

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

RESMED LIMITED, RESMED INC., and RESMED CORP.,
Petitioners,

v.

FISHER & PAYKEL HEALTHCARE LIMITED,
Patent Owner.

Case IPR2016-01730
Patent 8,091,547 B2

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

JUNG, *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. (“Petitioners”) filed a Petition (Paper 4, “Pet.”), requesting institution of an *inter partes* review of claims 1, 11–14, 24, and 25 of U.S. Patent No. 8,091,547 B2 (Ex. 1003, “the ’547 patent”). Fisher & Paykel Healthcare Limited (“Patent Owner”) filed a Preliminary Response (Paper 9). Upon considering the Petition and the Preliminary Response, we instituted *inter partes* review of claims 1, 11–14, 24, and 25 of the ’547 patent. Paper 10 (“Dec. on Inst.”).

After institution, Patent Owner filed a Response (Paper 13, “PO Resp.”) and a statutory disclaimer of claims 24 and 25 (Paper 23; Ex. 2006). Petitioners filed a Reply (Paper 16, “Pet. Reply”). Petitioners proffered a Declaration of Alexander Virr (Ex. 1012, “Virr Declaration” or “Virr Decl.”) with their Petition and a Second Declaration of Alexander Virr (Ex. 1034, “Second Virr Declaration” or “2d Virr Decl.”) with their Reply. Patent Owner proffered a Declaration of Hartmut Schneider, M.D., Ph.D. (Ex. 2004, “Schneider Declaration” or “Schneider Decl.”) with its Response. A deposition transcript for Dr. Schneider (Ex. 1035) was filed.

An oral hearing in this proceeding and Cases IPR2016-01716, IPR2016-01717, IPR2016-01719, IPR2016-01725, IPR2016-01727, IPR2016-01729, and IPR2016-01731 was held on December 6, 2017; a transcript of the hearing is included in the record (Paper 28, “Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons that follow, we determine that Petitioners have shown by a preponderance of the evidence that claims 1 and 11–14 of the ’547 patent are unpatentable.

A. Ground of Unpatentability at Issue

We instituted *inter partes* review on the ground that, under 35 U.S.C. § 103, claims 1, 11–14, 24, and 25 are unpatentable over the HC200 Manual¹ and Netzer². Dec. on Inst. 2, 17, 18.

B. Related Proceedings

The parties indicate that the '547 patent is at issue in *Fisher & Paykel Healthcare Ltd. v. ResMed Corp.*, 3:16-cv-02068-GPC-WVG (S.D. Cal.). Pet. 2; Paper 6, 1–2; Ex. 1029; Ex. 3001 (order granting motion to stay pending resolution of *inter partes* review).

The parties also indicate that the '547 patent was the subject of two cases that were dismissed without prejudice: *ResMed Inc. v. Fisher & Paykel Healthcare Corp. Ltd.*, 3:16-cv-02072-JAH-MDD (S.D. Cal.) and *Fisher & Paykel Healthcare Ltd. v. ResMed Corp.*, 3:16-cv-06099-R-AJW (C.D. Cal.). Pet. 2; Paper 6, 1; Exs. 1030–1033.

The '547 patent is also the subject of Cases IPR2016-01729 and IPR2016-01731. Pet. 3. The '547 patent issued from a division of an application, that became U.S. Patent No. 7,111,624 (Ex. 1001), which is at issue in Cases IPR2016-01725 and IPR2016-01727. Ex. 1003 (60); Pet. 3. Another related patent is at issue in Cases IPR2016-01716 and IPR2016-01717. Pet. 3.

¹ *HC200 Series Nasal CPAP Blower & Heated Humidifier User's Manual*, (Fisher & Paykel Healthcare, Rev A May 1998) (Ex. 1017); *see also* Pet. 13–14 (citing Ex. 1003, 1:26–44, Exs. 1023–26 as evidence to support that the HC200 Manual is § 102(b) prior art).

² WO 98/04311, published Feb. 5, 1998 (Ex. 1007). Exhibit 1008 is a certified English translation of Netzer, and citations to Netzer in this Decision are to Exhibit 1008.

C. The '547 Patent (Ex. 1003)

The '547 patent issued January 10, 2012, from an application filed July 5, 2006, and is a division of an application filed September 18, 2002, which is a continuation-in-part of an application filed on March 14, 2001. Ex. 1003, (22), (45), (60), 1:7–12; Pet. 11–12. The '547 patent also claims priority to a New Zealand application filed on March 21, 2000. Ex. 1003, (30).

The '547 patent relates to “a humidifier arrangement for use in stand alone humidifiers.” Ex. 1003, 1:18–24. The '547 patent states that humidifier chambers are “now used in compact and portable ventilation machines, for example machines intended for the home treatment of obstructive sleep apnea (CPAP machines).” *Id.* at 1:34–37. Figure 1 of the '547 patent is reproduced below:

