

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

RESMED LIMITED, RESMED INC., and RESMED CORP.,
Petitioner,

v.

FISHER & PAYKEL HEALTHCARE LIMITED,
Patent Owner.

Case IPR2016-01727
Patent 7,111,624 B2

Before HYUN J. JUNG, CARL M. DeFRANCO, and
MICHAEL L. WOODS, *Administrative Patent Judges*.

WOODS, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

ResMed Limited, ResMed Inc., and ResMed Corp. (collectively “Petitioner”) filed a Petition (Paper 4, “Pet.”) requesting *inter partes* review of claims 1–3 and 7 of U.S. Patent No. 7,111,624 B2 (Ex. 1001, “the ’624 Patent”). Pet. 1. Fisher & Paykel Healthcare Limited (“Patent Owner”) filed a Preliminary Response (Paper 9, “Prelim. Resp.”) and a statutory disclaimer disclaiming claims 1 and 2 (Ex. 2001). We issued a Decision to Institute an *inter partes* review of claims 3 and 7 of the ’624 patent as unpatentable under 35 U.S.C. § 103. Paper 11 (“Inst. Dec.”), 20–21.

After institution of trial, Patent Owner filed a Response (Paper 16, “PO Resp.”), to which Petitioner replied (Paper 19, “Pet. Reply”).

Oral argument was conducted on December 6, 2017, and a transcript of the hearing is entered in the record. Paper 29, “Transcript.”

We have jurisdiction under 35 U.S.C. § 318(a). After considering the evidence and arguments of both parties, and for the reasons set forth below, we determine that Petitioner met its burden of showing, by a preponderance of the evidence, that only claim 3 of the ’624 patent is unpatentable.

a. RELATED PROCEEDINGS

Along with this *inter partes* review, Petitioner sought review of claims 1–3 and 7 of the ’624 patent in IPR2016-01725, which review we also instituted as to claims 3 and 7.

Additionally, on August 15, 2016, Patent Owner filed a complaint alleging infringement of the ’624 Patent against Petitioner in the Central District of California. Pet. 2 (citing Exs. 1024, 1025). The complaint was

voluntarily dismissed without prejudice. *Id.*

On August 16, 2016, Patent Owner filed another complaint alleging infringement of the '624 Patent against Petitioner in the Southern District of California. *Id.* (citing Ex. 1023). This case has been stayed pending resolution of this and other *inter partes* reviews. *See* Ex. 3001, 7.

Also on August 16, 2016, Petitioner filed a complaint against Patent Owner seeking declaratory judgment of non-infringement and invalidity of the '624 Patent. *See* Pet. 2 (citing Ex. 1026). Petitioner voluntarily dismissed its complaint without prejudice on August 18, 2016. *Id.* (citing Ex. 1027).

Furthermore, Petitioner also seeks review of U.S. Patent No. 8,550,072 B2 (IPR2016-01716, -01717), U.S. Patent No. 6,398,197 B1 (IPR2016-01719), and U.S. Patent No. 8,091,547 (IPR2016-01729, -01730, -01731).

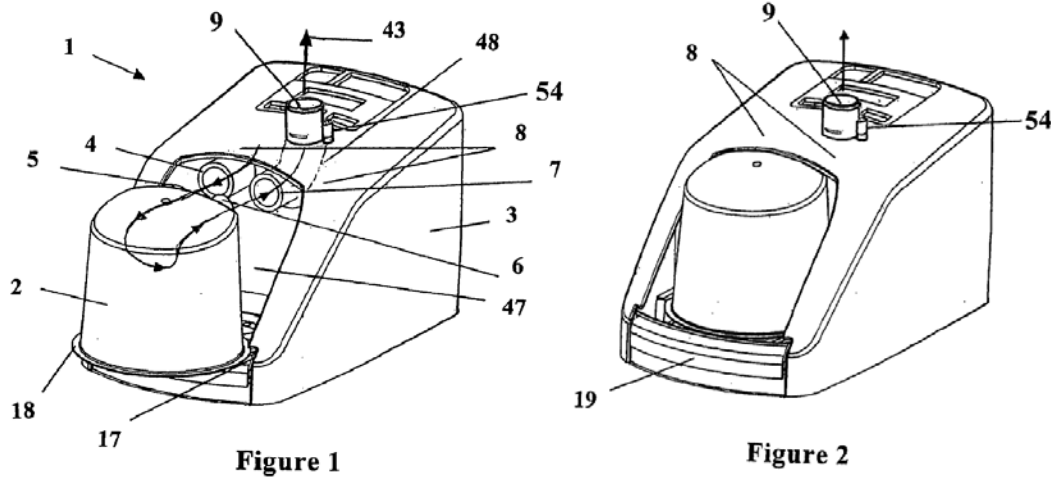
b. THE '624 PATENT

The '624 Patent is titled "APPARATUS FOR DELIVERING HUMIDIFIED GASES." Ex. 1001, Title. The '624 Patent "relates to a humidifier arrangement for use in stand alone humidifiers used for example in providing respiratory assistance to patients." *Id.* at 1:12–14.

According to the '624 Patent, there exists a "disadvantage" of prior art configurations resulting from a "need to disconnect the patient breathing conduit from the top of the humidifying chamber in a separate operation before removal of the chamber for the purpose of refilling." *Id.* at 1:40–43. An object of the '624 Patent is "to provide an apparatus for delivering

humidified gases which at least goes some way towards overcoming the above disadvantage[.]” *Id.* at 1:50–52.

To illustrate the Patent Owner’s apparatus, Figures 1 and 2 of the ’624 Patent are reproduced below:



The above figures illustrate CPAP machine 1 with water chamber 2 “separated” from machine 1 (Figure 1) and “engaged” with machine 1 (Figure 2). *Id.* at 3:17–28. CPAP machine 1 includes outlet connection port 9 “suitable for receiving a flexible respiratory conduit to deliver humidified air to a patient.” *Id.* at 4:7–10. Notably, the ’624 Patent describes:

An advantage obtained from the breathing conduit connection 9 being located on the body of the CPAP machine and not connected to the top of the water chamber directly, is that complete connection or disconnection of the water chamber from the CPAP system can be achieved with a single slide-on or slide-off motion. This feature makes removal of the water chamber for refilling considerably simpler.

