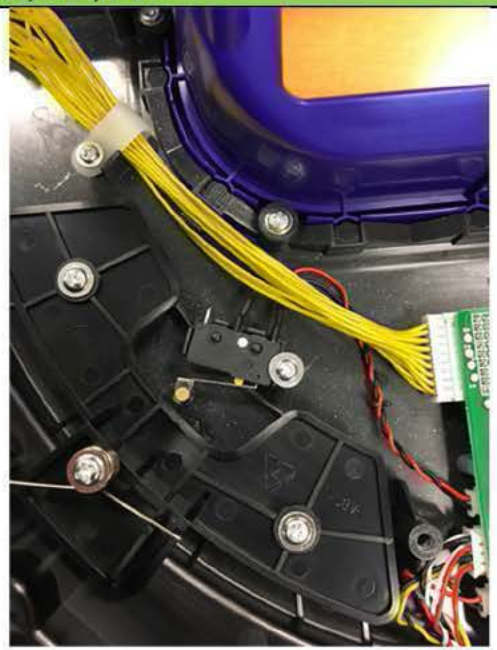
U.S. 9,038,233	
	
[F] the side brush being configured to rotate about an axis generally perpendicular to the floor surface and to rotate in a direction to direct debris toward the robot along a projected direction of movement of the powered primary brush assembly,	The side brush of the HRV420BP07 is configured to rotate about an axis generally perpendicular to the floor surface and to rotate in a direction to direct debris toward the HRV420BP07 along a projected direction of movement of the powered primary brush assembly. For example, the side brushes of the HRV420BP07 are configured to rotate about axes generally perpendicular to the floor surface, and to rotate in a direction such that debris swept by the side brushes are directed toward a projected direction of movement of the main brush. (*See, e.g.*, https://www.amazon.com/dp/B01N16BRGK/ref=sr_ph_1?ie=UTF8&qid=1498167247&sr=sr-1&keywords=hrv420bp07&th=1 ("Action Video"), at 0:45–1:00, (accessed on June 23, 2017), image below.)

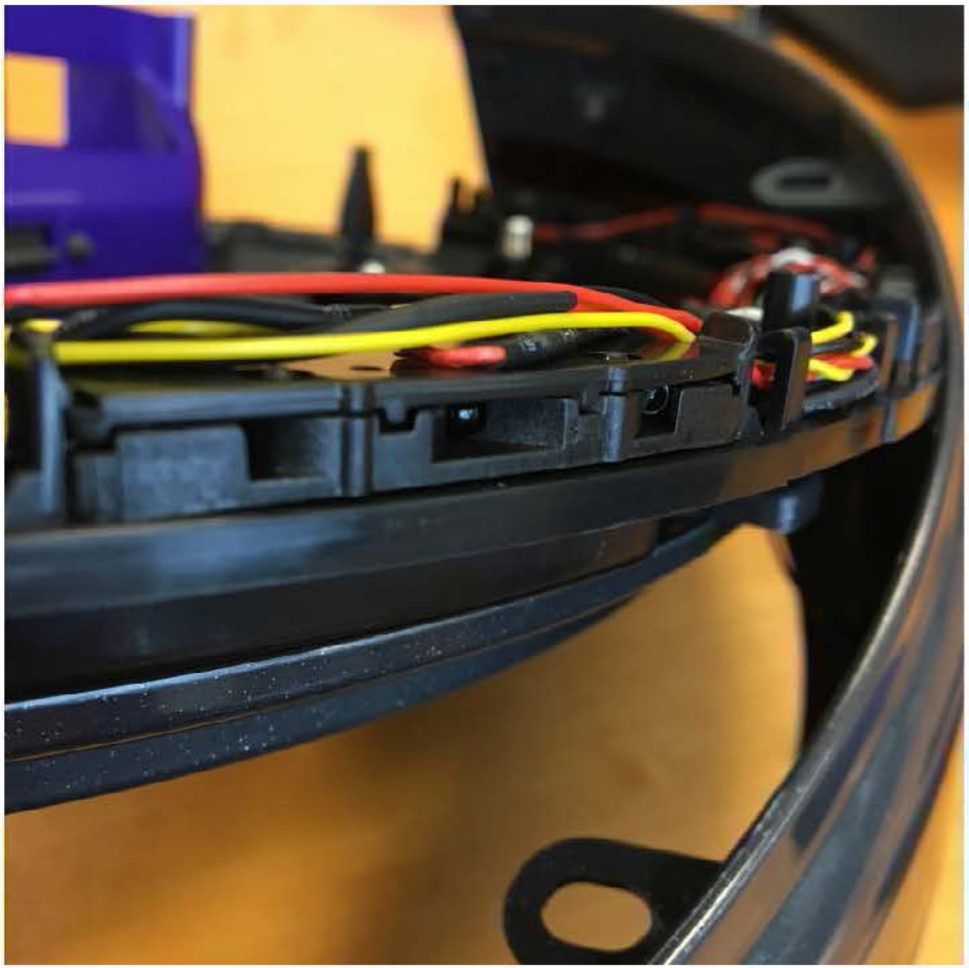
U.S. 9,038,233	
	
[G] the side brush having bundles of bristles and being positioned such that the bundles of bristles pass between the cliff detector and the floor surface during a rotation of the side brush around the axis, the bundles of bristles being separated by a gap, the gap being configured to prevent occlusion of the cliff detector beam during at least part of	The side brush of the HRV420BP07 has bundles of bristles and is positioned such that the bundles of bristles pass between the cliff detector and the floor surface during a rotation of the side brush around the axis, the bundles of bristles being separated by a gap, and the gap being configured to prevent occlusion of the cliff detector beam during at least part of the rotation of the side brush around the axis. (*See, e.g.,* HRV420BP07, image below.)

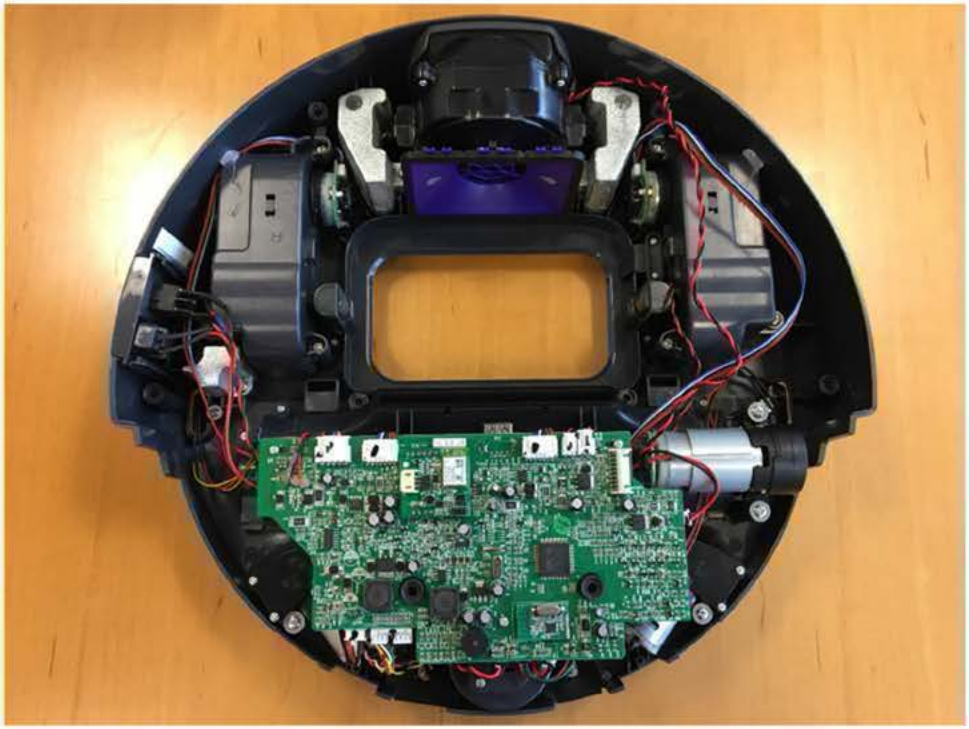
U.S. 9,038,233	
the rotation of the side brush around the axis;	
[H] a particulate receptacle positioned to receive and collect particulates brushed from the floor surface by the primary brush assembly and the powered side brush;	The HRV420BP07 includes a particulate receptacle positioned to receive and collect particulates brushed from the floor surface by the primary brush assembly and the powered side brush. For example, the HRV420BP07 "Extra-large dustbin holds 2X more pet hair and dirt than the competition, so you can clean more between empties." (B+D Product Page; *see also, e.g.*, Instruction Manual, page 6.) The dust bin of the HRV420BP07 is positioned to receive and collect particulates brushed from the floor surface by the side brushes and the main brush.

U.S. 9,038,233	
	Emptying the dust bin (Fig. G) 1. Turn the power switch (1) off. 2. Press the dust bin release button (10) and the dust bin will pop up from the top of the vacuum. 3. Pull out the dust bin. 4. Open the filter door (24) and empty the contents of the dust bin. **NOTE:** The dust bin can be washed using mild soap and water. Ensure dust bin is completely dry before reinstalling. Fig. G 

U.S. 9,038,233	
[I] an obstacle detector responsive to obstacles encountered by the robot; and	The HRV420BP07 includes an obstacle detector responsive to obstacles encountered by the HRV420BP07. In one example, the HRV420BP07 includes a bumper and a bump sensor associated with the bumper. (*See, e.g.*, Instruction Manual, page 2, image below.)  The bump sensor associated with the bumper may be responsive to an obstacle, *e.g.*, via contact between the bumper and the obstacle. (*See, e.g.*, bump sensor of HRV420BP07, image below.)

U.S. 9,038,233	
	

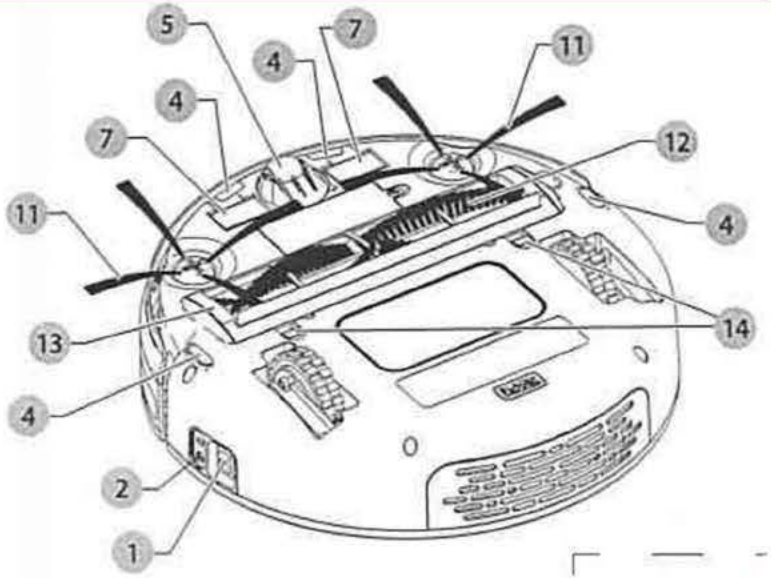
U.S. 9,038,233	
	The HRV420BP07 also contains wall sensors responsive to obstacles that it may detect. (*See, e.g.*, HRV420BP07 with a portion of the housing removed, image below.) 

U.S. 9,038,233	
[J] a control circuit in electrical communication with a motor drive and configured to control the motor drive to maneuver the robot about detected obstacles across the floor surface during a floor-cleaning operation.	The HRV420BP07 includes a control circuit in electrical communication with a motor drive and configured to control the motor drive to maneuver the HRV420BP07 about detected obstacles across the floor surface during a floor-cleaning operation. (*See, e.g.*, HRV420BP07, image below, showing control circuit.)  The control circuit is in electrical communication with a motor drive and configured to control the motor drive to maneuver with respect to detected obstacles during its floor-cleaning operation. (*See, e.g.,* HRV420BP07, showing motor drive connected to control circuit.)

U.S. 9,038,233	
	 

U.S. 9,038,233	
	  On information and belief, the control module may control the motor drive to maneuver the HRV420BP07 about obstacles detected via a bump sensor, ground detection sensor, and a wall sensor. Documentary evidence of this claim limitation may depend on discovery concerning the HRV420BP07, including source code for that product. Accordingly, iRobot reserves its rights to supplement its infringement contentions once these materials have been produced and iRobot has had sufficient time to analyze them.

U.S. 9,038,233	
CLAIM 15 OF THE '233 PATENT	**HRV420BP07**
[A] A self-propelled floor-cleaning robot comprising:	The preamble is not limiting. To the extent the preamble is determined to be limiting, the preamble is met. The HRV420BP07 is a self-propelled floor-cleaning robot. *See the evidence cited for element [1A] above, which is incorporated herein by reference.*
[B] wheels operably connected to a motor drive to propel the robot across the floor surface;	The HRV420BP07 includes wheels operably connected to a motor drive to propel the robot across the floor surface. For example, the HRV420BP07 includes at least two wheels. (*See, e.g.*, Instruction Maual, page 2, image below.)

U.S. 9,038,233	
	 The wheels are operably connected to motor drives to propel the HRV420BP07 across the floor surface. (*See, e.g.,* HRV420BP07, images below, showing wheel and motor drive.)