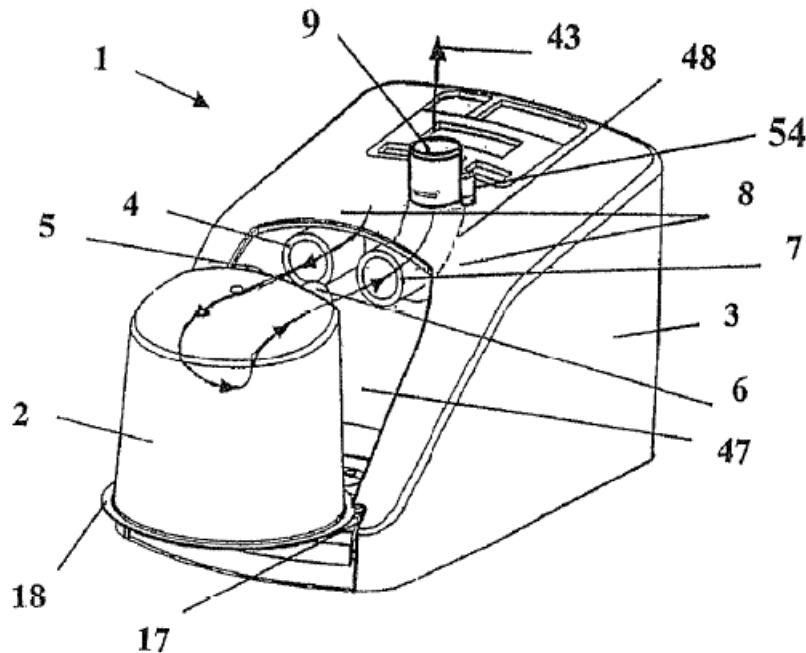


Figure 1

Figure 1 is a perspective view of a water chamber and CPAP machine. *Id.* at 3:36–37. CPAP machine 1 has water chamber 2 that includes gases

inlet port 5 and gases outlet port 6. *Id.* at 3:36–41, 4:17–20. CPAP machine 1 also includes chamber receiving bay 47 that receives water chamber 2, connection manifold 8 that connects with gases inlet port 5 and gases outlet port 6, and a heater base in bay 47 that heats water in chamber 2. *Id.* at 4:23–26, 4:29–30. Connection manifold 8 has a passage which receives airflow from a blower and directs it into water chamber 2 and a passage that directs airflow from gases outlet port 6 to CPAP patient outlet port 9. *Id.* at 4:57–61. CPAP machine 1 also has slot 17 that co-operates with flange 18 at the base of water chamber 2 and securing latch 19 (shown in Figure 2) that prevents removal of water chamber 2 when engaged with CPAP machine 1. *Id.* at 4:29–37.

In use, air from the blower exits through manifold outlet port 4, enters water chamber 2 through gases inlet port 5, is humidified by water evaporating in water chamber 2, leaves water chamber 2 through gases outlet port 6, enters manifold inlet port 7, and is directed to outlet port 9. *Id.* at 5:1–10.

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.

Id. at 5:10–15.

D. Illustrative Claim

The '547 patent has 25 claims, of which Petitioners challenge claims 1, 11–14, 24, and 25. Patent Owner filed a statutory disclaimer for claims 24 and 25. Paper 23; Ex. 2006. Claim 1, reproduced below, is the only independent claim at issue.

1. An apparatus for use in humidified gases delivery treatment comprising:

a housing,

a removable humidification chamber with a base,

a gases line inlet in said housing to receive pressurised gases from a pressurised gases source, said gases line inlet adapted to make a separable fluid connection with a breathing conduit,

a gases outlet in said housing in fluid connection with said gases line inlet, adapted to make a separable fluid connection with an inlet of said humidification chamber in order to provide gases flow into said humidification chamber,

a humidified gases return in said housing, adapted to make a separable fluid connection with an outlet of said humidification chamber in order to receive humidified gases from said humidification chamber,

a gases line outlet in said housing, in fluid connection with said humidified gases return, adapted to make fluid connection with or in fluid connection with a breathing conduit for delivery of humidified gases to a patient,

a chamber heater in said housing for vaporising liquid water in said humidification chamber in order to provide water vapour to gases flow passing through said humidification chamber,

said housing adapted to accommodate a humidification chamber, said humidification chamber being removable and engagable with said housing via a single motion, said single motion of engagement urging the base of said humidification chamber adjacent and in contact with said chamber heater, said single motion also making or breaking said separable connections between said gases outlet and said humidification chamber inlet, and said humidified gases return and said humidification chamber outlet.

Ex. 1003, 9:48–10:14.

II. CLAIM INTERPRETATION

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to 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).

For the Decision on Institution, we determined that express interpretation of any claim term was not necessary. Dec. on Inst. 8.

Petitioners state that “[c]laim terms are 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.” Pet. 13 (citing *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007)). Petitioners also state that “[c]onstrutions offered in the Petition are intended to aid this proceeding.” *Id.* In the Decision on Institution, we found no explicit constructions offered in the Petition. Dec. on Inst. 8.

Patent Owner proposes an interpretation for “said single motion of engagement urging the base of said humidification chamber adjacent and in contact with said chamber heater,” of claim 1. PO Resp. 10–16. Patent Owner contends that the phrase “requires more than the ‘single motion of engagement’ simply bringing the base of the water heater adjacent with the chamber heater” and “means ‘a single motion of engagement that 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.’” *Id.* at 10–11. In support of its interpretation, Patent Owner cites to the specification (*id.* at 11 (citing Ex. 1003, 7:63–66), 12–14 (citing Ex. 1003, 4:32–37, 4:45–56, Figs. 1, 2)), claims 6 and 24 (*id.* at 14), its declarant

testimony (*id.* at 11–12 (citing Schneider Decl. ¶¶ 36, 37, 56)), and prosecution history (*id.* at 15–16 (citing Ex. 1006, 43, 58–60, 89)). Petitioners reply to Patent Owner’s proposed interpretation. Pet. Reply 2–7 (citing PO Resp. 10–15; Ex. 1003, 7:63–8:2; 2d Virr Decl. ¶¶ 7–13; Ex. 1035, 54:11–25, 56:22–57:19, 58:24–59:1, 60:25–63:16, 68:7–20, 69:6–17, 72:13–73:7).

