



US005904172C1

(12) **EX PARTE REEXAMINATION CERTIFICATE** (9998th)

**United States Patent**  
**Giff et al.**

(10) **Number:** **US 5,904,172 C1**

(45) **Certificate Issued:** **Jan. 3, 2014**

(54) **VALVE ENCLOSURE ASSEMBLY**

(75) Inventors: **James Edwin Giff**, Maple Grove, MN (US); **Paul James Mahoney**, Stillwater, MN (US)

(73) Assignee: **Select Comfort Corporation**, Plymouth, MN (US)

**Reexamination Request:**

No. 90/012,456, Oct. 17, 2012

**Reexamination Certificate for:**

Patent No.: **5,904,172**  
Issued: **May 18, 1999**  
Appl. No.: **08/901,144**  
Filed: **Jul. 28, 1997**

(51) **Int. Cl.**  
**A47C 27/08** (2006.01)

(52) **U.S. Cl.**  
USPC ... **137/224; 137/271; 137/596.16; 137/596.2; 5/710; 5/713**

(58) **Field of Classification Search**  
None  
See application file for complete search history.

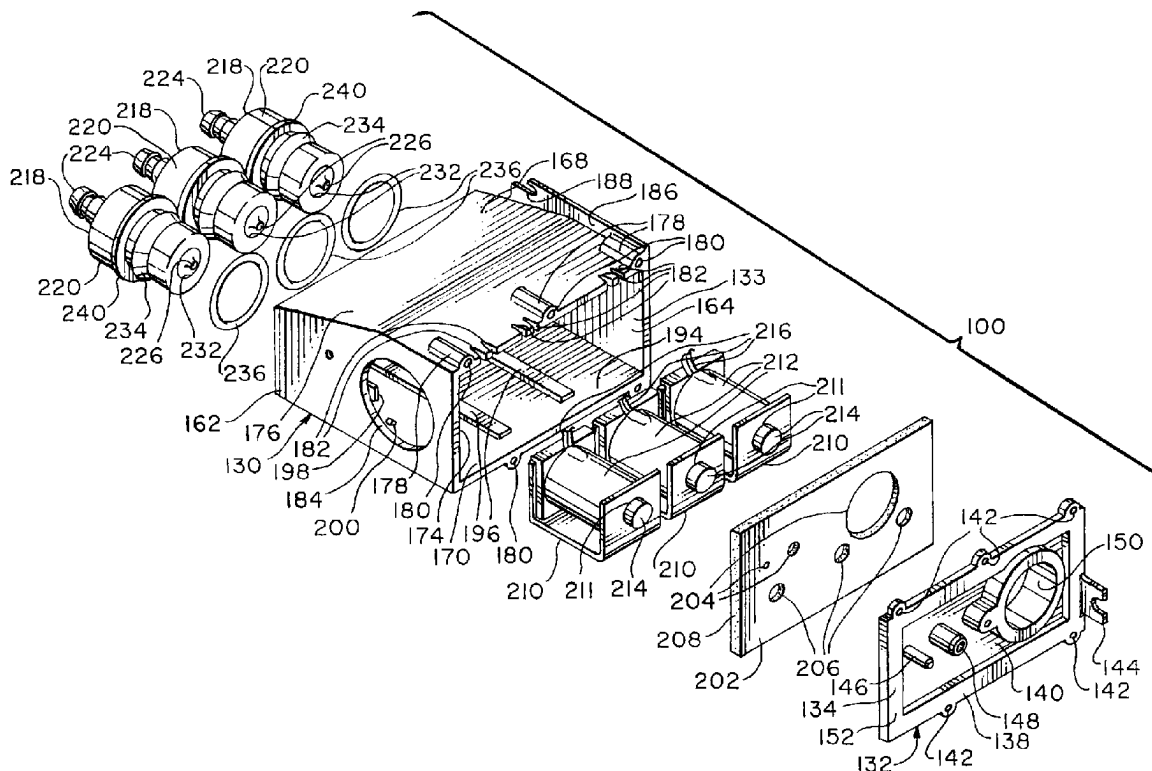
(56) **References Cited**

To view the complete listing of prior art documents cited during the proceeding for Reexamination Control Number 90/012,456, please refer to the USPTO's public Patent Application Information Retrieval (PAIR) system under the Display References tab.

