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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* MICHIEL KOOIJ,  
GERARD MICHAEL RUMMERY, and  
ROBERT EDWARD HENRY

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Appeal 2019-006686  
Application 15/830,673  
Technology Center 3700

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Before EDWARD A. BROWN, MICHAEL L. HOELTER, and  
MICHAEL J. FITZPATRICK, *Administrative Patent Judges*.

HOELTER, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant<sup>1</sup> appeals from the Examiner's decision to reject claims 21–46, which constitute all the claims pending in this application. *See* Appeal Br. 1. We have jurisdiction under 35 U.S.C. § 6(b).

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<sup>1</sup> We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as “ResMed Limited.” Appeal Br. 3.

We AFFIRM the Examiner's rejections of these claims.

### CLAIMED SUBJECT MATTER

The disclosed subject matter "relates to a retractable tube for use in Continuous Positive Airway Pressure (CPAP) therapy." Spec. ¶ 2. System claims 21 and 33 are independent. Claim 21 is illustrative of the claims on appeal and is reproduced below.

21. A continuous positive airway pressure (CPAP) system configured to deliver positively pressurized breathable gas to a patient's airways, the CPAP system comprising:

a patient interface configured to sealingly engage the patient's face;

a retractable air delivery tube configured to deliver the breathable gas to the patient interface, the retractable air delivery tube comprising a helical spring with a plurality of coils that bias the retractable air delivery tube to an unextended length that does not exceed 1 m in length, the retractable air delivery tube being extensible by about 40-100% of the unextended length, having an internal diameter between 10 mm and 20 mm, having a weight per unit length of 100 g/m or less and bowing outwardly between the coils of the helical spring;

a swivel elbow assembly connecting the patient interface to the retractable air delivery tube; and

headgear connected to the patient interface and configured to support the patient interface on the patient's head, the headgear being limited to a pair of side portions that are connectable to the patient interface and a rear portion connecting the side portions and being configured to engage a rear side of the patient's head.

### EVIDENCE

Name	Reference	Date
Hammerton-Fraser	US 4,316,458	Feb. 23, 1982
Corces et al. ("Corces")	US 5,156,146	Oct. 20, 1992

Drew et al. (“Drew”)	US 2004/0112385 A1	June 17, 2004
Edirisuriya et al. (Edirisuriya”)	US 2004/0239001 A1	Dec. 2, 2004
Ragner et al. (“Ragner”)	US 6,948,527 B2	Sept. 27, 2005
Davidowski et al. (“Davidowski”)	US 2006/0144399 A1	July 6, 2006
Walker et al. (“Walker”)	US 2006/0231100 A1	Oct. 19, 2006
Moulton et al. (“Moulton”)	US 7,156,127 B2	Jan. 2, 2007
Sherman	US 2008/0072909 A1	Mar. 27, 2008
Berthon-Jones	US 2008/0099023 A1	May 1, 2008

### REJECTIONS

Claims 45 and 46 are rejected under pre-AIA 35 U.S.C. § 112, second paragraph, as being indefinite.

Claims 21–23, 26–29, 31, 33–35, 38–41, 43, 45, and 46 are rejected under pre-AIA 35 U.S.C. § 103(a) as unpatentable over Sherman, Moulton, Walker, Berthon-Jones, Hammerton-Fraser, Ragner, and Drew.

Claims 24, 32, 36, and 44 are rejected under 35 U.S.C. § 103(a) as unpatentable over Sherman, Moulton, Walker, Berthon-Jones, Hammerton-Fraser, Ragner, Drew, and Edirisuriya.

Claims 25 and 37 are rejected under 35 U.S.C. § 103(a) as unpatentable over Sherman, Moulton, Walker, Berthon-Jones, Hammerton-Fraser, Ragner, Drew, and Corces.

Claims 30 and 42 are rejected under 35 U.S.C. § 103(a) as unpatentable over Sherman, Moulton, Walker, Berthon-Jones, Hammerton-Fraser, Ragner, Drew, and Davidowski.

## ANALYSIS

### *The rejection of claims 45 and 46 as being indefinite*

The Examiner finds that these two dependent claims “recite ‘the extended length,’ which lacks proper antecedent basis.” Final Act. 5. Indeed, parent claim 21 (claim 45) recites “an unextended length” while parent claim 33 (claim 46) recites “a neutral length.” There is no indication that Appellant disputes this rejection. *See Briefs generally*. We sustain the Examiner’s rejection of claims 45 and 46 as being indefinite.