We first turn to the claims themselves. Claim 1 does not require expressly that the single motion moves the chamber base so as to press the chamber base against the chamber heater, as proposed by Patent Owner. Claim 1 recites, in relevant part, “urging the base of said humidification chamber adjacent and in contact with said chamber heater.” Ex. 1003, 10:8–10.

Claim 6 recites “wherein said single motion disposes said heat conductive base adjacent a heater,” and claim 24 recites “wherein said single motion of engagement disposes the base of said humidification chamber adjacent said heater,” whereas claim 1 recites “said single motion of engagement urging the base of said humidification chamber adjacent and in contact with said chamber heater.” Ex. 1003, 10:8–10, 11:1–3, 12:47–49. Taken together, these claims indicate that “urging the base” results in a base being “adjacent and in contact” with a heater but “disposes the base” results in a base being “adjacent” a heater.

Turning next to the specification, the portions cited by Patent Owner describe the urging of securing latch 19 into a release position or a locking position (Ex. 1003, 4:32–37, 4:45–56) and another configuration “where the slide-on direction employed to fit the water chamber is not horizontal but at an angle from the horizontal or vertical” (*id.* at 7:63–66). These cited

portions do not indicate how urging a base differs from disposing a base. These cited portions also do not rebut the presumption that the phrase carries its ordinary and customary meaning and do not provide a definition of the phrase with reasonable clarity, deliberateness, and precision. *See* Ex. 1003, 4:32–37, 4:45–56, 7:63–66; *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007); *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

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 4:50–54. 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 shedding any light on the meaning of “urges” in the context of claim 1. Moreover, the specification describes a single slide on or slide off motion in relation to connecting ports of a water chamber (Ex. 1003, Abstract, 1:37–41, 3:1–4, 3:22–23) or installing a water chamber (*id.* at 2:48–51, 4:45–48, 5:13–15, 5:66–6:4, 6:54–56). In different aspects, the single motion can “urg[e] said heat conductive base adjacent and in said contact with a heater” (*id.* at 3:5–6) or “make operable engagement with a heater base” (*id.* at 3:20–21). Based on the above discussion of the specification, we, thus, find that the specification indicates that “urging” is related to being adjacent and in contact or making an operable engagement. We do not find, however, that the specification further indicates that “urging” the base is related to pressing the base against a heater, as proposed by Patent Owner.

Patent Owner also cites to paragraphs 36, 37, and 56 of its Schneider Declaration (Ex. 2004). The cited paragraphs provide testimony as to how

the angled slide-on direction can be beneficial (Schneider Decl. ¶¶ 36, 37) and would also “urge or press the base of the water chamber against the chamber heater” (*id.* ¶ 56). The testimony, however, does not explain how “urging” as used in Patent Owner’s cited portions of the specification (Ex. 1003, 4:32–37, 4:45–56, 7:63–66) would be understood by one of ordinary skill in the art to have the interpretation proposed by Patent Owner for “said single motion of engagement urging the base of said humidification chamber adjacent and in contact with said chamber heater.”

Turning next to the prosecution history, portions cited by Patent Owner indicate an amendment was made to the claim that issued as claim 1. *See* Ex. 1006, 43, 58–60, 89. However, the cited portions of the prosecution history do not indicate that the phrase “single motion of engagement urging the base of said humidification chamber adjacent and in contact with said chamber heater” means “a single motion of engagement that 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,” as proposed by Patent Owner.

Thus, for the preceding reasons, the full record does not persuade us to adopt Patent Owner’s proposed interpretation of “said single motion of engagement urging the base of said humidification chamber adjacent and in contact with said chamber heater.” In particular, we determine that record evidence does not support the phrase requiring a single motion of engagement that presses the chamber base against the chamber heater, as urged by Patent Owner. As discussed below, any further express interpretation of the phrase is not necessary for determining whether Petitioners have shown unpatentability by a preponderance of the evidence.

III. CHALLENGE OF CLAIMS 1 AND 11–14

Petitioners contend that claims 1, 11–14, 24, and 25 are obvious in view of the HC200 Manual (Ex. 1017) and Netzer (Ex. 1008). Pet. 4–5, 13–61. Petitioners cite to the HC200 Manual, Netzer, the Virr Declaration (Ex. 1012), and the Second Virr Declaration (Ex. 1034), and provide a claim chart. See Pet. 13–61; Pet. Reply 1–9. Patent Owner filed a disclaimer for claims 24 and 25. Paper 23; Ex. 2006. Patent Owner disputes the alleged obviousness of claims 1 and 11–14 with citations to the asserted references and the Schneider Declaration (Ex. 2004). PO Resp. 1–21.

To prevail in their challenge, under 35 U.S.C. § 103, of claims 1 and 11–14 as unpatentable over the HC200 Manual and Netzer, Petitioners must prove unpatentability by a preponderance of the evidence. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness 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 ordinary skill in the art; and (4) objective evidence of nonobviousness. See *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1996).

As discussed below, the parties’ disputes are related to the scope and content of the prior art and differences between claims 1 and 11–14 and the

prior art. The parties do not dispute the level of ordinary skill in the art and do not direct us to any objective evidence of nonobviousness.

After reviewing the complete record, we conclude that Petitioners have shown by a preponderance of the evidence that the HC200 Manual and Netzer teach or suggest each limitation of claims 1 and 11–14, that a person of ordinary skill in the art would have had a reason to combine the teachings of the HC200 Manual and Netzer, and that a person of ordinary skill in the art would have had a reasonable expectation of success in combining the teachings of the HC200 Manual and Netzer.

