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BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314-1176			PEO, JONATHAN M	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte WILHELM HEINE

Appeal 2018-005852
Application 14/076,456
Technology Center 1700

Before ROMULO H. DELMENDO, DONNA M. PRAISS, and
SHELDON M. MCGEE, *Administrative Patent Judges*.

DELMENDO, *Administrative Patent Judge*.

DECISION ON APPEAL

The Appellant¹ appeals under 35 U.S.C. § 134(a) from the Examiner's final decision to reject claims 1 and 3–18.^{2,3} We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

BACKGROUND

The subject matter on appeal relates to a method for filtering and separating flow media and an apparatus for performing such a method (Specification filed November 11, 2013 (“Spec.”), ¶ 1). Figure 1 (annotated), which illustrates an embodiment of the invention, is reproduced from the Drawings filed November 11, 2013, as follows:

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Although the Bibliographic Data Sheet indicates that the Inventor is the Applicant, the Application Data Sheet filed November 11, 2013 (“ADS”) lists “R.T.S. Rochem Technical Services GmbH” as the Applicant (ADS 4–5). The Appeal Brief filed November 1, 2017 (“Appeal Br.”) identifies the real party in interest as “R. S. T. [sic] ROCHEM TECHNICAL SERVICES. GMBH” (Appeal Br. 2).

² See Appeal Br. 8–30; Reply Brief filed May 18, 2018 (“Reply Br.”), 2–16; Final Office Action entered June 1, 2017 (“Final Act.”), 2–12, 14–32; Examiner’s Answer entered March 29, 2018 (“Ans.”), 3–40.

³ We heard oral arguments from the Appellant’s representative on September 19, 2019, a written transcript of which will be entered into the record when it is made available.

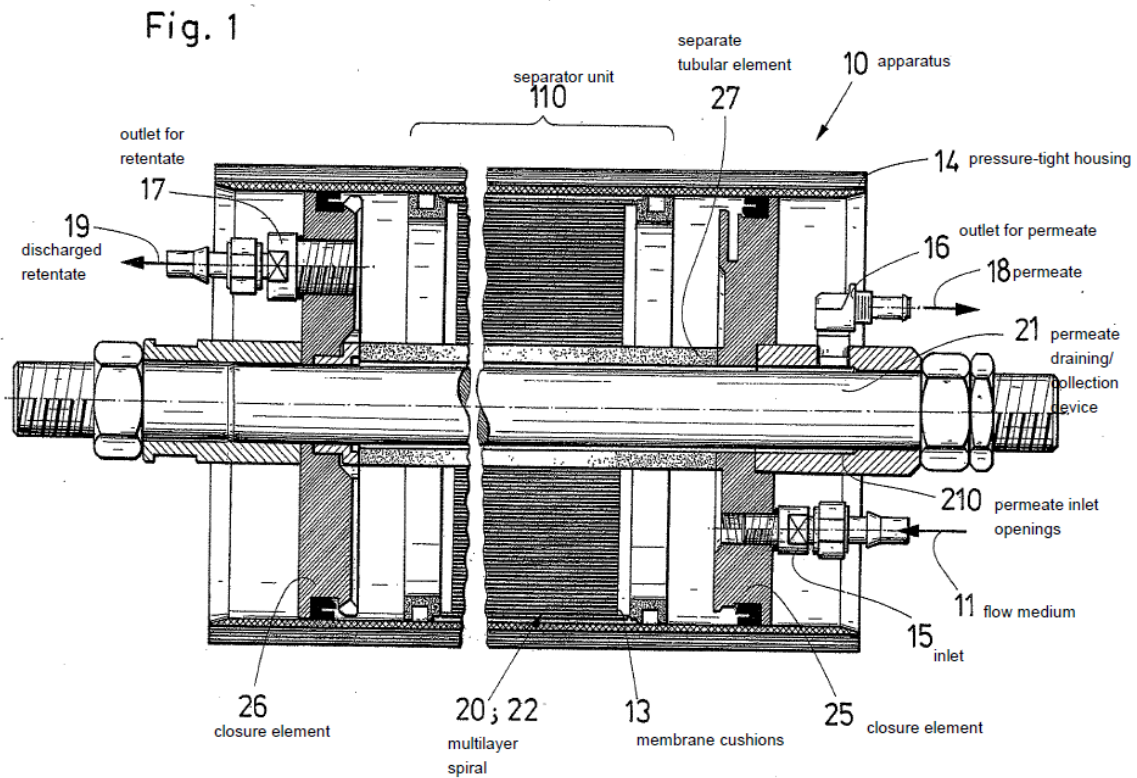


Figure 1 above depicts an apparatus **10** including, *inter alia*, a separator unit **110** with a plurality of membranes (membrane cushions) **13** forming a membrane stack **12** (shown in Fig. 3) in a pressure-tight housing **14** for filtering and separating a flow medium **11** into a permeate **18** and a discharged retentate **19** (*id.* ¶¶ 32–38, 53). The membranes **13** forming the membrane stack **12** are described as being “embodied for various separation areas”—i.e., “embodied for reverse osmosis, for nanofiltration, for ultrafiltration, of normal filtration, for instance, or also for substance separation by the method of pervaporation” (*id.* ¶ 36).

