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## United States Court of Appeals for the Federal Circuit

03-1401  
(Reexamination No. 90/005,807)

IN RE H. WILLIAM MORGAN, JR.

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DECIDED: February 5, 2004

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Before MICHEL, GAJARSA, and DYK, Circuit Judges.

GAJARSA, Circuit Judge.

H. William Morgan appeals the final decision of the United States Patent and Trademark Office, Board of Patent Appeals and Interferences (the "Board"), which affirmed the final decision of the Examiner rejecting claims 1-5 in a third party requested reexamination proceeding for U.S. Patent No. 5,376,271 (the "'271 patent"). Ex Parte H. William Morgan, Jr., No. 2002-1962 (Bd. Pat. App. & Int., Nov. 6, 2002). The '271 patent relates generally to a liquid filtration unit. The Board affirmed the rejection of Claims 1 and 2 as anticipated under 35 U.S.C. §102(b) by Morgan's earlier issued patent, U.S. Patent No. 4,133,769 (the "'769 patent"). The Board also affirmed the rejection of Claims 1, 2, and 5 as being unpatentable under 35 U.S.C. §103 over the Morgan '769 patent in view of U.S. Patent No. 3,931,015 (the "'015 patent"). Claims 3 and 4 were similarly rejected as obvious over the Morgan '769 patent in view of U.S. Patent No. 4,701,259 (the "'259 patent"). Id. The Board granted Morgan's request for rehearing on the rejection of Claim 4, but ultimately sustained the rejection of Claim 4. Ex Parte H. William Morgan, Jr., No. 2002-1962 (Bd. Pat. App. & Int.,

Feb. 26, 2003). We affirm the Board's decision.

## DISCUSSION

### A. Standard of Review

The current appeal requires us to review the Board's findings of anticipation and obviousness. Anticipation is a question of fact. In re Schreiber, 128 F.3d 1473, 1477 (Fed. Cir. 1997). Obviousness is a question of law that is based on underlying factual findings. In re Gartside, 203 F.3d 1305, 1316 (Fed. Cir. 2000). This court reviews questions of law de novo and the Board's factual findings for substantial evidence. 5 U.S.C. § 706(2)(E). Substantial evidence is "such relevant evidence as a reasonable mind might accept to support a conclusion." Consol. Edison Co. v. Nat'l Labor Relations Bd., 305 U.S. 197, 229 (1938).

### B. Anticipation

The '271 patent is, in general terms, directed to a liquid filter in which fluid enters the filter vessel through an inlet at the top, flows down through the open end of a filter bag that removes impurities, and exits the vessel through an outlet at the bottom.

Claim 1 of the '271 patent covers an embodiment in which the vessel side wall is crimped, forming an internal annular projection upon which the upper lip of the filter basket rests. Claim 1 states:

1. In a liquid filter including a closed filter vessel having a side wall, a bottom wall and an inlet port and an outlet port, a basket positioned in said vessel between said inlet port and said outlet port, means for supporting said basket in a generally fixed position within said vessel, and a filter bag positioned in said vessel between said inlet port and outlet port, the improvement wherein said vessel side wall is substantially smooth but for an internal annular projection, said basket including an upper lip abutting against and supported by said annular projection, said filter bag including a mounting ring attached thereto, said mounting ring including a shoulder means for seating against a lip of said basket adjacent said smooth side wall, said mounting ring further including a flange projecting from said shoulder means for contracting [sic] said vessel smooth side wall whereby said mounting ring constitutes seal means for preventing fluid leakage between said side wall and said bag.

'271 patent, col. 3, ll. 41-51; col. 4, ll. 1-8 (emphasis added). Claim 2, which depends from Claim 1, claims "[t]he liquid filter of claim 1 wherein said vessel defines a top opening, a removable cap attached to said vessel for sealing said top opening." '271 patent, col. 4, ll. 9-

11.

The anticipation of Claims 1 and 2 rests on whether the '769 patent discloses a side wall that is "substantially smooth but for an internal annular projection." The '769 patent shows a vessel side wall that contains an internal annular shoulder projecting inwardly from a position near the top of the vessel side wall. Above the internal annular shoulder is a thickened area that receives a fastening bolt. Morgan points to this thickened portion of the side wall as evidence that the side wall is not substantially smooth. The Board properly rejected Morgan's constricted definition of "substantially smooth." Claims subject to reexamination are to be given their broadest reasonable interpretation consistent with the specification. In re Yamamoto, 740 F.2d 1569, 1571 (Fed. Cir. 1984). The '271 specification does not define the claim element "substantially smooth," therefore the Board correctly gave the term its broadest reasonable construction by requiring a mostly, but not wholly, smooth side vessel wall. The vessel side wall disclosed by the '769 patent is primarily uniform, i.e., substantially smooth, even with the presence of the thickened portion at the top end of the side wall. The Board's finding of anticipation of Claims 1 and 2 of the '271 patent is thus supported by substantial evidence.