A. Level of Ordinary Skill

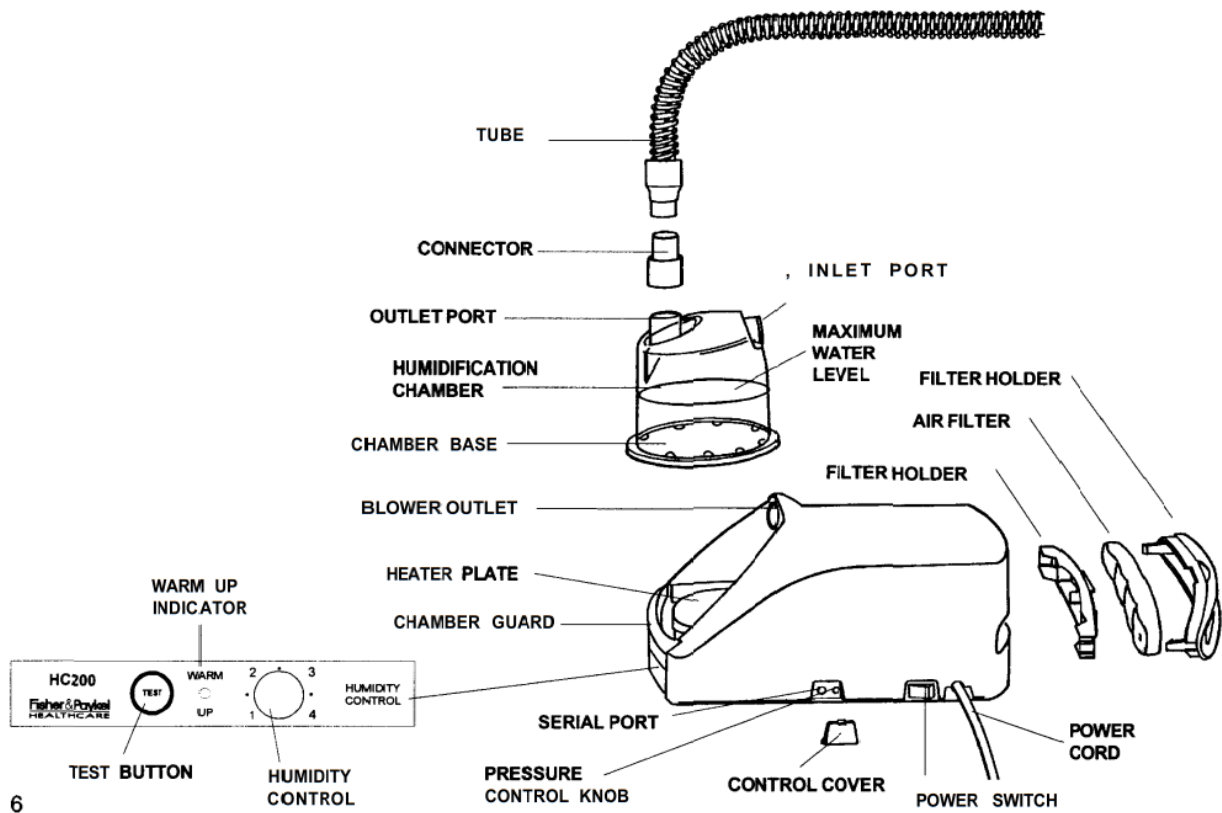
Petitioners provide a level of ordinary skill in the art. Pet. 12 (citing Virr Decl. ¶¶ 22–23). Patent Owner also provides a level of ordinary skill in the art. PO Resp. 8–9 (citing Schneider Decl. ¶ 30). Patent Owner also states that “[w]hile the level of skill in the art proposed by [Patent Owner] differs from that proposed by Petitioners, [Patent Owner] believes the difference is immaterial to deciding the issues raised by the Petition.” *Id.* at 9.

We adopt Petitioners’ 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. 12 (citing Virr Decl. ¶¶ 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. 9.

B. HC200 Manual (Ex. 1017)

“HC200 Series Nasal CPAP Blower & Heated Humidifier User’s Manual” provides instructions for using an “integrated Continuous Positive Airway Pressure generator and Heated Humidifier” that “is designed to be used with nasal masks” Ex. 1017, 6³. A figure from the HC200 Manual is reproduced below.



The figure shows “Important Parts of your HC200 System.” *Id.* at 7. The figure depicts parts labeled “humidification chamber,” “blower outlet,”

³ Petitioners cite to the exhibit page numbers added to the bottom center of each page and not to the page number at one of the bottom corners of most pages. References to the HC200 Manual in this Decision also cite to the exhibit page numbers added to the bottom center of each page.

“heater plate,” and “chamber guard.” *See id.* The “humidification chamber” includes “inlet port,” “outlet port,” and “chamber base.” *See id.*

The manual instructs that pressing down on the chamber guard and sliding the humidification chamber into the heater plate ensures that the inlet port on the chamber fits securely over the blower outlet. *Id.* at 8. It includes instructions to “Remove Humidification Chamber from HC200 before filling with water” and to “slide the Humidification Chamber onto the Heater Plate, ensuring that the Inlet Port on the Chamber fits securely over the Blower Outlet.” *Id.* It also instructs that one end of a patient tube should be attached to the outlet port of the humidification chamber and the other end should be attached to a mask. *Id.* at 9.

C. Netzer (Ex. 1008)

Netzer relates to a “gas supply device for sleep apnea having a respiratory gas source . . . wherein the flow guiding element is connected to a gas humidifier.” Ex. 1008, 1⁴. Figure 1 of Netzer is reproduced below.