Id. at 4:60–67; *see also id.* at 6:5–12 (describing a similar advantage to another preferred embodiment of the invention).

c. ILLUSTRATIVE CLAIMS

Claims 3 and 7 are before us on review and are reproduced below (with emphasis added to a limitation discussed in this Decision):

3. An apparatus for use in humidified gases delivery treatment as claimed in claim 2 wherein said water chamber has a base, and said water chamber is engagable with said humidifier engagement via a single motion, and *said single motion of engagement urges the base of said water chamber adjacent and in contact with said chamber heater* and makes a first fluid connection between said pressurised gases outlet and said humidifier inlet, and makes a second fluid connection between said humidified gases return and said humidifier outlet, with said first and second fluid connections being made in the direction of said single motion.

7. An apparatus for use in humidified gases delivery treatment as claimed in any one of claims 1–6 wherein said patient outlet includes a connector for receiving a breathing hose and at least one auxiliary electrical connection plug or socket or pneumatic connection plug or port, for a simultaneous connection when connecting a breathing circuit having complementary electrical or pneumatic connectors.

d. REFERENCES RELIED UPON

Petitioner relies in relevant part on the following references:

Reference	Reference	Ex. No(s).
Netzer	WO 98/04311, published Feb. 5, 1998	1007, 1008 ¹
Bahr	US 2001/0017134 A1, published Aug. 30, 2001	1011
HC200	<i>HC200 Series Nasal CPAP Blower & Heated Humidifier User's Manual</i> , Fisher & Paykel Healthcare, May 1998 ²	1017

¹ Exhibit 1008 is the English-language translation of Exhibit 1007, and our citations to Netzer are to Exhibit 1008.

² We base the May 1998 publication date on the “Revision Date” provided in

e. GROUND OF UNPATENTABILITY

We instituted *inter partes* review of (1) claim 3 as unpatentable over HC200 and Netzer and (2) claim 7 as unpatentable over HC200, Netzer, and Bahr. Inst. Dec. 20–21.

II. ANALYSIS

a. CLAIM CONSTRUCTION

In an *inter partes* review, claim terms in an unexpired patent are given their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–46 (2016) (upholding the use of the broadest reasonable interpretation standard). A presumption exists that a claim term should be construed in light of its ordinary and customary meaning. *CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002). Under the broadest reasonable construction standard, claim terms are generally given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

In our decision instituting trial, we noted that at that time, neither Patent Owner nor Petitioner proposed any particular claim construction. Inst. Dec. 7 (citing Pet. 14–15, Prelim. Resp.). In our institution decision, we also determined that no claim term required express construction for

HC200. Ex. 1017, 17; *see also* Pet. 15 (referring to Information Disclosure Statement submitted by Patent Owner in January 1999).

purposes of that decision. *Id.*

In its Patent Owner Response, Patent Owner proposes interpretations for the following phrases: (1) “said single motion of engagement urges the base of said water chamber adjacent and in contact with said chamber heater” (claim 3), and (2) “auxiliary electrical connection plug or socket” (claim 7). PO Resp. 15–26. Petitioner disputes Patent Owner’s proposed interpretations of (1) and (2). Pet. Reply 1–12. In this Final Written Decision, we expressly construe the following term: “said single motion of engagement urges the base of said water chamber adjacent and in contact with said chamber heater.”

i. “said single motion of engagement urges the base of said water chamber adjacent and in contact with said chamber heater”

The particular issue before us is whether the claimed limitation requires “pressing” the chamber base against the chamber heater.

In its Response, Patent Owner argues the claimed term “urges” requires more than simply bringing the chamber base into contact with the heater. *See, e.g.*, PO Resp. 20 (citing Ex. 2004 ¶ 60). In particular, Patent Owner proposes that the proper interpretation requires “a single motion of engagement that moves the chamber base in a direction so as to both” (1) “move the chamber base adjacent the chamber heater” and (2) “*also press the chamber base against the chamber heater.*” *Id.* at 16 (emphasis added). In support of this particular interpretation, Patent Owner relies on the testimony of Dr. Hartmut Schneider (Ex. 2004), cites to the specification of the ’624 patent, and the prosecution history of a related patent. *See, e.g., id.* at 16–17 (citing Ex. 1001, 7:60–63, Fig. 3; Ex. 2004 ¶ 56); *id.* at 20

(referencing the prosecution history of the '547 patent).

The cited portion of the '624 patent recites, “[i]t is envisaged that other configurations of the present invention are possible where the slide-on direction employed to fit the water chamber is not horizontal but at an angle from the horizontal or vertical.” Ex. 1001, 7:60–63. Based on this particular description, Dr. Schneider testifies, “[b]y orienting the slide-on direction at an offset from the horizontal and the chamber heater, the motion used to connect the water chamber to the housing would also *urge or press* the base of the water chamber against the chamber heater.” Ex. 2004 ¶ 56 (citing Ex. 1001, 7:62–63) (emphasis added)).

In further support of its contention that the claimed “‘urges’ requires more than simply maneuvering two components to touch each other,” Patent Owner relies on the '624 patent’s use of the word “urges” in describing the operation of a latch. *See* PO Resp. 18–20 (citing Ex. 1001, Figs. 1, 2, 4:27–38; Ex. 2004 ¶ 59).

Additionally, Patent Owner asserts that claim 6 of a related patent (the '547 patent) is further evidence that the “meaning of ‘urges’ . . . require[s] more than simply bringing the chamber base into contact with the heater.” PO Resp. 20 (citing Ex. 2004 ¶ 60). In particular, Patent Owner points out that claim 6 of the '547 patent was amended to replace “urging . . . adjacent and in contact” with “disposes . . . adjacent” and, accordingly, the file history of the '547 patent further evidences support for Patent Owner’s interpretation. *See id.* at 21–22 (citing Ex. 2008, 43, 58–60, 89).

Petitioner, on the other hand, contends that Patent Owner’s interpretation is contrary to the broadest reasonable interpretation. Pet.

Reply 2. Petitioner argues that “pressing is not required by the claims and is never mentioned in the specification.” *Id.* (citing Ex. 1035 ¶ 7). Petitioner also submits a definition of “urge” as “to force or impel in an indicated direction or into motion or greater speed.” Ex. 1031, 4. Patent Owner does not submit a definition of “urge.” *See, e.g.,* Ex. 2006; *see also* Transcript, 47:15–16 (“We’ve not submitted a dictionary definition of urge.”).