U.S. 9,038,233	
	 
[C] a controller in electrical communication with the motor drive and configured to control the motor drive to autonomously maneuver the robot about detected obstacles encountered on the floor surface during a floor-cleaning operation;	The HRV420BP07 includes a controller in electrical communication with the motor drive and configured to control the motor drive to autonomously maneuver the HRV420BP07 about detected obstacles encountered on the floor surface during a floor-cleaning operation. *See the evidence cited for element [1J] above, which is incorporated herein by reference.*
[D] a housing defining a housing perimeter;	The HRV420BP07 includes a housing defining a housing perimeter. *See the evidence cited for element [1B] above, which is incorporated herein by reference.*

U.S. 9,038,233	
[E] a cleaning head disposed within the housing perimeter and positioned to engage a floor surface;	The HRV420BP07 includes a cleaning head disposed within the housing perimeter and positioned to engage a floor surface. *See the evidence cited for element [1C] above, which is incorporated herein by reference.*
[F] a cliff detector carried by the housing and configured to direct a beam toward the floor surface and to respond to a falling edge of the floor surface; and	The HRV420BP07 includes a cliff detector carried by the housing and configured to direct a beam toward the floor surface and to respond to a falling edge of the floor surface. *See the evidence cited for element [1D] above, which is incorporated herein by reference.*
[G] a powered rotating side brush extending beyond the housing perimeter and positioned to brush floor surface debris from beyond the housing perimeter toward a projected path of the cleaning head, the powered rotating side brush rotating in a direction that brushes debris toward the robot ahead of a rotating axis of the brush along the projected path of the cleaning head,	The HRV420BP07 includes a powered rotating side brush extending beyond the housing perimeter and positioned to brush floor surface debris from beyond the housing perimeter toward a projected path of the cleaning head. The powered rotating side brush rotates in a direction that brushes debris toward the HRV420BP07 ahead of a rotating axis of the brush along the projected path of the cleaning head, *See the evidence cited for elements [1E] and [1F] above, which is incorporated herein by reference.*

U.S. 9,038,233	
[H] the side brush having bundles of bristles and being positioned such that the bundles of bristles pass between the cliff detector and the floor surface during a rotation of the side brush around the axis, the bundles of bristles being separated by a gap, the gap being configured to prevent occlusion of the cliff detector beam during at least a portion of a rotation of the side brush around the axis;	The side brush of the HRV420BP07 has bundles of bristles and is positioned such that the bundles of bristles pass between the cliff detector and the floor surface during a rotation of the side brush around the axis, the bundles of bristles being separated by a gap, and the gap being configured to prevent occlusion of the cliff detector beam during at least a portion of a rotation of the side brush around the axis. *See the evidence cited for element [1G] above, which is incorporated herein by reference.*
[I] the controller being configured to move the robot in a wall-following mode to maneuver the robot along a wall in a direction that places the powered rotating side brush adjacent the wall.	On information and belief, the controller of the HRV420BP07 is configured to move the HRV420BP07 in a wall-following mode to maneuver the HRV420BP07 along a wall in a direction that places the powered rotating side brush adjacent the wall. *See the evidence cited for element [11A] above, which is incorporated herein by reference.* Documentary evidence of this claim limitation may depend on discovery concerning the HRV420BP07, including source code for this product. Accordingly, iRobot reserves its rights to supplement its infringement contentions once these materials have been produced and iRobot has had sufficient time to analyze them.

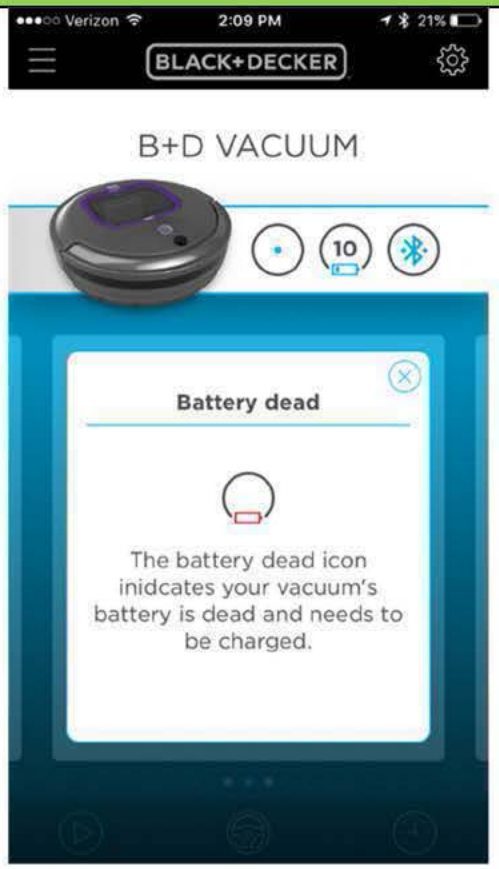
EXHIBIT 131

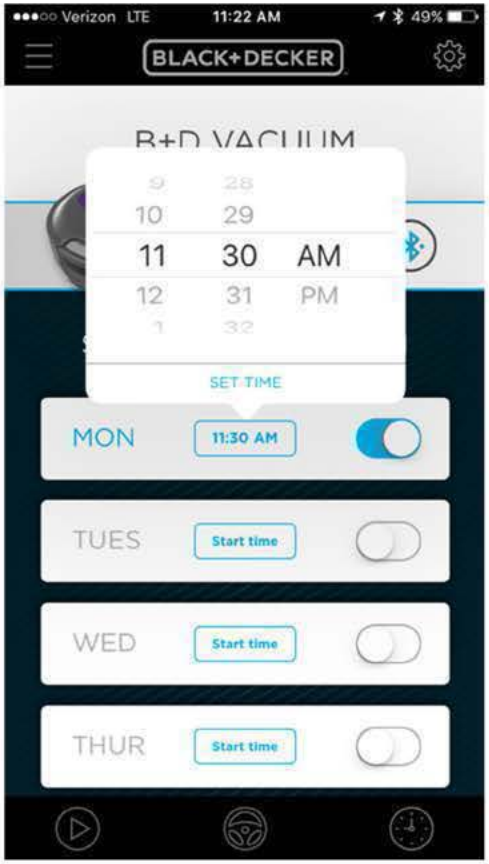
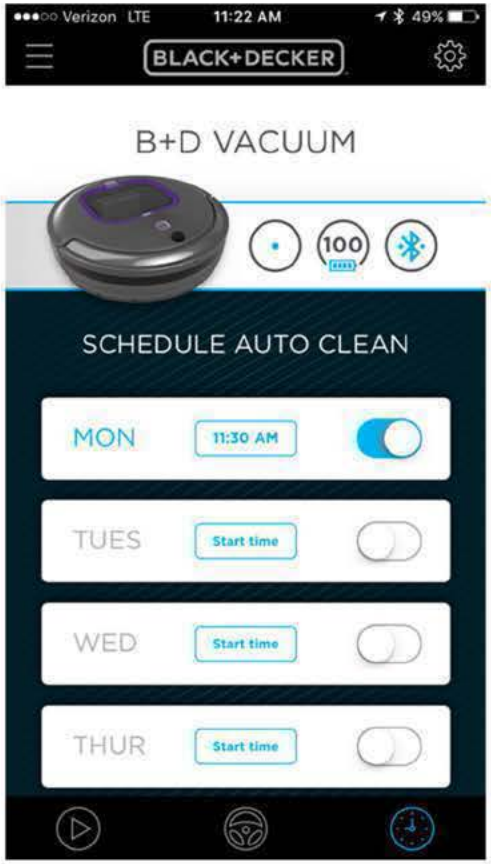
Complainant iRobot Corporation
337-TA-1057

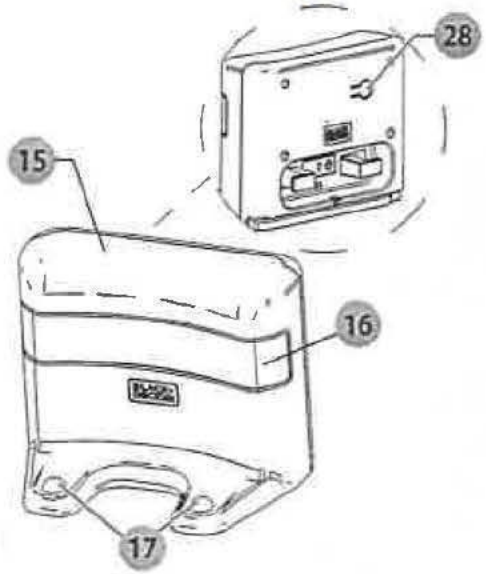
INFRINGEMENT OF U.S. PATENT NO. 9,486,924
BY BLACK + DECKER'S HRV420BP07 ROBOTIC VACUUM

U.S. 9,486,924	
CLAIM 1 OF THE '924 PATENT	**HRV420BP07**
[A] A method of cleaning a room, the method comprising:	The preamble is not limiting. To the extent the preamble is determined to be limiting, the preamble is met. The Black + Decker HRV420BP07 Robotic Vacuum ("HRV420BP07") practices a method of cleaning a room. For example, the HRV420BP07 is a "self-cleaning robotic vacuum." (*See, e.g.*, http://www.blackanddecker.com/en-us/products/home-cleaning/vacuums/robotic-vacuums/pet-lithium-robotic-vacuum-with-smartech/hrv420bp07, ("B+D Product Page") (accessed on June 23, 2017).), In addition, a user can "[c]onveniently program a cleaning schedule and control your self-cleaning robotic vacuum with the BLACK+DECKER smartphone app." (*Id.*).
[B] transmitting from a cleaning robot to a mobile phone a status of the cleaning robot; and	The method practiced by the HRV420BP07 includes transmitting from a cleaning robot to a mobile phone a status of the cleaning robot. For example, the HRV420BP07 can transmit to a mobile phone or device a status of the HRV420BP07, including but not limited to a battery status, a charge status, alerts, operating mode, and cleaning schedule information. (*See, e.g.*, https://www.amazon.com/dp/B01MSBX8UH/ref=twister_B06ZYSR2L1?_encoding=UTF8&psc=1 ("Amazon Sales Page") (accessed on June 7, 2017), image below; *see also, e.g.* B+D App, exemplary images below.)

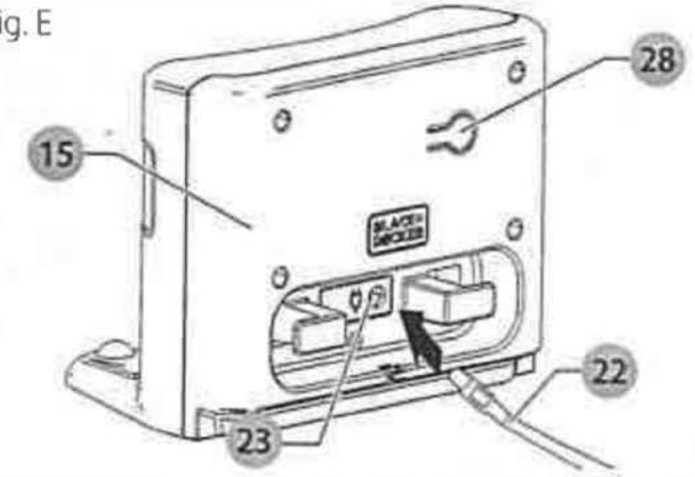
U.S. 9,486,924	
	 SMARTECH Control + Schedule From Your Smart Phone TROUBLESHOOTING ALERTS display the source of problems, eliminating guesswork 3 CLEANING MODES Auto, Quick, Spot SCHEDULING for timed, routine cleaning BATTERY STATUS at a glance MANUAL DRIVE for full control of the cleaning area BLACK+ DECKER App Store Google play Features available through app

U.S. 9,486,924	
	 
[C] receiving at the cleaning robot from the mobile phone, in response to an operator command input at the mobile phone and at least in part indicative of a schedule, information including instructions configured to	The method practiced by the HRV420BP07 includes receiving at the cleaning robot from the mobile phone, in response to an operator command input at the mobile phone and at least in part indicative of a schedule, information including instructions configured to cause a processor of the cleaning robot to execute a cleaning operation in the room according to the schedule. For example, the HRV420BP07 B+D smartphone app allows a user to "[c]onveniently program a cleaning schedule and control your self-cleaning robotic vacuum." (B+D Product Page; *see also, e.g.,* B+D App, images below.)

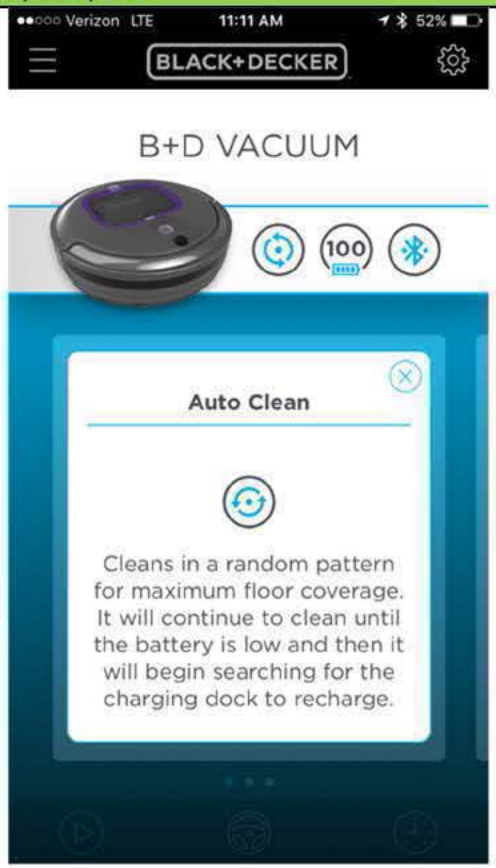
U.S. 9,486,924	
cause a processor of the cleaning robot to execute a cleaning operation in the room according to the schedule, wherein executing the cleaning operation in the room according to the schedule comprises:	 

U.S. 9,486,924	
[D] leaving a stationary charging device at which the cleaning robot is docked according to the schedule, and	The method practiced by the HRV420BP07 includes leaving a stationary charging device at which the cleaning robot is docked according to the schedule. For example, the HRV420BP07 "[a]utomatically docks and recharges, so it's ready for the next cleaning." (B+D Product Page). The HRV420BP07 charging dock is a stationary charging device. (*See, e.g.*, Black + Decker Robotic Vacuum Instruction Manual – Catalog Number HRV425BL, HRV425BLP, HRV420BP07 ("Instruction Manual"), pages 2 and 5, images below.) 

U.S. 9,486,924	
	1 Power switch 2 Charging socket 3 Start/Stop button 4 Ground detection sensor 5 Front wheel 6 Infrared receiver 7 Charging plate 8 Front lens 9 Dust bin 10 Dust bin release button 11 Side brushes 12 Main brush 13 Main brush frame 14 Main brush frame tabs 15 Charging dock 16 Charging dock infrared window 17 Charging electrodes 18 Battery charger 19 Maintenance tool 28 Charging dock pairing button **Additional Accessories** a. Side brushes (2) b. Side brush screws (2) c. HEPA filter

U.S. 9,486,924	
	Automatically charge (Fig. E, F) **IMPORTANT:** The power switch (1) **MUST** be in the ON position (**I**) for the vacuum to charge. 1. Plug the battery charger (18) into a wall outlet. 2. Slide the jack plug (22) end of the charger into the charging dock's charging socket (23) as shown in **Figure** E. 3. Place the charging dock base on a leveled floor with the back of the charger against a wall. **NOTE:** Do not place anything under the charging dock. It will prevent the vacuum from automatically charging. **NOTE:** Provide a minimum of 48 inches (122 cm) of clear space around the dock. Fig. E 

U.S. 9,486,924	
	When the HRV420BP07 executes a cleaning operation in the room according to the schedule, the HRV420BP07 leaves and returns to the docking station at which the HRV420BP07 is docked.
[E] navigating about a floor surface of the room.	The method practiced by the HRV420BP07 includes navigating about a floor surface of the room. For example, the HRV420BP07 "will vacuum around the room in which it is placed until its battery charge level dips to 15-20%, at which time it will initiate a search for its charging station. During auto cleaning, the robot vac follows a random pattern around the room, vacuuming in a straight line for its maximum distance (the length of an average room) or until it bumps into a wall or other object and turns." (BLACK + DECKER App User Guide, https://s3.amazonaws.com/sbd-smartech-faqs/VacAppBundle/VacAppGuide.html, ("App User Guide") (accessed on June 6, 2017); *see also, e.g.*, B+D App, image below.)