⁴ Petitioners cite to the exhibit page number at the lowermost center of each page. References to Netzer in this Decision also cite to the exhibit page number.

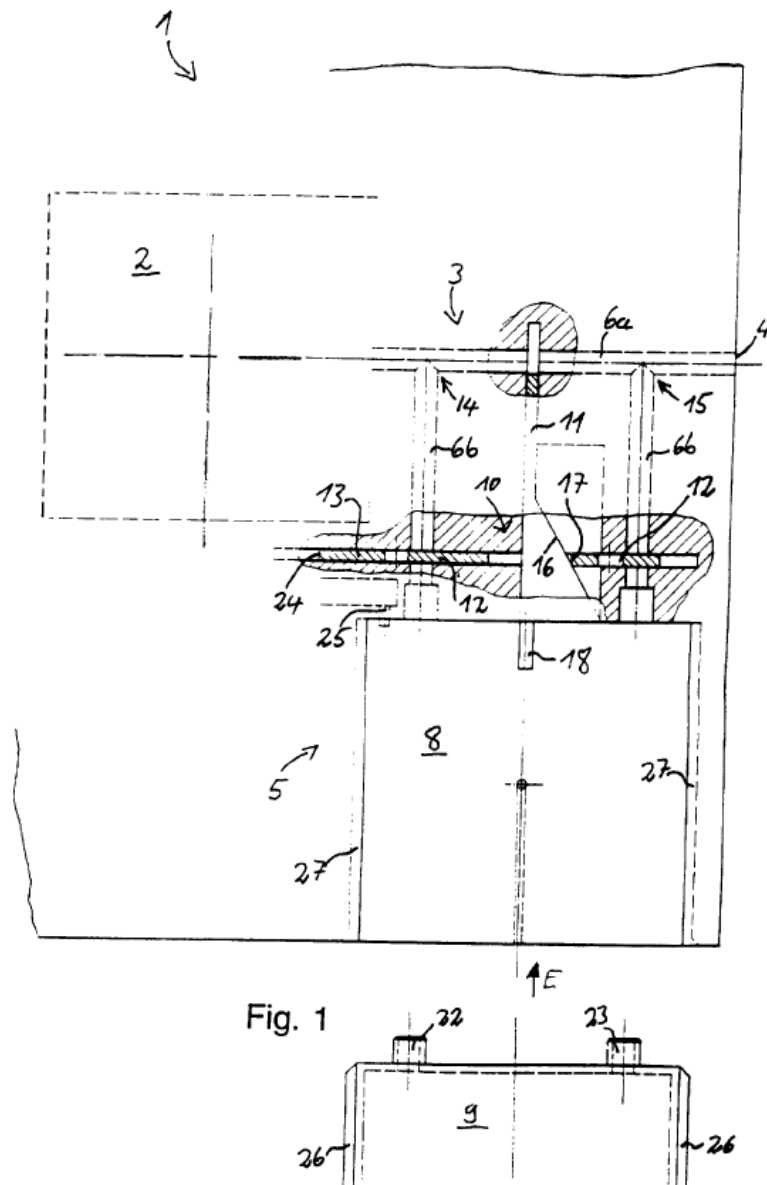


Figure 1 is a top view of gas supply device 1 with a liquid container removed from a device housing. Ex. 1008, 6. Gas supply device 1 has “respiratory gas source 2, which leads to a respiratory gas outlet 4 via a flow guiding element 3,” and humidifier housing 8, which receives liquid container 9. *Id.* at 6, 7. Respiratory gas source 2 “supplies the pressurized gas contained therein to the flow guiding element 3 via a valve.” *Id.* at 6. An air hose (not shown) “can be connected to the respiratory gas outlet 4,

connecting the device 1 to a . . . face mask.” *Id.* at 7.

Flow guiding element 3 has two flow paths 6a, 6b. *Id.* “[F]irst flow path 6a leads to the respiratory gas outlet 4, bypassing the gas humidifier 5,” and “second flow path 6b leads to the respiratory gas outlet 4 via an admixing point 7 . . . connected to the gas humidifier 5.” *Id.* “[F]irst flow path 6a is opened or closed by . . . main flow blocking valve 11,” and “second flow path 6b . . . is opened or closed by . . . bypass flow blocking valves 12.” *Id.*

Liquid container 9 can be removed from and replaced in humidifier housing 8. *Id.* When inserting liquid container 9, the flow path 6a to gas outlet 4 is closed, and a second flow path 6b to liquid container 9 is opened. *Id.* at 8. Thus, “respiratory gas can only be supplied . . . by means of one of the flow paths, and the respective flow path is determined by the insertion or removal of the liquid container.” *Id.* at 4.

Netzer also states its “liquid container can then be removed from the device and readily cleaned when the gas humidifier is not being used, thus significantly simplifying the handling of the device with regard to hygienic considerations.” *Id.* at 2.

D. Independent Claim 1

1. Uncontested Limitations

Petitioners persuade us that the “*HC200 Manual* discloses nearly all of the features recited in claim 1 except for the housing having a humidified gases return and a gases line outlet.” Pet. 22. In particular, we find that the *HC200 Manual* teaches an “apparatus for use in humidified gases delivery treatment” (Ex. 1017, 6 (“integrated Continuous Positive Airway Pressure generator and Heated Humidifier”)) with “a housing” (*id.* at 1, 7 (figure

depicting housing)) and “a removable humidification chamber with a base” (see *id.* at 8 (instructions to “Remove Humidification Chamber from HC200 before filling with water”)), as required by claim 1. See also Pet. 31–33 (citing Virr Decl. ¶¶ 58–62; Ex. 1017, 6–10, 12); Virr Decl. ¶¶ 59, 60.

