

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

AMERICAN NATIONAL MANUFACTURING INC.,  
Petitioner,

v.

SLEEP NUMBER CORPORATION  
f/k/a SELECT COMFORT CORPORATION  
Patent Owner.

Case No. IPR2019-00514

Patent No. 5,904,172

**DECLARATION OF ROBERT GIACHETTI PH.D. IN SUPPORT OF  
PETITIONER'S REPLY TO PATENT OWNER'S RESPONSE**

I, Dr. Robert Giachetti, declare as follows:

1. My qualifications and background were previously described in Exhibit 1005, in support of Petitioners in this proceeding. I include a current list of my qualifications and background as Appendix A to this declaration.
2. I understand that on October 30, 2019, Patent Owner (“PO”) Sleep Number Corporation filed a Response (“POR”; Paper 46) to the Petition (Paper 2) filed by Petitioner American National Manufacturing Inc. (“ANM” or “Petitioner”) in IPR2019-00514 regarding the validity of U.S. Patent No. 5,904,172 (“172 Patent” or “Giff”; Ex. 1001). I understand the Response was accompanied by a declaration by William C. Messner, Ph.D., in support of PO’s Response (Exhibit 2040), and a declaration by John P. Abraham, Ph.D. in support of PO’s Response (Exhibit 2041). I make this declaration in support of ANM’s Reply to the POR.
3. Dr. Messner’s declaration addresses a number of topics. Two primary topics in Dr. Messner’s declaration that I will address are “substantially fluidly sealed” and “guides and stops.” Next, Dr. Messner agrees with me upon the background of person of ordinary skill in the art (“PHOSITA”) that I presented, but, according to his analysis, we disagree upon what capabilities that background provides A PHOSITA – more importantly, Dr. Messner has provided a rationale for why the device can measure air pressure accurately, a rationale that is not present in the

specification or the claims. I will integrate this third topic into the two primary ones.

4. Outside of these three main topics, there are other points that I find inconsistent or also disagree with. For example, I also find that some of the analysis provided by Dr. Messner contradicts other analyses provided in Exhibit 2041 in support of Patent Owner by Dr. John Abraham, particularly in ascribing importance to arbitrary terms like “front” or “rear” when addressing whether products practice the claims of the ‘172 Patent. Dr. Abraham liberally finds that manifolds of various manufactured products are equivalent to the claimed valve enclosure assembly regardless of how they are put together and regardless of where each solenoid is affixed (e.g. inside or outside of the manifold, see Ex. 2041, d. Rapid Air or e. NightAir), while to the contrary Dr. Messner requires exact adherence to the language of the claim, such as the terms of orientation front, and rear, and which portion thereof each solenoid is affixed when critiquing my analysis, and the Vrzalik art, for example, see Ex. 2040 Paragraph 122). I disagree with most of the points Dr. Messner makes about these topics, and I find that most of his examples of other devices make his analysis confusing, and does comport to the understanding of a PHOSITA would have of Giff and the relevant prior art. Dr. Messner also provides opinions in an effort to discredit prior art that I have presented, and I address that art also.

5. Patent owner is critical of my engineering experience in terms of air mattresses in 1997 (POR, page 2), but as I explained in my disposition, I had experience building a robotic vacuum cleaner in 1993. Ex. 2067, 62:11-63:2. This robotic vacuum cleaner was self contained, battery powered, had a plug in power source to charge the battery or operate if desired, included multiple sensors to provide continuous input to the system, included an on-board circuit board (x286) to interpret sensor readings and issue commands to system motors based on those readings. This robotic vacuum was built from scratch, and as part of the design process, nearly all the issues identified in the deposition of Mr. Duval were explored [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED].

6. By 1997, at the completion of my undergraduate degree, I was familiar with pumps and sensors, sufficient to understand the technology used in Giffit and Shafer.

7. Even if my knowledge of air mattress technology in 1997 were limited to what I have read in books, the technology was not new then and the technology is still current. In fact, one of the references I used in my opening expert report (Ex.

1005), the Power Transmission Handbook (Ex. 1027, 1028) , a veritable encyclopedia of simple machine elements from the time of Shafer (1993), remains virtually unchanged, word for word and graphic for graphic in comparison to the 2009 edition when it comes to the pneumatic components used in Shafer and Gifft.

**1. An Enclosure Defining a Substantially Fluidly Sealed Air Chamber and Measurement of Air Pressure in an Air Mattress**

8. Dr. Messner repeats throughout his declaration that the reason the valve enclosure assembly of Gifft works to measure air pressure in the air mattress accurately is because it is substantially fluidly sealed with a gasket; Dr. Messner states that A PHOSITA understands this (Ex. 2040 paragraph 76). Dr. Messner does not explain how or why either are the case, the specification of Gifft does not teach this, and Dr. Messner does not explain why the prior art cited by Gifft (Ex. 1001, 1:22-29) that is chemically sealed does not also share the accuracy, despite also being sealed.

9. Gifft's specification does not include a statement or a teaching that accuracy of measuring pressure is dependent on the presence of a gasket.

10. Furthermore, Gifft is compatible with other pump/blower configurations that could utilize the inlet port on the side of the valve enclosure assembly (Gifft element 184), and there is no gasket specified by Gifft in this location. Gifft only

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