Representative claim 6 is reproduced from the Supplemental Appeal Brief filed November 27, 2017 (“Supp. Appeal Br.”), as follows:

6. An apparatus (10) for filtering and separating components of a flow medium (11) by means of membranes (13), including a substantially pressure-tight housing (14) in which a plurality of membranes (13) is disposed in a stack, at least one

inlet (15) for the flow medium (11) carried into the apparatus (10) and to be separated, and at least one outlet (16) for permeate (18) discharged from the apparatus (10) and an outlet (17) for discharged retentate (19), the membranes (13) being membrane cushions which have an opening region (131) for emergence of the permeate (18) collecting in the membrane cushions' interior (137), characterized in that ***each respective partial set of the plurality of membranes (13), which form a membrane stack (12), have different separation techniques from each other partial set based on the flow medium (11) to be separated in the partial set of the plurality of membranes forming the stack.***

(Supp. Appeal Br. 4 (emphasis added)). Method claims 1 and 3, which are the only other independent claims on appeal, recite the same or similar disputed limitations as highlighted above in reproduced claim 6 (*id.* at 3–4).

REJECTIONS ON APPEAL

The claims on appeal stand rejected under AIA 35 U.S.C. § 103,⁴ as follows:

- A. Claims 6–13 and 18 as unpatentable over Heine (US 2004/0154971 A1, pub. Aug. 12, 2004; “Heine ’971”), Heine et al. (US 6,524,478 B1, iss. Feb. 25, 2003; “Heine ’478), and Dufresne et al. (US 2013/0118975 A1, pub. May 16, 2013) (“Dufresne”);
- B. Claims 6 and 14–17 as unpatentable over Heine (US 2006/0273001 A1, pub. Dec. 7, 2006; “Heine ’001”), Heine ’971, and Dufresne;
- C. Claim 1 as unpatentable over Heine ’001, Heine ’971, Heine

⁴ A rejection under 35 U.S.C. § 112(b) of claims 1–17, as set forth in the Final Action (Final Act. 13–14), was withdrawn in view of an Amendment filed July 21, 2017 (Advisory Action entered August 24, 2017, 1–2).

'478, Dufresne, and *Nanofiltration and Reverse Osmosis* (NF/RO), American Membrane Technology Association (2007) (“NF/RO”); and

- D. Claims 3–5 as unpatentable over Heine '001, Heine '971, Heine '478, Dufresne, and NF/RO.

(Ans. 3–40; Final Act. 2–12, 14–32).

DISCUSSION

A key finding underlying each of the Examiner’s rejections is that Dufresne teaches an apparatus having the disputed limitations highlighted above in reproduced claim 6 (Ans. 4, 9, 14, 17–18). Based on this finding, the Examiner concludes that a person having ordinary skill in the art would have combined Dufresne with the other references to arrive at the claimed subject matter (*id.* at 4–5, 9, 14, 18). For the reasons given by the Appellant (e.g., Appeal Br. 11–12, 16–17) and below, we conclude that the Examiner’s finding is based on an unreasonable construction of the disputed claim limitations.

As reproduced above, claim 6 recites “each respective partial set of the plurality of membranes (13), which form a membrane stack (12), have different separation techniques from each other partial set” (Supp. Appeal Br. 4). The Specification reasonably informs one skilled in the relevant art that membrane cushions or membrane elements **13** as depicted in Figures 1 and 3 form the “membrane stack” (*see, e.g.*, Spec. ¶ 36). Thus, a person skilled in the relevant art would *not* have understood a “partial set of the plurality of membranes (13)” to read on Dufresne’s reverse osmosis (RO) units or nanofiltration (NF) units **48**, which are self-contained units including “a set of wou[n]d membrane elements arranged end to end in a

pressure vessel” (Dufresne, Fig. 1 and ¶ 19). *In re Baker Hughes, Inc.*, 215 F.3d 1297, 1303 (Fed. Cir. 2000) (holding that interpreting “hydrocarbon” to read on gaseous hydrocarbons constituted reversible error in the proper context of the written description).

Although the Examiner is correct that the term “membrane stack” is not explicitly defined, “[t]he correct inquiry in giving a claim term its broadest reasonable interpretation in light of the specification is not whether the specification proscribes or precludes some broad reading of the claim term adopted by the examiner.” *In re Smith Int’l, Inc.*, 871 F.3d 1375, 1382–83 (Fed. Cir. 2017). Rather, “[i]t is an interpretation that corresponds with what and how the inventor describes his invention in the specification, i.e., an interpretation that is ‘consistent with the specification.’” *Id.* at 1383 (internal citations omitted).

Under these circumstances, we conclude that the Examiner’s claim interpretation of the disputed limitations constitutes reversible error.⁵ *In re Suitco Surface, Inc.*, 603 F.3d 1255, 1261 (Fed. Cir. 2010).

It follows then that the Examiner’s articulated reasoning is not based on some rational underpinning to support a conclusion that a person skill in the relevant art would have combined the references *in the manner claimed*.

⁵ In the Answer, the Examiner asserts that the Appellant’s statements in the Appeal Brief (Appeal Br. 15) are taken “to mean that it would be obvious to one of ordinary skill to select other membranes to form partial set of membranes because they are well-known and commercially available based on the components to be separated” (Ans. 26). We think that the Examiner takes the Appellant’s statements out of context. In any event, the Appeal Brief and Reply Brief reasonably dispute the Examiner’s obviousness analysis, and, therefore, the statements cannot possibly constitute an admission as to obviousness.

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KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 418 (2007) (citing *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

CONCLUSION

In summary:

Claims Rejected	Basis	Affirmed	Reversed
6–13, 18	§ 103 Heine '971, Dufresne		6–13, 18
6, 14–17	§ 103 Heine '001, Heine '971, Dufresne		6, 14–17
1	§ 103 Heine '001, Heine '971, Heine '478, Dufresne, NF/RO		1
3–5	§ 103 Heine '001, Heine '971, Heine '478, Dufresne, NF/RO		3–5
Overall Outcome	§ 103		1, 3–18

REVERSED