U.S. 9,486,924	
	 Verizon LTE 11:11 AM 52% BLACK+DECKER B+D VACUUM 100 Auto Clean Cleans in a random pattern for maximum floor coverage. It will continue to clean until the battery is low and then it will begin searching for the charging dock to recharge.

U.S. 9,486,924	
CLAIM 12 OF THE '924 PATENT	**HRV420BP07**
[A] A method of controlling a cleaning robot to clean a room, the method comprising:	The preamble is not limiting. To the extent the preamble is determined to be limiting, the preamble is met. The HRV420BP07 practices a method of controlling a cleaning robot to clean a room. For example, the HRV420BP07 is a "self-cleaning robotic vacuum," (B+D Product Page) and the method is performed by a user of the HRV420BP07. A user can "[c]onveniently program a cleaning schedule and control your self-cleaning robotic vacuum with the BLACK+DECKER smartphone app." (*Id.*; *see also, e.g.*, Instruction Manual, page 5 , image below.)

U.S. 9,486,924	
	Using the BLACK+DECKER App to operate your robot vacuum The BLACK+DECKER App allows you to operate and connect to your robot vacuum from a compatible mobile device. After downloading the App, you connect your device to the vacuum. Then you can use the App to operate the robot. **NOTE:** Your mobile device has to be within Bluetooth range to operate the robot **You can use the BLACK+DECKER App to:** • Schedule an auto cleaning to occur on the days and times of your choosing. **NOTE:** If at any time, the robot is switched to the OFF position, the scheduling function will need to be restored by reconnecting to the app after the unit has been turned back on. • Initiate a quick, spot, or manual cleaning. • Monitor the robot's battery charge level. • Add another BLACK+DECKER robot vacuum to your device. • View Troubleshooting FAQ for suggestions on how to solve common problems or errors. • Create an account to receive promotional materials. • Disconnect your device from the robot.

U.S. 9,486,924	
[B] initiating formation of a wireless communication link between the cleaning robot and a mobile phone; and	The method practiced by the HRV420BP07 includes initiating formation of a wireless communication link between the cleaning robot and a mobile phone. For example, to connect a mobile device to the robot using the HRV420BP07 smartphone app, the user uses the smartphone app to initiate formation of a Bluetooth connection between the mobile phone and the HRV420BP07. (*See, e.g.*, Instruction Manual, page 5, image below.)

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	To download the BLACK+DECKER App and connect your device, do the following: 1. Download the BLACK+DECKER App, application at:   2. Double-click the BLACK+DECKER App icon to launch the App on your device. An App TERMS AND CONDITIONS page appears. **NOTE:** The BLACK+DECKER App is governed by separate terms and conditions available for viewing through the mobile application. 3. Scroll down the App TERMS AND CONDITIONS page to make the Agree button clickable. 4. Click the Agree button to continue. A CREATE ACCOUNT page appears. 5. Take one of the following options on the CREATE ACCOUNT page: - Complete and Submit the form if you want to create a Stanley Black & Decker (SBD) user account. SBD will send promotional emails to the email address you specify. - Click Skip to continue without creating an SBD user account.

U.S. 9,486,924	
	6. ANDROID ONLY; iOS SKIP to the next step. When the Quick Setup screen appears, ensure that the "Enable Bluetooth", "Location Services", and "App Permissions" boxes are checked, and click Continue. 7. On the Select Product screen, click the Robot Vacuum icon to connect the robot vacuum to your mobile device. ***IMPORTANT:*** *The power switch (1) MUST be in the ON position (I) for the vacuum to pair* 8. When the Connecting screen appears, press and hold the Start/Stop button (3) on the robot vacuum to connect your mobile device to the vacuum. A confirmation message appears when the connection . . . process completes, followed by an optional tutorial that explains Robot App basics.

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[C] entering an operator command input into the mobile phone to cause the mobile phone to transmit, using the wireless communication link, information to the cleaning robot, the operator command input being at least in part indicative of a schedule, and the information comprising instructions configured to cause a processor of the cleaning robot to perform operations including executing a cleaning operation in the room according to the schedule, wherein executing the cleaning operation in the room according to the schedule comprises:	The method practiced by the HRV420BP07 includes entering an operator command input into the mobile phone to cause the mobile phone to transmit, using the wireless communication link, information to the cleaning robot, the operator command input being at least in part indicative of a schedule. The information includes instructions configured to cause a processor of the cleaning robot to perform operations including executing a cleaning operation in the room according to the schedule. *See the evidence cited for element [1C] above, which is incorporated herein by reference.*
[D] leaving, according to the schedule, a stationary charging device at which the cleaning robot is docked, and	The method practiced by the HRV420BP07 includes leaving a stationary charging device at which the cleaning robot is docked according to the schedule. *See the evidence cited for element [1D] above, which is incorporated herein by reference.*
[E] navigating about a floor surface of the room.	The method practiced by the HRV420BP07 includes navigating about a floor surface of the room. *See the evidence cited for element [1E] above, which is incorporated herein by reference.*

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VIA HAND DELIVERY

April 18, 2017

The Honorable Lisa R. Barton
Acting Secretary
U.S. International Trade Commission
500 E Street, S.W.
Washington, D.C. 20436

Re: Certain Robotic Vacuum Cleaning Devices and Components Thereof Such as Spare Parts, Inv. No. 337-TA-__

Dear Secretary Barton:

Enclosed for filing on behalf of iRobot Corporation ("iRobot"), are the following documents in support of Complainant's request that the Commission commence an investigation pursuant to the provisions of Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337. Please note that Confidential Exhibits 40 and 106 to the Complaint contain Confidential Business Information and pursuant to the Commission's Rules of Practice and Procedure, a request for confidential treatment of the information in those exhibits accompanies this filing. Accordingly, Complainant submits the following:

1. One original and eight (8) paper copies of Complainant's Non-Confidential Verified Complaint and the Public Interest Statement (original unbound); one (1) CD of the Non-Confidential Exhibits, and one (1) CD of the Confidential Exhibits (Commission Rules 201.6(c), 210.4(f)(2) and 210.8(a)(l)(i) and 201.8(b));

2. Eleven (11) additional copies of the Non-Confidential Verified Complaint, and the Public Interest Statement, and eleven (11) CDs of the Non-Confidential Exhibits for service upon each proposed respondent (Commission Rules 210.8(a)(l)(iii) and 210.11(a));

3. Eleven (11) additional copies of the Confidential Exhibits on CD, one for each proposed respondent (Commission Rules 210.8(a)(l)(iii) and 210.11(a));

4. Three (3) additional copies of the Non-Confidential Verified Complaint for service upon the Embassy of Canada, the Embassy of the People's Republic of China, and the Embassy of Taiwan (Commission Rules 210.8(a)(l)(iv) and 210.11(a)(l)(ii));

5. One (1) certified copy of the asserted United States Patent: U.S. Patent No. 6,809,490 (the "'490 Patent"), identified as Exhibit 1 in the Complaint;

6. One (1) certified copy of the asserted United States Patent: U.S. Patent No. 7,155,308 (the "'308 Patent"), identified as Exhibit 2 in the Complaint;

7. One (1) certified copy of the asserted United States Patent: U.S. Patent No. 8,474,090 (the "'090 Patent"), identified as Exhibit 3 in the Complaint;

8. One (1) certified copy of the asserted United States Patent: U.S. Patent No. 8,600,553 (the "'553 Patent"), identified as Exhibit 4 in the Complaint;

9. One (1) certified copy of the asserted United States Patent: U.S. Patent No. 9,038,233 (the "'233 Patent"), identified as Exhibit 5 in the Complaint;

10. One (1) certified copy of the asserted United States Patent: U.S. Patent No. 9,486,924 (the "'924 Patent"), identified as Exhibit 6 in the Complaint;

11. One (1) certified copy of the assignment for the '490 Patent, identified as Exhibit 7 in the Complaint;

12. One (1) certified copy of the assignment for the '308 Patent, identified as Exhibit 8 in the Complaint;

13. One (1) certified copy of the assignment for the '090 Patent, identified as Exhibit 9 in the Complaint;

14. One (1) certified copy of the assignment for the '553 Patent, identified as Exhibit 10 in the Complaint;

15. One (1) certified copy of the assignment for the '233 Patent, identified as Exhibit 11 in the Complaint;

16. One (1) certified copy of the assignment for the '924 Patent, identified as Exhibit 12 in the Complaint;

17. One (1) certified copy of the prosecution history of the '490 patent, identified as Appendix A in the Complaint, and three (3) additional copies on separate CDs (Commission Rules 210.12(c)(l));

18. One (1) certified copy of the prosecution history of the '308 patent, identified as Appendix B in the Complaint, and three (3) additional copies on separate CDs (Commission Rules 210.12(c)(l));

19. One (1) certified copy of the prosecution history of the '090 patent, identified as Appendix C in the Complaint, and three (3) additional copies on separate CDs (Commission Rules 210.12(c)(l));

20. One (1) certified copy of the prosecution history of the '553 patent, identified as Appendix D in the Complaint, and three (3) additional copies on separate CDs (Commission Rules 210.12(c)(l));

21. One (1) certified copy of the prosecution history of the '233 patent, identified as Appendix E in the Complaint, and three (3) additional copies on separate CDs (Commission Rules 210.12(c)(l));

22. One (1) certified copy of the prosecution history of the '924 patent, identified as Appendix F in the Complaint, and three (3) additional copies on separate CDs (Commission Rules 210.12(c)(l));

23. Four (4) copies of examiner-cited references identified in the prosecution histories of the asserted patents, identified as Appendices G through L in the Complaint, respectively (Commission Rule 210.12(c)(2)).

24. A letter of certification pursuant to Commission Rules 201.6(b) and 210.8(d) requesting confidential treatment of information appearing in Confidential Exhibits 40 and 106 to the Verified Complaint.

Three (3) physical samples of iRobot's domestic industry products, including one (1) Roomba 650, one (1) Roomba 860, and one (1) Roomba 980.

Respectfully submitted,

Ruffin B. Cordell

Counsel for iRobot Corporation

FISH.
FISH & RICHARDSON

Fish & Richardson P.C.
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VIA HAND DELIVERY

April 18, 2017

Ruffin B. Cordell
Principal
cordell@fr.com
202 626 6449 direct

The Honorable Lisa R. Barton
Acting Secretary
U.S. International Trade Commission
500 E Street, S.W.
Washington, D.C. 20436

Re: Certain Robotic Vacuum Cleaning Devices and Components Thereof Such as Spare Parts, Inv. No. 337-TA-__

Dear Secretary Barton:

In accordance with 19 C.F.R. §§ 201.8(g) and 210.5, iRobot Corporation ("iRobot") requests confidential treatment for the business information contained in Confidential Exhibits 40 and 106 to the Verified Complaint.

The information for which confidential treatment is sought is proprietary commercial information not otherwise publicly available. Specifically, Confidential Exhibit 40 contains information regarding licensing of the asserted patents, and Confidential Exhibit 106 contains proprietary information regarding Complainant's domestic industry, including information relating to the financial performance and commercial operations of Complainant.

The information described above qualifies as confidential business information pursuant to Rule 201.6(a) because:

1. It is not publicly available;

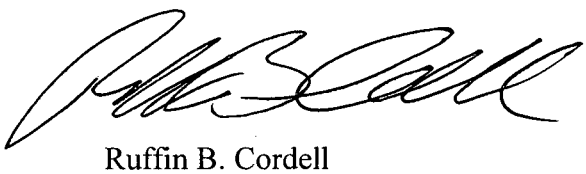
2. Unauthorized disclosure of such information could cause substantial harm to the competitive position of iRobot;

3. The disclosure of such information could impair the Commission's ability to obtain information necessary to perform it statutory function.

The Honorable Lisa R. Barton
April 18, 2017

Please contact me if you have any questions about this request, or if this request is not granted in full.

Respectfully submitted,



Ruffin B. Cordell

Counsel for iRobot Corporation

UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C.

In the Matter of	
CERTAIN ROBOTIC VACUUM CLEANING DEVICES AND COMPONENTS THEREOF SUCH AS SPARE PARTS	**Inv. No. 337-TA-_____**

COMPLAINANT'S PUBLIC INTEREST STATEMENT

In support of its complaint filed April 18, 2017, Complainant iRobot Corporation ("iRobot") hereby submits this public interest statement, as required by 19 C.F.R. § 210.8(b). As discussed below, the remedy sought against proposed Respondents Bissell Homecare, Inc., Hoover Inc., Royal Appliance Manufacturing Co. Inc. d/b/a TTI Floor Care North America, Inc., Bobsweep, Inc., Bobsweep USA, The Black & Decker Corporation, Black & Decker (U.S.) Inc., Shenzhen ZhiYi Technology Co., Ltd. d/b/a iLife, Matsutek Enterprises Co., Ltd., Suzhou Real Power Electric Appliance Co., Ltd., and Shenzen Silver Star Intelligent Technology Co., Ltd. (collectively "Proposed Respondents") will not have an adverse effect on the public health or welfare, competitive conditions in the United States economy, production of like or directly competitive articles in the United States, or U.S. consumers.

The accused products in this investigation, as identified in the accompanying complaint, are robotic vacuum cleaning devices and components thereof such as spare parts, manufactured by or on behalf of the named Proposed Respondents that infringe one or more of the asserted patents. The requested remedial orders, which would exclude only those robotic vacuum cleaning devices and components thereof such as spare parts manufactured or sold by Proposed Respondents are not contrary to the public interest. The Commission has long recognized the

strong public interest in enforcing intellectual property rights. *See Certain Baseband Processor Chips and Chipsets, Transmitter and Receiver (Radio) Chips, Power Control Chips, and Products Containing Same, Including Cellular Telephone Handsets*, Inv. No. 337-TA-543, USITC Pub. 4258, at 136-37 (Oct. 2011).