C. Obviousness

1. Claims 1, 2, and 5

Claim 1, and its dependent claims 2 and 5, were also rejected on the grounds that such claims would have been obvious over the Morgan '769 patent in view of the '015 patent. Mr. Morgan did not argue Claims 2 and 5 separately from Claim 1 with respect to the Examiner's obviousness rejection; these claims therefore stand or fall with independent Claim 1. See In re Dance, 160 F.3d 1339, 1340 n.2 (Fed. Cir. 1998).

The '015 patent describes an improved filter vessel that is easier to clean and assemble because it is constructed by a deep drawn process.<sup>[1]</sup> '015 patent, col. 1, ll. 31-35; col. 2, ll. 18-19. The '015 patent emphasizes that these advantages occur because the deep drawn process creates seamless side walls and therefore fewer parts. Id. at col. 1, ll. 25-34. The '015 patent covers a filter vessel formed by the deep drawn process that contains smooth

vessel side walls, except for a crimped portion that forms an internal annular shoulder upon which the filter element is suspended. Id. at col. 2, ll. 54-57.

Because the '015 patent discusses the advantages of a simplified vessel wall resulting from the deep drawn process, the Board found the '015 patent sufficient to motivate one of skill in the art to form the '769 filter housing with substantially smooth side walls except for the internal annular projection. This combination would make obvious Claims 1, 2, and 5 of the '271 patent.

The Board has fulfilled its burden of establishing a prima facie case of obviousness. See, e.g., In re Dembiczak, 175 F.3d 994, 1001 (Fed. Cir. 1999). The suggestion or motivation to combine two references may be found in the prior art, the knowledge of one skilled in the art, or the nature of the problem to be solved. SIBIA Neurosciences Inc. v. Cadus Pharm. Corp., 225 F.3d 1349, 1356 (Fed. Cir. 2000). Here, the '015 patent emphasizes the ease of assembly and disassembly of a filter housing containing seamless side walls constructed from the deep drawn process. The '015 patent therefore identifies the benefits of adding a smooth sided wall to a filter housing, the same benefits of ease of assembly, disassembly, and cleaning recited in the '271 patent. When a second reference identifies the benefits of adding a feature to the primary reference, an obviousness rejection is proper. See In re Thrift, 298 F.3d 1357, 1365 (Fed. Cir. 2002). We therefore affirm the Board's finding that Claims 1, 2 and 5, are obvious in light of the '015 and '271 patents.

2. Claims 3 and 4

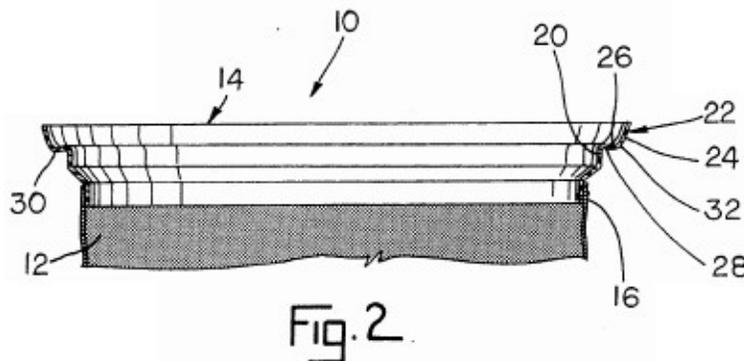
Claim 3 covers an alternative embodiment of the '271 patent, whereby the internal annular shoulder is eliminated. To support the filter basket, the basket instead has support legs that rest on the bottom of the vessel wall. Claim 3 states:

3. In a liquid filter including a closed filter vessel having a side wall, a bottom wall and an inlet port and an outlet port, a basket positioned in said vessel between said inlet port and said outlet port, means for supporting said basket in a generally fixed position within said vessel by contact of said basket with said vessel bottom wall, and a filter bag positioned in said vessel between said inlet port and outlet port, the improvement wherein said vessel side wall is substantially smooth said filter bag including a mounting ring attached thereto, said mounting ring including a shoulder means for seating against a lip of said basket adjacent said smooth side

wall, said mounting ring further including a flange projecting from said shoulder means for contracting [sic] said vessel smooth side wall whereby said mounting ring constitutes seal means for preventing fluid leakage between said side wall and said bag, said mounting ring flange being flared outwardly and upwardly from said shoulder means.

'271 patent, col. 4, ll. 12-31 (emphasis added).

Claim 4 discloses a similar filter unit as Claim 3, where the filter basket rests on the bottom of the filter housing by virtue of support legs. Claim 4 requires an additional limitation of a “shoulder means defining a recess and an outer bead, said basket flange fitted in said recess adjacent said bead.” *Id.* at col. 4, ll. 47-50. The specification does not define the terms “recess” or “bead.” Figure 2 of the '271 patent embodies the recess and bead limitation of Claim 4. Reproduced below, Figure 2 shows that the filter bag mounting top 14 defines a recess 28 by virtue of its lower wall 26. A lead line for recess 28 is directed near the intersection of the lower wall 26 and the stepped side wall 20. The bead 30 is the area where the lower wall 26 curves and transitions upward into the upper side wall 24.

