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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JOANNE ELIZABETH DREW,
ALEXANDER VIRR, and GEOFFREY CRUMBLIN

Appeal 2018-000966
Application 13/975,601
Technology Center 3700

Before MICHELLE R. OSINSKI, ERIC C. JESCHKE, and
PAUL J. KORNICZKY, *Administrative Patent Judges*.

KORNICZKY, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE[1]

Pursuant to 35 U.S.C. § 134(a), Appellant[2] appeals from the Examiner's decision, as set forth in the Final Office Action, rejecting claims 15, 16, 21–23, 25–30, and 32–41.[3] We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

THE CLAIMED SUBJECT MATTER

The application is directed to "a respiratory mask and a vent for a respiratory mask." Spec. 1:5–6. Claims 15 and 38 are the independent claims on appeal. Claim 15 is reproduced below:

> 15. A respiratory mask for delivery of a flow of breathable gas at a continuously positive pressure with respect to atmospheric pressure to an entrance to a patient's airways, wherein the respiratory mask is configured to maintain a therapy pressure in a range of about 3 cmH_2O to about 20 cmH_2O above atmospheric pressure in use, throughout a patient's respiratory cycle, while the patient is sleeping, to ameliorate sleep disordered breathing, the respiratory mask comprising:
>
> a shell forming an inner cavity and including a breathable gas inlet adapted to connect to a breathable gas supply conduit;
>
> a seal provided to the shell and adapted to interface with a patient's nose and/or mouth; and

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[1] In this Decision, we refer to (1) the Examiner's Final Office Action dated December 29, 2016 ("Final Act."), and Answer dated September 8, 2017 ("Ans."), and (2) Appellant's Appeal Brief dated June 20, 2017 ("Appeal Br."), and Reply Brief dated November 7, 2017 ("Reply Br.").

[2] 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.

[3] Claims 1–14, 17–20, 24, and 31 are cancelled. Appeal Br. 22–25 (Claims App.).

> a gas washout vent including a thin air permeable material provided to the shell, wherein the thin air permeable material is constructed and arranged to extend across an opening provided to the shell and allow an airflow therethrough to allow washout of exhaled gas from the inner cavity to atmosphere while allowing a therapy pressure to be maintained within the inner cavity,
>
> wherein the thin air permeable material includes a thickness that is less than a thickness of the shell, and
>
> wherein the shell includes an exterior surface and said opening is provided through said exterior surface, and the thin air permeable material includes an exterior surface extending across said opening of the shell, and the exterior surface of the thin air permeable material includes a curvature along its length across said opening that substantially corresponds to a curvature of the exterior surface of the shell.

REFERENCES

In rejecting the claims on appeal, the Examiner relied upon the following prior art:

Roy	US 4,601,465	July 22, 1986
Tanny	US 5,126,189	June 30, 1992
Landis	US 5,687,715	Nov. 18, 1997
Metzger	US 5,732,695	Mar. 31, 1998
Kwok	WO 98/34665	Aug. 13, 1998
Hurst	US 5,836,303	Nov. 17, 1998
Popitz	US 5,857,460	Jan. 12, 1999
Kanno	US 6,309,438 B1	Oct. 30, 2001
Wood	US 6,478,026 B1	Nov. 12, 2002
Dunhao	US 6,694,973 B1	Feb. 24, 2004

REJECTIONS

The Examiner made the following rejections:

1. Claim 25 stands rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement.[4]

2. Claims 15, 25–29, 33, 35, and 40 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kwok and Roy.

3. Claims 21, 23, and 41 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kwok, Roy, and Tanny.

4. Claims 16, 22, and 30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kwok, Roy, and Kanno.

5. Claim 32 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kwok, Roy, and Dunhao.

6. Claim 34 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kwok, Roy, and Hurst.

7. Claim 36 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kwok, Roy, and Metzger.

8. Claim 37 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kwok, Roy, Metzger, and Wood.

9. Claim 38 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kwok and Kanno.

10. Claim 39 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kwok, Roy, and Landis.

11. Claims 15, 25–29, 32, 33, 35, and 40 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kwok, Roy, and Popitz.

[4] The rejection of claim 39 is withdrawn. Ans. 75.

