

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DONALD M. YENNI, JR., ROBERT L.
LAMBERT, JR., CLYDE D. CALHOUN, DAVID
C. KOSKENMAKI and DAVID J. LUNDIN

Appeal No. 95-0785
Application 07/748,708¹

ON BRIEF

Before JOHN D. SMITH, PAK and WALTZ, **Administrative Patent Judges**.

WALTZ, **Administrative Patent Judge**.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1 through 16, 18, 20 and 21. Claims 17 and 19, the only other claims in this application, stand withdrawn from consideration as being directed to a non-elected invention.

¹ Application for patent filed August 22, 1991.

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According to appellants, the invention is directed to a thermoformable add-on EMI shielding sheet comprising a carrier material with a partially embedded metal fiber mat therein (brief, page 4). The carrier material must have a softening temperature lower than the highest temperature reached during the thermoforming process, while the metal fibers must have a melting point lower than this highest thermoforming temperature (*Id.*).

Claims 1, 16 and 18 are illustrative of the subject matter on appeal and are reproduced below:

1. A thermoformable add-on EMI shielding sheet comprising a carrier material selected from the group consisting of polymeric fibrous webs and sheet materials having the capability of becoming porous during a thermoforming process, said carrier material having a metal mat at least partially embedded therein, said mat comprising a plurality of fine, randomly-oriented metal fibers, said carrier material having a softening temperature and said metal mat having a melting temperature lower than the highest temperature reached during said thermoforming process.

16. A thermoformed article comprising a substrate polymer having an EMI shielding layer on a portion thereof, said portion being less than the entire article, said shielding layer having been precut from an add-on EMI shielding sheet, placed atop said substrate polymer, and thermoformed therewith.

18. A thermoformed article made by a method comprising the steps of:

a) providing a polymeric substrate having an area where EMI shielding is desired;

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b) preheating said polymeric substrate for sufficient time for it to attain some portion of its thermoforming temperature;

c) forming an article by placing a precut add-on EMI shielding sheet comprising a carrier material, including its metal mat, over said area where EMI shielding is desired;

d) heating said article for a sufficient time for said carrier material to soften and said metal mat to melt and for said article, including the polymeric substrate to reach completely its thermoforming temperature;

e) thermoforming said article into a desired shape.

The examiner has relied upon the following references in refusing to allow the appealed claims:

Kritchevsky et al. (Kritchevsky)	4,678,699	Jul. 7, 1987
Gaughan	4,689,098	Aug. 25, 1987
Komito et al. (Komito) (Japanese Kokai)	176823	Aug. 3, 1987
Nakanishi et al. (Nakanishi) (Japanese Kokai)	276297	Nov. 13, 1990

Claim 16 stands rejected under 35 U.S.C. § 102(b) as anticipated by Nakanishi. Claims 18 and 20 stand rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103 as unpatentable over Gaughan or Komito. Claims 1-16, 18, 20 and 21 stand rejected under 35 U.S.C. § 103 as unpatentable over Nakanishi or Kritchevsky in view of Gaughan. We reverse all stated rejections for reasons which follow.

OPINION

A. The Rejection Under § 102(b)

Under 35 U.S.C. § 102(b), every limitation of a claim must identically be disclosed, either expressly or under the principles of inherency, in a single prior art reference for it to anticipate the claim. See *In re Bond*, 910 F.2d 831, 832, 15 USPQ2d 1566, 1567 (Fed. Cir. 1990).

The thermoformed article recited in claim 16 requires, *inter alia*, that the substrate polymer have "an EMI shielding layer on a portion thereof, said portion being less than the entire article". The examiner fails to address this limitation (see the answer, pages 3 and 5). In the final rejection, the examiner had addressed this limitation by citing Figures 1 and 2 of Nakanishi (see the final rejection, the paragraph bridging pages 2 and 3). However, as pointed out by appellants on page 7 of the brief, Figures 1 and 2 both show the EMI shield covering all of the article. There is no disclosure or teaching in Nakanishi regarding partial covering of the substrate polymer with the EMI shield.