### *The rejection of claims 21–23, 26–29, 31, 33–35, 38–41, 43, 45, and 46 as unpatentable over Sherman, Moulton, Walker, Berthon-Jones, Hammerton-Fraser, Ragner, and Drew*

Appellant presents arguments for independent claim 21 (*see* Appeal Br. 8–17) separate from arguments presented with respect to independent claim 33 (*see* Appeal Br. 17–25). However, these arguments are essentially duplicative of each other (*compare* Appeal Br. 8–17 with Appeal Br. 17–25) and thus we address claims 21 and 33 together. Appellant also presents separate arguments for claims 22 and 34, which are argued together. *See* Appeal Br. 25–26. Appellant presents no separate arguments for the remaining claims. Accordingly, we select independent claim 21 and dependent claim 22 for review, with the remaining claims (i.e., claims 23, 26–29, 31, 33–35, 38–41, 43, 45, and 46) standing or falling with their respectively grouped claim. *See* 37 C.F.R. § 41.37(c)(1)(iv).

### Claim 21

Before addressing claim 21, the Examiner notes that this claim includes the limitation “the headgear being *limited to* a pair of side portions that are connectable to the patient interface and a rear portion connecting the

side portions.” Final Act. 4 (emphasis added). The Examiner interprets this “limited to” language as “headgear [that] only includes a pair of side portions and a rear portion as claimed and excludes any other headgear structure.” Final Act. 5.

On this point, the Examiner finds that the primary reference to Sherman discloses “headgear [24] being limited to a pair of side portions” as recited. Final Act. 7 (referencing Sherman Fig. 1); *see also* Ans. 19. Appellant disagrees stating that “it is not necessary for the headgear of Sherman to be [so] limited . . . to achieve the function of supporting the patient interface on the patient’s face.” Appeal Br. 9. However, the same can be said of Appellant’s device because Appellant’s Specification clearly discusses multiple means of performing the function of supporting a patient interface on a patient’s face. For example, compare Appellant’s Figures 1–4 (disclosing a strap having side and rear portions that encircle a patient’s head) with Fig. 10 (disclosing ear straps). Appellant also discusses prior headgear that “includes a cap portion with four straps,” but Appellant contends that this cap/four-strap assembly “may be uncomfortable . . . and difficult to adjust.” Spec. 6.

Thus, Appellant discloses multiple ways to support a patient interface on a patient’s face. However, consistent with the Examiner’s claim interpretation, we understand Appellant has elected to claim less than what Appellant may be entitled to claim by specifically only reciting headgear having “a pair of side portions . . . and a rear portion connecting the side portions and being configured to engage a rear side of the patient’s head.”

Appellant further contends that Sherman’s “Fig. 1 only shows one side of the headgear and the mask” and that the user’s head and mask “block

the view of the other side of the mask and headgear.” Reply Br. 2. Thus, Appellant surmises that “the headgear on the other side of the face may merely loop around the user’s left ear instead of connecting to the rear portion.” Reply Br. 2. In other words, because Sherman’s Figure 1 fails to fully illustrate the strap completely encircling the patient’s head (the left side is not shown), Appellant contends that Sherman fails to disclose this limitation.

We disagree with Appellant’s assessment which implies that a skilled person has very limited imagination and can only rely upon that which is overtly disclosed. The Supreme Court has instructed otherwise stating that a skilled person is “a person of ordinary creativity, not an automaton.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007). Thus, in view of Figure 1 of Sherman, we are not persuaded the Examiner erred in relying on this reference for teaching, or suggesting, the limitation of the headgear having “a pair of side portions . . . and a rear portion connecting the side portions and being configured to engage a rear side of the patient’s head.”

Appellant next contends the Examiner relied on improper hindsight to reject claim 21. *See* Appeal Br. 10 (“one of ordinary skill would not have been able to achieve the specific combination of air delivery tube features recited in claim 21 without a preexisting knowledge of the specific combination”). Appellant notes the Examiner’s reliance on seven references, describing it as an “unnatural combination of references,” but does not challenge any of the reasons provided by the Examiner for the

combination of the references with Sherman.<sup>2</sup> Appeal Br. 10. Thus, Appellant’s “hindsight” contention lacks merit because Appellant does not identify error by the Examiner, only that the Examiner employed references from “disparate industries.”<sup>3</sup> Appeal Br. 10.