12. Claims 21, 23, and 41 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kwok, Roy, Popitz, and Tanny.

13. Claims 16, 22, and 30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kwok, Roy, Popitz, and Kanno.

14. Claim 34 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kwok, Roy, Popitz, and Hurst.

15. Claim 36 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kwok, Roy, Popitz, and Metzger.

16. Claim 37 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kwok, Roy, Popitz, Metzger, and Wood.

17. Claim 38 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kwok, Kanno, and Popitz.

18. Claim 39 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kwok, Roy, Popitz, and Landis.

19. Claims 15, 25–29, 32, 33, 35, and 40 stand rejected on the ground of nonstatutory double patenting as being unpatentable over claim 42 of U.S. Patent 8,528,558 in view of Roy, Kwok, and Popitz.

Appellant seeks our review of these rejections.

DISCUSSION

Rejection 1: Claim 25 as Failing to Comply with the Written Description Requirement

Claim 25 recites a respiratory mask "wherein the gas washout vent includes two thin air permeable materials, each one of the two thin air permeable materials provided to a respective side of the shell." The Examiner finds that this limitation "appears to introduce new matter not

found in the disclosure as originally filed" because the "embodiment which includes the two thin air permeable material vents located on the shell is shown in Fig. 6–7[,] which does not appear to show the vent/thin air permeable material having an exterior surface with a curvature to substantially match the curvature of the exterior surface of the shell." Final Act. 3.

Whether a specification complies with the written description requirement of 35 U.S.C. § 112, first paragraph, is a question of fact and is assessed on a case-by-case basis. *See, e.g.*, *Purdue Pharma L.P. v. Faulding, Inc.*, 230 F.3d 1320, 1323 (Fed. Cir. 2000) (citing *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1561 (Fed. Cir. 1991)). The disclosure, as originally filed, need not literally describe the claimed subject matter (i.e., using the same terms or *in haec verba*) in order to satisfy the written description requirement. *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1352 (Fed. Cir. 2010) (en banc) (stating that the written description requirement "does not demand any particular form of disclosure or that the specification recite the claimed invention *in haec verba*" (internal citations omitted)). But the Specification must convey with reasonable clarity to those skilled in the art that, as of the filing date, Appellant was in possession of the claimed invention. *See id*.

Appellant argues that the Examiner's rejection is erroneous because

> Exemplary support for [claim 25] is provided by Fig. 6 showing two thin air permeable materials provided to a respective side of the shell. In addition, page 7, lines 1–5; page 7, line 23 to page 8, line 2; and page 9, lines 28–33 of the [S]pecification, for example, clearly discuss combining aspects of different examples to devise other arrangements, e.g., curved air permeable materials provided to a respective side of the shell.

Appeal Br. 20. We agree that these portions of the Specification show that Appellant was in possession of the subject matter recited in claim 25. Figures 1–2, for example, illustrate that the curvature of the exterior surface of the thin air permeable material 28 corresponds to the curvature of the exterior surface of the shell 12. The Specification states that its "various vent arrangements can be used with various mask arrangements" (Spec. 7:1–5), and "like reference numerals [in Fig. 6] have been used to indicate like features" in Fig. 2 (Spec. 7:25–26 (compare membranes 28 and shells 12)). Thus, the rejection of claim 25 is not sustained.

Rejections 2–10: Claims 15, 16, 21–23, 25–30, and 32–41

In Rejections 2–10, the Examiner relies on Kwok to teach or suggest "the exterior surface of the thin air permeable material includes a curvature along its length across said opening that substantially corresponds to a curvature of the exterior surface of the shell" as recited in independent claims 15 and 38. Final Act. 5–6 (claim 15), 14–15 (claim 38). The Examiner's annotated Figure 8 of Kwok is reproduced below.