Furthermore, the article of claim 16 also requires that the shielding layer was precut from "an add-on EMI shielding sheet". The specification defines this term as a sheet with softened

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carrier material and metal fibers which have begun to melt during the thermoforming (specification, page 11). Contrary to the examiner's assertions on page 3 of the answer, the article of claim 16 is specifically required to be "thermoformed". See *In re Wilder*, 429 F.2d 447, 166 USPQ 545 (CCPA 1970)(Every limitation positively recited in a claim must be given effect in order to determine what subject matter that claim defines). Therefore the article of appealed claim 16 must have softened carrier material and melted metal fibers. See *In re Sneed*, 710 F.2d 1544, 1548, 218 USPQ 385, 388 (Fed. Cir. 1983)(In proceedings before the PTO, claims in an application are to be given their broadest reasonable interpretation consistent with the specification, and that claim language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art). Nakanishi fails to disclose any melting of metal fibers during the thermoforming process. The thermoformed article of Nakanishi therefore does not meet every positive limitation of appealed claim 16. Accordingly the rejection of claim 16 under § 102(b) in view of Nakanishi is reversed.

B. The Rejection Under §§ 102(b)/103

Claims 18 and 20 are written in product-by-process form. It is well settled that the PTO bears a lesser burden of proof in making a case of *prima facie* obviousness for product-by-process claims because of their peculiar nature than when a product is claimed in the conventional fashion. See *In re Fessman*, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974). Once the examiner provides a rationale tending to show that the claimed product appears to be the same or slightly different than that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. See *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433-34 (CCPA 1977).

Both claims 18 and 20 require the metal mat fibers to melt. The examiner has not pointed out where this feature of the claimed article can be found in the Gaughan or Komito references (answer, pages 4 and 6). In fact, Komito teaches use of molding temperatures below that at which the metal alloy melts or "dissolves" (page 7). Gaughan teaches that the aluminum whiskers are molten when they are produced (column 3, lines 16-20), but fails to disclose that the metal is melted during thermoforming

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(column 4, lines 21-24). We find that the examiner has failed to meet the initial burden of proof since the prior art product does not reasonably appear to be the same or only slightly different from the product claimed. Accordingly, the rejection of claims 18 and 20 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103 as unpatentable over Gaughan or Komito is reversed.

C. The Rejection Under § 103

The EMI shielding sheet of appealed claim 1 comprises a carrier material and a partially embedded metal fiber mat, with the requirement that the carrier material have a softening temperature and the metal mat having a melting temperature lower than the highest temperature reached during the thermoforming process.

None of the references applied by the examiner disclose or suggest that the metal mat must have a melting temperature lower than the highest temperature reached during the thermoforming process (as admitted by the examiner in regard to the primary references, see page 4 of the answer). Contrary to the examiner's assertions, Gaughan makes no distinction between high and low melting metals in the EMI shielding sheets (see Gaughan,

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column 2, lines 61-68, and the answer, page 4). The examiner cites column 3, lines 53-63, of Kritchevsky for the teaching that the metal fibers "are melted during the process" (answer, page 6). However, it is clear from the context of column 3, lines 60-63, of Kritchevsky, that the thermoplastic fibers are the only component that melts during processing. As a result of this melting, the metal fibers are believed to contact each other forming a more effective shielding grid but Kritchevsky does not disclose that the metal fibers melt. This disclosure of Kritchevsky is clarified by reference to Example 8, at column 12, lines 1-2, where it is disclosed again that the thermoplastic fibers melt resulting in the metal fibers contacting. There is no disclosure or suggestion in Kritchevsky that the metal fibers melt.

Where the legal conclusion of obviousness is not supported by facts it cannot stand. See *In re Warner*, 379 F.2d 1011, 1016-17, 154 USPQ 173, 177-78 (CCPA 1967). Accordingly, the rejection

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of claims 1-16, 18, 20 and 21 under 35 U.S.C. § 103 as
unpatentable over Nakanishi or Kritchevsky in view of Gaughan is
reversed.

REVERSED

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JOHN D. SMITH)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
CHUNG K. PAK)	
Administrative Patent Judge)	APPEALS AND
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)	INTERFERENCES
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Administrative Patent Judge)	

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