In this investigation, the only potentially relevant public interest inquiry is whether the exclusion of this particular subset of robotic vacuum cleaning devices and components thereof such as spare parts would have an adverse effect on the public interest factors set forth in Section 337. Complainant respectfully submits that it would not.

Rule 210.8(b)(1) Explanation of how the articles potentially subject to the requested remedial orders are used in the United States

The robotic vacuum cleaning devices that would be subject to the remedial orders are imported by Proposed Respondents from outside of the United States and sold to customers such as homeowners and small business establishments. Customers are typically agnostic as to who manufactures a particular robotic vacuum cleaning device. Instead, they choose a particular product based on price, availability, ease of use, and presence of particular features such as the thoroughness of cleaning, ability to program a cleaning schedule, and/or battery life.

Rule 210.8(b)(2) Identification of any public health, safety, or welfare concerns relating to the requested remedial orders

There are no health, safety, or welfare concerns relating to the requested remedial orders that would be at issue in this investigation. The accused products are not designed for, nor are they used for, any specific use that would implicate the public health, safety, or welfare. *See Certain Radio Control Hobby Transmitters and Receivers and Products Containing Same*, Inv. No. 337-TA-757, Notice of Issuance of Limited Exclusion Order (Sept. 27, 2011).

Rule 210.8(b)(3) Identification of like or directly competitive articles that Complainant or third parties make that would replace the subject articles if they were to be excluded

Complainant designs, manufactures, and sells a variety of robotic vacuum cleaning devices to customers in the United States. Complainant is widely recognized as the leading designer, manufacturer, and seller of high-quality robotic vacuum cleaning devices. Indeed, Complainant's products have received numerous accolades, including Red Dot's 2017 Product Design Award, HomeWorld's 2017 Best of the Best Silver Award, Family Circle's 2016 Best New Cleaning Products, Mashable's 2015 Choice Award, and as a 2015 CES Innovation Award Honoree in Home Appliances. In addition, competitors such as Dyson, Samsung, and LG provide robotic vacuum cleaning devices to the consuming public that would not be implicated by the requested remedial orders.

Rule 210.8(b)(4) Identification of whether the Complainants have the capacity to replace the volume of articles subject to the requested remedial orders in a commercially reasonable time in the United States

As noted in the previous section, Complainant is a leader in the field of robotic vacuum cleaning devices. Complainant has the ability to expand its manufacturing capacity to sufficiently replace the volume of articles that would be subject to the requested remedial orders in a commercially reasonable time in the United States. Moreover, on information and belief, non-accused products made and/or sold by competitors other than those named in the complaint would also be available in the United States to replace the volume of articles subject to the requested remedial orders.

CONCLUSION

If the Commission grants the requested remedial orders, the public interest in protecting Complainant's valid and enforceable intellectual property rights will be served. In addition, the

accused devices are not necessary to any health or welfare need, and an adequate supply of substitute devices will be available through Complainant and other competitors. As such, the strong public interest in protecting Complainant's intellectual property rights outweighs any potential adverse impact on the public.

Respectfully submitted,

FISH & RICHARDSON P.C.

Dated: April 18, 2017

Ruffin B. Cordell
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Counsel for Complainant
iRobot Corporation

UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C.

In the Matter of CERTAIN ROBOTIC VACUUM CLEANING DEVICES AND COMPONENTS THEREOF SUCH AS SPARE PARTS	Inv. No. 337-TA-_____

VERIFIED COMPLAINT OF IROBOT CORPORATION
UNDER SECTION 337 OF THE TARIFF ACT OF 1930, AS AMENDED

COMPLAINANT:
iRobot Corporation
8 Crosby Drive
Bedford, Massachusetts 01730
Telephone: (781) 430-3000

COUNSEL FOR COMPLAINANT:
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PROPOSED RESPONDENTS:
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Telephone: (616) 453-4451

Hoover Inc.
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Glenwillow, Ohio 44139
Telephone: (330) 499-9499

Royal Appliance Manufacturing Co. Inc.
d/b/a TTI Floor Care North America, Inc.
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Glenwillow, Ohio 44139
Telephone: (440) 996-2000

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Bobsweep USA
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Telephone: (410) 716-3900

Black & Decker (U.S.) Inc.
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4. Certified Copy of U.S. Patent No. 8,600,553
5. Certified Copy of U.S. Patent No. 9,038,233
6. Certified Copy of U.S. Patent No. 9,486,924
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21. Robotic vacuum cleaning products offered for sale by Black & Decker (http://www.blackanddecker.com/en-us/products/home-cleaning/vacuums/robot-vacuums/params/1/24/newest/-/-/-/-/-/-/-)
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38. Shenzhen Silver Star Intelligent Technology Co., Ltd. Disclosure to California Energy Commission re Hoover Model Number BH71000

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40. **CONFIDENTIAL:** List of licensed entities

41. Proof of Purchase of a Bissell SmartClean Model 1974 Robotic Vacuum Cleaning Device

42. Proof of Purchase of a Hoover Quest 800 (Model BH70800) Robotic Vacuum Cleaning Device

43. Proof of Purchase of a Hoover Quest 1000 (Model BH71000) Robotic Vacuum Cleaning Device

44. Proof of Purchase of a Bobsweep PetHair Robotic Vacuum Cleaner and Mop

45. Proof of Purchase of a Bobsweep Classic Robotic Vacuum Cleaner

46. Proof of Purchase of a Black & Decker BDH5000 robotic vacuum cleaning device

47. Proof of Purchase of an iLife V5s Robotic Vacuum Cleaning Device

48. Proof of Purchase of an iLife A6 Robotic Vacuum Cleaning Device

49. Proof of Purchase of an iLife V7 Robotic Vacuum Cleaning Device

50. Bissell SmartClean Robotic Vacuum User Guide 1605 Series

51. Hoover Quest 1000 Instruction Manual

52. bObi by bObsweep Owner's Manual

53. Black & Decker Robotic Vacuum Instruction Manual BDH5000

54. iLife A6 Robotic Vacuum Cleaner User Manual

55. Infringement Claim Chart for Bissell's SmartClean 1974 Robotic Vacuum Under U.S. Patent No. 6,809,490

56. Infringement Claim Chart for Bissell's SmartClean 1974 Robotic Vacuum Under U.S. Patent No. 7,155,308

57. Infringement Claim Chart for Bissell's SmartClean 1974 Robotic Vacuum Under U.S. Patent No. 8,474,090

LIST OF APPENDICES

K. Examiner-cited references in the Prosecution History of U.S. Patent No. 9,038,233

L. Examiner-cited references in the Prosecution History of U.S. Patent No. 9,486,924

I. INTRODUCTION

1.1 Complainant iRobot Corporation ("iRobot" or "Complainant") requests that the United States International Trade Commission commence an investigation pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337 ("Section 337"), to remedy the unlawful importation into the United States, sale for importation into the United States, and/or sale within the United States after importation by the owner, importer, or consignee (or agents thereof), of certain robotic vacuum cleaning devices and components thereof such as spare parts that infringe valid and enforceable United States patents owned by iRobot.

1.2 The Proposed Respondents are Bissell Homecare, Inc., Hoover Inc., Royal Appliance Manufacturing Co. Inc. d/b/a TTI Floor Care North America, Inc., Bobsweep, Inc., Bobsweep USA, The Black & Decker Corporation, Black & Decker (U.S.) Inc., Shenzhen ZhiYi Technology Co., Ltd. d/b/a iLife, Matsutek Enterprises Co., Ltd., Suzhou Real Power Electric Appliance Co., Ltd., and Shenzhen Silver Star Intelligent Technology Co., Ltd. (collectively "Proposed Respondents"). Upon information and belief, Proposed Respondents have engaged in unfair acts in violation of Section 337 through and in connection with the unlicensed importation into the United States, sale for importation into the United States, and/or sale within the United States after importation of products that infringe one or more claims of U.S. Patent No. 6,809,490 (the "'490 Patent"); one or more claims of U.S. Patent No. 7,155,308 (the "'308 Patent"); one or more claims of U.S. Patent No. 8,474,090 (the "'090 Patent"); one or more claims of U.S. Patent No. 8,600,553 (the "'553 Patent"), one or more claims of U.S. Patent No. 9,038,233 (the "'233 Patent"),[1] and/or one or more claims of U.S. Patent No. 9,486,924 (the

[1] The '233 Patent is related to the '090 Patent pursuant to a continuation application.

"'924 Patent"). The '490, '308, '090, '553, '233, and '924 Patents are collectively referred to herein as "the Asserted Patents."

1.3 Complainant asserts that Proposed Respondents directly infringe, contributorily infringe, and/or induce the infringement of at least the following claims (independent claims in **bold**; collectively, "the Asserted Claims"):

Asserted Patent	Asserted Claims
U.S. Patent No. 6,809,490	**1**, 2, 3, 7, 12, **42**
U.S. Patent No. 7,155,308	**1**, 2, 3, 7, 11, 12, 17, **19**, 20, 28, 34
U.S. Patent No. 8,474,090	**1**, 2, 3, 7, 8, **10**, 11, 14, 15, **17**, 18, 19
U.S. Patent No. 8,600,553	**1**, 2, 4, 8, **11**, 12, 21, 22, **25**
U.S. Patent No. 9,038,233	**1**, 10, 11, 14, **15**, 16
U.S. Patent No. 9,486,924	**1**, 2, 8, 9, **12**, 13

1.4 Certified copies of the Asserted Patents accompany this Complaint as **Exhibits 1-6**. iRobot owns by assignment the entire right, title, and interest in and to these patents. A certified copy of the recorded assignments accompanies this Complaint as **Exhibits 7-12**.

1.5 As required by 19 U.S.C. § 1337(a)(2) and defined by 19 U.S.C. § 1337(a)(3), an industry in the United States exists relating to articles covered by the Asserted Patents.

1.6 Complainant seeks a permanent limited exclusion order, pursuant to Section 337(d), excluding from entry into the United States all of Proposed Respondents' Accused Products (examples of which are described *infra* in Section III) that infringe one or more claims of the Asserted Patents. Complainant also seeks permanent cease and desist orders, pursuant to Section 337(f), directing each Proposed Respondent to cease and desist from activities including, but not limited to, importing, marketing, advertising, demonstrating, warehousing inventory for distribution, offering for sale, selling, distributing, servicing, repairing, maintaining,

programming, updating, or using such Accused Products in the United States. Complainant also seeks the imposition of a bond on any imports during the Presidential review period.

II. COMPLAINANT

2.1 iRobot Corporation ("iRobot") is a corporation organized under the laws of the State of Delaware, with its principal place of business in Bedford, Massachusetts.

2.2 iRobot (formerly IS Robotics, Inc.) was founded in 1990 by Massachusetts Institute of Technology roboticists with the vision of making practical robots a reality. The company has developed some of the world's most important robots, and has a rich history steeped in innovation.

2.3 iRobot robots have revealed mysteries of the Great Pyramid of Giza, found harmful subsea oil in the Gulf of Mexico, and saved thousands of lives in areas of conflict and crisis around the globe. iRobot engineers inspired the first Micro Rovers used by NASA, changing space exploration forever, deployed the first ground robots used by U.S. Forces in conflict, brought the first self-navigating FDA-approved remote presence robots to hospitals and introduced the first practical home robot with Roomba®, forging a path for an entirely new category in home cleaning.

2.4 Since 2002, iRobot has sold more than 15 million home robots. Prior to the sale of its defense and security business unit in 2016, iRobot also sold approximately 6,000 defense and security robots, most of which have been sold to the U.S. military and deployed on missions in Afghanistan and Iraq, and more recently to state, local, and international government entities.

2.5 iRobot is the leader in home robotic cleaning devices, with products delivering convenient, customized, powerful cleaning assistance. Among other product offerings, iRobot develops, manufactures, and sells the well-known Roomba line of products, which have been

recognized as a market leader in robotic vacuum cleaning as well as highly preferred Braava® branded products. iRobot also offers Scooba,® a floor washing robot, Mirra,® a pool cleaning robot, and Looj,® a gutter cleaning robot. As an innovative company always seeking ways to better serve consumers with additional features and functionality, iRobot also offers its HOME App technology for remote monitoring and control of certain Roomba models.

2.6 iRobot is also committed to building a future for Science, Technology, Engineering, and Math (STEM) education in the United States. Its multi-faceted outreach program is a resource for students, parents, and educators to share in iRobot's excitement for the robotics industry and get an inside look at iRobot innovation. iRobot's STEM activities reached over 170,000 students, parents, and educators between 2014 and 2016.

2.7 iRobot has extensive involvement with the U.S. market with its innovative robotic vacuum cleaning devices. As detailed, *infra*, iRobot employs hundreds of persons in the United States who are dedicated to the design, research, development, testing, quality control, and customer care of its robotic vacuum cleaning devices, and related accessories for U.S. customers.

III. PROPOSED RESPONDENTS

A. Bissell Homecare, Inc.

3.1 On information and belief, Bissell Homecare, Inc. is a corporation organized under the laws of the State of Michigan, having a principal place of business located at 2345 Walker Ave., NW, Grand Rapids, Michigan 49544.

3.2 According to its website (https://www.bissell.com/vacuums/robotic-vacuums), Bissell Homecare, Inc., or others on its behalf, offers for sale the SmartClean® line of robotic vacuum cleaning products. *See* **Exhibit 13**. For example, the SmartClean line of products includes at least the Model 1605C and Model 1974 Robotic Vacuums ("Bissell Accused Products"). *See id.* Moreover, according to its website, Bissell has announced as "Available

Soon" an additional robotic vacuum cleaning product, the SmartClean Connected Robotic Vacuum Model 2147, that appears to practice one or more of the Asserted Claims ("Upcoming Bissell Accused Product"). *See* **Exhibit 115**.

3.3 On information and belief, Bissell Homecare, Inc., or others on its behalf, imports the Bissell Accused Products into the United States, sells them for importation into the United States, and/or sells them after importation into the United States.

B. Hoover, Inc.

3.4 On information and belief, Hoover Inc. is a corporation organized under the laws of the State of Delaware, having a principal place of business located at 7005 Cochran Road, Glenwillow, Ohio 44139.