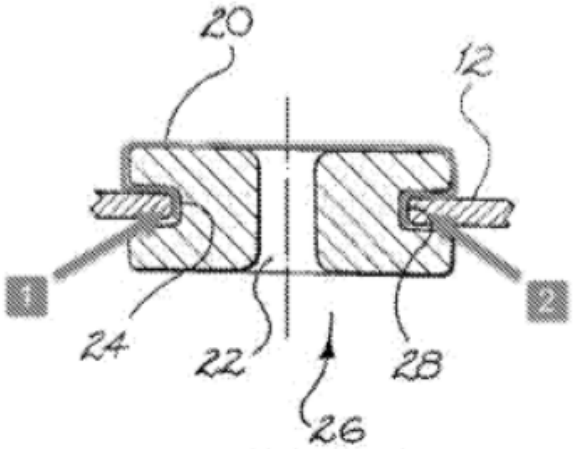

FIG. 8

Ans. 76. According to the Examiner, annotated Figure 8, a cross-sectional view of the material 20, illustrates the "exterior surface" of thin air permeable material 20, which starts at locations 1 and ends at location 2, and thus extends across an opening defined in shell 12. *Id.* The Examiner finds a curvature exists at locations 1 and 2, and thus, both the "exterior surface" of thin air permeable material 20 and shell 12 includes a curvature. *Id.*

Appellant argues that the Examiner's finding is erroneous because locations 1 and 2 of annotated Figure 8 are the boundary edges, not the exterior surfaces, of permeable material 20 and shell 12. Reply Br. 2–3. We agree. Locations 1 and 2 of shell 12 are merely the edge of an opening in shell 12. Figure 8 illustrates that (1) shell 12 has a flat surface, and does not have a curvature, and (2) material 20 has a flat surface that corresponds to the flat surface of shell 12. Kwok does not teach or suggest "the exterior surface of the thin air permeable material includes a curvature along its length across said opening that substantially corresponds to a curvature of the exterior surface of the shell" as recited in independent claims 15 and 38. The Examiner does not find that the other prior art (Roy, Tanny, Kanno, Dunhao, Hurst, Metzger, Wood, Landis) cited in Rejections 2–10 remedy the deficiencies of Kwok. Thus, Rejections 2–10 are not sustained.

Rejections 11–16 and 18: Claims 15, 16, 21–23, 25–30, 32–37, and 39–41

In the alternative rejections in Rejections 11–18, the Examiner construes "curvature" to mean that the exterior surface of the shell has, for example, a convex curvature. Final Act. 16. A plain meaning of "curvature" is "the state of being curved." Merriam-Webster.com, https://www.merriam-webster.com/dictionary/curvature (last visited

September 20, 2019). The Specification does not use the terms "curvature" or "curved."

Claim 15

In Rejection 11, the Examiner relies on Popitz to teach or suggest "the exterior surface of the thin air permeable material includes a curvature along its length across said opening that substantially corresponds to a curvature of the exterior surface of the shell" as recited in claim 15. Final Act. 18. The Examiner finds that

> Popitz teaches a respiratory mask which includes an exterior surface which is convexly curved and also includes a thin air permeable material which includes an exterior surface that is curved to substantially match the curvature of the shell (see Popitz Fig. 1 which shows the exterior surface of the mask shell being convexly curved as well as thin air permeable material 40 also having convex curvature which substantially corresponds to the shell curvature).

Id. The Examiner reasons it would have been obvious to one of ordinary skill in the art to modify "Kwok device's shell exterior surface to be convexly curved and the exterior surface of the thin air permeable material to also be convexly curved, as taught by Popitz" because "this is a well-known shape for a respiratory mask which provides ample interior space for a patient's breathing passages and does not provide sharp edges to the device." *Id*.