We agree with Mr. Virr’s testimony that “pressing is not . . . mentioned in the specification” (Ex. 1035 ¶ 7) and agree with Petitioner’s construction that “pressing is not required by the claims” (Pet. Reply 2). We do not agree with Patent Owner’s proposed construction for the following reasons.

First, we disagree with Patent Owner’s argument that the specification’s description of an angled slide-on direction supports a construction of “urges” that requires “press[ing] the chamber base against the chamber heater.” *See* PO Resp. 16 (citing Ex. 1001, 7:60–63). The particular disclosure cited by Patent Owner simply reads, “[i]t is envisaged that other configurations of the present invention are possible where the slide-on direction employed to fit the water chamber is not horizontal but at an angle from the horizontal or vertical.” Ex. 1001, 7:60–63. We do not find this description as relating to the claimed “urges,” let alone providing a lexicographic definition that may be different from the plain and ordinary meaning of the term. Rather, we find persuasive Mr. Virr’s testimony that “[a] POSITA would have understood that the passages cited by the Patent Owner simply describes that the slide-on direction can be angled . . . [and that there] is no discussion of a spring bias or other pressing force being

applied to the water chamber in these or other passages.” Ex. 1035 ¶ 9.

Second, we disagree with Patent Owner’s argument that the Specification’s description of latch 19 being urged up or down supports its proposed interpretation that the water chamber must be pressed against the heater. See PO Resp. 17–20 (citing in part Ex. 1001, Figs. 1, 2, 4:27–32). The cited description simply reads, “[t]he front face of the latch is shaped such that during the single slide-on motion employed to fit the water chamber to the CPAP machine the flange **18** urges the securing latch **19** into the release position and allows the water chamber to be properly fitted.”

Ex. 1001, 4:27–32. We do not find this description as providing a lexicographic definition of the term “urges” or otherwise relating to “pressing” the water chamber onto a heater. Notably, the Specification also describes, “[o]nce the water chamber is properly seated on the heater base . . . the flange **18** and base of the chamber will no longer be in contact with the securing latch **19**.” *Id.* at 4:32–36. Because the latch does not contact the base of the seated water chamber, we are not persuaded that the latch “presses” against the chamber. Thus, we do not find the Specification’s description of latch 19 as supporting Patent Owner’s proposed interpretation of “urges” in the context of claim 3. Rather, we agree with Mr. Virr’s testimony that “[a] POSITA would have understood that the latch 19 does not relate to the engagement between the water chamber and the heater base.” Ex. 1035 ¶ 11.

Third, we disagree with Patent Owner’s argument that the prosecution history of the related ’547 patent supports its narrower construction. See PO Resp. 2. In particular, Patent Owner relies on the following claim

amendment: “wherein said single motion ~~urging~~ disposes said heat conductive base adjacent ~~and in contact with~~ a heater of said humidified gases delivery apparatus.” *Id.* at 21 (citing Ex. 2008, 43). We do not find this claim amendment, which simply replaces “urging . . . and in contact” with “disposes,” as supporting Patent Owner’s argument that the claims require a “pressing” force. Even if the amendment “clearly evidences” Patent Owner’s intention that “urging . . . adjacent and in contact” and “disposes . . . adjacent” have *different meanings* (*id.* at 22), we agree with Mr. Virr’s testimony and discern that the different meaning is that “disposes . . . adjacent” does not require contact, whereas “urging . . . adjacent and in contact with,” requires contact (Ex. 1035 ¶ 12).

Upon reviewing the claim language, the Specification, the prosecution history, the testimony of Dr. Schneider (e.g., Ex. 2004 ¶¶ 54–60), the testimony of Mr. Virr (e.g., Ex. 1035 ¶ 7), and Petitioner’s definition of “urge” (Ex. 1031), giving the claimed terms their ordinary and customary meaning under the broadest reasonable construction standard, we construe the claimed phrase “said single motion of engagement urges the base of said water chamber adjacent and in contact with said chamber heater,” as requiring a single motion of engagement that moves the chamber base in a direction so that the chamber base is adjacent and in contact with the chamber heater. We do not agree with Patent Owner’s proposed construction that the claim limitation requires the “single motion . . . to . . . also *press* the chamber base against the chamber heater,” which requires application of some pressing force not claimed or otherwise described in the Specification. *See* PO Resp. 16 (emphasis added).

ii. Remaining Claim Terms

We determine that no other terms require express construction for the purposes of this Decision. *See Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011) (“[C]laim terms need only be construed ‘to the extent necessary to resolve the controversy.’”) (quoting *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

b. OBVIOUSNESS

A claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art are “such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which such subject matter pertains.” 35 U.S.C. § 103(a). The question of obviousness under 35 U.S.C. § 103 is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

c. PERSON OF ORDINARY SKILL IN THE ART

In determining whether an invention would have been obvious at the time it was made, we consider the level of ordinary skill in the pertinent art at the time of the invention. *Graham*, 383 U.S. at 17.

Petitioner proposes that a person of ordinary skill in the art (“POSITA”) “would have had a bachelor’s degree in mechanical engineering, biomedical engineering, or a related discipline, and at least five

years of relevant product design experience in the field of medical devices or respiratory therapy, or an equivalent advanced education.” Pet. 14 (citing Ex. 1012 ¶¶ 22–23).

Patent Owner, on the other hand, proposes that a POSITA “would have had a bachelor’s degree in mechanical engineering, biomedical engineering or a related discipline and a sufficient amount of product design or development experience to obtain a level of competence in the field of respiratory therapy devices, including humidifiers, or an equivalent advanced education.” PO Resp. 14 (citing Ex. 2004 ¶ 30). Patent Owner also proposes that for “ individuals with different educational backgrounds, a person could still be of ordinary skill in the art provided that person’s additional experience compensates for any differences in that person’s education as stated above.” *Id.*

The parties acknowledge differences in their respective definitions of a POSITA, but represent that these differences do not affect their arguments or our analysis. See Transcript at 47:11–14 (“[Patent Owner’s POSITA] is more focused. I think [Petitioner’s POSITA] is more generic as to medical devices, but [Patent Owner’s] expert has said it’s relatively the same level of skill in the art and as to which definition you choose, [Patent Owner does not] think it affects the analysis.”).