*Primary Examiner* — Joseph A. Kaufman

(57) **ABSTRACT**

An improved valve enclosure assembly for use with an air inflatable mattress includes at least one air bladder, a pump fluidly coupled to the at least one air bladder for providing compressed air thereto, and a processor for providing commands to the improved valve enclosure assembly during an inflate/deflate cycle. The improved valve enclosure assembly is fluidly coupled intermediate the pump and the at least one air bladder for controlling the inflation of the at least one air bladder. An enclosure defines a substantially fluidly sealed air chamber and has at least one air inlet to the air chamber being fluidly coupled to the pump. A pressure monitor is operably coupled to the processor and is in fluid communication with the at least one bladder for continuously monitoring the pressure in the at least one bladder. A method of effecting a desired pressure in a bladder of an air inflatable mattress is also disclosed.



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**EX PARTE  
REEXAMINATION CERTIFICATE  
ISSUED UNDER 35 U.S.C. 307**

THE PATENT IS HEREBY AMENDED AS  
INDICATED BELOW.

**Matter enclosed in heavy brackets [ ] appeared in the patent, but has been deleted and is no longer a part of the patent; matter printed in italics indicates additions made to the patent.**

AS A RESULT OF REEXAMINATION, IT HAS BEEN DETERMINED THAT:

The patentability of claims 2, 4-6, 11, 12 and 14-18 is confirmed.

Claims 1 and 10 are cancelled.

Claim 9 is determined to be patentable as amended.

New claims 19-25 are added and determined to be patentable.

Claims 3, 7, 8 and 13 were not reexamined.

9. A method of effecting a desired pressure in a bladder of an air inflatable mattress, comprising the steps of:

providing a commanded desired pressure of the bladder; opening a valve [fluid] fluidly coupled to the bladder, *wherein the valve is one of a plurality of valves at least partially contained within, or formed integral to, a substantially fluidly sealed air chamber of a valve enclosure assembly;*

continuously monitoring the existing pressure in the bladder at a tap on [a] *the valve enclosure assembly, the tap defining an opening through the valve enclosure assembly and into an interior of the air chamber;*

determining the differential between the existing pressure in the bladder and the desired pressure in the bladder; exhausting air from the bladder through the valve when the differential indicates that the existing pressure in the bladder is greater than the desired pressure;

energizing a pump fluidly coupled to the valve for providing compressed air to the bladder when the differential indicates that the desired pressure in the bladder is greater than the existing pressure in the bladder to inflate the bladder; and

closing said valve when the existing pressure in the bladder substantially equals the desired pressure in the bladder.

19. *An improved valve enclosure assembly for use with an air inflatable mattress having at least one air bladder inflated by compressed air, a pump fluidly coupled to the at least one air bladder for providing compressed air thereto, and a processor for providing commands to the improved valve enclosure assembly during an inflate/deflate cycle, the improved valve enclosure assembly being fluidly coupled intermediate the pump and the at least one air bladder for controlling the inflation of the at least one air bladder, comprising:*

*an enclosure defining a substantially fluidly sealed air chamber and having at least one air inlet to the air chamber being fluidly coupled to the pump;*

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*pressure monitor means including a sensor being operably coupled to the processor and being in fluid communication with the at least one bladder through a pressure monitoring port defining an opening the enclosure and into an interior of the air chamber, the sensor configured for continuously monitoring the pressure in the at least one bladder during an inflate/deflate cycle by monitoring the pressure in the air chamber, and*

*two or more valves being fluidly sealingly disposed in respective valve apertures defined in the enclosure by a snap-fit engagement therewith and being in fluid communication with both the exterior of the enclosure and with the air chamber.*

20. *An improved valve enclosure assembly for use with an air inflatable mattress having at least one air bladder inflated by compressed air, a pump fluidly coupled to the at least one air bladder for providing compressed air thereto, and a processor for providing commands to the improved valve enclosure assembly during an inflate/deflate cycle, the improved valve enclosure assembly being fluidly coupled intermediate the pump and the at least one air bladder for controlling the inflation of the at least one air bladder, comprising:*

*an enclosure defining a substantially fluidly sealed air chamber and having at least one air inlet to the air chamber being fluidly coupled to the pump, the enclosure being formed of an enclosure portion and a rear cover portion, a flexible seal being compressively interposed between the enclosure portion and the rear cover portion to effect a substantially fluid tight seal therebetween;*

*two or more valves being in fluid communication with both the exterior of the enclosure and with the air chamber; and*

*pressure monitor means including a sensor being operably coupled to the processor and being in fluid communication with the at least one bladder through a pressure monitoring port defining an opening through the enclosure and into an interior of the air chamber, the pressure sensor configured for continuously monitoring the pressure in the at least one bladder during an inflate/deflate cycle.*

21. *The improved valve enclosure assembly of claim 20 wherein the pressure monitoring port is disposed on the rear cover portion of the enclosure.*