Appellant argues that the Examiner's rejection is erroneous for several reasons. First, Appellant argues that Roy and Popitz are non-analogous art and cannot be applied in an obviousness rejection. Appeal Br. 16. To be suitable for use in an obviousness rejection, a reference must be within an

analogous art as the claimed invention. *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004). The test for determining whether a reference is in an analogous art is a two-part, alternative test that requires a showing that: (1) the reference is from the same field of endeavor as the claimed invention (even if it addresses a different problem); or (2) the reference is reasonably pertinent to the problem faced by the inventor (even if it is not in the same field of endeavor as the claimed invention). *Id.* As to the first prong, the "test for analogous art requires the PTO to determine the appropriate field of endeavor by reference to explanations of the invention's subject matter in the patent application, including the embodiments, function, and structure of the claimed invention." *Id.*

> Here, Appellant argues that independent claim 15 is directed to
>
> a respiratory mask for delivery of a flow of breathable gas at a continuously positive pressure with respect to atmospheric pressure to an entrance to a patient's airways, wherein the respiratory mask is configured to maintain a therapy pressure in a range of about 3 cmH_2O to about 20 cmH_2O above atmospheric pressure in use, throughout a patient's respiratory cycle, while the patient is sleeping, to ameliorate sleep disordered breathing.

Appeal Br. 16–17. According to Appellant, Roy is directed to "a device for stimulating the human respiratory system by making breathing more difficult and limiting lung ventilation and does not include any disclosure related to a respiratory mask for ameliorating sleep disordered breathing." *Id*. at 10 (underlining omitted). According to Appellant, Popitz is directed to "an oxygen mask including a gas sensor structured to sense the presence or absence of a selected respired gas and does not include any disclosure related to a respiratory mask providing appropriate seals and therapy pressures for ameliorating sleep disordered breathing." *Id*. at 17. Appellant

concludes that Roy and Popitz are from different fields of endeavor and fail the first prong of the test for analogous art. *Id*. at 10, 17.

In response to Appellant's argument, the Examiner asserts that Appellant uses "an overly narrow definition of the field of endeavor of the instant invention." Ans. 76. We agree. Appellant attempts to use limitations from claim 15 to narrow the field of the endeavor. However, according to the "Field of the Invention" of Appellant's Specification, the "present invention relates to a respiratory mask and a vent for a respiratory mask." Spec. 1:4–6. We agree with the Examiner that, like the Specification,

> Roy is also directed towards a respiratory device, more particularly a respiratory mask type of device (see Fig. 3 and 7 of Roy for example) with an air permeable element (air permeable vent 17, Roy Fig. 3 for example). Although Roy and the instant application address different issues (sleep apnea in the instant application and respiratory system stimulation in the Roy reference)[,] they both are analogous in that they belong to the respiratory arts, more particularly respiratory mask devices with air permeable elements.

Ans. 78–79. We also agree with the Examiner that, like the Specification,

> Popitz is also directed towards a respiratory device, more particularly a respiratory mask type of device (see Fig. 1) with an air permeable element (air permeable element 40, Popitz Fig. 1, col. 4 ln. 27-30 for example). Although Popitz and the instant application address different issues (sleep apnea in the instant application and respiratory gas sensing mask in the Popitz reference)[,] they both are analogous in that they belong to the respiratory arts, more particularly respiratory mask devices with air permeable elements.

Ans. 85. Appellant's arguments that the Specification, Roy, and Popitz are not in the same field of endeavor are not persuasive.

Second, Appellant argues that there is no reason or motivation to combine Kwok and Roy. Appeal Br. 16. The Examiner reasons that it would have been obvious to one of ordinary skill in the art "to modify the Kwok device's vent material to be thinner than the thickness of the mask shell, as taught by Roy, in order to provide a lightweight vent material which would provide a lighter device overall (via lesser thickness/material than that of the mask shell)." Final Act. 17.

