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CARLSON, GASKEY & OLDS, P.C. 400 WEST MAPLE ROAD SUITE 350 BIRMINGHAM, MI 48009			ANDERSON, DENISE R	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JAMES S. ELDER

Appeal 2014-004233
Application 12/818,592
Technology Center 1700

Before PETER F. KRATZ, GEORGE C. BEST, and MONTÉ T. SQUIRE,
Administrative Patent Judges.

BEST, *Administrative Patent Judge.*

DECISION ON APPEAL

The Examiner finally rejected claims 1–5 and 14 of Application 12/818,592 under 35 U.S.C. § 102(b) as anticipated and also rejected claims 6–13, 15, and 16 under 35 U.S.C. § 103(a) as obvious. Final Act. (April 3, 2013). Appellant¹ subsequently canceled claims 1–6 and 14, Amendment 2–3 (June 3, 2013) (entered June 11, 2013), and now seeks reversal of the rejection of claims 7–13, 15, and 16 pursuant to 35 U.S.C. § 134(a). We have jurisdiction under 35 U.S.C. § 6.

¹ Hamilton Sundstrand Corp. is identified as the real party in interest. Appeal Br. 1.

For the reasons set forth below, we REVERSE.

BACKGROUND

The '592 Application describes filters, particularly filters for use in the fuel systems of gas turbine engines. Spec. ¶¶ 1–2. These filters are said to reduce formation of coke deposits on the filter material and reduce the pressure drop of the fuel passing through the filter. *Id.* ¶¶ 20, 24.

Claim 7—the only independent claim remaining in the '592 Application—is reproduced below from the Claims Appendix of the Appeal Brief with the language that is central to the issues presented in this appeal italicized:

7. A filter for use with a fuel system having contaminants therein, said filter comprising:
 - a plurality of apices;
 - a plurality of ridges, each ridge attaching an apex to an adjacent apex wherein a plurality of ridges and adjoining apices define a first opening;
 - a second opening in register with said first opening wherein said second opening has less surface area than said first opening;
 - a first side attaching said first opening and said second opening wherein said first side tapers inwardly from said first opening to said second opening;
 - a third opening in register with said second opening;
 - a fourth opening defined by a second plurality of apices and ridges and in register with said third opening wherein said third opening has less surface area than said fourth opening;
 - a second side attaching said third opening and said fourth opening wherein said second side tapers outwardly from said third opening to said fourth opening; and

a flow passage from said first opening to said second opening decreasing in cross-sectional area, then moves through said third opening, and increases in cross-sectional area until reaching said fourth opening.^[2]

Appeal Br. 5 (Claims App'x).

REJECTION

On appeal, the Examiner maintains the following rejection:

Claims 7–13, 15, and 16 are rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Mirtsch³ and Strub.⁴ Final Act. 6–7; Answer 2.

DISCUSSION

Appellant argues for reversal of the rejection of claims 7–13, 15, and 16 on the basis of limitations recited in claim 7. The remaining appealed claims depend from claim 7. As discussed below, we need only address claim 7 in deciding this appeal.

² As written, the claim limitation “a flow passage . . . decreasing in cross-sectional area, then moves through said third opening, and increases in cross-sectional area . . .” likely is grammatically incorrect. If prosecution of the '592 Application continues, Appellant should consider amending the claim to read, e.g., “moving through said third opening, and increasing in cross-sectional area” or “connecting to said third opening and increasing in cross-sectional area.”

³ WO 2008/077394 A3, published July 3, 2008. Without objection from Appellant, the Examiner cites US 2010/0058589 A1, published March 11, 2010 as the English-language equivalent.

⁴ US 4,288,330, issued September 8, 1981.

In rejecting claim 7, the Examiner found that the combination of Mirtsch and Strub discloses the claimed filter. In particular, the Examiner found that “Mirtsch et al. discloses the claimed invention except for the single flow passage from the first opening to the second opening decreasing in cross-sectional area, which then moves through the third opening, increasing in cross-sectional area until reaching the fourth opening. Strub teaches this is known in the art.” Answer 4. The Examiner found that Strub’s Figure 3c discloses the cross-sectional shape of flow passages through a plate or tube filter. *Id.* The Examiner also found that Strub teaches that flow passages such as those shown in Figure 3c have several advantages relative to other aperture shapes known in the art. *Id.*

Based upon these findings, the Examiner concluded that a person of ordinary skill in the art at the time of the invention

would have been motivated to provide the Mirtsch et al. filter with a flow passage [from the first opening to the second opening decreasing in cross-sectional area, which then moves through the third opening, increasing in cross-sectional area until reaching the fourth opening] . . . [because] relative to the previous art of filters with slot-shaped flow passages, mesh fabric flow passages, or porous material flow passages, filters with the recited flow passages “have a very high mechanical stability and a relatively high insensitivity to impact, as can happen during transport and assembly,” “remain operative for a considerably longer period, before cleaning is required,” and also have “very good rejection properties for the washing off of the sediment in rewashing operations.”

Id. at 7.

Appellant argues that the Examiner erred by finding that a person of ordinary skill in the art would have been motivated to combine Mirtsch and Strub in the manner described in the rejection. Because we agree with Appellant’s argument, we reverse the rejection of claim 7.

Strub describes “a method of production of a liquid-permeable plate or tube for [a] filtering plant, in particular for settling layer filters.” Strub col. 1, ll. 8–10. Strub, therefore, is describing a plate that supports a settling layer of material that actually performs the filtering function, e.g., sand, silica gel, or diatomaceous earth. As Strub describes, such a support plate must be able to support the formation of bridges or domes of the filter media over the openings in the support plate. *See* Strub col. 1, line 31–col. 2, line 51.

Because Strub is describing the properties of a support plate rather than a filter plate, the alleged advantages of Strub’s support plate relative to the prior art involve a comparison with prior art support plates. The Examiner has not explained why the alleged advantages described in Strub would apply to the filter plate created by the proposed combination of Mirtsch and Strub.

Furthermore, Appellant correctly notes that the holes shown in Mirtsch are already circular in shape. Reply Br. 1. Strub contains no description or suggestion that any of the alleged advantages are the result of the particular cross-sectional shape of the circular holes described in Strub and shown in Strub’s Figure 3c. Thus, the Examiner has not identified a reason why a person of ordinary skill in the art at the time of the invention would have modified Mirtsch to create a flow passage with the particular cross-sectional shape shown in Figure 3c of Strub.

In sum, the Examiner has not identified a sufficient reason for a person of ordinary skill in the art at the time of the invention to have modified Mirtsch in the proposed manner. Accordingly, we conclude that the modification proposed in the rejection is the result of hindsight and

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would not have been obvious at the time of the invention. Thus, we reverse the rejection of claim 7.

CONCLUSION

For the reasons set forth above, we reverse the rejection of claims 7–13, 15, and 16 as unpatentable over the combination of Mirtsch and Strub.

REVERSED