22. *The improved valve enclosure assembly of claim 2 further including at least one solenoid configured to operate a valve, wherein the at least one solenoid is at least partially received within the air chamber of the enclosure.*

23. *The improved valve enclosure assembly of claim 2 further including at least one solenoid configured to operate a valve, wherein the at least one solenoid is positioned entirely within the air chamber of the enclosure.*

24. *The improved valve enclosure assembly of claim 2 wherein the enclosure is formed of an enclosure portion and a rear cover portion.*

25. *The improved valve enclosure assembly of claim 24 wherein a flexible seal is compressively interposed between the enclosure portion and the rear cover portion to effect a substantially fluid tight seal therebetween.*

\* \* \* \* \*



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
90/012,456	10/17/2012	5904172	292.001US1X	5505

21186 7590 12/13/2013  
SCHWEGMAN, LUNDBERG & WOESSNER, P.A.  
P.O. BOX 2938  
MINNEAPOLIS, MN 55402

EXAMINER
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KAUFMAN, JOSEPH A

ART UNIT	PAPER NUMBER
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3993

MAIL DATE	DELIVERY MODE
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12/13/2013

PAPER

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

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



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(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

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**EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM**

REEXAMINATION CONTROL NO. 90/012,456.

PATENT NO. 5904172.

ART UNIT 3993.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

<b>Notice of Intent to Issue Ex Parte Reexamination Certificate</b>	<b>Control No.</b>	<b>Patent Under Reexamination</b>	
	90/012,456	5904172	
	<b>Examiner</b>	<b>Art Unit</b>	<b>AIA (First Inventor to File) Status</b>
	JOSEPH KAUFMAN	3993	No

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

1.  Prosecution on the merits is (or remains) closed in this *ex parte* reexamination proceeding. This proceeding is subject to reopening at the initiative of the Office or upon petition. Cf. 37 CFR 1.313(a). A Certificate will be issued in view of
  - (a)  Patent owner's communication(s) filed: 02 December 2013.
  - (b)  Patent owner's failure to file an appropriate timely response to the Office action mailed: \_\_\_\_\_.
  - (c)  Patent owner's failure to timely file an Appeal Brief (37 CFR 41.31).
  - (d)  The decision on appeal by the  Board of Patent Appeals and Interferences  Court dated \_\_\_\_\_
  - (e)  Other: \_\_\_\_\_.
2. The Reexamination Certificate will indicate the following:
  - (a) Change in the Specification:  Yes  No
  - (b) Change in the Drawing(s):  Yes  No
  - (c) Status of the Claim(s):
    - (1) Patent claim(s) confirmed: 2,4-6,11,12 and 14-18.
    - (2) Patent claim(s) amended (including dependent on amended claim(s)): 9
    - (3) Patent claim(s) canceled: 1 and 10.
    - (4) Newly presented claim(s) patentable: 19-25.
    - (5) Newly presented canceled claims: 26.
    - (6) Patent claim(s)  previously  currently disclaimed: \_\_\_\_\_
    - (7) Patent claim(s) not subject to reexamination: 3,7,8 and 13.
3.  A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on \_\_\_\_\_.
4.  Note the attached statement of reasons for patentability and/or confirmation. Any comments considered necessary by patent owner regarding reasons for patentability and/or confirmation must be submitted promptly to avoid processing delays. Such submission(s) should be labeled: "Comments On Statement of Reasons for Patentability and/or Confirmation."
5.  Note attached NOTICE OF REFERENCES CITED (PTO-892).
6.  Note attached LIST OF REFERENCES CITED (PTO/SB/08 or PTO/SB/08 substitute).
7.  The drawing correction request filed on \_\_\_\_\_ is:  approved  disapproved.
8.  Acknowledgment is made of the priority claim under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All b)  Some\* c)  None of the certified copies have
    - been received.
    - not been received.
    - been filed in Application No. \_\_\_\_\_.
    - been filed in reexamination Control No. \_\_\_\_\_.
    - been received by the International Bureau in PCT Application No. \_\_\_\_\_.

\* Certified copies not received: \_\_\_\_\_.
9.  Note attached Examiner's Amendment.
10.  Note attached Interview Summary (PTO-474).
11.  Other: \_\_\_\_\_.

**All correspondence** relating to this reexamination proceeding should be directed to the **Central Reexamination Unit** at the mail, FAX, or hand-carry addresses given at the end of this Office action.

Joseph A. Kaufman  
Primary Examiner  
Art Unit: 3993

cc: Requester (if third party requester)

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