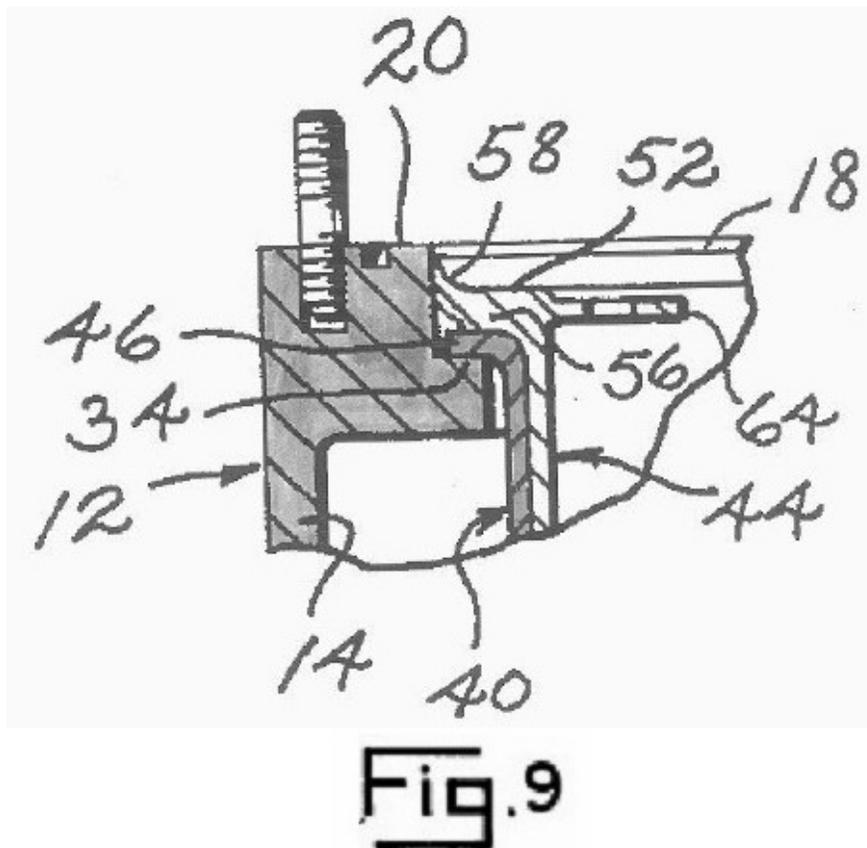


Claims 3 and 4 were rejected by the Board as obvious in light of the '259 patent when combined with the '769 patent. The '259 patent describes a filter unit in which the basket and the filter bag are supported within the housing vessel by legs that rest at the bottom of the housing. '259 patent, col. 1, ll. 48-52. The '259 patent teaches that an internal annular projection inside the filter housing complicates the construction of the filter. *Id.* at col. 1, ll. 41-45. Placing legs at the bottom of the filter bag therefore simplifies the housing construction.

Id. at col. 1, ll. 48-52.

Claim 3 is obvious in light of the combination of the '259 patent and the '769 patent. The '259 patent clearly shows a filter basket that is supported from the bottom with support legs rather than by resting the lip of the basket on an annular projection. The '259 also teaches that such a construction is simpler and has advantages over filter housings that have an annular projection. The '259 patent therefore would motivate one of ordinary skill in the art to modify the '769 patent's filter structure to have the basket rest on the bottom wall with the elimination of an annular shoulder.

Claim 4 is similarly obvious when the '259 patent is viewed in light of the '769 patent. The added limitation of Claim 4, which requires that the filter bag shoulder means defines "a recess and an outer bead," is met by the teachings of the '769 patent. Figure 9 of the '769 patent, reproduced below and enhanced with shading, reveals such a structure. The "shoulder means" of Claim 4 corresponds to the ring portion of the filter bag 52 of the '769 patent. The "outer bead" corresponds to the curved transition between the filter bag 56 and the area of the filter bag lip 58 that flexes against the vessel side wall. The "recess" of Claim 4 is represented in the '769 patent by the interior corner between the lower surface of the filter bag flange 56 and the adjacent side wall of the filter bag 44. The interior corner forms a "recess" in accordance with the broad meaning of that term as a "small hollow" or other such minor indentation. Webster's II New Riverside Univ. Dictionary (1984). The recess of the '769 patent in turn receives at least part of the flange or lip 46 of the basket.



Because the additional limitation in Claim 4 of a “shoulder means defining a recess and an outer bead, said basket flange fitted in said recess adjacent said bead” is provided for in the '769 patent, Claim 4 is obvious with respect to the combination of the '769 and the '259 patents.

We have considered Morgan’s additional arguments and find them unpersuasive.

### CONCLUSION

Claims 1 and 2 of the '271 patent are anticipated by Morgan’s '769 patent. Claims 1, 2, and 5 are obvious in view of the combination of the '769 patent with the '015 patent. Claims 3 and 4 are also obvious as a combination of the '769 patent and the '259 patents. For the reasons herein discussed, we affirm the decision of the Board.

No costs.

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[1] “Drawing” is a metal working process in which a metal blank is formed into a cylindrical shape. See Marks’ Standard Handbook for Mechanical Engineers, 13-16 (10th ed. 1996).