We also find that the HC200 Manual teaches “a gases outlet in said housing . . . adapted to make a separable fluid connection with an inlet of said humidification chamber in order to provide gases flow into said humidification chamber” (Ex. 1017, 7 (depicting a “Blower Outlet”), 8 (“slide the Humidification Chamber onto the Heater Plate, ensuring that the Inlet Port on the Chamber fits securely over the Blower Outlet”)), as required by claim 1. See also Pet. 34–36 (Ex. 1008, 8, 9, Figs. 1, 2, 4; Virr Decl. ¶¶ 49–62; Ex. 1017, 7, 8); Virr Decl. ¶¶ 59, 60.

We further find that the HC200 Manual teaches “a chamber heater in said housing for vaporising liquid water in said humidification chamber in order to provide water vapour to gases flow passing through said humidification chamber” and “said housing adapted to accommodate a humidification chamber, said humidification chamber being removable and engagable with said housing via a single motion,” as required by claim 1. Ex. 1017, 7 (depicting “Heater Plate”), 8 (instruction to “slide the Humidification Chamber onto the Heater Plate”); see also Pet. 38–40 (Virr Decl. ¶¶ 58–62; Ex. 1017, 1, 6–8); Virr Decl. ¶¶ 59–62.

Petitioners persuade us that a “housing having a humidified gases return and a gases line outlet,” as recited by claim 1, “were known . . . as demonstrated by *Netzer*.” Pet. 22. Petitioners also persuade us that *Netzer* “discloses a gases line 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.* (citing Ex. 1008, 8–9, Figs. 1, 2, 4).

Specifically, we find that Netzer teaches “a gases line inlet in said housing to receive pressurised gases from a pressurised gases source, said gases line inlet adapted to make a separable fluid connection with a breathing conduit” (Ex. 1008, 7 (“respiratory gas source 2 . . . supplies the pressurized gas contained therein to flow to the flow guiding element 3 via a valve”), 8 (“air hose . . . can be connected to the respiratory gas outlet 4” and “flow guiding element 3 . . . leads to the respiratory gas outlet 4”)) and “a gases outlet in said housing in fluid connection with said gases line inlet, adapted to make a separable fluid connection with an inlet of said humidification chamber in order to provide gases flow into said humidification chamber” (*id.* at 8 (“flow guiding element 3 . . . has two flow paths 6a, 6b” and “second flow path 6b leads to the respiratory gas outlet 4 via . . . gas humidifier 5”), Figs. 1 (showing flow guiding element 3 includes second flow path 6b), 2 (showing second flow path 6b connected to container inlet 22)), as recited by claim 1. *See also* Pet. 33–36 (citing Ex. 1008, 7–9, Figs. 1, 2, 4; Virr Decl. ¶¶ 49–62; Ex. 1017, 7–9, 12); Virr Decl. ¶¶ 51–53.

We also find that Netzer teaches “a humidified gases return in said housing, adapted to make a separable fluid connection with an outlet of said humidification chamber in order to receive humidified gases from said humidification chamber” (Ex. 1008, 8 (“second flow path 6b leads to the respiratory gas outlet 4 via . . . gas humidifier 5”), Fig. 2 (showing container outlet 23 connected to second flow path 6b)) and “a gases line outlet in said housing, in fluid connection with said humidified gases return, adapted to

make fluid connection with or in fluid connection with a breathing conduit for delivery of humidified gases to a patient” (*id.* at 8 (“air hose . . . can be connected to the respiratory gas outlet 4” and “flow guiding element 3 . . . leads to the respiratory gas outlet 4”), Fig. 2 (showing second flow path 6b connected to respiratory gas outlet 4)), as recited by claim 1. *See also* Pet. 36–38 (citing Ex. 1008, 8, 9, Figs. 1, 2, 4; Virr Decl. ¶¶ 49–62; Ex. 1017, 6, 8); Virr Decl. ¶¶ 52, 53, 55.

We further find that Netzer teaches “said single motion also making or breaking said separable connections between said gases outlet and said humidification chamber inlet, and said humidified gases return and said humidification chamber outlet.” *Id.* at 5 (“the respiratory gas can only be supplied . . . by means of one of the flow paths, and the respective flow path is determined by the insertion or removal of the liquid container”), Figs. 1 (showing container inlet 22 and outlet 23), 2 (showing container inlet 22 and outlet 23 connected to second flow path 6b); *see also* Pet. 41–43 (citing Ex. 1008, 5, 8, 9, Figs. 1, 2; Virr Decl. ¶¶ 49–62; Ex. 1017, 1, 8); Virr Decl. ¶¶ 56, 57.

Patent Owner presents no specific arguments regarding the limitations discussed above. *See* PO Resp. 6–7 (stating that the “HC200 Manual is directed to a CPAP device having an integrated humidifier,” shows “a humidifier water chamber with an inlet port on its side wall that connects to the blower at a blower outlet,” “a vertically oriented air outlet on the top of the chamber” that “connect to a tube that leads to the patient,” and “the water chamber has a chamber base that is heated by a heater plate located on the device housing”), 7–8 (stating that, in Netzer, “when a liquid container is inserted the flow automatically switches to a second flow path” that “allows

the gases to flow through the humidifier”), 9–20 (contending that the HC200 Manual and Netzer do not show “said single motion of engagement urging the base of said humidification chamber adjacent and in contact with said chamber heater”); *see also* 37 C.F.R. § 42.23(a) (“Any material fact not specifically denied may be considered admitted.”); Paper 11, 3 (“The patent owner is cautioned that any arguments for patentability not raised and fully briefed in the response will be deemed waived.”).