3.5 According to its website (https://hoover.com/products/category/robot-vacuums/), Hoover Inc., or others on its behalf, offers for sale the Quest™ line of robotic vacuum cleaning products. *See* **Exhibit 14**. For example, the Quest line of products includes at least the Quest 700 (Model BH70700), Quest 800 (Model BH70800), and Quest 1000 (Model BH71000) robot vacuums ("Hoover Accused Products"). *See id.*

3.6 On information and belief, Hoover Inc., or others on its behalf, imports the Hoover Accused Products into the United States, sells them for importation into the United States, and/or sells them after importation into the United States.

C. Royal Appliance Manufacturing Co. Inc. d/b/a TTI Floor Care North America, Inc.

3.7 On information and belief, Royal Appliance Manufacturing Co. Inc. is a corporation organized under the laws of the State of Ohio, having a principal place of business located at 7005 Cochran Road, Glenwillow, Ohio 44139. On information and belief, Royal

Appliance Manufacturing Co. Inc. is a subsidiary of Techtronic Industries Company Limited that does business under the name TTI Floor Care North America, Inc. *See* **Exhibits 15, 16, 17.**

3.8 On information and belief, Royal Appliance Manufacturing Co. Inc., or others on its behalf, imports the Hoover Accused Products into the United States, sells them for importation into the United States, and/or sells them after importation into the United States.

3.9 For example, the website (https://hoover.com/products/category/robot-vacuums/) at which the Hoover Quest line of products is available for sale, states "Today, Hoover is part of TTI Floor Care North America, headquartered in Glenwillow, OH." *See* **Exhibit 16**. Moreover, the TTI Floor Care North America website has a link to the Hoover sales website and also states "Hoover: We acquired this marquee brand in 2007." *See* **Exhibit 17**.

D. Bobsweep, Inc.

3.10 On information and belief, Bobsweep, Inc. is a Canadian corporation, having a principal place of business located at 1121 Bay St., Suite 709, Toronto, ON M5S3L9, Canada.

3.11 According to its website (http://www.bobsweep.com/), Bobsweep, Inc., or others on its behalf, offers for sale several robotic vacuum cleaning products. *See* **Exhibit 18**. For example, the "Family of bObsweep Robotic Vacuums" includes at least the Bob PetHair Plus,™ bObi Pet,™ bObi Classic,™ Bob PetHair,™ Bob Standard,™ and Junior™ ("Bobsweep Accused Products"). *See id.*

3.12 On information and belief, Bobsweep, Inc., or others on its behalf, imports the Bobsweep Accused Products into the United States, sells them for importation into the United States, and/or sells them after importation into the United States.

E. Bobsweep USA

3.13 On information and belief, Bobsweep USA is a corporation organized under the laws of the State of Nevada, having a principal place of business located at 2360 Corporate Circle, Suite 400, Henderson, Nevada 89074.

3.14 On information and belief, Bobsweep USA, or others on its behalf, imports the Bobsweep Accused Products into the United States, sells them for importation into the United States, and/or sells them after importation into the United States.

3.15 For example, Bobsweep USA has been identified as the consignee of Bobsweep "electrical floor sweeper" products. *See generally* **Exhibit 19**.

F. The Black & Decker Corporation

3.16 On information and belief, The Black & Decker Corporation is a corporation organized under the laws of the State of Maryland, having a principal place of business located at 701 E. Joppa Rd., Towson, Maryland 21286.

3.17 The Black & Decker Corporation, or others on its behalf, offers for sale several robotic vacuum cleaning products. For example, The Black & Decker Corporation sells and offers for sale in the United States at least the Black & Decker BDH5000 robotic vacuum cleaner ("Black & Decker Accused Products"). *See, e.g.*, **Exhibit 20**.

3.18 Moreover, according to its website, The Black & Decker Corporation, or others on its behalf, offers for sale (via pre-order) several additional robotic vacuum cleaning products that appear to practice one or more of the Asserted Claims, including at least the Lithium Robotic Vacuum with LED and SMARTECH™ (Model HRV425BL), the PET Lithium Robotic Vacuum with LED and SMARTECH™ (Model HRV425BLP), and the PET Lithium Robotic Vacuum with SMARTECH™ (Model HRV420BP07) (collectively, "Upcoming Black & Decker Accused Products"). *See* **Exhibit 21**. On information and belief, The Black & Decker

Corporation, or others on its behalf, demonstrated its Upcoming Black & Decker Accused Products at the 2017 Consumer Electronics Show in Las Vegas, Nevada. *See* **Exhibit 22**. The Upcoming Black & Decker Accused Products are available for pre-order in the United States with an expected availability date of June 1, 2017. *See* **Exhibit 23**.

3.19 On information and belief, The Black & Decker Corporation, or others on its behalf, imports the Black & Decker Accused Products into the United States, sells them for importation into the United States, and/or sells them after importation into the United States.

G. Black & Decker (U.S.) Inc.

3.20 On information and belief, Black & Decker (U.S.) Inc. is a corporation organized under the laws of the State of Maryland, having a principal place of business located at 701 E. Joppa Rd., Towson, Maryland 21286.

3.21 On information and belief, Black & Decker (U.S.) Inc., or others on its behalf, imports the Black & Decker Accused Products into the United States, sells them for importation into the United States, and/or sells them after importation into the United States.

3.22 For example, Black & Decker (U.S.) Inc. is identified on the Black & Decker BDH5000 robotic vacuum cleaner as well as the box in which it is packaged. *See* **Exhibit 24**. On information and belief, Black & Decker (U.S.) Inc. is an importer of the accused BDH5000 device for the United States. *See id.*

H. Shenzhen ZhiYi Technology Co., Ltd. d/b/a iLife

3.23 On information and belief, Shenzhen ZhiYi Technology Co., Ltd. d/b/a iLife is a Chinese corporation, having a principal place of business located at 3rd Floor Bld B, Hytera Technology Park, No. 3,4th of Baolong Road, Longgang, ShenZhen 518000, People's Republic of China. On information and belief, Shenzhen ZhiYi Technology Co., Ltd. conducts business

under the name iLife and utilizes the website www.iliferobot.com for sales in the United States. *See* **Exhibits 25, 26.**

3.24 According to its website (http://www.iliferobot.com/), Shenzhen ZhiYi Technology Co., Ltd. d/b/a iLife, or others on its behalf, offers for sale several robotic vacuum cleaning products, including the A-series and V-series. *See* **Exhibits 27, 28.** For example, the iLife branded robotic vacuum cleaners include at least the A6, A4, A4s, V7, V7s, V5s, V5s Pro, V3s, and V3s Pro robotic vacuum cleaner models ("iLife Accused Products"). *See, e.g., id.*

3.25 On information and belief, Shenzhen ZhiYi Technology Co., Ltd. d/b/a iLife, or others on its behalf, manufactures the iLife Accused Products in the People's Republic of China or another country other than the United States, and then imports them into the United States, sells them for importation into the United States, and/or sells them after importation into the United States.

I. Matsutek Enterprises Co., Ltd.

3.26 On information and belief, Matsutek Enterprises Co., Ltd. is a corporation organized under the laws of Taiwan, having a principal place of business located at 2F, 2, Lane 15 Tzu Chiang Street, New Taipei City, Taiwan 23678.

3.27 On information and belief, Matsutek Enterprises Co., Ltd. manufactures the Bissell Accused Products in Taiwan or another country other than the United States, and then imports them into the United States, sells them for importation into the United States, and/or sells them after importation into the United States.

3.28 For example, certain of the Bissell Accused Products include circuit boards imprinted with the Matsutek Enterprises Co., Ltd. name. *See* **Exhibit 29.** Further, for example, U.S. Customs records show Matsutek Enterprises Co., Ltd. as the supplier and/or shipper to Bissell Homecare Inc. of "1605 Bissell Robot Vacuum," a Bissell Accused Product. *See*

Exhibits 30, 31. Additionally, Matsutek Enterprises Co., Ltd. is identified as a manufacturer of Bissell consumer product model numbers 1605 and 1974 robotic vacuum cleaners, both Bissell Accused Products, in disclosures made to the California Energy Commission. *See* **Exhibits 32, 33**.

J. Suzhou Real Power Electric Appliance Co., Ltd.

3.29 On information and belief, Suzhou Real Power Electric Appliance Co., Ltd. is a Chinese corporation, having a principal place of business located at No 9 Shi Yang Rd, Suzhou New District, Suzhou 215151, People's Republic of China.

3.30 On information and belief, Suzhou Real Power Electric Appliance Co., Ltd. manufactures the Hoover Accused Products and/or components thereof in the People's Republic of China or another country other than the United States, and then imports them into the United States, sells them for importation into the United States, and/or sells them after importation into the United States.

3.31 For example, Suzhou Real Power Electric Appliance Co., Ltd. is identified as a manufacturer of Hoover consumer product model numbers BH 70700 and BH70800 robotic vacuum cleaners, both Hoover Accused Products, in disclosures made to the California Energy Commission. *See* **Exhibits 34, 35**. Further, for example, U.S. Customs records show Suzhou Real Power Electric Appliance Co., Ltd. as the shipper to Hoover and/or Royal Appliance Manufacturing Co. Inc. of "Vacuum Cleaner Spare Parts – Robots" and similar items. *See* **Exhibit 36**.[2] Additionally, a Statement of Compliance filed with the Federal Communications

[2] Exhibit 36 also identifies The Hoover Co. I, LP as a consignee of robotic vacuum cleaner spare parts manufactured by Suzhou Real Power Electric Appliance Co., Ltd. Because limited corporate information is available for The Hoover Co. I, LP, including its corporate status relative to other Hoover entities and its absence from Hoover's current Dun & Bradstreet corporate family tree, The Hoover Co. I, LP has not been identified as a Proposed Respondent in

Commission by Hoover, Inc. for the BH70700 robotic vacuum cleaner identifies Suzhou Real Power Electric Appliance Co., Ltd. as "Manufacturer." *See* **Exhibit 37**.

K. Shenzhen Silver Star Intelligent Technology Co., Ltd.

3.32 On information and belief, Shenzhen Silver Star Intelligent Technology Co., Ltd. is a Chinese corporation, having a principal place of business located at Building D, Huiqing Technology Park, DAFU Industrial Area, Guanguang Road, Guanlan Town, Shenzhen, People's Republic of China.

3.33 On information and belief, Shenzhen Silver Star Intelligent Technology Co., Ltd. manufactures Hoover Accused Products, Bobsweep Accused Products, and/or Black & Decker Accused Products in the People's Republic of China or another country other than the United States, and then imports them into the United States, sells them for importation into the United States, and/or sells them after importation into the United States.

3.34 For example, Shenzhen Silver Star Intelligent Technology Co., Ltd. is identified as a manufacturer of Hoover consumer product model number BH 71000 robotic vacuum cleaners, a Hoover Accused Product, in a disclosure made to the California Energy Commission. *See* **Exhibit 38**.

3.35 Further, for example, U.S. Customs records show Shenzhen Silver Star Intelligent Technology Co., Ltd. as the shipper to Bobsweep USA of containers of Bobsweep bObi Pet devices as well as "Bobsweep PetHair Plus Robotic Vacuums," which are Bobsweep Accused Products. *See* **Exhibit 19**.

3.36 Further, for example, Shenzhen Silver Star Intelligent Technology Co., Ltd. is identified as a manufacturer of Black & Decker consumer product model number BDH5000

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this Complaint. However, Complainant reserves the right to supplement its allegations should discovery indicate that The Hoover Co. I, LP should be a Proposed Respondent.

robotic vacuum cleaners, a Black & Decker Accused Product, in a disclosure made to the California Energy Commission. *See* **Exhibit 39**.

IV. THE TECHNOLOGY AND PRODUCTS AT ISSUE

4.1 The technologies at issue relate generally to various aspects of robotic vacuum cleaning devices. As explained, *infra*, one or more of the Asserted Patents are directed to various aspects and features of controlling the movement of a robotic vacuum cleaning device, including operational modes to effectively cover a given area, heading and speed settings, and obstacle detection and response. Further, one or more of the Asserted Patents are directed to various components and features of a robotic vacuum cleaning device, such as its sensors, brushes, wheel drives, receptacles, and control circuits. Finally, one or more of the Asserted Patents are directed to messaging and control aspects of a robotic vacuum cleaning device, including scheduling, status alerts, and error conditions.

4.2 Pursuant to 19 C.F.R. § 210.12(a)(12), the accused products are certain robotic vacuum cleaning devices and components thereof such as spare parts, including but not limited to the Bissell Accused Products, Hoover Accused Products, Bobsweep Accused Products, Black & Decker Accused Products, and iLife Accused Products (collectively, the "Accused Products") that, without permission, implement iRobot's patented technologies as described and claimed in the Asserted Patents.

4.3 A robotic vacuum cleaner is an autonomous device that is operable without human intervention to clean designated areas. One of the primary requirements for an autonomous cleaning device is a self-contained power supply. Such a device has intelligent programming and a limited vacuum cleaning system.

4.4 Many of today's robotic vacuum cleaners are characterized by a power subsystem for providing the energy to power the robot, a motive subsystem to propel the robot for cleaning operations, a control module to control the robot to effect cleaning operations, and a cleaning head subsystem. Robotic vacuum cleaners also include a brush assembly powered by the motive subsystem to sweep up particulates during cleaning operations and a vacuum assembly to ingest the particulates.

4.5 Examples of the Bissell Accused Products include, but are not limited to, the SmartClean Model 1605C and Model 1974 robot vacuum cleaners. Further, on information and belief, upcoming Bissell robotic vacuums, including at least the SmartClean Connected Robotic Vacuum Model 2147 practice one or more of the Asserted Claims.

4.6 Examples of the Hoover Accused Products include, but are not limited to, the Quest 700 (Model BH70700), Quest 800 (Model BH70800), and Quest 1000 (Model BH71000) robot vacuum cleaners.

4.7 Examples of the Bobsweep Accused Products include, but are not limited to, Bob PetHair Plus, bObi Pet, bObi Classic, Bob PetHair, Bob Standard, and Junior robot vacuum cleaners.

4.8 Examples of the Black & Decker Accused Products include, but are not limited to, the BDH5000 robotic vacuum cleaner. Further, on information and belief, upcoming Black & Decker robotic vacuums, including at least the Lithium Robotic Vacuum with LED and SMARTECH (Model HRV425BL), the PET Lithium Robotic Vacuum with LED and SMARTECH (Model HRV425BLP), and the PET Lithium Robotic Vacuum with SMARTECH (Model HRV420BP07) practice one or more of the Asserted Claims.

4.9 Examples of the iLife Accused Products include, but are not limited to, the A6, A4, A4s, V7, V7s, V5s, V5s Pro, V3s, and V3s Pro robotic vacuum cleaners.

