UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOHN A. SIMONETTI,
and IRINA VINAROV

Appeal 2008-4663
Application 10/947,280
Technology Center 1700

Decided: October 31, 2008

Before EDWARD C. KIMLIN, CATHERINE Q. TIMM, and KAREN M. HASTINGS, *Administrative Patent Judges*.

TIMM, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's decision rejecting claims 26-38. We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

I. BACKGROUND

The invention relates to a hydrophilic semipermeable membrane including a blend of poly(vinylidene fluoride)("PVDF") and hydroxyalkylcellulose. (Spec. ¶ 23). Claim 26 is illustrative of the subject matter on appeal:

26. A filter for ultrafiltration, comprising:

a semipermeable membrane comprising a blend of a mixture of PVDF and hydroxyalkylcellulose and comprising a feed surface and a permeate surface;

wherein the membrane is hydrophilic.

The Examiner relies on the following prior art references to show unpatentability:

Knothe et al.	US 4,219,422	Aug. 26, 1980
Sims	US 4,735,717	Apr. 5, 1988
Stengaard	US 5,019,261	May 28, 1991

The Examiner maintains the following rejections:

1. Claims 26-29, and 31 rejected under 35 U.S.C. § 102(b) as anticipated by Stengaard;

2. Claim 38 rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Stengaard;

3. Claims 30, and 33-37 rejected under 35 U.S.C. § 103(a) as obvious over Stengaard in view of Sims; and

4. Claim 32 rejected under 35 U.S.C. § 103(a) as obvious over Stengaard in view of Knothe et al. ("Knothe").

II. DISCUSSION

With respect to the rejection of the sole independent claim, claim 26, Appellants and the Examiner both agree and rely upon the definition of the term "blend" provided in Appellants' Specification, i.e., "a mixture of two or more polymers." (App. Br. 3; Ans. 6; *see* Spec. ¶ 28). Appellants, however, argue that Stengaard fails to teach a "blend," or mixture, as thus defined. (App. Br. 4). The Examiner responds that "[s]ince Stengaard's PVDF hydrophilic membrane comprises hydroxycellulose throughout the inner member pore surfaces, the membrane is clearly a mixture of the two polymers." (Ans. 6).

The issue on appeal arising from the contentions of Appellants and the Examiner is: has the Examiner reversibly erred in finding that the term "blend" in claim 26 reads on the teachings of Stengaard? We answer this question in the affirmative.

The evidence of record supports the following Findings of Fact (FF):

1. Appellants' Specification states that "[t]he term blend means a mixture of two or more polymers." (Spec. ¶ 28).

2. Stengaard teaches that "a hydrophilic 'surface layer' is formed, said surface layer being either chemically or physically bound to the membrane material" such that "membranes with hydrophilic character may be provided on the basis of existing ultrafiltration and microfiltration membranes." (Stengaard, col. 3, ll. 38-47).

3. Stengaard teaches that "[t]he basic membrane is preferably prepared of polyvinylidene fluoride." (Stengaard, col. 8, ll. 3-4).

4. Further, Stengaard teaches "the preparation of known permeable membranes." (Stengaard, col. 8, ll. 14-15).

5. Stengaard teaches that "the hydrophilic character of the membrane is obtained by treatment with a solution comprising one or more hydrophilic, mono- or polymeric compounds . . . followed by rendering the layer deposited on the membrane surface insoluble on the membrane surface by means of a catalyzed reaction at elevated temperatures in order to fixate the hydrophilic material to the membrane." (Stengaard, col. 4, ll. 7-18).

6. Stengaard refers to "[t]he cellulose polymers" as "used as a membrane coating material." (Stengaard, col. 4, ll. 43-44).

7. Stengaard further teaches that "a permeable, porous, polymeric membrane with hydrophobic character is treated with a solution comprising one or more hydrophilic, monomeric or polymeric compounds . . . said coated membrane being subsequently cured by means of heating until an insoluble, hydrophilic surface coat is formed." (Stengaard, col. 5, ll. 18-28).

8. The Background section of Appellants' Specification states that

> A variety of approaches have been described for modifying PVDF membranes to make them hydrophilic rather than hydrophobic. Coating a fully formed PVDF membrane with a hydrophilic polymer can result in a hydrophilic surface. However, this approach greatly increases the complexity of the manufacturing process and can result in a loss of control over the porosity and the retention properties of the membrane. The coating layer can also be degraded by the liquid being filtered, causing the properties of the membrane to change over time.

(Spec. ¶ 4).

9. Stengaard teaches that "the term 'surface' in connection with membranes refers to any membrane surface being able to come in contact

with the liquid to be filtered and thus not only to the outer surface of said membrane." (Stengaard, col. 3, ll. 51-55).

Since Appellants have provided a specific definition for the term "blend," we must use this definition in our analysis. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) ("[T]he specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor's lexicography governs."). Thus, according to the claim language, the membrane must comprise a mixture of PVDF and hydroxyalkylcellulose, as dictated by Appellants' Specification. (FF 1).

"To anticipate a claim, a prior art reference must disclose every limitation of the claimed invention, either explicitly or inherently." *In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997).

Applying the preceding legal principle to the Factual Findings in the record of this appeal, we find that claim 26 is not anticipated by Stengaard. In particular, we agree with the Appellants that Stengaard does not teach a membrane which is comprised of a mixture of PVDF and hydroxyalkyl-cellulose. Rather, we find that Stengaard teaches that the hydroxyalkyl-cellulose is applied as a coating, or a surface layer, to a known and already formed, or existing, PVDF membrane. (FF 2-7). One of ordinary skill in the art would not have considered a coating formed on the surface of a membrane, even if those surfaces are interior surfaces of pores formed in the membrane (FF 9), to have the homogeneous nature that is understood to be found in a membrane that is comprised of a mixture of substances. Thus, the coated membrane taught by Stengaard does not fall within the common ordinary meaning of the term "mixture."

Further, we find that Appellants' Specification specifically distinguishes a conventional hydrophobic membrane with a hydrophilic coating, such as taught by Stengaard, from a membrane which is comprised of a mixture of hydrophobic and hydrophilic substances. (FF 8).

III. CONCLUSION

The Examiner reversibly erred in finding that the term "blend" in claim 26 reads on the teachings of Stengaard. As such, the Examiner reversibly erred in finding that claim 26 is anticipated by Stengaard. Accordingly, we cannot sustain the Examiner's rejection of claim 26.

Claims 27-29, and 31 are all dependent from claim 26, and the rejection of these claims fails for the reasons provided above. The Examiner's rejections of claim 38 under 35 U.S.C. § 102(b) or, in the alternative, under 35 U.S.C. § 103(a), claims 30 and 33-37 under 35 U.S.C. § 103(a), and claim 32 under 35 U.S.C. § 103(a) all rely upon Stengaard in the same capacity as in the anticipation rejection of claim 26, and the secondary references do not remedy the deficiency discussed above. Accordingly, we also cannot sustain the Examiner's rejections of any of the dependent claims.

IV. DECISION

The decision of the Examiner has been reversed.

REVERSED

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