Appellant next challenges the Examiner’s reliance on Walker specifically. *See* Appeal Br. 11–13; Reply Br. 5–6. Walker was relied upon by the Examiner for teaching “a respiratory tube having a length that does not exceed 1 m (para 43).”<sup>4</sup> Final Act. 7. Appellant further identifies the four reasons expressed by the Examiner for combining Walker’s teachings of air hose length with Sherman’s device (i.e., “accommodate a smaller user,” “avoid extra slack,” “avoid entanglement,” and “ensure that the respirator is close to the user for easier access”).<sup>5</sup> *See* Appeal Br. 11; *see also* Reply Br. 3, 5. Appellant acknowledges that “[t]he Examiner’s first three rationales . . . are based on the teachings of Walker,” but that the last one is not. Appeal Br. 12. Despite acknowledging the four independent

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<sup>2</sup> We are instructed that it “is not the number of references, but what they would have meant to a person of ordinary skill in the field of the invention.” *In re Gorman*, 933 F.2d 982, 986 (Fed. Cir. 1991).

<sup>3</sup> Appellant further specifically states that their “remarks in the Appeal Brief are not concerned with whether or not Moulton, Walker, Hammerton-Fraser, and Ragner are non-analogous” art. Reply Br. 3.

<sup>4</sup> Appellant urged the Examiner to rely on the teachings of Berthon-Jones for tube length (*see* Appeal Br. 11, 12), but “[t]he Examiner chooses to ignore the [longer] ‘length’ teaching of Berthon-Jones and rely on Walker” for tube length instead. Reply Br. 3; *see also* Final Act. 7.

<sup>5</sup> Appellant states that with respect to a CPAP system, “it is desired that the air delivery tube dangles away from the user’s body so that the air delivery tube can be connected to the flow generator.” Reply Br. 4. Appellant does not explain how Walker’s shorter length would fail to accomplish the same, just with less “dangle.”



rationales, Appellant challenges only two of them. *See* Appeal Br. 12–13. For example, Appellant states, “a longer air delivery tube does not prevent a respirator from being close to the user” and “the actions described by Walker that lead to entanglement likely do not occur when a user is asleep.” Appeal Br. 13. Even assuming, *arguendo*, that Appellant’s concerns are reasonable, Appellant remains silent as to the remaining two reasons the Examiner expressed, and does not explain how or why these other two reasons to combine with Sherman are faulty. Hence, we are not persuaded the Examiner erred in relying on Walker for teaching a tube “having a length that does not exceed 1 m” (Final Act. 7) or that the Examiner erred in combining such teachings with the device of Sherman.<sup>6</sup>

Appellant further addresses the Examiner’s reliance on Moulton. *See* Appeal Br. 13–15; Reply Br. 7–8. The Examiner relied on Moulton for teaching “a retractable tube with a helical wire 22 and plastic tubing (Col. 4, ll. 21–24) that is extensible by 100% of its unextended length (Claim 1).” Final Act. 7. Appellant does not dispute Moulton’s teachings or the ability of Moulton’s tube to extend “about two to about six times greater than the length in said retracted position.” Moulton 6:23–25 (claim 1). Instead, Appellant addresses Moulton’s expandability, stating “[s]uch issues are irrelevant to the CPAP patient interface of Sherman.” Appeal Br. 14. In other words, as per Appellant, “[a] CPAP system user does not have to worry about moving the CPAP apparatus or extending its reach during a therapy session,” and as such “the ‘stretch hose’ teaching of Moulton does

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<sup>6</sup> Appellant further states, “Walker does not teach that ‘an unextended length that does not exceed 1 meter’ decreases slack.” Reply Br. 5. Appellant does not explain how a shorter length fails to decrease slack.

not apply to the CPAP system of Sherman.” Appeal Br. 14; *see also* Reply Br. 7 (“the length of a CPAP air delivery tube need only span the length from the user’s face to the flow generator”). Appellant also discusses, for the first time via the Reply Brief, a desire for a CPAP device to be compact, which “can be achieved by wrapping the air delivery tube.” Reply Br. 8.