4.10 On information and belief, the Accused Products are sold for importation into the United States, imported into the United States, and/or sold within the United States after importation by or on behalf of the Proposed Respondents. Discovery may disclose the importation of additional infringing articles.

V. THE ASSERTED PATENTS

A. U.S. Patent No. 6,809,490

1. Identification of the Patent and Ownership by iRobot

5.1 U.S. Patent No. 6,809,490 ("the '490 Patent") is entitled "Method and System for Multi-Mode Coverage for an Autonomous Robot" and was duly and legally issued on October 26, 2004. *See* **Exhibit 1**. The '490 Patent issued from U.S. Patent Application Serial No. 10/167,851, filed June 12, 2002. *Id.* The inventors of the '490 Patent are Joseph L. Jones and Phillip R. Mass. *Id.*

5.2 The '490 Patent has seven independent claims and 35 dependent claims. *Id.* The '490 Patent is valid, enforceable, and currently in full force and effect.

5.3 iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the '490 Patent. Prior to issuance, the '490 Patent inventors assigned all right, title and interest in U.S. Patent Application Serial No. 10/167,851. These assignments are recorded at the United States Patent and Trademark Office at Reel/Frame 014249/705 and 014249/711. *See* **Exhibit 7**.

5.4 This Complaint is accompanied by Appendices A and G containing: A) a certified copy and three additional copies of the prosecution history of the '490 Patent; and B) four copies of examiner-cited references mentioned in that prosecution history.

2. Non-Technical Description of the Patented Invention[3]

5.5 The '490 Patent relates to a control system for a mobile robot to effectively cover a given area by operating in a plurality of modes. In an exemplary embodiment, an autonomous mobile robot can operate in an obstacle following mode, a random bounce mode, or in a spot coverage mode. Additionally, the '490 Patent describes a behavior based architecture for the control system to ensure full coverage.

3. Foreign Counterparts to the '490 Patent

5.6 The following foreign patent(s) and/or patent application(s) are counterparts to the '490 Patent:

Patent/Application No.	Status
EP Patent 1395888	Issued May 18, 2011
CA Patent 2,416,621	Issued September 12, 2006
JP 2003-504174	Abandoned
SG Patent 119394	Issued December 28, 2008
HK Reg. 1061013	Issued November 25, 2011

No other foreign patents or patent applications corresponding to the '490 Patent have been filed, abandoned, withdrawn, or rejected.

[3] The non-technical descriptions of the Asserted Patents herein are presented to give a general background of the inventions. Such statements are not intended to be used, nor should be used, for purposes of patent claim interpretation. Complainant presents these statements subject to, and without waiver of, its right to argue that claim terms should be construed in a particular way, as contemplated by claim interpretation jurisprudence and the relevant evidence.

4. Licenses

5.7 As required under Commission Rule 210.12(a)(9)(iii), a list of licensed entities is attached to this Complaint as **Confidential Exhibit 40**. There are no other current known licenses to the '490 patent.

B. U.S. Patent No. 7,155,308

1. Identification of the Patent and Ownership by iRobot

5.8 U.S. Patent No. 7,155,308 ("the '308 Patent") is entitled "Robot Obstacle Detection System" and was duly and legally issued on December 26, 2006. *See* **Exhibit 2**. The '308 Patent issued from U.S. Patent Application Serial No. 10/453,202 filed June 3, 2003. *Id.* The inventor of the '308 Patent is Joseph L. Jones. *Id.*

5.9 The '308 Patent has two independent claims and 32 dependent claims. *Id.* The '308 Patent is valid, enforceable, and currently in full force and effect.

5.10 iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the '308 Patent. Prior to issuance, the '308 Patent inventor assigned all right, title and interest in U.S. Patent Application Serial No. 10/453,202. The assignment of the '308 Patent to iRobot is recorded at the United States Patent and Trademark Office at Reel/Frame 014150/455. *See* **Exhibit 8**.

5.11 This Complaint is accompanied by Appendices B and H containing: C) a certified copy and three additional copies of the prosecution history of the '308 Patent; and D) four copies of examiner-cited references mentioned in that prosecution history.

2. Non-Technical Description of the Patented Invention

5.12 The '308 Patent relates to a robot obstacle detection system that includes a robot housing that navigates with respect to a surface, and a sensor subsystem. The sensor subsystem includes an optical emitter which emits a directed beam having a defined field of emission and a

photon detector having a defined field of view which intersects the field of emission of the emitter at a region. A circuit in communication with a detector redirects the robot when the surface does not occupy the region to avoid obstacles. A similar system is employed to detect walls.

3. Foreign Counterparts to the '308 Patent

5.13 There are no foreign patents or patent applications corresponding to the '308 Patent that have been filed, abandoned, withdrawn, or rejected.

4. Licenses

5.14 As required under Commission Rule 210.12(a)(9)(iii), a list of licensed entities is attached to this Complaint as **Confidential Exhibit 40**. There are no other current known licenses to the '308 patent.

C. U.S. Patent No. 8,474,090

1. Identification of the Patent and Ownership by iRobot

5.15 U.S. Patent No. 8,474,090 ("the '090 Patent") is entitled "Autonomous Floor-Cleaning Robot" and duly and legally issued on July 2, 2013. *See* Exhibit 3. The '090 Patent issued from U.S. Patent Application Serial No. 12/201,554, filed on August 29, 2008. *Id.* The inventors of the '090 Patent are Joseph L. Jones, Newton E. Mack, David M. Nugent, and Paul E. Sandin. *Id.*

5.16 The '090 Patent has three independent claims and 17 dependent claims. *Id.* The '090 Patent is valid, enforceable, and currently in full force and effect.

5.17 iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the '090 Patent. Prior to issuance, the '090 Patent inventors assigned all right, title and interest in U.S. Patent Application Serial No. 12/201,554. The assignment of the '090 Patent to

iRobot is recorded at the United States Patent and Trademark Office at Reel/Frame 028625/471. *See* **Exhibit 9**.

5.18 Pursuant to Rule 210.12(c) of the Commission's Rules of Practice and Procedure, this Complaint is accompanied by Appendices C and I containing: E) a certified copy and three additional copies of the prosecution history of the '090 Patent; and F) four copies of examiner-cited references mentioned in that prosecution history.

2. Non-Technical Description of the Patented Invention

5.19 The '090 Patent relates to a floor cleaning robot that includes 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.

3. Foreign Counterparts to the '090 Patent

5.20 The following foreign patent(s) and/or patent application(s) are counterparts to the '553 Patent:

Patent/Application No.	Status
JP Patent 5767685	Issued February 20, 2014

No other foreign patents or patent applications corresponding to the '090 Patent have been filed, abandoned, withdrawn, or rejected.

4. Licenses

5.21 There are no licensed entities to the '090 patent.

D. U.S. Patent No. 8,600,553

1. Identification of the Patent and Ownership by iRobot

5.22 U.S. Patent No. 8,600,553 ("the '553 Patent") is entitled "Coverage Robot Mobility" and duly and legally issued on December 3, 2013. *See* **Exhibit 4**. The '553 Patent issued from U.S. Patent Application Serial No. 11/758,289, filed on June 5, 2007. *Id.* The inventors of the '553 Patent are Selma Svendsen, Daniel N. Ozick, Christopher M. Casey, Deepak Ramesh Kapoor, Tony L. Campbell, Chikyung Won, Christopher John Morse, and Scott Thomas Burnett. *Id.*

5.23 The '553 Patent has three independent claims and 22 dependent claims. *Id.* The '553 Patent is valid, enforceable, and currently in full force and effect.

5.24 iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the '553 Patent. Prior to issuance, the '553 Patent inventors assigned all right, title and interest in U.S. Patent Application Serial No. 11/758,289. The assignment of the '553 Patent to iRobot is recorded at the United States Patent and Trademark Office at Reel/Frame 020893/176. *See* **Exhibit 10**.

5.25 This Complaint is accompanied by Appendices D and J containing: G) a certified copy and three additional copies of the prosecution history of the '553 Patent; and H) four copies of examiner-cited references mentioned in that prosecution history.

2. Non-Technical Description of the Patented Invention

5.26 The '553 Patent relates to an autonomous coverage robot that includes a drive system, a bump sensor, and a proximity sensor. The drive system is configured to maneuver the robot according to a heading and a speed setting. The bump sensor is responsive to a collision of

the robot with an obstacle in a forward direction. A method of navigating an autonomous coverage robot with respect to an object on a floor includes the robot autonomously traversing the floor in a cleaning mode at a full cleaning speed. Upon sensing a proximity of the object forward of the robot, the robot reduces the cleaning speed to a reduced cleaning speed while continuing towards the object until the robot detects a contact with the object. Upon sensing contact with the object, the robot turns with respect to the object and cleans next to the object.

3. Foreign Counterparts to the '553 Patent

5.27 The following foreign patent(s) and/or patent application(s) are counterparts to the '553 Patent:

Patent/Application No.	Status
EP Patent 2120122	Issued November 18, 2009
JP 2010-282185	Abandoned
KR Patent 1300492	Issued September 2, 2013

No other foreign patents or patent applications corresponding to the '553 Patent have been filed, abandoned, withdrawn, or rejected.

4. Licenses

5.28 There are no licensed entities to the '533 patent.

E. U.S. Patent No. 9,038,233

1. Identification of the Patent and Ownership by iRobot

5.29 U.S. Patent No. 9,038,233 ("the '233 Patent") is entitled "Autonomous Floor-Cleaning Robot" and duly and legally issued on May 26, 2015. *See* **Exhibit 5**. The '233 Patent issued from U.S. Patent Application Serial No. 13/714,546, filed on December 14, 2012. *Id.*

The inventors of the '233 Patent are Joseph L. Jones, Newton E. Mack, David M. Nugent, and Paul E. Sandin. *Id.*

5.30 The '233 Patent has two independent claims and 19 dependent claims. *Id.* The '233 Patent is valid, enforceable, and currently in full force and effect.

5.31 iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the '233 Patent. Prior to issuance, the '233 Patent inventors assigned all right, title and interest in U.S. Patent Application Serial No. 13/714,546. The assignment of the '233 Patent to iRobot is recorded at the United States Patent and Trademark Office at Reel/Frame 030046/817. *See* **Exhibit 11.**

5.32 This Complaint is accompanied by Appendices E and K containing: I) a certified copy and three additional copies of the prosecution history of the '233 Patent; and J) four copies of examiner-cited references mentioned in that prosecution history.

2. Non-Technical Description of the Patented Invention

5.33 The '233 Patent relates to an autonomous floor-cleaning robot that includes a cleaning head subsystem with a dual-stage brush assembly having counter-rotating, asymmetric brushes. The autonomous floor-cleaning robot further includes a side brush assembly for directing particulates outside the envelope of the robot into the cleaning head subsystem.

3. Foreign Counterparts to the '233 Patent

5.34 The following foreign patent(s) and/or patent application(s) are counterparts to the '233 Patent:

Patent/Application No.	Status
JP Patent 5809227	Issued November 10, 2015

No other foreign patents or patent applications corresponding to the '233 Patent have been filed, abandoned, withdrawn, or rejected.

4. Licenses

5.35 There are no licensed entities to the '233 patent.

F. U.S. Patent No. 9,486,924

1. Identification of the Patent and Ownership by iRobot

5.36 U.S. Patent No. 9,486,924 ("the '924 Patent") is entitled "Remote Control Scheduler and Method for Autonomous Robotic Device" and duly and legally issued on November 8, 2016. *See* **Exhibit 6**. The '924 Patent issued from U.S. Patent Application Serial No. 14/670,572, filed on March 27, 2015. *Id.* The inventors of the '924 Patent are Zivthan A. Dubrovsky, Gregg W. Landry, Michael J. Halloran, and James Lynch. *Id.*

5.37 The '924 Patent has two independent claims and 17 dependent claims. *Id.* The '924 Patent is valid, enforceable, and currently in full force and effect.

5.38 iRobot is the owner, by valid assignment, of the entire right, title and interest in and to the '924 Patent. Prior to issuance, the '924 Patent inventors assigned all right, title and interest in U.S. Patent Application Serial No. 14/670,572. The assignment of the '924 Patent to iRobot is recorded at the United States Patent and Trademark Office at Reel/Frame 035655/501. *See* **Exhibit 12**.

5.39 This Complaint is accompanied by Appendices F and L containing: K) a certified copy and three additional copies of the prosecution history of the '924 Patent; and L) four copies of examiner-cited references mentioned in that prosecution history.

2. Non-Technical Description of the Patented Invention

5.40 The '924 Patent relates to a method of scheduling a robotic device that enables the device to run autonomously based on previously loaded scheduling information. The method

consists of a communication device, such as a hand-held remote device, that can directly control the robotic device, or load scheduling information into the robotic device such that it will carry out a defined task at the desired time without the need for further external control. The communication device can also be configured to load a scheduling application program into an existing robotic device, such that the robotic device can receive and implement scheduling information from a user.

3. Foreign Counterparts to the '924 Patent

5.41 There are no foreign patents or patent applications corresponding to the '924 Patent that have been filed, abandoned, withdrawn, or rejected.

4. Licenses

5.42 There are no licensed entities to the '924 patent.

VI. SPECIFIC INSTANCES OF UNFAIR IMPORTATION AND SALE

6.1 On information and belief, Proposed Respondents, or others on their behalf, manufacture the Accused Products in China or another country other than the United States and then import them into the United States, sell them for importation into the United States, and/or sell them after importation into the United States.

6.2 On March 7, 2017, a Bissell SmartClean Model 1974 robotic vacuum cleaning device, a Bissell Accused Product, was purchased in the United States at a Target store located at 101 Commerce Way, Woburn, MA 01801. The purchased product specifies that the robotic vacuum cleaning device was "Made in China." *See* **Exhibit 41**.

6.3 As discussed in Section III.I *supra*, on information and belief, Matsutek Enterprises Co., Ltd. is involved with the manufacture, importation, sale for importation, and/or sale after importation of the Bissell Accused Products. *See* **Exhibits 29-33**.