2. Reason for Combining

Petitioners contend that a person of ordinary skill in the art would have been motivated to modify the HC200 Manual to move a patient outlet tube from a humidifier chamber to a 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.” Pet. 23 (citing Virr Decl. ¶¶ 72–83). According to Petitioners, one of ordinary skill in the art would have “recognized the disadvantages associated with placing a gases outlet on a humidifier chamber that required daily filling and cleaning,” such as the HC200 Manual. *Id.* at 23–27 (citing Ex. 1001, 1:40–43; Ex. 1008, 1; Ex. 1017, 7, 9, 11; Ex. 1027; Ex. 1028; Virr Decl. ¶¶ 76, 77, 79).

Petitioners assert that a “well-known solution . . . was to move the patient gases outlet from the humidifier water chamber to the housing.” *Id.* at 27–29 (citing Ex. 1008, 1–2; Ex. 1010; Ex. 1028). Petitioners, thus, contend that one of ordinary skill in the art “would have been prompted to modify the HC200 device based on . . . Netzer . . . to move the patient gases outlet from the humidifier chamber to the housing,” so as to “allow the patient to remove the water chamber without having to disconnect their

breathing tube and respiratory mask.” *Id.* at 29 (citing Virr Decl. ¶ 81). Petitioners further contend that the proposed modification “would improve the usability of the CPAP device,” would “lead to greater treatment results and greater rates of CPAP-prescribed compliance,” “could be readily achieved by repositioning the outlet of the HC200’s chamber, and adding a humidified gases return and connecting patient outlet to the HC200’s housing,” and would be “using known techniques to improve similar devices.” *Id.* at 29–31 (citing Virr Decl. ¶¶ 82, 83).

The full record supports Petitioners’ position that a “well-known solution . . . was to move the patient gases outlet from the humidifier water chamber to the housing,” as taught by Netzer based on the findings discussed above. Pet. 27–29. The full record also supports that modifying the HC200 Manual in view of 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” and so as to “allow the patient to remove the water chamber without having to disconnect their breathing tube and respiratory mask.” *Id.* at 23, 29. The full record persuades us that modifying the HC200 Manual with Netzer “would improve the usability of the CPAP device,” would “lead to greater treatment results and greater rates of CPAP-prescribed compliance,” and would be “using known techniques to improve similar devices.” *Id.* at 29–31. We credit the testimony of Mr. Virr regarding these contentions. Virr Decl. ¶¶ 72–74, 79, 81–83. We, therefore, determine that one of ordinary skill in the art would have had a reason to combine the teachings of the HC200 Manual and Netzer.

We also credit Mr. Virr’s testimony that the proposed combination “could be readily achieved by repositioning the outlet of the HC200’s chamber, and adding a humidified gases return and connecting patient outlet to the HC200’s housing” and would be “using known techniques to improve similar devices.” Virr Decl. ¶ 83. Thus, we determine that one of ordinary skill in the art would have had a reasonable expectation of success in combining the teachings of the HC200 Manual and Netzer.

Patent Owner argues that the asserted references fail to teach or suggest “urging the base of said humidification chamber adjacent and in contact with said chamber heater,” as recited by claim 1, and presents no specific arguments regarding Petitioners’ reason for combining the HC200 Manual and Netzer. See PO Resp. 17–20; see also Paper 11, 3 (“The patent owner is cautioned that any arguments for patentability not raised and fully briefed in the response will be deemed waived.”).

3. *“said single motion of engagement urging the base of said humidification chamber adjacent and in contact with said chamber heater”*

Petitioners persuade us that the HC200 Manual teaches the recitation “said single motion of engagement urging the base of said humidification chamber adjacent and in contact with said chamber heater.” Pet. 40–41 (citing Ex. 1017, 1, 7, 8; Virr Decl. ¶¶ 58–62). In particular, we find that the HC200 Manual teaches a “humidification chamber” with a “chamber base” that is adjacent and in contact with a “heater plate.” Ex. 1017, 1 (figure showing humidification chamber atop the heater plate), 7 (figure showing “humidification chamber,” “chamber base,” and “heater plate”), 8 (“slide the Humidification Chamber onto the Heater Plate”).

Patent Owner responds that the HC200 Manual fails to teach, and that Petitioners do not argue sufficiently that the HC200 Manual teaches or suggests, a “single motion of engagement urging the base of said humidification chamber adjacent and in contact with said chamber heater,” as recited by claim 1 because Patent Owner contends that the phrase should be construed to require the “claimed single motion of engagement 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. 17–20 (citing Pet. 40–41; Virr Decl. ¶¶ 58–62; Ex. 1017, 1, 7, 8) (emphasis added).

For the reasons discussed above in Section II, the full record does not persuade us that the broadest reasonable interpretation in view of the specification of the ’547 patent of “single motion of engagement urging the base of said humidification chamber adjacent and in contact with said chamber heater” requires pressing the chamber base against the chamber. Therefore, we determine that a preponderance of the evidence shows that the HC200 Manual teaches this recitation of claim 1 and thus, for the reasons here and in Sections III.D.1 and III.D.2, we determine that Petitioners have shown by a preponderance of the evidence that claim 1 is unpatentable over the HC200 Manual and Netzer.

