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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte MARK MAGIDSON and CREST TURDJIAN

Appeal 2020-000905
Application 13/999,345
Technology Center 3700

Before MICHAEL C. ASTORINO, KENNETH G. SCHOPFER, and
BRADLEY B. BAYAT, *Administrative Patent Judges*.

SCHOPFER, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1–24. We have jurisdiction under 35 U.S.C. § 6(b). A hearing was held on September 11, 2020.

We REVERSE.

¹ 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 Moldex-Metric, Inc. Appeal Br. 2.

BACKGROUND

The Specification discloses that “[t]he present invention relates to a pleated filtering face piece respirator and in particular to a pleated filtering face piece respirator formed from a plurality of layers and with the individual layers serving different functions.” Spec. 1.

CLAIMS

Claims 1 and 17 are the independent claims on appeal and recite:

1. A method of making a flexible pleated filtering face piece respirator to be worn on the face of a wearer, having an overall structure of continuous, adjacent and unopposed pleats to allow the face piece to expand and contract to any facial movement, and for providing filtering including the following steps,

providing at least one layer of flexible plastic material formed from openwork flexible plastic material that provides support and for providing a plurality of perforations for allowing for the free passage of air through the openwork plastic,

providing a layer of filter material for filtering impurities in the air,

positioning the at least one layer of flexible plastic material formed from openwork flexible plastic material and the layer of filter material for filtering impurities in the air to lie one on top of the other to form a multilayer of flexible plastic material and filter material where the flexible plastic material provides support for the filter material,

providing a pleater for pleating sheet material into pleated material having an overall structure of continuous, adjacent and unopposed pleats,

moving the multilayer of flexible plastic material and filter material to the pleater,

pleating the multilayer of flexible plastic material and filter material to form a pleated composite layer of flexible plastic material and filter material having an overall structure of continuous, adjacent and unopposed pleats,

providing male and female molding members having a mold configuration conforming generally to the contours of the face of the wearer,

moving the pleated composite layer of flexible plastic material and filter material, between the male and female molding members, and

pressing the male and female molding members together to form the pleated filtering face piece respirator to the desired configuration by molding the at least one layer of openwork flexible plastic material to form a support layer to carry the layer of filter material and having an overall structure of continuous, adjacent and unopposed pleats to allow the face piece to expand and contract to any facial movement.

17. A flexible pleated molded filtering face piece respirator to be worn upon the face of a wearer having an overall structure of continuous, adjacent and unopposed pleats to allow the face piece to expand and contract to any facial movement and for providing filtering including,

at least one layer of moldable flexible plastic material formed from openwork flexible plastic material that provides support and for providing a plurality of perforations for allowing for the free passage of air through the openwork plastic,

a layer of moldable filter material for filtering impurities in the air,

the at least one layer of flexible plastic material formed from openwork flexible plastic material and the layer of filter material for filtering impurities in the air lying one on top of the other to form a moldable multilayer of flexible plastic material and filter material where the flexible plastic material provides support for the filter material, and

wherein the moldable multilayer of flexible plastic material and filter material are pleated into pleated material and molded to form the pleated filtering face piece respirator to a desired configuration wherein the at least one layer of openwork flexible plastic material forms a support layer to carry the layer of filter material and having an overall structure of continuous,

adjacent and unopposed pleats to allow the face piece to expand and contract to any facial movement.

Appeal Br., Claims App. 1–2, 4–5.

REJECTIONS

1. The Examiner rejects claims 1–3, 7–10, and 14–16 under 35 U.S.C. § 103(a) as unpatentable over Turdjian² in view of Gebrewold,³ Kern,⁴ Rocklitz,⁵ and Reese.⁶
2. The Examiner rejects claims 4–6 and 11–13 under 35 U.S.C. § 103(a) as unpatentable over Turdjian in view of Gebrewold, Kern, Rocklitz, Reese, Westwood,⁷ and Braun.⁸
3. The Examiner rejects claims 17, 18, 23, and 24 under 35 U.S.C. § 103(a) as unpatentable over Turdjian in view of Gebrewold and Reese.
4. The Examiner rejects claim 19 under 35 U.S.C. § 103(a) as unpatentable over Turdjian in view of Gebrewold, Reese, and Kern.
5. The Examiner rejects claims 20–22 under 35 U.S.C. § 103(a) as unpatentable over Turdjian in view of Gebrewold, Reese, Kern, Westwood, and Braun.

DISCUSSION

We are persuaded by Appellant’s argument that the Examiner has not established that the proposed combinations of art would result in a method

² Turdjian, US 2006/0266364 A1, pub. Nov. 30, 2006.

³ Gebrewold et al., US 2009/0078265 A1, pub. Mar. 26, 2009.

⁴ Kern et al., US 5,701,893, iss. Dec. 30, 1997.

⁵ Rocklitz, US 2010/0078379 A1, pub. Apr. 1, 2010.

⁶ Reese et al., US 5,553,608, iss. Sept. 10, 1996.

⁷ Westwood, US 2011/0123775 A1, pub. May 26, 2011.

⁸ Braun et al., US 5,763,078, iss. June 9, 1998.

or apparatus in which a multilayer of flexible plastic material and filter material are pleated so as to form a structure with continuous, adjacent, and unopposed pleats.

In rejecting each of independent claims 1 and 17, the Examiner relies on a combination of Turdjian and Gebrewold to result in a mask with a pleated multilayer flexible plastic support and filtering structure. *See* Final Act. 3, 5–6. For example, with respect to claim 17, the Examiner finds that Turdjian teaches a molded filtering face piece respirator with a layer of moldable flexible openwork plastic and a layer of moldable filtering material, wherein the layer of plastic and layer of filtering material lie together to form a moldable multilayer. *Id.* at 3. The Examiner acknowledges that Turdjian does not teach that the moldable multilayer material is pleated. *Id.* The Examiner then finds and determines:

Gebrewold teaches in fig. 4 pleating (58) a multiplayer (51a, 51b, 52). It would have been obvious to one of ordinary skill in the art at the time the invention was made to manufacture the multilayers of Turdjian with at least one pleat as taught by Gebrewold to aide in accommodating wearer movements as disclosed by Gebrewold in [0002] lines 1-5.

Id.

Appellant argues that the combination does not disclose or suggest a pleated plastic material that forms a support layer for carrying the filter material. Appeal Br. 13. In support, Appellant asserts that Turdjian does not teach any pleated support plastic layer and to the extent that Gebrewold teaches a respirator with pleated material, the pleated material is separate from Gebrewold's disclosed support structure. *Id.* at 15.

We agree with Appellant. Specifically, we find that the Examiner has not adequately explained how a person of ordinary skill in the art would

have arrived at the claimed structure of a combined plastic support and filtering layer that is pleated based on the relied upon evidence and without the benefit of impermissible hindsight. We agree with Appellant that Gebrewold discloses a separate and distinct support structure from the pleated filtering structure. *See* Appeal Br. 16. Specifically, Gebrewold discloses a respirator that is the combination of two separate parts: a filtering layer as shown in Figure 4 and a support structure as shown in Figure 5. Gebrewold discloses that prior art masks use an open-work plastic mesh to support a filtration layer and that such prior art masks “were lacking in an ability to dynamically respond to wearer jaw movement.” Gebrewold ¶ 11. To overcome this deficiency, Gebrewold discloses a mask that includes a support structure with “first and second transversely-extending members and a filtering structure that includes a pleat that is capable of expanding when first and second transversely-extending members of the support structure move away from each other.” *Id.* Gebrewold provides for movement of the support structure by constructing it using a “living hinge” where moveable transversely extending support members meet. *Id.* ¶ 59. Further, Gebrewold explicitly discloses that “[t]he support structure is a part or assembly that is not integral to (or made from) the filtering structure.” *Id.* ¶ 61.

Based on this disclosure, Gebrewold clearly distinguishes the support structure from the pleated filtering structure and discloses that those structures are not connected. *See also* Appeal Br. 16. One of ordinary skill would understand that Gebrewold’s support structure does not include a pleat and instead includes a hinge to accommodate facial movement. Further, the Examiner has not cited to any further disclosure in Gebrewold that teaches or suggests that the support structure might include a pleat.

Thus, given that Gebrewold specifically distinguishes prior art masks with an open-work plastic used in conjunction with a filtering layer and provides for separate support and filtering structures to overcome the deficiencies of such prior art masks, we agree with Appellant that the Examiner has not established that the proposed combination would result in an apparatus including a pleated moldable multilayer of flexible plastic material as required by claim 17.

In response to Appellant's argument related to the above, the "Examiner notes that the cover webs [of Gebrewold] helps [sic] keep the filter material 52[]encased and are thus supportive." Ans. 10. The Examiner, however, does not explain adequately why one of ordinary skill in the art would have recognized that Gebrewold's cover webs intended "to capture any fibers that could come loose" (Gebrewold ¶ 59) provide the support required by claims 1 and 17. And we fail to see why one of ordinary skill in the art would have recognized that benefit from Gebrewold's cover webs given Gebrewold's clear teaching of separate support and filtering structures and Gebrewold's comparison between such a support structure and the use of open-work plastic material for support in prior art masks.

Based on the foregoing and because the Examiner does not rely on any additional evidence or further reasoning that would cure the deficiency discussed above, we do not sustain the rejections of independent claims 1 and 17. We also do not sustain the rejections of the dependent claims for the same reasons because the Examiner does not rely on any of the other cited references to remedy the deficiency in Gebrewold.

CONCLUSION

We REVERSE the rejections of claims 1–24.

In summary:

Claims Rejected	35 U.S.C. §	Basis	Affirmed	Reversed
1-3, 7-10, 14-16	103(a)	Turdjian, Gebrewold, Kern, Rocklitz, Reese		1-3, 7-10, 14-16
4-6, 11-13	103(a)	Turdjian, Gebrewold, Kern, Rocklitz, Reese, Westwood, Braun		4-6, 11-13
17, 18, 23, 24	103(a)	Turdjian, Gebrewold, Reese		17, 18, 23, 24
19	103(a)	Turdjian, Gebrewold, Reese, Kern		19
20-22	103(a)	Turdjian, Gebrewold, Reese, Kern, Westwood, Braun		20-22
Overall Outcome				1-24

REVERSED