Appellant argues that there is no reason or motivation to combine Kwok and Roy because

> Kwok discloses a vent insert constructed of a flexible elastomeric material that allows the vent insert to be squeezed through an opening in the shell before resiliently expanding to engage the rim bounding the opening in the shell in the fashion of a grommet (e.g., see Fig. 8 of Kwok). Accordingly, there is no reason or motivation to modify Kwok to include a vent having a thickness that is less than a thickness of the shell as such modification may adversely affect noted benefits of Kwok's vent, e.g., easy installation, retention, reduction of noise.

Appeal Br. 11. Appellant also argues that "modifying the vent material to be thinner than the thickness of the mask shell does not necessarily provide a lighter device overall, e.g., thicker mask shell may in fact provide a heavier device overall." *Id*. at 12.

Appellant's arguments are not persuasive. The Examiner's rationale that a person of ordinary skill in the art would have desired a lighter vent material and mask has rational underpinnings. Appellant's arguments are conclusory and do not provide a persuasive explanation why a thinner vent material would adversely affect Kwok's "easy installation, retention, reduction of noise" or would require a "thicker mask shell."

Third, Appellant argues that there is no reason or motivation to combine Kwok and Popitz. Appeal Br. 18. The Examiner reasons that it would have been obvious to one of ordinary skill in the art

> to modify the modified Kwok device's shell exterior surface to be convexly curved and the exterior surface of the thin air permeable material to also be convexly curved, as taught by Popitz, as this is a well-known shape for a respiratory mask which provides ample interior space for a patient's breathing passages and does not provide sharp edges to the device.

Final Act. 18.

Appellant presents three arguments that there is no reason or motivation to combine the teachings of Kwok and Popitz:

(1) Because "the alleged air permeable material at [40] of Popitz is a gas sensor element structured to detect and visually indicate (e.g., by changing colors) the presence or absence of a selected respired gas," "there is no reason or motivation to modify Kwok's vent in view of a gas sensor element" (Appeal Br. 18);

(2) "[T]he mask 20 of Popitz includes ventilation apertures 28 for gas washout (e.g., see col. 5, lines 25–30), which further exemplifies that there is no reason or motivation to look to Popitz's gas sensor to modify Kwok's gas washout vent" (*id.*); and

(3) Because "the alleged air permeable material [40] of Popitz comprises a housing (top portion [40A] and a body portion [40B]) for housing appropriate indicators, a suitable sealing gasket between the air permeable material [40] and the mask [20], and baffles [44] for directing flow (e.g., see Fig. 3)," "modification of Kwok in view of Popitz would alter the structure and retention mechanism of Kwok's vent, and there is no reason or motivation for such modification which may adversely affect

noted benefits of Kwok's vent, e.g., easy installation, retention, reduction of noise" (*id*. at 19).

Appellant's arguments are not persuasive. Arguments 1 and 2 do not address the Examiner's proposal to modify the shape of Kwok's flat shell and vent to have Popitz's convex curvature so that there is more space for the patient's face and breathing passages. Contrary to argument 3, the Examiner proposes using Popitz's convex curvature, not substituting Popitz's material 40, housing, gaskets, and baffles. Because Appellant does not address the rejection as articulated by the Examiner, Appellant does not identify Examiner error.

For the reasons above, the rejection of claim 15 is sustained.

Claims 16, 21–23, 25–30, 32–37, and 39–41

For the reasons discussed above, the rejection of claim 15 is sustained. Because Appellant does not address the rejections of claims 16, 21–23, 25–30, 32–37, and 39–41, which depend from claim 15, the rejections of these claims are summarily sustained.

Rejection 17: Claim 38
as Unpatentable Over Kwok, Kanno, and Popitz

The Examiner finds that the combined teachings of Kwok, Kanno, and Popitz disclose the limitations in claim 38. Final Act. 25–27.

Appellant argues that the Examiner's rejection is erroneous for several reasons. Appeal Br. 19. First, Appellant argues that Kanno is nonanalogous art and cannot be applied in an obviousness rejection of the present claims. *Id*. According to Appellant, independent claim 38 is directed to

> a respiratory mask for delivery of a flow of breathable gas at a continuously positive pressure with respect to atmospheric pressure to an entrance to a patient's airways, wherein the respiratory mask is configured to maintain a therapy pressure in a range of about 3 cmH_2O to about 20 cmH_2O above atmospheric pressure in use, throughout a patient's respiratory cycle, while the patient is sleeping, to ameliorate sleep disordered breathing.