Nevertheless, based on our review of the ’624 patent, the types of problems and solutions described in the ’624 patent and applied prior art, and the testimony of Mr. Virr and Dr. Schneider, we adopt Petitioner’s asserted level of ordinary skill and find that a:

person of ordinary skill in the art (“POSITA”) as of any of the claimed priority dates as early as March 2000 would have had a

bachelor's degree in mechanical engineering, biomedical engineering, or a related discipline, and at least five years of relevant product design experience in the field of medical devices or respiratory therapy, or an equivalent advanced education.

Pet. 14 (citing Ex. 1012 ¶¶ 22–23). We also agree with Patent Owner that any differences in the parties' proposed level of ordinary skill does not impact our analysis. *See* PO Resp. 14–15; *see also* Transcript at 47:11–14.

d. PRIOR ART

i. Netzer (Exs. 1007, 1008)³

Netzer discloses a gas supply device and humidifier, which can be used for treating sleep apnea. Ex. 1008, 2. Netzer's device can operate in two modes—one mode with the humidifier and another mode without the humidifier. *See id.* at 7. When the humidifier is not in use, the humidifier is bypassed. *Id.* at 8.

We reproduce Netzer's Figures 1 and 2 to illustrate these differing modes of operation, below:

³ *See supra* n.1.

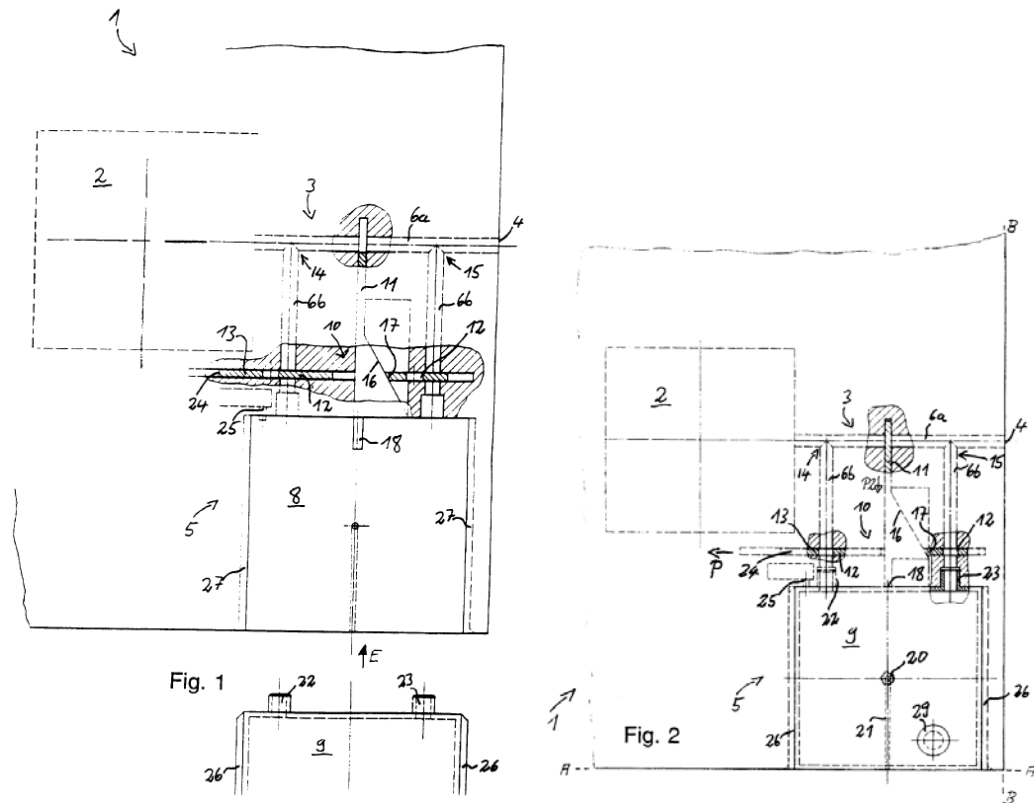


Figure 1 (left) depicts liquid container 9 removed from the device housing, and respiratory gas bypassing gas humidifier 5, whereas Figure 2 (right) depicts liquid container 9 inserted, and the flow of air directed through the humidifier. *See id.* at 7, 8. As explained in Netzer, valve assembly 10 opens or closes different sections of flow guiding element 3 to form either first gas flow path 6a, which bypasses humidifier 5, or second gas flow path 6b, which directs flow through humidifier 5. *See id.* at 8

ii. Bahr (Ex. 1011)

Bahr discloses a “conduit connectible in a fluid transfer system” (Ex. 1011, Abstr.) and, more particularly, fluid conduits with transmission lines for transmitting electrical signals along the conduit path (*see id.* ¶ 9). In the particular embodiment relied on by Petitioner (Pet. 39 (citing Ex. 1011 ¶ 22,

Fig. 3)), Bahr discloses that these conduits are used with a ventilator (Ex. 1011 ¶¶ 21, 22, Fig. 3).

To illustrate these disclosed features, we reproduce Figure 3 of Bahr, below:

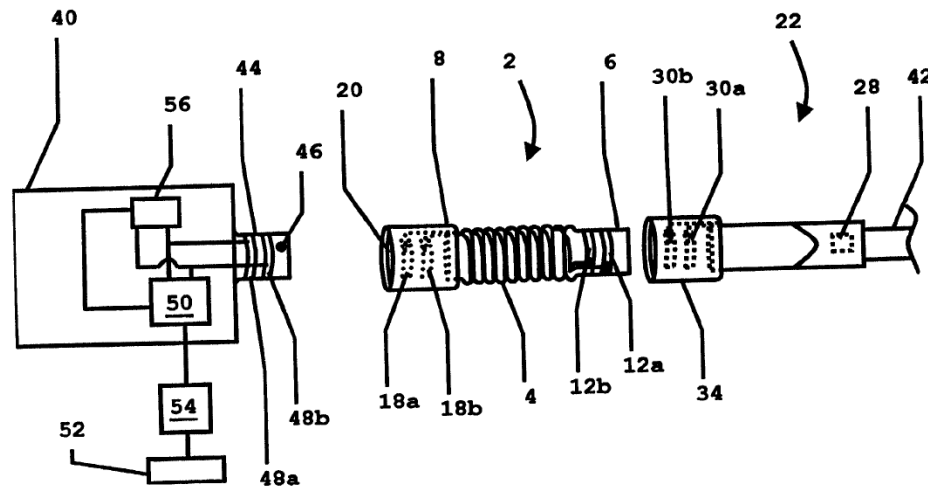
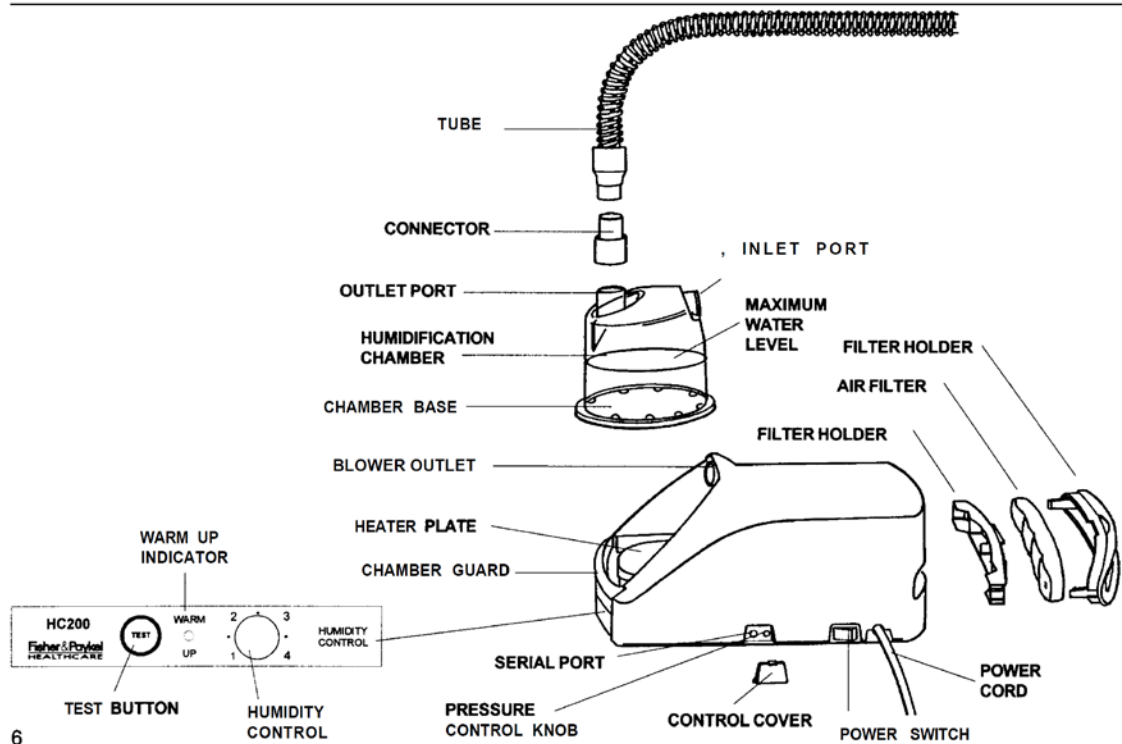


Figure 3 shows elements of Bahr's ventilator 40 with gas port 44 having external mating surface 46 for connecting with female interface 8 of gas tubing 4. *Id.* ¶¶ 19, 21, 22. Bahr discloses that "female interface **8** can be formed of a flexible rubber material *to form a gas seal* when push-fit with a cooperating male interface of another conduit." *Id.* ¶ 19 (italicized emphasis added). Bahr also discloses gas port 44 as having electrical contacts 48a and 48b on external mating surface 46. *Id.* ¶ 22. Contacts 48a and 48b connect with contacts 18a and 18b, respectively, provided on the inside of female interface 8 of flexible tubing 4, thereby establishing electrical connections between contacts 48a and 18a and between contacts 48b and 18b. *See id.* The electrical connection enables electrical signal communication "regardless of the rotations orientation of the conduit **2**." *Id.*

iii. HC200 (Ex. 1017)⁴

HC200 discloses a device with a heater plate, a blower that supplies pressurized gas through a blower outlet, and a humidification chamber that slides into a recess of the device and over the heater plate. See Ex. 1017, 2, 7–11. Humidified gas is provided to a patient with a breathing tube that is connected to an outlet port of the humidification chamber. See *id.* To illustrate this device, we reproduce a figure titled “Important Parts of your HC200 System” (Ex. 1017, 6) below:

Important Parts of your HC200 System



⁴ Our page references to HC200 will be to the reference’s native page numbers, as shown on the lower-left and lower-right margins of the reference.

