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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte OLGA V. MAKAROVA, CHA-MEI TANG, and
PLATTE T. AMSTUTZ

Appeal 2022-002730
Application 13/696,139
Technology Center 1700

Before JAMES C. HOUSEL, GEORGE C. BEST, and
N. WHITNEY WILSON, *Administrative Patent Judges*.

WILSON, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner’s March 27, 2020 decision to reject claims 1–7, 44, 45, 47, 48, and 50–58 (“Non-Final Act.”). We have jurisdiction under 35 U.S.C. § 6(b). An oral hearing was held on September 26, 2022, a transcript of which will be made part of the record.

We REVERSE.

¹ “Appellant” refers to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies the real party in interest as Creatv Microtech, Inc. (Appeal Br. 1).

CLAIMED SUBJECT MATTER

Appellant's disclosure is directed to polymer microfilters and methods of manufacturing the same (Abstract). The microfilters are formed from epoxy-based photo-definable dry film, with apertures extending through the polymer layer (*id.*). Claim 1, reproduced below from the Claims Appendix, is illustrative of the claimed subject matter:

1. A microfilter comprising:
a single polymer layer formed from an epoxy-based negative photo-definable dry film, wherein the single polymer layer has a flexibility to be disposed on a roll and unrolled;
and
a plurality of apertures formed by exposing the single polymer layer to a UV light via an optical mask to obtain a selected shape of said apertures based on said mask, each of said apertures extending through the single polymer layer having said flexibility,
said single polymer layer having said flexibility forming a freestanding unattached microfilter structure with uniform thickness and having said flexibility.

REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Brauker	US 5,807,406	Sept. 15, 1998
Gong	US 2003/0138941 A1	July 24, 2003
Wolfe	US 2009/0073400 A1	Mar. 19, 2009
Summerfelt	US 2009/0321964 A1	Dec. 31, 2009
DuPont	<i>DuPont PerMX 3000 Technical Data Sheet</i>	2010

REJECTIONS

Claim(s) Rejected	35 U.S.C. §	Reference(s)/ Basis
1–4, 7, 44, 45, 47, 50–58	103(a)	Wolfe, DuPont, Summerfelt, Brauker
3, 5, 6, 48	103(a)	Wolfe, DuPont, Summerfelt, Brauker, Gong

OPINION

We review the appealed rejections for error based upon the issues identified by Appellant and in light of the arguments and evidence produced thereon. *Ex parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (precedential) (“Filing a Board appeal does not, unto itself, entitle an appellant to *de novo* review of all aspects of a rejection. If an appellant fails to present arguments on a particular issue—or, more broadly, on a particular rejection—the Board will not, as a general matter, unilaterally review those uncontested aspects of the rejection.”), *cited with approval in In re Jung*, 637 F.3d 1356, 1365 (Fed. Cir. 2011) (“[I]t has long been the Board’s practice to require an applicant to identify the alleged error in the examiner’s rejections.”)).

Because each of the independent claims recites the features which are material to our determination that the rejection should be reversed, we focus our analysis on the rejection of claim 1. The same reasoning would apply to the remaining independent and dependent claims.

The Examiner finds that Wolfe teaches a particulate filter with regularly spaced micropores which comprises a single flexible polymer layer formed from a photo-definable dry film (MYLAR) (Non-Final Act. 5, citing Wolfe, Fig. 1, ¶ 27). The Examiner further finds that Wolfe’s single polymer layer has the flexibility to be disposed on a roll and unrolled, and

that its apertures are formed by exposing the single polymer layer to particle radiation via an optical mask (Non-Final Act. 5, citing Wolfe, Fig. 6, Abstract, ¶ 72). The Examiner also finds that the apertures in Wolfe’s film extend through the single polymer layer, and that the single polymer layer forms a free standing, unattached microfilter structure with a uniform thickness (Non-Final Act. 5, citing Wolfe, ¶¶ 34, 37).

The Examiner finds that Wolfe teaches the use of a positive photo-definable dry film (MYLAR), but not an epoxy-based negative photo-definable dry film (Non-Final Act. 6). The Examiner determines that it was known that microstructures could be made using either a positive photoresist or a negative photoresist as art recognized equivalents (Non-Final Act. 6, citing Brauker, 5:35–39, 8:12–15). The Examiner further finds that DuPont teaches a flexible epoxy-based negative photo-definable dry film which offers the advantages of excellent thickness uniformity after hot roll lamination and a high aspect ratio imaging (Non-Final Act. 6). The Examiner determines that it would have been obvious to substitute the film from DuPont into Wolfe’s system for its known advantages because both references are in the same technological environment of microfabricated polymer membrane structures (*id.*).

Appellant argues, *inter alia*, that a person of skill in the art would not have substituted the DuPont film into Wolfe’s system (Appeal Br. 8). Appellant’s argument is persuasive. As noted by Appellant, DuPont specifically teaches that its film “is best suited for permanent applications where it is imaged, cured and left on devices” (Dupont, p. 1). Moreover, the feature relied by the Examiner as motivating the use of DuPont’s film in Wolfe’s system—providing excellent thickness uniformity after hot roll

lamination—is explicitly premised on the film being laminated to a substrate (DuPont, p. 1 (“Dry film type material which can provide excellent thickness uniformity after hot roll lamination”)).

Additionally, because DuPont specifically indicates that its film is best used while laminated to an underlying substrate, a person of skill in the art would not have thought that film to be a substitute for Wolfe’s free-standing polymeric sheet.

Thus, the Examiner’s rationale as to why a person of skill in the art would have substituted DuPont’s film for Wolfe’s polymeric sheet is not adequately supported by the evidence of record. Accordingly, the rejection cannot be affirmed. “[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006), *cited with approval in KSR*, 550 U.S. 398, 418 (2007).

CONCLUSION

The Examiner’s rejections are reversed.

DECISION SUMMARY

In summary:

Claim(s) Rejected	35 U.S.C. §	Reference(s)/ Basis	Affirmed	Reversed
1–4, 7, 44, 45, 47, 50– 58	103(a)	Wolfe, DuPont, Summerfelt, Brauker		1–4, 7, 44, 45, 47, 50–58

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3, 5, 6, 48	103(a)	Wolfe, DuPont, Summerfelt, Brauker, Gong		3, 5, 6, 48
Overall Outcome				1-7, 44, 45, 47, 48, 50-58

REVERSED