6.4 On March 10, 2017, a Hoover Quest 800 (Model BH70800) robotic vacuum cleaning device, a Hoover Accused Product, was purchased in the United States online at www.bestbuy.com for pickup at a Best Buy store located at 86 Middlesex Turnpike, Burlington, MA 01803 on March 22, 2017. The purchased product specifies that the robotic vacuum cleaning device was "Made in China." *See* **Exhibit 42.**

6.5 On March 10, 2017, a Hoover Quest 1000 (Model BH71000) robotic vacuum cleaning device, a Hoover Accused Product, was purchased in the United States online at www.target.com. The purchased product was shipped to the iRobot facility in Bedford, Massachusetts. The purchased product specifies that the robotic vacuum cleaning device was "Made in China." *See* **Exhibit 43.**

6.6 As discussed in Section III.C *supra*, on information and belief, Royal Appliance Mfg. Co. Inc. d/b/a TTI Floor Care North America, Inc., or others on its behalf, is involved with the importation, sale for importation, and/or sale after importation of the Hoover Accused Products. *See* **Exhibits 15-17**. Further, as discussed in Section III.J *supra*, on information and belief, Suzhou Real Power Electric Appliance Co., Ltd. is involved with the manufacture, importation, sale for importation, and/or sale after importation of Hoover Accused Products and/or components thereof. *See* **Exhibits 34-37**. Further, as discussed in Section III.K *supra*, on information and belief, Shenzhen Silver Star Intelligent Technology Co., Ltd. is involved with the manufacture, importation, sale for importation, and/or sale after importation of Hoover Accused Products. *See* **Exhibit 38.**

6.7 On March 7, 2017, a bObsweep PetHair Robotic Vacuum Cleaner and Mop, a Bobsweep Accused Product, was purchased in the United States online at www.bobsweep.com. The purchased product was shipped to the iRobot facility in Bedford, Massachusetts. The

purchased product specifies that the robotic vacuum cleaning device was "Manufactured in China." *See* **Exhibit 44**.

6.8 On March 22, 2017, a bObsweep Classic Robotic Vacuum Cleaner, a Bobsweep Accused Product, was purchased in the United States online at www.bobsweep.com. The purchased product was shipped to the iRobot facility in Bedford, Massachusetts. The purchased product specifies that the robotic vacuum cleaning device was "manufactured in China." *See* **Exhibit 45**.

6.9 As discussed in Section III.E *supra*, on information and belief, Bobsweep USA, or others on its behalf, is involved with the importation, sale for importation, and/or sale after importation of the Bobsweep Accused Products. *See* **Exhibit 19**. Further, as discussed in Section III.K *supra*, on information and belief, Shenzhen Silver Star Intelligent Technology Co., Ltd. is involved with the manufacture, importation, sale for importation, and/or sale after importation of the Bobsweep Accused Products. *See id.*

6.10 On February 24, 2017, a Black & Decker BDH5000 robotic vacuum cleaning device, a Black & Decker Accused Product, was purchased in the United States at a Walmart store located at 777 Brockton Ave, Abington, MA 02351. The purchased product specifies that the robotic vacuum cleaning device was "Made in China." *See* **Exhibit 46**.

6.11 As discussed in Section III.G *supra*, on information and belief, Black & Decker (U.S.) Inc., or others on its behalf, is involved with the importation, sale for importation, and/or sale after importation of the Black & Decker Accused Products. *See* **Exhibit 24**. Further, as discussed in Section III.K *supra*, on information and belief, Shenzhen Silver Star Intelligent Technology Co., Ltd. is involved with the manufacture, importation, sale for importation, and/or sale after importation of the Black & Decker Accused Products. *See* **Exhibit 39**.

6.12 On March 7, 2017, an iLife V5s robotic vacuum cleaning device, an iLife Accused Product, was purchased in the United States online at www.amazon.com (following redirection from www.iliferobot.com). The purchased product was shipped to the iRobot facility in Bedford, Massachusetts. The purchased product specifies that the robotic vacuum cleaning device was "Made in China." *See* **Exhibit 47**.

6.13 On March 7, 2017, an iLife A6 robotic vacuum cleaning device, an iLife Accused Product, was purchased in the United States online at www.amazon.com (following redirection from www.iliferobot.com). The purchased product was shipped to the iRobot facility in Bedford, Massachusetts. The purchased product specifies that the robotic vacuum cleaning device was "Made in China." *See* **Exhibit 48**.

6.14 On March 8, 2017, an iLife V7 robotic vacuum cleaning device, an iLife Accused Product, was purchased in the United States online at www.gearbest.com. The purchased product was shipped to the iRobot facility in Bedford, Massachusetts. The purchased product specifies that the robotic vacuum cleaning device was "Made in China." *See* **Exhibit 49**.

6.15 Discovery is expected to reveal additional specific acts of Proposed Respondents' importation, sale for importation, and/or sale after importation of the Accused Products.

VII. UNFAIR ACTS OF PROPOSED RESPONDENTS

A. Infringement of the Asserted Patents

7.1 Upon information and belief, the Proposed Respondents have engaged in unfair trade practices, including the sale for importation, importation, and sale after importation into the United States of certain robotic vacuum cleaning devices and components thereof such as spare parts that infringe the asserted apparatus and method claims of the Asserted Patents. Upon information and belief, the Accused Products directly infringe, contributorily infringe, and/or

induce the infringement of at least the asserted claims as specifically set forth in the table below.[4] On information and belief, the Proposed Respondents manufacture, assemble, package and test, and/or purchase the Accused Products outside the United States, specifically, at least in Canada, the People's Republic of China, and/or Taiwan; the Proposed Respondents then sell for importation, import into the United States, and/or sell within the United States after importation, the Accused Products.

7.2 Upon information and belief, the Proposed Respondents' infringing activities relate to the Accused Products as follows:

Table 7.2

Exemplary Accused Products	Related Proposed Respondents
SmartClean Model 1605C and Model 1974 (each included in "Bissell Accused Products")	Bissell Homecare, Inc.; Matsutek Enterprises Co., Ltd.
Quest 700 (Model BH70700), Quest 800 (Model BH70800), and Quest 1000 (Model BH71000) (each included in "Hoover Accused Products")	Hoover Inc.; Royal Appliance Manufacturing Co. Inc. d/b/a TTI Floor Care North America, Inc.; Suzhou Real Power Electric Appliance Co., Ltd.; Shenzhen Silver Star Intelligent Technology Co., Ltd.
Bob PetHair Plus, bObi Pet, bObi Classic, Bob PetHair, Bob Standard, and Junior (each included in "Bobsweep Accused Products")	Bobsweep, Inc.; Bobsweep USA; Shenzhen Silver Star Intelligent Technology Co., Ltd.
BDH5000 (included in "Black & Decker Accused Products")	The Black & Decker Corporation; Black & Decker (U.S.) Inc.; Shenzhen Silver Star Intelligent Technology Co., Ltd.

[4] Discovery may reveal that Proposed Respondents infringe additional claims of the Asserted Patents. Moreover, on information and belief, the Upcoming Bissell Accused Product and Upcoming Black & Decker Accused Products will be shown to directly infringe, contributorily infringe, and/or induce the infringement of one or more claims of the Asserted Patents. Complainant reserves all rights to supplement its allegations with respect to the Upcoming Bissell Accused Product and Upcoming Black & Decker Accused Products.

A6, A4, A4s, V7, V7s, V5s, V5s Pro, V3s, and V3s Pro (each included in "iLife Accused Products")	Shenzhen ZhiYi Technology Co., Ltd. d/b/a iLife

7.3 The Asserted Patents and corresponding asserted claims are listed below (independent claims in **bold**):

Table 7.3

U.S. Patent No.	Infringed Claims[5]	Accused Products
6,809,490	**1**, 2, 3, 7, 12, **42**	Bissell Accused Products
	1, 2, 3, 7, 12, **42**	Hoover Accused Products
	1, 2, 3, 7, 12, **42**	Bobsweep Accused Products
	1, 7, 12, **42**	Black & Decker Accused Products
	1, 2, 3, 7, 12, **42**	iLife Accused Products
7,155,308	**1**, 2, 3, 7, 11, 17, **19**, 20, 28, 34	Bissell Accused Products
	1, 2, 3, 7, 11, 12, 17, **19**, 20, 28, 34	Hoover Accused Products
	1, 2, 3, 7, 11, 12, 17, **19**, 20, 28, 34	Bobsweep Accused Products
	1, 2, 3, 7, 11, 12, 17, **19**, 20, 28, 34	Black & Decker Accused Products
	1, 2, 3, 7, 11, 12, 17, **19**, 20, 28, 34	iLife Accused Products
8,474,090	**1**, 2, 3, 7, **10**, 14, 15, **17**, 18, 19	Bissell Accused Products
	1, 2, 3, 7, 8, **10**, 11, 14, 15, **17**, 18, 19	Hoover Accused Products
	1, 2, 3, 7, 8, **10**, 11, 14, 15, **17**, 18, 19	Bobsweep Accused Products
	1, 2, 3, 7, 8, **10**, 11, 14, 15, **17**, 18, 19	Black & Decker Accused Products
	1, 2, 3, 7, **10**, 14, 15, **17**, 18, 19	iLife Accused Products
8,600,553	**1**, 4, 8, **11**, 21, 22, **25**	Bissell Accused Products
	1, 2, 4, 8, **11**, 12, 21, 22, **25**	Hoover Accused Products
	1, 2, 4, 8, **11**, 12, 21, 22, **25**	iLife Accused Products
9,038,233	**1**, 10, 11, 14, **15**, 16	Bissell Accused Products
	1, 10, 11, 14, **15**, 16	Hoover Accused Products

[5] One or more of the identified Accused Products infringes each of the identified claims as detailed in the infringement claim charts attached to this Complaint.

	1, 10, 11, 14, **15**, 16	Bobsweep Accused Products
	1, 10, 11, 14, **15**, 16	iLife Accused Products
9,486,924	**1**, 2, 8, 9, **12**, 13	Hoover Accused Products
	1, 2, 8, 9, **12**, 13	iLife Accused Products

7.4 Upon information and belief, the Proposed Respondents directly infringe the asserted claims at least through their sale for importation, importation, and sale after importation into the United States of the Accused Products, and indirectly infringe any asserted claims directed to methods of operating the Accused Products at least by contributing to and/or inducing others to practice the claimed methods in the United States.

7.5 The Proposed Respondents have induced, and continue to induce, direct infringement of the Asserted Patents at least by their customers and/or end users with the specific intent that such customers' and/or end users' acts infringe the Asserted Patents. On information and belief, the Proposed Respondents actively induce others to infringe at least the asserted method claims through their sale of the Accused Products to customers in the United States. Upon information and belief, the Proposed Respondents create and distribute promotional and product literature for the Accused Products that is designed to instruct, encourage, enable, and facilitate the use of the Accused Products in a manner that directly infringes the Asserted Patents. *See, e.g.*, **Exhibits 50**; **51**; **52**; **53**; **54**.

7.6 The Proposed Respondents induce such infringing acts and know or should have known that their actions would induce direct infringement of the Asserted Patents. The Proposed Respondents had actual notice of the Asserted Patents at least upon the filing or service of this Complaint.[6] The Proposed Respondents' knowledge of their infringement of the Asserted

[6] Concurrently with the filing of this Complaint, non-confidential copies of the same will be provided by Complainant to each Proposed Respondent at the addresses herein identified on the front cover.

Patents, and their continued sale, offer for sale, importation, and/or sale for importation of the Accused Products constitutes infringement as well as active inducement of others to infringe the Asserted Patents.

7.7 To the extent any Proposed Respondents contend that they do not sell for importation, import, or sell in the United States after importation products that include all of the limitations of the asserted apparatus claims, such Proposed Respondents contributorily infringe certain of the asserted claims through their sale and offers to sell within the United States and/or importation into the United States of components such as spare parts of the Accused Products, constituting a material part of the asserted claims, knowing the same to be especially made or especially adapted for use in an infringement of the Asserted Patents, and not a staple article or commodity of commerce suitable for substantial non-infringing use. Due to the specific designs of the Accused Products, components thereof such as spare parts do not have any substantial non-infringing uses.

B. Application of Asserted Independent Claims

7.8 The Bissell Accused Products that are sold for importation, imported, and/or sold after importation into the United States by the Proposed Respondents set forth in Table 7.2 infringe, individually as an apparatus and/or when used to practice a method, at least the asserted claims set forth in Table 7.3, either literally—directly or indirectly—or under the doctrine of equivalents. For example, attached to this Complaint are charts that apply, to the Bissell SmartClean Model 1974, asserted independent claims 1 and 42 of the '490 Patent, asserted independent claims 1 and 19 of the'308 Patent, asserted independent claims 1, 10, and 17 of the '090 Patent, asserted independent claims 1, 11, and 25 of the '553 Patent, and asserted independent claims 1 and 15 of the '233 Patent. *See* **Exhibits 55, 56, 57, 58,** and **59,**

respectively. Discovery may reveal additional Bissell infringing robotic vacuum cleaning devices and/or components thereof such as spare parts.

7.9 The Hoover Accused Products that are sold for importation, imported, and/or sold after importation into the United States by the Proposed Respondents set forth in Table 7.2 infringe, individually as an apparatus and/or when used to practice a method, at least the asserted claims set forth in Table 7.3, either literally—directly or indirectly—or under the doctrine of equivalents. For example, attached to this Complaint are charts that apply, to the Hoover Quest 800 (Model BH70800) and Hoover Quest 1000 (Model BH71000), one or more of asserted independent claims 1 and 42 of the '490 Patent, asserted independent claims 1 and 19 of the'308 Patent, asserted independent claims 1, 10, and 17 of the '090 Patent, asserted independent claims 1, 11, and 25 of the '553 Patent, asserted independent claims 1 and 15 of the '233 Patent, and asserted independent claims 1 and 12 of the '924 Patent. *See* **Exhibits 60, 65, 61, 66, 67, 62, 63, 68, 64,** and **69**, respectively. Discovery may reveal additional Hoover infringing robotic vacuum cleaning devices and/or components thereof such as spare parts.

7.10 The Bobsweep Accused Products that are sold for importation, imported, and/or sold after importation into the United States by the Proposed Respondents set forth in Table 7.2 infringe, individually as an apparatus and/or when used to practice a method, at least the asserted claims set forth in Table 7.3, either literally—directly or indirectly—or under the doctrine of equivalents. For example, attached to this Complaint are charts that apply, to the bObsweep PetHair Robotic Vacuum Cleaner and Mop and bObsweep Classic Robotic Vacuum Cleaner, one or more of asserted independent claims 1 and 42 of the '490 Patent, asserted independent claims 1 and 19 of the'308 Patent, asserted independent claims 1, 10, and 17 of the '090 Patent, and asserted independent claims 1 and 15 of the '233 Patent. *See* **Exhibits 70, 73, 71, 74, 75, 72,** and

76, respectively. Discovery may reveal additional Bobsweep infringing robotic vacuum cleaning devices and/or components thereof such as spare parts.