E. Dependent Claims 11–14

Claim 11 depends from claim 1 and recites “wherein said housing includes a connection manifold.” Ex. 1003, 11:25–27. Petitioners persuade us that Netzer teaches its limitations. Pet. 43–44 (citing Ex. 1008, 7, Fig. 1; Virr Decl. ¶¶ 49–57). In particular, we find that Netzer teaches “a

respiratory gas source 2 . . . leads to a respiratory gas outlet 4 via a flow guiding element 3.” Ex. 1008, 7, Fig. 1.

Claim 12 depends from claim 11. Ex. 1003, 11:27–45. Petitioners persuade us that the HC200 Manual and Netzer teach its limitations. Pet. 44–48 (citing Ex. 1008, 7–13, Figs. 1, 2, 4; Virr Decl. ¶¶ 49–62; Ex. 1017, 1, 8). Specifically, we find that Netzer teaches a “connection manifold comprising: said gases line inlet adapted to make a fluid connection with a breathing conduit in order to receive pressurised gases,” as recited by claim 12. Ex. 1008, 7 (“a respiratory gas source 2 . . . leads to a respiratory gas outlet 4 via a flow guiding element 3”), 8, Fig. 1.

We also find that connections to Netzer’s flow guiding element 3 that mate with inlet 22 and outlet 23 of liquid container 9, respectively, teach a “connection manifold comprising . . . said gases outlet adapted to make a separable fluid connection with an inlet of a humidification chamber in order to provide gases into said humidification chamber” and “said humidified gases return adapted to make a separable fluid connection with an outlet of said humidification chamber in order to receive humidified gases from said humidification chamber,” as recited by claim 12. *Id.* at 9, Figs. 1, 2, 4.

We further find that Netzer teaches a “connection manifold comprising . . . said gases line outlet in fluid connection with said gases return,” as recited by claim 12. *Id.* at 8, 9, Figs. 1, 2, 4. We additionally find that respiratory gas outlet 4 of Netzer teaches a “connection manifold comprising . . . said gases line outlet adapted to make a fluid connection with a breathing conduit for delivery of humidified gases to a patient” (*id.* at 7, 8) and removal and replacement of Netzer’s liquid container 9 of teach “said separable connections being made or broken by a single motion of said

humidifier chamber being placed adjacent to said manifold” (*id.* at 8, 10–13, Figs. 1, 2).

Regarding the HC200 Manual, we find that it teaches a “connection manifold comprising . . . said gases outlet adapted to make a separable fluid connection with an inlet of a humidification chamber in order to provide gases into said humidification chamber” (Ex. 1017, 7 (showing “blower outlet”), 8), “said gases line outlet adapted to make a fluid connection with a breathing conduit for delivery of humidified gases to a patient” (*id.* at 7 (showing a “tube”), 9), and “said separable connections being made or broken by a single motion of said humidifier chamber being placed adjacent to said manifold” (*id.* at 1, 8). The HC200 Manual, thus, teaches certain limitations of claim 12.

Claim 13 depends from claim 12 and recites “wherein said manifold includes a passage between said gases line inlet and said gases outlet.” Ex. 1003, 11:46–49. Petitioners persuade us that Netzer teaches its limitations. Pet. 48–49 (citing Ex. 1008, 9, Figs. 1, 2, 4; Virr Decl. ¶¶ 49–57). In particular, we find that Netzer teaches bypass inlet 14 and path 6b between a breathing conduit and a connection for inlet 22 of liquid container 9.

Claim 14 depends from claim 12 and recites “wherein said manifold includes a passage between said humidified gases return and said gases line inlet.” Ex. 1001, 11:50–53. Petitioners persuade us that Netzer teaches its limitations. Pet. 49 (citing Ex. 1008, 9, Figs. 1, 2; Virr Decl. ¶¶ 49–57). Specifically, we find that Netzer teaches bypass inlet 15 and path 6b between a connection for outlet 23 of liquid container 9 and respiratory gas outlet 14. Ex. 1008, 9, Figs. 1, 2.

Patent Owner relies on its arguments for claim 1. *See* PO Resp. 17–18 (arguing “Claim 1 (and thus dependent Claims 11-14) requires that the ‘single motion of engagement **urging** the base of said humidification chamber adjacent **and** in contact with said chamber heater’”), 20 (arguing “Petitioners have not provided any explanation as to how the HC200 Manual (or Netzer) purportedly discloses or would have made obvious the ‘urging . . . in contact’ limitation of Claim 1 (and thus dependent Claims 11-14)”). For the reasons discussed above in Section III.D., we are persuaded by a preponderance of the evidence that claim 1 is unpatentable over the HC200 Manual and Netzer.

Thus, in view of the record developed after trial, we are persuaded by a preponderance of the evidence that claims 11–14 are unpatentable over the HC200 Manual and Netzer.

IV. CONCLUSION

For the foregoing reasons, based on the full record before us, we determine that Petitioners have demonstrated, by a preponderance of the evidence, that claims 1 and 11–14 of the ’547 patent are unpatentable.

V. ORDER

Accordingly, it is:

ORDERED that claims 1 and 11–14 of U.S. Patent No. 8,091,547 B2 have been shown, by a preponderance of the evidence, to be unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, the 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.

PETITIONERS:

Michael T. Hawkins
Stephen R. Schaefer
Michael J. Kane
Christopher C. Hoff
FISH & RICHARDSON P.C.
hawkins@fr.com
schaefer@fr.com
kane@fr.com
IPR36784-0045IP2@fr.com

PATENT OWNER:

Joseph F. Jennings
Brenton R. Babcock
Matthew S. Bellinger
KNOBBE, MARTENS, OLSON & BEAR, LLP
2jfj@knobbe.com
2brb@knobbe.com
BoxFPH773@knobbe.com
2msb@knobbe.com