Id. at 13–14. In contrast to claim 38, Appellant argues that because Kanno is directed to "a filter unit for dust-proof and gas-proof masks structured to improve dust collection efficiency and does not include any disclosure related to a respiratory mask for ameliorating sleep disordered breathing," "Kanno is from a different field of endeavor and fails the first prong of the test for analogous art." *Id*. at 14.

In response to Appellant's argument, the Examiner asserts that Appellant uses "an overly narrow definition of the field of endeavor of the instant invention." Ans. 82. We agree. Appellant attempts to use limitations from claim 38 to narrow the field of the endeavor. However, according to the "Field of the Invention" of Appellant's Specification, the "present invention relates to a respiratory mask and a vent for a respiratory mask." Spec. 1:4–6. We agree with the Examiner that, like the Specification,

> Kanno is also directed towards a respiratory device, more particularly a respiratory mask type of device (see Kanno col. 2 ln. 4-9) with an air permeable element (air permeable element: Kanno col. 1 ln. 60 through col. 2 ln. 3, col. 3 ln. 7–12 for example). Although Kanno and the instant application address different issues (sleep apnea in the instant application and filter masks in the Kanno reference)[,] they both are analogous in that they belong to the respiratory arts, more particularly respiratory mask devices with air permeable elements. One of ordinary

> skill in the art, when looking to modify a respiratory mask such as Kwok, would not have been limited to masks for delivery of flow to maintain pressure in a range of about 3 cm H_2O to about 20 cm H_2O above atmosphere throughout the patient's respiratory cycle, while the patient is sleeping to ameliorate sleep disordered breathing, but rather one would have reasonably looked to references relating to breathing masks with air permeable elements, such as the Kanno reference.

Ans. 82. Appellant's arguments are not persuasive.

Second, Appellant argues that "there is no evidence on the record supporting the Examiner's conclusion that it would be obvious to modify Kwok in view of Kanno." Appeal Br. 19. Turning first to the Examiner's findings and reasoning, the Examiner finds that "Kanno teaches an air permeable material for use in respiratory masks which includes a thickness of less than 0.5 mm and hole diameter of less than 0.2 mm." Final Act. 26 (citing Kanno, 3:7–12 (thickness of 0.1 to 20 microns which is less than 0.5 mm, hole diameter of 0.1 to 0.5 microns which is less than 0.2 mm)). The Examiner reasons that it would have been obvious to one of ordinary skill in the art

> to modify the Kwok device by replacing the vent material with the expanded PTFE vent material, as taught by Kanno and thus having hole diameters less than 0.2 mm and thickness less than 0.5 mm, in order to provide a lightweight vent material which would provide a lighter device overall (via lesser thickness/material than that of the mask shell).

Id.

Appellant presents three reasons to support its argument that there is no reason or motivation to combine the teachings of Kwok and Kanno:

(1) Because "Kwok discloses a vent insert constructed of a flexible elastomeric material that allows the vent insert to be squeezed through an

opening in the shell before resiliently expanding to engage the rim bounding the opening in the shell in the fashion of a grommet (e.g., see Fig. 8 of Kwok)," "there is no reason or motivation to modify Kwok to include a vent having a thickness less than 0.5 mm and each of the holes having a diameter less than 0.2 mm as such modification may adversely affect noted benefits of Kwok's vent, e.g., easy installation, retention, reduction of noise" (Appeal Br. 14–15);

(2) Because "the alleged air permeable material of Kanno comprises a filter material that must be folded into pleats to maximize dust collection (see col. 4, lines 26–33) and requires a reinforcing material or a filter cartridge and corresponding filter holder (col. 4, lines 5–23) to hold the filter material in position," "modification of Kwok in view of Kanno would alter the structure and retention mechanism of Kwok's vent, and there is no reason or motivation for such modification" (*id*. at 15); and

(3) "[M]odifying the vent material to be thinner than the thickness of the mask shell does not necessarily provide a lighter device overall, e.g., thicker mask shell may in fact provide a heavier device overall" (*id*.).

Appellant's arguments are not persuasive. Appellant does not explain persuasively why the Examiner's proposal to use Kanno's membrane thickness and hole size would adversely affect Kwok's "easy installation, retention, reduction of noise" or require a "thicker mask shell." Similarly, the Examiner's proposal uses Kanno's membrane thickness and hole size, not Kanno's folded pleat configuration. Because Appellant does not address the rejection as articulated by the Examiner, Appellant does not identify Examiner error.

Finally, Appellant argues that, for the same reasons discussed above in connection with claim 15, Popitz is not analogous art and cannot be applied in an obviousness rejection of the present claims, and there is no reason or motivation to combine Kwok and Popitz. Appeal Br. 19. As discussed above in connection with claim 15, Appellant's arguments are not persuasive.

For the above reasons, the rejection of claim 38 is sustained.

Rejection 19: Claims 15, 25–29, 32, 33, 35, and 40

The Examiner rejects claims 15, 25–29, 32, 33, 35, and 40 on the ground of nonstatutory double patenting as being unpatentable over claim 42 of U.S. Patent 8,528,558 in view of Roy, Kwok, and Popitz. Appellant only argues that "[e]ach of the double patenting rejections of independent claims 15 and 38 rely on Roy, Kwok, Popitz and/or Kanno and should be withdrawn for at least reasons noted above with respect to Roy, Kwok, Popitz and/or Kanno." Appeal Br. 20. As discussed above, the rejections of the claims in Rejections 11–18 are sustained. Likewise, the rejection of claims 15, 25–29, 32, 33, 35, and 40 on the basis of double patenting is sustained.

CONCLUSION

In summary:

Claims Rejected	Basis (35 U.S.C.)	Affirmed	Reversed
25	§112, first paragraph		25
15, 25–29, 33, 35, 40	§103(a) Kwok, Roy		15, 25–29, 33, 35, 40
21, 23, 41	§103(a) Kwok, Roy, Tanny		21, 23, 41
16, 22, 30	§103(a) Kwok, Roy, Kanno		16, 22, 30
32	§103(a) Kwok, Roy, Dunhao		32
34	§103(a) Kwok, Roy, Hurst		34
36	§103(a) Kwok, Roy, Metzger		36
37	§103(a) Kwok, Roy, Metzger, Wood		37
38	§103(a) Kwok, Kanno		38
39	§103(a) Kwok, Roy, Landis		39
15, 25–29, 32, 33, 35, 40	§103(a) Kwok, Roy, Popitz	15, 25–29, 32, 33, 35, 40	
21, 23, 41	§103(a) Kwok, Roy, Popitz, Tanny	21, 23, 41	
16, 22, 30	§103(a) Kwok, Roy, Popitz, Kanno	16, 22, 30	
34	§103(a) Kwok, Roy, Popitz, Hurst	34	
36	§103(a) Kwok, Roy, Popitz, Metzger	36	
37	§103(a) Kwok, Roy, Popitz, Metzger, Wood	37	
38	§103(a) Kwok, Kanno, Popitz	38	
39	§103(a) Kwok, Roy, Popitz, Landis	39	
15, 25–29, 32–33, 35, 40	Nonstatutory double patenting as being unpatentable over claim 42 of U.S. Patent 8,528,558, Roy, Kwok, Popitz	15, 25–29, 32–33, 35, 40	
Overall Outcome		15, 16, 21–23, 25–30, and 32–41	

For the above reasons, we AFFIRM the Examiner's rejections of claims 15, 16, 21–23, 25–30, and 32–41 under 35 U.S.C. § 103.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED