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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JONATHAN TAYLOR WIEGELE

Appeal 2019-001609
Application 14/132,134
Technology Center 1700

Before CATHERINE Q. TIMM, ROMULO H. DELMENDO, and LINDA M. GAUDETTE, *Administrative Patent Judges.*

GAUDETTE, *Administrative Patent Judge.*

DECISION ON APPEAL[1]

The Appellant[2] appeals under 35 U.S.C. § 134(a) from the Examiner's decision finally rejecting claims 1–11, 13–18, 20–23, and 25–34.[3]

We AFFIRM IN PART.

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[1] This Decision includes citations to the following documents: Specification filed Dec. 18, 2013 ("Spec."); Final Office Action dated Feb. 1, 2018 ("Final"); Appeal Brief filed July 2, 2018 ("Appeal Br."); Examiner's Answer dated Oct. 16, 2018 ("Ans."); and Reply Brief filed Dec. 17, 2018 ("Reply Br.").

[2] We use the word "Appellant" to refer to the "applicant" as defined in 37 C.F.R. § 1.42(a). The Appellant identifies the real party in interest as Brita LP. Appeal Br. 4.

[3] We have jurisdiction under 35 U.S.C. § 6(b).

CLAIMED SUBJECT MATTER

The claims are directed to a method and an apparatus for reservoir free and ventless water filtering. Claim 1, reproduced below from the Claims Appendix to the Appeal Brief, is illustrative of the claimed subject matter:

1. A filter structure, comprising:

a first hydrophilic protective layer comprising a first surface exposable to an incoming stream of water, wherein said first surface comprises a contact area configured to receive said stream, wherein said first hydrophilic protective layer is configured to receive said incoming stream of water at said first surface and to distribute water out a second surface of said first hydrophilic protective layer primarily using gravity;

an activated carbon felt (ACF) layer in contact throughout with said second surface of said first hydrophilic protective layer, wherein said ACF layer is configured for water filtration primarily using gravity;

a second hydrophilic protective layer comprising a first surface in contact throughout with said ACF layer configured for receiving filtered water from said ACF layer and to distribute water out a second surface for passing said filtered water primarily using gravity;

wherein said first hydrophilic protective layer and said second hydrophilic protective layer distribute the water out to expand an outgoing water footprint relative to an incoming water footprint;

wherein a cross section of said first hydrophilic protective layer, said ACF layer, and said second hydrophilic protective layer is generally U-shaped and configured such that throughout said generally U-shaped said cross section, including the portion of the cross section where the contact area is located, said ACF layer has a substantially uniform thickness and is coextensive with said first hydrophilic protective layer and said second hydrophilic protective layer.

REFERENCES

The Examiner relies on the following prior art as evidence of unpatentability:

Name	Reference	Date
Shimazaki	US 4,696,742	Sep. 29, 1987
Pouli	EP 0402661 B1	Apr. 21, 1993
Olson	US 2011/0079572 A1	Apr. 7, 2011
Lin	US 2013/0319927 A1	Dec. 5, 2013

REJECTIONS

1. Claims 2 and 3 are rejected under 35 U.S.C. § 112(a) as failing to comply with the written description requirement.

2. Claims 1–11, 13–18, 20–23, and 30–32 are rejected under 35 U.S.C. § 112(b) as indefinite.

3. Claims 1, 4–6, 10, and 30–32 are rejected under 35 U.S.C. § 103 as unpatentable over Lin in view of Shimazaki.

4. Claims 7–9 are rejected under 35 U.S.C. § 103 as unpatentable over Lin, in view of Shimazaki and Olson

5. Claims 2, 3, 11, 13–18, 20–29, and 33 are rejected under 35 U.S.C. § 103 as unpatentable over Lin, in view of Shimazaki and Pouli.

6. Claim 34 is rejected under 35 U.S.C. § 103 as unpatentable over Lin, in view of Shimazaki, Pouli, and Olson.

We note that the Appellant also addresses the objections to claims 10 and 31. Appeal Br. 13; *see* Final 6. We do not address these arguments because objections to the claims are not subject to appeal. *See* 37 C.F.R. § 41.31(c) (2011).

OPINION

Rejection under 35 U.S.C. § 112(a)

The Examiner rejected claim 2 and its dependent claim 3 under 35 U.S.C. § 112(a) as failing to comply with the written description requirement. Final 6–7; *see* Ans. 3 (withdrawing the rejection of claims 13–18, 20–23, and 30 under 35 USC § 112(a)). Claim 2 depends from claim 1 and recites "wherein at least one of said first and second hydrophilic protective layer[s] comprises a cellulose based nonwoven layer formed from long fibers that are bonded together by at least one of a chemical process, a mechanical process, a heat process, or a solvent process." Appeal Br. 42 (Claims Appendix). The Examiner contends that the Specification provides support for only a first hydrophilic layer having the recited properties. Ans. 7 (citing Spec. ¶ 22).

The Appellant argues that the Specification provides support for both layers having the recited properties, directing us to Specification paragraph 26: "The filter structure 110A also includes a second hydrophilic protective layer 130, which is similar in design, structure, and configuration as the first protective layer 110."

> The test for determining compliance with the written description requirement is whether the disclosure of the application as originally filed reasonably conveys to the artisan that the inventor had possession at that time of the later claimed subject matter, rather than the presence or absence of literal support in the specification for the claim language.

In re Kaslow, 707 F.2d 1366, 1375 (Fed. Cir. 1983) (citations omitted).

Given the following disclosure in the original written description and claims, we are persuaded that one of ordinary skill in the art would have understood that the inventor was in possession of a second hydrophilic layer

comprising "a cellulose based nonwoven layer formed from long fibers that are bonded together by at least one of a chemical process, a mechanical process, a heat process, or a solvent process": "the protective layer 110 is made from long fibers that may be bonded together by chemical, mechanical, heat or solvent processes. For instance, the nonwoven layer 110 may comprise a fabric. In one embodiment, the protective layer 110 comprises a cellulose based nonwoven layer" (Spec. ¶ 22); "In one embodiment, the cellulose based nonwoven layer 110 comprises rayon" (*id.* ¶ 23); "The filter structure 110A also includes a second hydrophilic protective layer 130, which is similar in design, structure, and configuration as the first protective layer 110" (*id.* ¶ 26); "In one embodiment, the protective layer 130 comprises a cellulose based nonwoven layer. In still another embodiment, the cellulose based nonwoven layer comprises rayon" (*id.*). *See also* Original claims 2, 3, 27, 28 (filed Dec. 18, 2013).

Accordingly, we do not sustain the rejection of claims 2 and 3 under 35 U.S.C. § 112(a).

Rejection under 35 U.S.C. § 112(b)

The Examiner rejected claims 1–11, 13–18, 20–23, and 30–32 under 35 U.S.C. § 112(b) as indefinite. A claim is indefinite under 35 U.S.C. § 112 when it contains words or phrases whose meaning is unclear. *In re Packard*, 751 F.3d 1307, 1311 (Fed. Cir. 2014) ("Indefiniteness, as a subset of claim construction, is a question of law . . . .").

Claims 10 and 22

The Examiner rejected claims 10 and 22 as indefinite due to insufficient antecedent basis for the terms "second hydrophilic protective" and "first cellulose based nonwoven layer," respectively. Final 8. On June

28, 2018, after filing a Notice of Appeal, but prior to filing the Appeal Brief, the Appellant filed amendments to claims 10 and 22 to provide proper antecedent basis for the above-quoted claim terms. Amendment After Appeal 6, 9, 16. The Appellant apparently presumes that these amendments were entered. *See* Appeal Br. 16; *id.* at 43, 45–46 (Claims Appendix). However, we find no indication in the record that the June 28, 2018 amendments to claims 10 and 22 were entered. *See, e.g.*, Ans. 3 (wherein the Examiner does not identify the rejection of claims 10 and 22 under 35 U.S.C. § 112(b) as having been withdrawn), 5 (noting that the June 28, 2018 amendments to claims 10 and 31, *if entered*, would overcome the objections to these claims). Accordingly, we review the appeal of claims 10 and 22 based on the claim language in the last-entered amendment, i.e., the amendment entered on November 28, 2017 (*see* Final 2). Because the Appellant does not contend that the Examiner reversibly erred in rejecting claims 10 and 22 (as amended on November 28, 2017) as indefinite, we sustain the rejection as to these claims.

Claims 1 and 32

The Examiner contends that claim 1 is rendered indefinite by the phrases "an activated carbon felt (ACF) layer in contact throughout with said second surface of said first hydrophilic protective layer" and "a second hydrophilic protective layer comprising a first surface in contact throughout with said ACF layer." Final 8. Similarly, the Examiner contends that claim 32, which depends indirectly from claim 1, is rendered indefinite by the phrase "said first hydrophilic protective layer and said second hydrophilic protective layer are in contact and sandwich said ACF layer throughout." *Id.* More specifically, the Examiner asserts that it is unclear what portions of the

ACF or the second hydrophilic protective layer are in contact with the other layers. *Id.* In the Answer, the Examiner explains further that the Specification describes Figure 1B as illustrating a cross section of shaped filter structure 100B that is larger than the cross section shown in Figure 1A, but fails to indicate that this is the entire cross section of a filter. Ans. 7.

The Appellant contends that the meanings of the argued claim 1 and claim 32 phrases is clear from Specification paragraph 28 and Figures 1A and 1B, which describe and illustrate the ACF layer as being in contact with the entireties of the first and second hydrophilic protective layers. Appeal Br. 17. The Appellant also notes that Webster's Third New International Dictionary defines "throughout" as "in or to every part of" or "from one end to the other." *Id.*

We are persuaded that the meanings of the argued claim 1 and claim 32 phrases would be clear to one of ordinary skill in the art, particularly given claim 1's requirement that "said ACF layer . . . is *coextensive* with said first hydrophilic protective layer and said second hydrophilic protective layer" (emphasis added).

Accordingly, we do not sustain the rejection of claims 1 and 32, or of dependent claims 2–9, 11, and 31.

Claim 30

The Examiner determines that claim 30 is rendered indefinite by the following phrase: "a flow rate of a continuously flowing stream of water out of said multi-layer filtration material is substantially not reduced relative to a flow rate into said multi-layer filtration material." Final 8; *see* Appeal Br. 49, Claims Appendix (Claim 30 penultimate wherein clause). The Examiner asserts that

> [a] water flow rate upon initial contact with the first water contact surface of the first hydrophilic layer and up to an unspecified time will not be the same as the zero flow rate leaving the fourth surface of the second hydrophilic layer due to residence time of the water in the filtration material in order for filtration to occur.

Id. In the Answer, the Examiner explains further that

> [u]pon starting filtration, a single continuously flowing stream enters the filter medium wherein it is retained over the residence time in order for filtration to occur. During this time no stream of liquid flows out of the filter medium. Similarly, when liquid is no longer being fed into the filter medium as a single continuously flowing stream, liquid still flows out of the filter medium as a single continuously flowing stream due to liquid still present in the filter medium.

Ans. 8.

The Appellant contends that the ordinary artisan would understand the argued claim 30 phrase as meaning that "the flow rate of water out of the multi-layer filtration material will be substantially not reduced relative to a flow rate of a **continuously flowing stream** of water flowing into the multi-layer filtration material." Appeal Br. 18. The Appellant directs us to Specification paragraph 30 which discloses that "[e]mbodiments of the present invention disclose a filter structure 100B that ensures that there is no pooling of water at the bottom head portion 160, and thus no reduction in the flow rate." *See* Appeal Br. 18.

The Appellant has argued persuasively that the meaning of the argued claim 30 phrase would be clear to one of ordinary skill in the art. The Examiner's indefiniteness rejection fails to take into account Specification paragraph 30's explicit disclosure that water is not retained in the filter medium and, therefore, the filter medium is capable of functioning in the

manner recited in claim 30's penultimate "wherein" clause. *Compare* Ans. 8 ("a single continuously flowing stream enters the filter medium wherein it is retained over the residence time in order for filtration to occur"), *with* Spec. ¶ 30 ("filter structure 100B . . . ensures that there is no pooling of water at the bottom head portion 160, and thus no reduction in the flow rate").

Accordingly, we do not sustain the indefiniteness rejection of claim 30 and its dependent claims 13–18, 20, 21, and 23.

Rejections under 35 U.S.C. § 103

Claims 1 and 30

The Examiner rejected independent claims 1 and 30 under 35 U.S.C. § 103 as unpatentable over Lin in view of Shimazaki. The Examiner found that Lin discloses a filter structure comprising first and second protective layers and an activated carbon layer therebetween. Final 9–11. The Examiner found that Lin's filter structure is configured to function in the manner recited in claims 1 and 30, but acknowledges that Lin does not describe the first and second protective layers as *hydrophilic* layers and does not describe the activated carbon layer as an activated carbon felt (ACF) layer. *Id.* at 9–12. The Examiner found that Shimazaki discloses a filter structure comprising a hydrophilic layer in contact throughout with an ACF layer. *Id.* at 12–13. The Examiner determined that one of ordinary skill in the art would have utilized an ACF layer with hydrophilic protective layers in Lin's filter structure based on Shimazaki's disclosures that ACF has a higher absorption rate and produces less fine powders than activated carbon, and these properties result from the combination of the hydrophilic layer on the ACF layer. Final 13.

The Appellant argues that Lin's activated carbon material 216 is located in only a lower portion of the space (i.e., water filtering space 2151) formed between first and second filter units 214, 215 (the alleged first and second protective layers). Appeal Br. 22. The Appellant thus contends that the Examiner erred reversibly in finding that Lin discloses "a second hydrophilic protective layer comprising a first surface in contact throughout with" an activated carbon layer as recited in claim 1. *Id.* at 21.

In response, the Examiner contends that Lin Figure 2B "reveals the filter material 216 not only reside[s] . . . in the bottom of filter bag 21 . . . , but fills the ***entire*** space 2151 including the side portions." Ans. 10. We agree with the Appellant, however, that Lin Figure 2B does not clearly depict, or otherwise describe, a surface of second filter unit 215 in contact throughout with filter material 216. *See* Reply Br. 13–15. To the contrary, Lin Figures 2A, 3, and 4C "clearly illustrate[] that the filter material 216 is not near an opening 211 of the filter bag 21 but only near a water outlet 212 of the filter bag 21." Reply Br. 15.

Because the Appellant has argued persuasively that the Examiner's obviousness determination as to claim 1 is based on an unsupported finding of fact, we do not sustain the Section 103 rejections of claim 1 and its dependent claims 2–11, 31, and 32.

As to claim 30, the Examiner found that Shimazaki discloses the "ability to shape ACF to maintain curvature." Final 13 (citing Shimazaki 5:68–6:2; Figs. 3–6). The Examiner determines, therefore, that the combination of Lin and Shimazaki would have resulted in a filter having an ACF layer having "a bend modulus" that "maintains the formed curvature of [the] multi-layer filtration material" as recited in claim 30. *Id.*

The Appellant argues that Shimazaki discloses that ACF may be packed in a vessel, but does not teach or suggest an ACF having a particular bend modulus that would maintain its formed curvature if removed from the vessel, or maintain the formed curvature of a multi-layer filtration material containing a layer of the ACF. *See* Appeal Br. 32; Reply Br. 23 ("Claim 30 recites the bend modulus of the ACF layer maintaining a formed curvature and not simply that the ACF member layer may [be] curved."); Spec. ¶ 34 ("[T]he ACF layer 120 is made of a material having a bending modulus that is sufficient to enable the ACF layer 120 to hold its shape. In particular, the bending modulus is of a sufficient value, such that the ACF material is stiff enough to hold its shape after reaching its final configuration."); Original claim 10 ("The on-demand filter structure of Claim 1, wherein a structural combination of said first hydrophilic protective layer, said ACF layer, and said second hydrophilic protective [layer] is characterized with a bending modulus that is of sufficient value such that said structural combination three-layer filtration materiel maintains said curvature.").

The Appellant has argued persuasively that the disclosure in Shimazaki relied-upon by the Examiner does not support a finding that Shimazaki discloses or suggests an ACF layer having "a bend modulus" that "maintains the formed curvature of [the] multi-layer filtration material" as recited in claim 30. *See, e.g.*, Shimazaki 2:61–63 (describing Figures 3–6 as "showing different packings of the ACF element used for the filter adsorption unit"), 5:63–67 (describing the unit as "composed of an ACF-containing vessel 1 . . . packed with ACF 4 holded by holding plates 3*a* and *b*"), 6:34–38 (describing the unit as composed of an ACF-containing vessel

1 having . . . packed therein ACF(1) 4 and ACF(2) 5 held therein by holding plates 3*a* and 3*b*"), 5:68–6:2 ("ACF of this invention can be packed in the vessel in various forms as shown in FIG. 3 to FIG. 6.").

Because the Appellant has argued persuasively that the Examiner's obviousness determination as to claim 30 is based on an unsupported finding of fact, we do not sustain the Section 103 rejections of claim 30 and its dependent claims 13–18 and 20–23.

Claim 25

The Examiner rejected claim 25 under 35 U.S.C. § 103 as unpatentable over Lin, in view of Shimazaki and Pouli. The Appellant contends that the Examiner erred reversibly in finding that a continuously flowing stream of water into Lin's filter would result in a second footprint when exiting the first protective layer's second surface that is larger than a first footprint that results when the flowing stream of water enters the first protective layer's first surface as required by claim 25. Appeal Br. 34–35. As to this limitation, the Examiner found that the curvature of Lin's filter necessarily would result in a second footprint that is larger than the first footprint created by a stream flowing through Lin's first filter unit 214. Final 22 (citing Lin Figures 2A, 2b, ¶¶ 30, 32, 34).

The Appellant directs us to Specification paragraph 30 which discloses the following:

> In one embodiment, the first protective layer 110 is configured to facilitate an expanded distribution of the water 150 out an exit area 119 of the second surface 115. That is, the first protective layer 110 acts as a distributor network for the incoming water 150. In part, this is due to the hydrophilic nature of the protective layer 110. *For example, the hydrophilic nature of the cellulose based material (e.g., rayon) used in the*

> *protective layer 110 helps to distribute water.* That is, as the water passes through the first protective layer 115 the two-dimensional surface area of the exit area or footprint 119 is larger than the entry footprint or contact area 117.

Spec. ¶ 30 (emphasis added); *see* Appeal Br. 34–35. The Appellant argues that Lin's filter units are not made from a hydrophilic material and, therefore, the Examiner has not identified sufficient evidence to support a finding that Lin's method would result a larger footprint when exiting the first filtering unit. Appeal Br. 35.

In response, the Examiner reiterates that "the curved geometry of the filter layers disclosed by Lin in Figures 2A and 2B necessarily result in larger surface areas, i.e., 'footprints,' on the outer versus inner surfaces." Ans. 18.[4] The Examiner asserts that "Appellant has not offered any reason why this geometric axiom is conclusory." *Id.* (emphasis omitted).

Based on the Specification's disclosure that the hydrophilic nature of the protective layer material distributes the water in a manner that creates an exit footprint that is larger than the entry footprint (Spec. ¶ 30), we are not convinced that the Examiner's position is based on a geometric axiom. We determine, therefore, that the Examiner has improperly shifted the burden of proof to the Appellant. *Cf. In re Robertson*, 169 F.3d 743, 745 (Fed. Cir. 1999) (explaining that inherency may not be established by probabilities or possibilities).

Because the Appellant has argued persuasively that the Examiner's obviousness determination as to claim 25 is based on an unsupported finding

[4] We note that the Examiner has not made, and the Appellant has not presented arguments to refute, a finding that Lin, if modified to include Shimazaki's filtration materials, would have resulted in this feature.

of fact, we do not sustain the Section 103 rejections of claim 25 and its dependent claims 26–29, 33, and 34.

CONCLUSION

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
2, 3	112(a)	Written description		2, 3
1–11, 13–18, 20–23, 30–32	112(b)	Indefiniteness	10, 22	1–9, 11, 13–18, 20, 21, 23, 30–32
1, 4–6, 10, 30–32	103	Lin, Shimazaki		1, 4–6, 10, 30–32
7–9	103	Lin, Shimazaki, Olson		7–9
2, 3, 11, 13–18, 20–29, 33	103	Lin, Shimazaki, Pouli		2, 3, 11, 13–18, 20–29, 33
34	103	Lin, Shimazaki, Pouli, Olson		34
Overall Outcome			10, 22	1–9, 11, 13–18, 20, 21, 23, 25–34

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

AFFIRMED IN PART