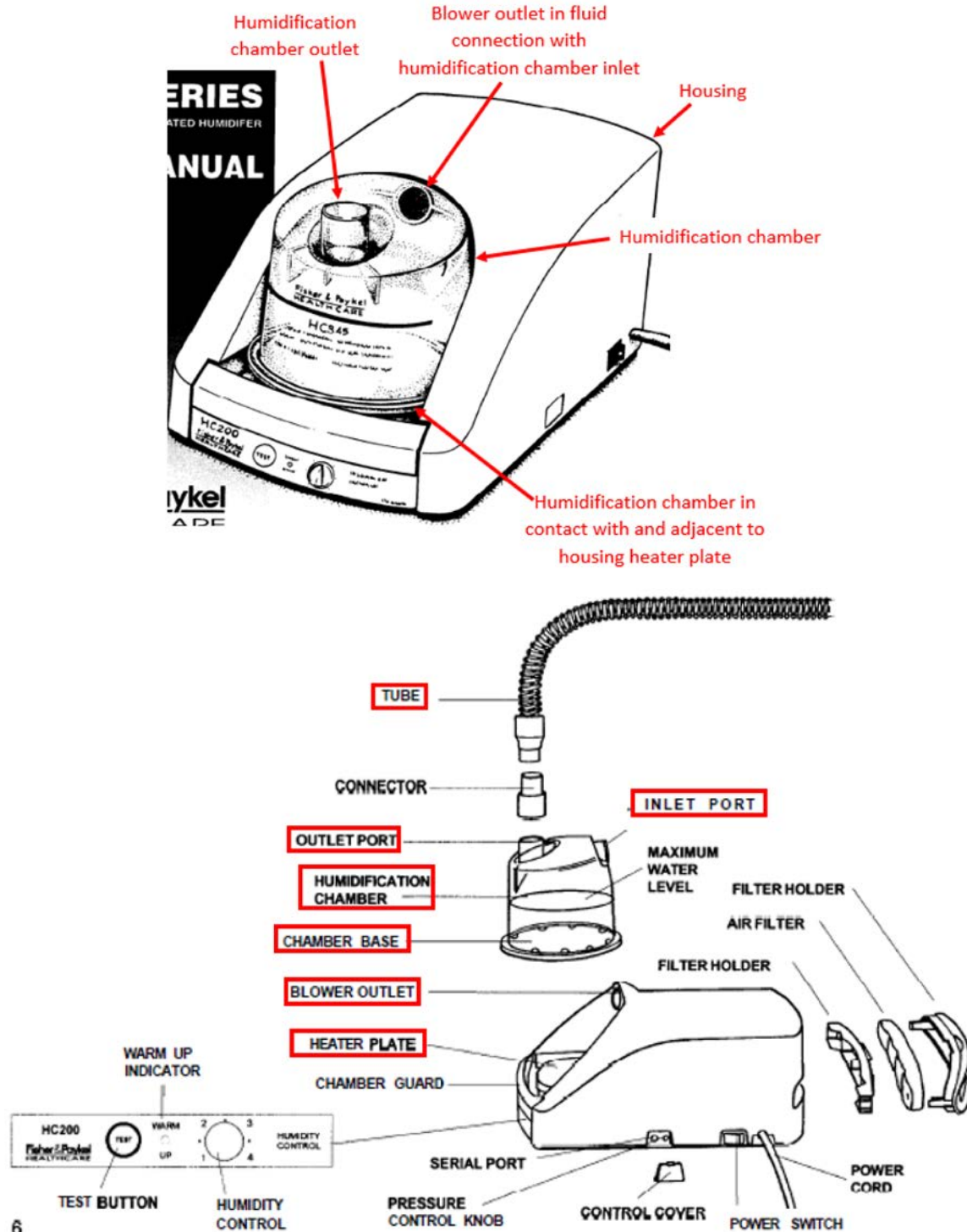
As shown in the above-figure, HC200 discloses a humidification chamber, tube, heater plate, and blower outlet. HC200 discloses that the humidification chamber is installed by pressing down the spring loaded Chamber Guard and *sliding the Humidification Chamber onto the Heater Plate*, thereby ensuring that the Inlet Port on the Chamber fits securely over the Blower Outlet, and that the Chamber Guard springs back up to completely surround the chamber base. Ex. 1017, 7.

e. CLAIM 3 AS UNPATENTABLE

i. Petitioner's Challenge

Petitioner contends that claim 3 is unpatentable over HC200 and Netzer. Pet. 14. Claim 3 depends from claim 2, which depends from claim 1. As such, our analysis includes Petitioner's challenges of claims 1 and 2, although they have been disclaimed. Paper 11, 2; Ex. 2001.

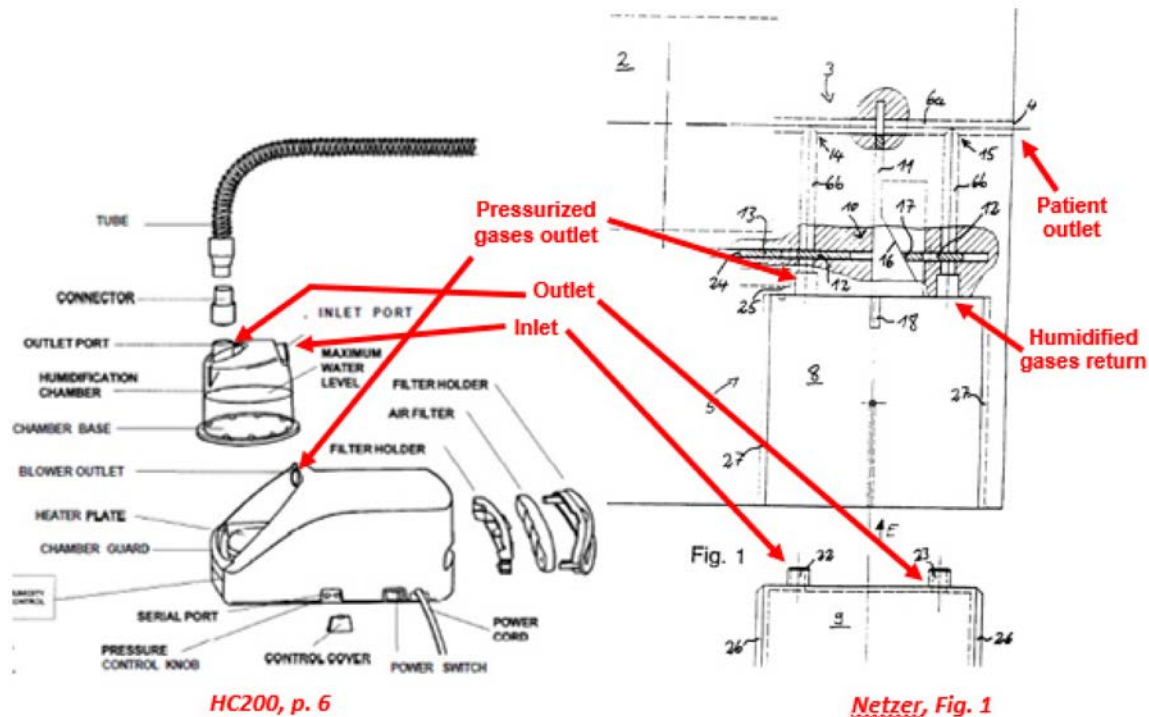
Petitioner asserts that HC200 "discloses nearly all of the features recited in claims 1-3." Pet. 23. To address the claimed "single motion of engagement urges the base of said water chamber adjacent and in contact with said chamber heater," Petitioner submits the following annotated Figures (*id.* at 16, 17) from HC200:



In referencing these figures, Petitioner asserts that “the HC200 Manual describes that the humidification chamber is installed by

‘[p]ress[ing] down the spring loaded Chamber Guard and *slid[ing] the Humidification Chamber onto the Heater Plate*, ensuring that the Inlet Port on the Chamber fits securely over the Blower Outlet’ and that the Chamber Guard ‘spring[s] back up to completely surround the chamber base.’” *See id.* at 18 (citing Ex. 1017, 7; Ex. 1012 ¶ 62) (emphasis added); *see also id.* at 41 (citing Ex. 1017, 1, 7, 8).

Petitioner acknowledges, however, that HC200 does not disclose the claimed housing having a humidified gases return and a patient outlet.” *Id.* at 23. To satisfy this missing limitation, Petitioner relies on Netzer’s disclosure of “a patient outlet (respiratory gas outlet 4) in the housing that is in fluid connection (fluid guiding element 3) with the humidified gases return (opening of flow guiding element).” *Id.* at 24 (citing Ex. 1008, 8–9, Figs. 1, 2, and 4; Ex. 1012 ¶¶ 52–53). To illustrate these findings, Petitioner submits annotated copies of Netzer’s Figure 1 and a figure from HC200, both of which we reproduce below:



According to Petitioner, the above annotated figures show corresponding structures between Netzer's CPAP device and HC200's CPAP device, including Netzer's teaching of "the chamber outlet being positioned to fluidly connect to a humidified gases return in the housing, and the humidified gases return being fluidly connected to a patient outlet in the housing." Pet. 24 (citing Ex. 1012 ¶ 73).

In combining Netzer with HC200, Petitioner reasons that:

A person of ordinary skill in the art at the time of the '624 patent would have been motivated to modify the *HC200* to move the patient outlet tube from the humidifier chamber to the housing, as taught by Netzer, so that the humidifier chamber could slide in and out of the housing without requiring the patient to disconnect the outlet tube and mask every time he needed to fill or clean the humidifier.

Id. at 25 (citing Ex. 1012 ¶ 74). Petitioner further reasons that the proposed combination would improve the usability of the CPAP device by eliminating

the “inconvenience associated with removing their hoses for daily filling and cleaning of the humidifier.” *Id.* at 31 (citing Ex. 1012 ¶ 82). In relying on the declaration testimony of Mr. Virr, Petitioner asserts that this modification is even “suggested by Netzer.” *Id.* at 32 (citing Ex. 1012 ¶ 83).

ii. Patent Owner’s Argument

In contesting Petitioner’s challenge, Patent Owner argues that claim 3 would not have been obvious over HC200 and Netzer because neither Netzer nor HC200 “teach or make obvious the ‘urges . . . in contact’ limitation of Claim 3.” PO Resp. 28 (citing Ex. 2004 ¶ 86); *id.* n.6. In support of its argument, Patent Owner relies on its proposed claim interpretation discussed above, construing the claim term “urges” as requiring “pressing.” *See id.* (“the claim as properly construed requires that the claimed single motion . . . to . . . *press the chamber base against the chamber heater*”) (emphasis added); *see also supra* Part II.a.i.

Patent Owner also asserts that HC200 “does not describe or show that the motion used to insert the water chamber moves the chamber base in a direction so as to both move the chamber base adjacent the chamber heater and also press the chamber base against the chamber heater.” PO Resp. 30 (citing Ex. 1017, 1).

iii. Our Analysis

We agree with Petitioner that Patent Owner’s argument is premised on an unsupported and overly narrow interpretation of the claimed term “urges . . . adjacent and in contact with.” *See* Pet. Reply 12. As discussed above, we construe the claimed limitation “said single motion of engagement urges the

base of said water chamber adjacent and in contact with said chamber heater,” as requiring a single motion of engagement that moves the chamber base in a direction so that it is adjacent and in contact with the chamber heater. *See supra* Part II.a.i. We do not agree with Patent Owner’s construction that the claimed limitation also requires “press[ing] the chamber base against the chamber heater.” *Id.*; PO Resp. 28 (“the claim as properly construed requires that the claimed single motion . . . press the chamber base against the chamber heater.”).

In response to Patent Owner’s assertion that HC200 does not show or describe the claimed single motion (*see* PO Resp. 30), we point out that HC200 discloses in-detail the steps for installing its Humidification Chamber. *See* Ex. 1017, 7 (“To install the Humidification Chamber”). In particular, HC200 discloses that its Humidification Chamber is installed by “[p]ress[ing] down the spring loaded Chamber Guard and slid[ing] the Humidification Chamber onto the Heater Plate, ensuring that the Inlet Port on the Chamber fits securely over the Blower Outlet” and that the Chamber Guard “spring[s] back up to completely surround the chamber base.” *Id.*; *see also id.* at Fig.

Based on our interpretation of the claimed phrase, we find that Petitioner’s combination of HC200 and Netzer satisfies the claimed “single motion of engagement urges . . .” limitation. *See* Pet. 41 (claim chart). In particular, the combination of HC200 and Netzer would result in an apparatus having a water chamber engagable with the humidifier via a “single motion” by moving, i.e., sliding, the chamber base in a direction so that the chamber base is adjacent and in contact with the chamber heater, as

required by the properly construed claim. *See supra* Part II.a.i; *see also* Ex. 1017, 7 (“To install the Humidification Chamber”).

Further, Petitioner articulately reasons with rational underpinnings that a person of ordinary skill in the art would have modified “HC200 to move the patient outlet tube from the humidifier chamber to the housing, as taught by Netzer, so that the humidifier chamber could slide in and out of the housing without requiring the patient to disconnect the outlet tube and masked every time he needed to fill or clean the humidifier.” Pet. 25 (citing Ex. 1012 ¶ 74); *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006), cited with approval in *KSR*, 550 U.S. at 418 (“rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.”).

For the foregoing reasons, and as set forth in the Petition supported by the underlying evidence cited therein, we find that the combination of HC200 and Netzer satisfies the limitations of claim 3 and are persuaded that a preponderance of the evidence supports the conclusion that claim 3 is unpatentable over HC200 and Netzer.

f. CLAIM 7 AS UNPATENTABLE

i. Petitioner’s Challenge

Petitioner submits that claim 7 is unpatentable as obvious over HC200, Netzer, and Bahr. Pet. 43. Claim 7 depends from any one of claims 1–6 and recites, *inter alia*, “said patient outlet includes a connector for receiving a breathing hose and at least one auxiliary electrical connection plug or socket or pneumatic connection plug or port.” Ex. 1001, 10:55–61.

In addressing this limitation, Petitioner relies on Bahr's gas port 44 for satisfying the claimed "patient outlet," surface 46 for satisfying the claimed "connector for receiving a breathing hose," and electrical contacts 48a, 48b for satisfying the claimed "auxiliary electrical connection plug or socket." *See* Pet. 50 ("Bahr discloses a patient outlet as gas port 44 . . . includ[ing] a connector as the external mating surface 46"); *id.* at 47 ("external mating surface 46 of the gas port 44 includes a pair of electrical contacts 48a, 48b").

Petitioner reasons that it would have been obvious to one of ordinary skill in the art to further combine Bahr's electrical contacts 48a, 48b "to implement this well-known and conventional means of minimizing work required for a patient to connect a breathing hose, and any electrical components of the hose, to a CPAP machine." *Id.* at 45 (citing Ex. 1012 ¶¶ 86–87). Petitioner explains that "rather than needing to establish a fluid connection between a patient hose and Netzer's gas outlet 4 separately from an electrical connection for a heater wire in the hose" (*id.* at 49), the combination would "simplify the manner in which connections were made on a CPAP machine or humidifier" (*id.* (citations omitted)). In support of this reasoning, Petitioner relies on Mr. Virr's testimony and cites to Bahr's disclosure that these electrical connections overcome prior art transmission lines that result in "additional installation work . . . more difficult transportation for the patient . . . , [and] involuntary disconnection." *Id.* at 49 (citing Ex. 1011 ¶ 6; Ex. 1012 ¶ 87).

ii. Patent Owner's Argument

In response to Petitioner's challenge, Patent Owner argues that it would not have been obvious to combine Bahr with HC200 and Netzer. PO

Resp. 34.⁵ In support of this argument, Patent Owner submits the testimony of Dr. Schneider. *See, e.g.*, Ex. 2004 ¶ 105 (“a skilled artisan would not have incorporated Bahr’s electrical contacts and associated sensor into a CPAP device such as the . . . HC200 Manual/Netzer combination[.]”).

We agree.

iii. Our Analysis

Petitioner contends that one of ordinary skill in the art would have combined HC200, Netzer, and Bahr “in order to minimize the work required for a patient to connect a breathing hose, *and any electrical components of the hose*, to a CPAP machine.” Pet. 48 (citing Ex. 1012 ¶¶ 86, 87) (emphasis added). In particular, Petitioner contends that:

For example, rather than needing to establish a fluid connection between a patient hose and *HC200 Manual’s* outlet port or *Netzer’s* gas outlet 4 separately from an electrical connection *for a heater wire in the hose*, the teachings of Bahr’s system would allow the patient to establish both the fluid connection and the electrical connection simultaneously.

Id. at 49 (citing Ex. 1011 ¶ 6; Ex. 1012 ¶ 87) (emphasis added). Notably, Petitioner’s combination presumes that HC200 or Netzer would benefit from

⁵ *See also* Prelim. Resp. 38 (“[t]he Petition’s alleged motivation to combine the HC200 Manual, Netzer, and Bahr fails because the identified problem did not exist in the HC200 Manual or Netzer . . . [and] there is no mention of electrical breathing hose components in either the HC200 Manual or Netzer.”); *see also* Inst. Dec. 19 (“Patent Owner’s argument otherwise directly contradicts the testimony of Mr. Virr and, *at this stage of the proceeding*, is not supported by adequate evidence”) (emphasis added).

such an electrical connection due to the existence of “electrical components” or a “heater wire” in the hose.

Although Mr. Virr’s testimony suggests that Netzer’s or HC200’s CPAP machine would use “electrical components of the hose” (Ex. 1012 ¶ 86) or “a heater wire in the hose” (*id.* at ¶ 87), neither Petitioner nor Mr. Virr cites to any portion of HC200 or Netzer to support this assertion. *See* Pet. 16–19 (asserted teachings of HC200), 19–24 (asserted teachings of Netzer), 48–49; *see also* Ex. 1012 ¶¶ 49–57 (Mr. Virr’s testimony describing Netzer); *see also id.* at ¶¶ 58–62 (Mr. Virr’s testimony describing HC200). Petitioner also does not explain adequately how its proposed combination results in “any electrical components of the hose” (Pet. 48) or “a heater wire in the hose” (*id.* at 49) so that an electrical connection would be needed. Upon weighing Dr. Schneider’s testimony (Ex. 2004 ¶¶ 104–105) and Mr. Virr’s testimony (Ex. 1012 ¶¶ 86–87; Ex. 1035 ¶ 21), we are not persuaded that one of ordinary skill in the art would have added an “electrical component of the hose” or “heater wire in the hose” to the HC200/Netzer combination, much less Bahr’s electrical connections, as proposed by Petitioner.

Bahr teaches contacts for “sensor 28, such as a solid state pressure transducer or a flow meter” (Ex. 1011 ¶ 20) “to provide a visible indication on a display 54 of monitored properties of the gas” (*id.* ¶ 24), or “detector 56 . . . in order to detect whether a sensor is connected” (*id.* ¶ 25). *See also* Ex. 2004 ¶ 104 (“Bahr teaches a detector attached to its electrical contacts to detect whether a sensor is connected”); PO Resp. 37 (stating the same in an argument why references would not be combined). Unlike Bahr, however, neither HC200 nor Netzer discloses a display for providing “monitored

properties of the gas,” let alone a similar pressure transducer or flow meter for measuring such properties. Because HC200 indicates that the patient monitors if air is leaking around the mask visually (*see* Ex. 1017, 14), we are not persuaded that a POSITA would have added a separate electrical sensor to monitor air leakage, either. Turning to Netzer, although Netzer discloses a “spring-loaded electric switch” to turn off Netzer’s humidifier upon removal of its liquid chamber (Ex. 1008, 6), Netzer does not describe this switch as requiring any “electrical components of the hose” or “a heater wire in the hose.”

Accordingly, we are not persuaded that one of ordinary skill in the art would have further modified Netzer and HC200 to include Bahr’s electrical connections, as Petitioner proposes, when doing so would needlessly add cost and complexity to the combined device. *See* Ex. 2004 ¶ 105. As such, Petitioner’s reasoning has insufficient rational underpinnings (*KSR*, 550 U.S. at 418), and Petitioner has failed to establish by a preponderance of the evidence that claim 7 is unpatentable over HC200, Netzer, and Bahr.

III. CONCLUSION

We determine that Petitioner has shown by a preponderance of the evidence that claim 3 is unpatentable over HC200 and Netzer. We also determine that Petitioner has not shown by a preponderance of the evidence that claim 7 is unpatentable HC200, Netzer, and Bahr.

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claim 3 of the ’624 patent is held unpatentable;

FURTHER ORDERED that claim 7 of the '624 patent has not been shown to be unpatentable; and

FURTHER ORDERED that this is a Final Written Decision. Parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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