7.11 The Black & Decker Accused Products that are sold for importation, imported, and/or sold after importation into the United States by the Proposed Respondents set forth in Table 7.2 infringe, individually as an apparatus and/or when used to practice a method, at least the asserted claims set forth in Table 7.3, either literally—directly or indirectly—or under the doctrine of equivalents. For example, attached to this Complaint are charts that apply, to the Black & Decker BDH5000, asserted independent claims 1 and 42 of the '490 Patent, asserted independent claims 1 and 19 of the'308 Patent, and asserted independent claims 1, 10, and 17 of the '090 Patent. *See* **Exhibits 77**, **78**, and **79**, respectively. Discovery may reveal additional Black & Decker infringing robotic vacuum cleaning devices and/or components thereof such as spare parts.

7.12 The iLife Accused Products that are sold for importation, imported, and/or sold after importation into the United States by the Proposed Respondents set forth in Table 7.2 infringe, individually as an apparatus and/or when used to practice a method, at least the asserted claims set forth in Table 7.3, either literally—directly or indirectly—or under the doctrine of equivalents. For example, attached to this Complaint are charts that apply, to the iLife V5s, iLife V7, and iLife A6, one or more of asserted independent claims 1 and 42 of the '490 Patent, asserted independent claims 1 and 19 of the'308 Patent, asserted independent claims 1, 10, and 17 of the '090 Patent, asserted independent claims 1, 11, and 25 of the '553 Patent, asserted independent claims 1 and 15 of the '233 Patent, and asserted independent claims 1 and 12 of the '924 Patent. *See* **Exhibits 80**, **85**, **81**, **86**, **82**, **87**, **83**, **88**, **84**, and **89**, respectively. Discovery

may reveal additional iLife infringing robotic vacuum cleaning devices and/or components thereof such as spare parts.

VIII. CLASSIFICATION UNDER THE HARMONIZED TARIFF SCHEDULE

8.1 The Accused Products are believed to fall within at least the following classification of the Harmonized Tariff Schedule of the United States: 8508.11.0000 ("Vacuum cleaners; parts thereof: With self-contained electric motor: Of a power not exceeding 1,500 W and having a dust bag or other receptacle capacity not exceeding 20 L"). Components of the Accused Products may be classified under at least HTS item number 8508.70.00 ("Vacuum cleaners; parts thereof: Parts"). These classifications are intended for illustration only and are not intended to be restrictive of the Accused Products.

IX. DOMESTIC INDUSTRY

9.1 As required by Section 337(a)(2) and defined by Section 337(a)(3), a domestic industry exists in the United States in connection with articles protected by the '490, '308, '090, '553, '233, and '924 Patents.

A. Technical Prong

9.2 Claim charts demonstrating how exemplary iRobot robotic vacuum cleaning devices practice at least one claim of each of the '490, '308, '090, '553, '233, and '924 Patents are attached as **Exhibits 90** through **105**. The claim charts rely on iRobot's Roomba 650 as exemplary of its 600-series products, iRobot's Roomba 860 as exemplary of its 800-series products, and iRobot's Roomba 980 as exemplary of its 900-series products.[7] iRobot's robotic

[7] Within a given series of iRobot vacuum cleaning robots, the differences between specific products are generally related to aesthetics and/or capacity, such as faceplate color, trim color, handle color, battery charge capacity, and bin capacity; there may also be some differences in features unrelated to the Asserted Patents.

vacuum cleaning devices are therefore protected by the '490, '308, '090, '553, '233, and '924 Patents, and a technical domestic industry for those articles exists.

9.3 iRobot's customers and/or end users also practice at least one claim of each of the '490, '308, '090, '553, '233, and '924 Patents in a manner known and expected by iRobot through their use of iRobot's Roomba 600-series products, Roomba 800-series products, and Roomba 900-series products. iRobot actively encourages its customers and/or end users to practice at least one claim of each of the '490, '308, '090, '553, '233, and '924 Patents, for example, by providing technical guides, product data sheets, demonstrations, specifications, installation guides, and other forms of support.

B. Economic Prong

9.4 A domestic industry, under subparts (A), (B), and/or (C) of Section 337(a)(3), exists by virtue of iRobot's significant U.S. investment in plant and equipment, significant employment of U.S. labor and capital, and substantial investment in U.S. exploitation of the Asserted Patents, including through engineering and research and development. iRobot's robotic vacuum cleaning devices are protected by at least the '490, '308, '090, '553, '233, and '924 Patents. iRobot's domestic activities and investments related to the articles protected by the Asserted Patents are described in the Confidential Declaration of Alison Dean, Chief Financial Officer. *See generally* **Confidential Exhibit 106**. In particular, certain of iRobot's robotic vacuum cleaning devices (collectively, "the domestic industry products") are protected by the Asserted Patents. In particular, iRobot's Roomba 600-series, 800-series, and 900-series robots practice claims of the '490, '308, '090, '553, and '233 Patents, and iRobot's Roomba 900-series robots practice claims of the '924 Patent. The domestic industry products account for a significant portion of iRobot's overall revenues and unit output. *See id.* at ¶¶ 4-7.

9.5 iRobot employs at least 520 employees in the United States in its U.S. facilities located in Bedford, Massachusetts and Pasadena, California. iRobot's engineering team designs and develops its innovative line of robotic vacuum cleaning devices in its U.S. facilities. *Id.* at ¶¶ 8-10. iRobot's technical work, *i.e.*, research, design, development, engineering, and testing of the domestic industry products occurs in the United States at these facilities. *Id.* at ¶¶ 10-12.

9.6 iRobot has made and continues to make significant investment in plant and equipment in the United States with respect to articles protected by the Asserted Patents. iRobot has made and continues to make substantial investment in its Bedford, Massachusetts and Pasadena, California facilities. *Id.* at ¶¶ 9-12. iRobot invests significantly in the physical plant and the equipment located in these U.S. facilities dedicated to research, designing, servicing, and supporting articles protected by the Asserted Patents. *Id.*

9.7 iRobot has made and continues to make significant investments in labor and capital with respect to articles protected by the Asserted Patents. As noted, *supra*, iRobot employs at least 520 employees in its Bedford, Massachusetts and Pasadena, California facilities, many of whom devote substantial person-hours toward the research, design, engineering, service, and support of products protected by the Asserted Patents. Further details of iRobot employment of labor or capital are provided in **Confidential Exhibit 106**.

9.8 iRobot has made and continues to make significant investment in the exploitation of the Asserted Patents. iRobot has invested and continues to invest in the design, research, development, engineering, service, and support of the patented features of the articles covered by the Asserted Patents through its investments in the technical work performed at its U.S. facilities. *Id.* at ¶¶ 13-14. **Confidential Exhibit 106** sets forth in more detail iRobot's significant investment associated with the exploitation of iRobot's rights in the Asserted Patents.

X. RELATED LITIGATION

10.1 Complainant alleged infringement of the Asserted Patents against the Proposed Respondents in five complaints filed in the United States District Court for the District of Massachusetts on April 17, 2017, corresponding to the allegations made herein. Specifically, Complainant filed the following actions:

Table 10.1

District Court Case Caption	Named Defendants	Asserted Patents
iRobot Corporation v. Hoover Inc., et al., Civil Action No. 1:17-cv-10647-LTS (D. Mass.)	Hoover Inc. Royal Appliance Manufacturing Co. Inc. d/b/a TTI Floor Care North America, Inc.; Shenzhen Silver Star Intelligent Technology Co., Ltd.; Suzhou Real Power Electric Appliance Co., Ltd.	'490 Patent; '308 Patent; '090 Patent; '553 Patent; '233 Patent; '924 Patent
iRobot Corporation v. The Black & Decker Corporation, et al., Civil Action No. 1:17-cv-10648-LTS (D. Mass.)	The Black & Decker Corporation; Black & Decker (U.S.) Inc.; Shenzhen Silver Star Intelligent Technology Co., Ltd.	'490 Patent; '308 Patent; '090 Patent
iRobot Corporation v. Bissell Homecare, Inc., et al., Civil Action No. 1:17-cv-10649-LTS (D. Mass.)	Bissell Homecare, Inc.; Matsutek Enterprises Co., Ltd.	'490 Patent; '308 Patent; '090 Patent; '553 Patent; '233 Patent
iRobot Corporation v. Bobsweep, Inc., et al., Civil Action No. 1:17-cv-10651-LTS (D. Mass.)	Bobsweep, Inc.; Bobsweep USA; Shenzhen Silver Star Intelligent Technology Co., Ltd.	'490 Patent; '308 Patent; '090 Patent; '233 Patent
iRobot Corporation v. Shenzhen ZhiYi Technology Co., Ltd., Civil Action No. 1:17-cv-10652-LTS (D. Mass.)	Shenzhen ZhiYi Technology Co., Ltd.	'490 Patent; '308 Patent; '090 Patent; '553 Patent; '233 Patent; '924 Patent

No procedural schedule has been issued and no dispositive motions have been decided in these cases.

10.2 The Asserted Patents, or the subject matter thereof, have also previously been the subject of court or agency litigation. iRobot brought suit on May 3, 2005 in the United States District Court for the District of Massachusetts against Urus Industrial Corporation and Koolatron in a case styled *iRobot Corp. v. Urus Industrial Corp.*, Civil Action No. 05-cv-10914-RGS (D. Mass.). iRobot sought damages for copyright infringement, trade dress infringement, and patent infringement of U.S. Patent No. 6,594,844, U.S. Patent No. 6,809,490 (an Asserted Patent in the present Complaint), and U.S. Patent No. 6,883,201. A Final Consent Judgment was entered in the case on August 8, 2005.

10.3 A foreign counterpart to U.S. Patent No. 6,809,490—EP1395888—was the subject of litigation in Germany between iRobot, and Shenzhen Silver Star Intelligent Technology Co. Ltd., Shenzhen Silver Star Intelligent Electronic Co. Ltd., Elektrogeräte Solac Vertrieb GmbH, and Electrodomésticos Solac S.A. EP1395888 was the subject of infringement actions in the District Court Düsseldorf (Cases 4a-O-51/13 and 4a-O-65/13) brought between June 2013 and August 2014, and was also the subject of cancellation proceedings in the German Federal Patent Court (Cases 5-Ni-5/14 and 5-Ni-31/14) brought in January 2014 and September 2014, respectively. These cases were withdrawn by February 2015.

XI. REQUESTED EXCLUSION ORDERS

A. Limited Exclusion Order

11.1 Pursuant to Section 337(d), Complainant respectfully requests that a limited exclusion order be entered against the infringing products of each named Proposed Respondent and its subsidiaries and affiliates in order to remedy the Proposed Respondents' violation of Section 337 and to prevent such future violations by Proposed Respondents.

B. Cease and Desist Orders

11.2 Cease and desist orders against all named Proposed Respondents are appropriate under Section 337(f), which provides that the Commission may issue a cease and desist order against any person violating Section 337 in addition to exclusion orders issued under Section 337(d). Accordingly, cease and desist orders directing Proposed Respondents to cease and desist from the importation, marketing, advertising, distribution, and sale of the infringing robotic vacuum cleaning devices and components thereof such as spare parts are appropriate to remedy, and prevent, the violation of Complainant's patent rights.

XII. REQUESTED RELIEF

12.1 WHEREFORE, by reason of the foregoing, Complainant requests that the United States International Trade Commission:

(a) Institute an immediate investigation, pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337(a)(1)(B)(i) and (b)(1), with respect to violation of Section 337 by Proposed Respondents based upon their sale for importation, importation, and/or sale after importation into the United States of certain robotic vacuum cleaning devices and components thereof such as spare parts that infringe one or more of the asserted claims of Complainant's United States Patent No. 6,809,490; United States Patent No. 7,155,308; United States Patent No. 8,474,090; United States Patent No, 8,600,553; United States Patent No. 9,038,233; and United States Patent No. 9,486,924;

(b) Schedule and conduct a hearing on the unlawful acts and, following the hearing, determine that there has been a violation of Section 337;

(c) Issue a permanent limited exclusion order specifically directed to each named Proposed Respondent and each of their respective subsidiaries and affiliates, barring from entry into the United States all Accused Products that infringe one or more of the asserted claims of

Complainant's United States Patent No. 6,809,490; United States Patent No. 7,155,308; United States Patent No. 8,474,090; United States Patent No, 8,600,553; United States Patent No. 9,038,233; and United States Patent No. 9,486,924;

(d) Issue a permanent cease and desist order, pursuant to 19 U.S.C. § 1337(f), directing Proposed Respondents to cease and desist from selling for importation into the United States, importing, selling after importation into the United States, offering for sale, marketing, advertising, demonstrating, sampling, warehousing inventory for distribution, selling, distributing, licensing, testing, providing technical support, use, or other related commercial activity involving imported Accused Products that infringe one or more of the asserted claims of Complainant's United States Patent No. 6,809,490; United States Patent No. 7,155,308; United States Patent No. 8,474,090; United States Patent No, 8,600,553; United States Patent No. 9,038,233; and United States Patent No. 9,486,924;

(e) Impose a bond, pursuant to Section 337(j) of the Tariff Act of 1930, as amended, upon the Proposed Respondents during the Presidential review period; and

(f) Grant such other and further relief as the Commission deems just and proper based on the facts determined by the investigation and the authority of the Commission.

Respectfully submitted,

FISH & RICHARDSON P.C.

Dated: April 18, 2017

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VERIFICATION OF COMPLAINT

I, Christian Cerda, declare, in accordance with 19 C.F.R. §§ 210.4 and 210.12(a), under penalty of perjury, that the following statements are true:

1. I am the Chief Operating Officer at iRobot Corporation, and I am duly authorized to sign this Complaint on behalf of the Complainant;

2. I have read the foregoing Complaint;

3. To the best of my knowledge, information, and belief, based upon reasonable inquiry, the foregoing Complaint is well-founded in fact and is warranted by existing law or by a non-frivolous argument for the extension, modification, or reversal of existing law or the establishment of new law;

4. The allegations or other factual contentions have evidentiary support or are likely to have evidentiary support after a reasonable opportunity for further investigation or discovery; and

5. The foregoing Complaint is not being filed for any improper purpose, such as to harass or to cause unnecessary delay or needless increase in the cost of litigation.

Executed in Bedford, Massachusetts on this 17 day of April 2017.

Christian Cerda
Chief Operating Officer
iRobot Corporation