In the matter before us, claim 21 recites the specific limitation of a “retractable air delivery tube being extensible by about 40–100% of the unextended length.” Paragraph 77 of Appellant’s Specification discusses a stretch ratio “in a range of about 1:1–1:4” allowing the tube “to expand from about 0% – 400%.” Appellant’s Specification indicates that these requirements are so that “movement of the patient without breaking the seal of the mask is maximized.” Spec. ¶ 77. Hence, Appellant is addressing the problem of providing patient mobility without breaking the patient’s seal. In view of this, Appellant does not explain how Moulton’s tube, which exceeds the stretch ratio set forth in Appellant’s Specification (i.e., Moulton has a stretch ratio of about 1:6), as well as also being “convenient to store” and of “flexible construction” (Moulton 3:50–58), would not be of interest to a skilled person when addressing these issues. *See* Ans. 22 (“Moulton is at least reasonably pertinent to the problem sought to be solved by Appellant”), 23 (“providing extensibility of 100% provides the added benefit of allowing for more storage convenience”). Indeed, Moulton explicitly teaches a “Stretch Hose.” Moulton, Title. We thus are not persuaded by Appellant (*see, e.g.*, Reply Br. 7, 8, 10) that the Examiner erred in relying upon Moulton for teaching such an expandable/retractable tube.<sup>7</sup>

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<sup>7</sup> Appellant also addresses the teachings of Walker and Ragner in the Appeal Brief (*see* Appeal Br. 15–16), but neither reference was relied on by the

Appellant does not address the further teachings of Hammerton-Fraser, Ragner, and Drew or otherwise explain how the Examiner's reliance thereon was faulty. Appellant only addresses the further teachings of Berthon-Jones by comparing same to the teachings of Walker regarding the limitation discussed above of an air delivery tube whose unextended length "does not exceed 1 m in length." *See* Appeal Br. 11, 12. Appellant's comparison is not indicative that the Examiner erred when the Examiner elected to rely on Walker's length teachings instead. *See* Final Act. 7. Accordingly, and based on the record presented, we are not persuaded the Examiner erred in relying on Sherman, Moulton, Walker, Berthon-Jones, Hammerton-Fraser, Ragner, and Drew in rejecting claim 21. We sustain the Examiner's rejection of claims 21, 23, 26–29, 31, 33, 35, 38–41, 43, 45, and 46 in view thereof.

#### Claim 22

Claim 22 depends directly from claim 21 and recites a certain level of "bendability of the retracted air delivery tube." The Examiner acknowledges that "modified Sherman does not explicitly recite" this disclosure but that, in view of both Moulton (extendibility) and Hammerton-Fraser (low density plastic), it would have been obvious to modify Sherman's bendable and retractable tube with a bendability of the retractable air delivery tube" as recited. Final Act. 9–10. The Examiner further states "that the modified Sherman[] current tube would perform equally as well . . . to prevent a large downward pulling force on the user's mask and head." Final Act. 10; *see also* Hammerton-Fraser 2:60–64 (addressing a desire to "reduce the loading

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Examiner for disclosing a tube with helical coils that expands/retracts as claimed.

at the interface member and thereby minimize the discomfort of the patient”); Ans. 25. Appellant does not challenge this finding by the Examiner, and instead contrasts the recited limitation with “the degree of bending [of] other air delivery tubes in the art.” Appeal Br. 16, 26 (both referencing Spec. ¶¶ 80–83). Based on Appellant’s comparison with “other air delivery tubes in the art” (Appeal Br. 16, 26), Appellant contends that “the combination of features recited in claim 22 achieves an unexpected result.” Appeal Br. 17; *see also* Ans. 26 (“the claimed ‘bendability’ is an unexpected result and would not have been obvious over the prior art”).

Paragraphs 80–83 of Appellant’s Specification provide tables of comparison between Appellant’s “TPU/ABS” tube (Spec. ¶ 81) and “ResMed’s Swift™ tube and Sleepnet’s IQ®” as well as “Respironic’s Optilife™ short tube.” Spec. ¶ 83. Appellant states that the claimed tube is “highly bendable and this is readily apparent by comparison with the tubes of prior art masks.” Spec. ¶ 80. First, it is noted that only Appellant’s TPU/ABS tube is identified as being “retractable” and thus it is not known if the other tubes in the comparison are equally retractable. Second, Table 2 relied on by Appellant only addresses tubes whose stretch ratio is at most half of Moulton’s disclosed stretch ratio of 1:6. *See* Moulton 6:23–25 (claim 1). As a consequence, since Moulton clearly addresses bendability and flexibility (*see* Moulton 3:56–58, “the hose readily bends due to its flexible construction”), Appellant is not persuasive the Examiner was in error when

stating that “the modified Sherman[] current tube would perform equally as well.”<sup>8,9</sup> Final Act. 10.

Accordingly, and based on the record presented, we are not persuaded the Examiner erred in rejecting claims 22 and 34 as being obvious in view of Sherman, Moulton, Walker, Berthon-Jones, Hammerton-Fraser, Ragner, and Drew. We thus sustain the rejection of claims 22 and 34.

*The rejection of claims 24, 32, 36, and 44 as unpatentable over Sherman, Moulton, Walker, Berthon-Jones, Hammerton-Fraser, Ragner, Drew, and Edirisuriya*

Each of these dependent claims additionally recite “a cuff” at the end of the tube with this “cuff being configured to connect to a humidifier or a flow generator.” The Examiner relies on Edirisuriya for this additional teaching. Final Act. 16, 20. There appears to be some confusion on Appellant’s part because Appellant does not address claims 24 and 36, but instead seems only to address claims 32 and 44. *See* Appeal Br. 25 (addressing “**claims 22, 32, 34 and 44**”). Further compounding the confusion, when addressing claims 32 and 44, Appellant does not address this additional reference to Edirisuriya, but instead focuses on the

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<sup>8</sup> *See In re Best*, 562 F.2d 1252, 1255 (CCPA 1977) (“Whether the rejection is based on ‘inherency’ under 35 U.S.C. § 102, on ‘prima facie obviousness’ under 35 U.S.C. § 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO’s inability to manufacture products or to obtain and compare prior art products”).

<sup>9</sup> Claim 22 recites a criteria whereby a weight “is attached to a free end of the [cantilevered] unsupported portion” of the tube. This weight is such that “the retractable air delivery tube bends at least 78 degrees from a longitudinal axis of the supported end.” However, if the cantilevered tube is vertically aligned and suspended from above, it is not clear how any bending measured “from a longitudinal axis of the supported end” would ensue.

“bendability” of the claims as discussed above with respect to claim 22. As noted, Appellant’s position regarding “bendability” is not persuasive of Examiner error. Further, lacking any explanation from Appellant as to why the Examiner’s additional reliance on Edirisuriya might be improper (*see* Appeal Br. 25–26), we are not persuaded the Examiner erred when rejecting claims 24, 32, 36, and 44 as unpatentable over Sherman, Moulton, Walker, Berthon-Jones, Hammerton-Fraser, Ragner, Drew, and Edirisuriya.

*The rejection of (a) claims 25 and 37 as unpatentable over Sherman, Moulton, Walker, Berthon-Jones, Hammerton-Fraser, Ragner, Drew, and Corces, and (b) claims 30 and 42 as unpatentable over Sherman, Moulton, Walker, Berthon-Jones, Hammerton-Fraser, Ragner, Drew, and Davidowski*

Appellant presents no arguments for any of claims 25, 30, 37, or 42 in view of the additionally recited references to Corces and Davidowski. We thus sustain the Examiner’s rejections of these claims.

## CONCLUSION

In summary:

<b>Claims Rejected</b>	<b>35 U.S.C. §</b>	<b>Reference(s)/Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
45, 46	112, second paragraph	Indefinite	45, 46	
21–23, 26– 29, 31, 33– 35, 38–41, 43, 45, 46	103(a)	Sherman, Moulton, Walker, Berthon- Jones, Hammerton- Fraser, Ragner, Drew	21–23, 26– 29, 31, 33– 35, 38–41, 43, 45, 46	
24, 32, 36, 44	103(a)	Sherman, Moulton, Walker, Berthon- Jones, Hammerton- Fraser, Ragner, Drew, Edirisuriya	24, 32, 36, 44	

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25, 37		Sherman, Moulton, Walker, Berthon- Jones, Hammerton- Fraser, Ragner, Drew, Corces	25, 37	
30, 42		Sherman, Moulton, Walker, Berthon- Jones, Hammerton- Fraser, Ragner, Drew, Davidowski	30, 42	
<b>Overall Outcome</b>			21-46	

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED