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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 25

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte ANDREW E. JANETOS

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Appeal No. 98-2156
Application No. 08/421,489[1]

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ON BRIEF

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Before MEISTER, McQUADE, and NASE, ***Administrative Patent Judges***.

MEISTER, ***Administrative Patent Judge***.

DECISION ON APPEAL

Andrew E. Janetos (the appellant) appeals from the final rejection of claims 1 and 3-18. Claims 19-22, the only other claims remaining in the application, stand withdrawn from

[1] Application for patent filed April 13, 1995.

further consideration by the examiner under the provisions of 37 C.F.R. § 1.142(b) as being directed to a nonelected invention.

We AFFIRM-IN-PART.

The appellant's invention pertains to a box for storing small objects that is molded from a cross-linked polymer foam material that comprises an integrally formed bottom section, cover and hinge. Independent claim 1 is further illustrative of the appealed subject matter and a copy thereof may be found in APPENDIX A of the brief.

The references relied on by the examiner are:

Lux	3,236,373	Feb. 22, 1966
Solomon	3,813,025	May 28, 1974
Davis	4,298,133	Nov. 3, 1981
Kimura et al. (Kimura)	4,552,708	Nov. 12, 1985
Johnson et al (Johnson)	4,935,287	Jun. 19, 1990
Kiley	5,564,623	Oct. 15, 1996
		(filed Jun. 11, 1993)

The claims on appeal stand rejected under 35 U.S.C. § 103(a) in the following manner:

(1) Claims 1, 5-7, 11 and 15-17 as being unpatentable over Kiley in view of Kimura;

(2) Claims 3, 4, 10 and 18 as being unpatentable over Kiley in view of Kimura and Lux;

(3) Claim 8 as being unpatentable over Kiley in view of Kimura and Solomon;

(4) Claims 1, 8 and 9 as being unpatentable over Kiley in view of Kimura, Solomon and Davis; and

(5) Claims 12-14 as being unpatentable over Kiley in view of Kimura and Johnson.

The rejections are explained on pages 5-10 of the answer. The arguments of the appellant and examiner in support of their respective positions can be found on pages 12-26 of the brief, pages 1-5 of the reply brief and pages 10-16 of the answer.

OPINION

We have carefully reviewed the appellant's invention as described in the specification, the appealed claims, the prior art applied by the examiner and the respective positions advanced by the appellant in the brief and reply brief, and by

the examiner in the answer. As a consequence of this review, we will sustain Rejections (1), (3) and (4) and reverse Rejection (5). With respect to Rejection (2) we will sustain the rejection of claims 3, 4 and 18, and reverse the rejection of claim 10.

Rejection (1), (3) and (4)

The examiner considers that it would have been obvious to form the container of Kiley of a cross-linked foam "in order to adjust the melt viscosity of the foam which aids in obtaining a more 'uniform fine-celled, highly expanded foam' (see col. 1 paragraphs 3-4)" (see answer, page 5). In support of this position the answer states:

> Appellant argues that the container of Kiley, as modified by Kimura et al., does not teach "a one-piece box, ***molded*** from a ***crosslinked*** polymer foam material, wherein the hinge section is said to specifically comprise ***compressed crosslinked foam*** that is resilient and capable of repeated articulation" (page 14 lines 14-16 of Brief). The examiner respectfully disagrees with this position. The verb "mold" is defined in ***Webster's II New Riverside University Dictionary*** (1994) as "[t]o form into a particular shape". The container of Kiley teaches a one-piece box which is formed into a particular shape, or molded from a polymer foam material. Kiley also teaches that the container has

> a hinge section, comprised of compressed foam and capable of repeated articulation (see col. 5 lines 58-61 and col. 6 lines 30-34 of Kiley). Kimura et al. teach that it is known to crosslink polymer foam. As modified by the crosslinking of Kimura et al., the container of Kiley teaches [sic] a crosslinked polymer foam container having a compressed crosslinked foam hinge section. [Page 10.]

The appellant begins the argument in the brief by citing a decision identified as "***Ex parte Martha,*** Appeal No. 94-3760" (see page 13). However, ***Martha,*** as recognized by the appellant, is an unpublished decision by the Board. Unpublished Board opinions are not binding as precedent ***(Ex parte Holt***, 19 USPQ2d 1211, 1214 (Bd. Pat. App. & Int. 1991)) and citing such a decision as precedent is improper and inappropriate (***see Ex parte Vossen***, 155 USPQ 109, 110 (Bd. App. 1967)).

The appellant argues that there is no suggestion to combine the teachings of Kiley and Kimura as the examiner proposes. This is particularly the case since, in the appellant's view, Kiley went out of his way to dissuade those skilled in the art from using cross-linked foam by stating in lines 15-18 of column 3 that "the present invention requires

neither the grinding into powder of the starting resin[2] nor the employment of cross-linking agents" (footnote added). The brief also states that

> while certainly, Kimura teaches the advantages of crosslinking for viscosity control ***during foam formation***, this still leaves open the fact Applicant's claims, contrary to long-standing art made of record in this case, are directed towards a ***molded crosslinked*** polymer foam material, long after any foam formation or manufacturing step, wherein the hinge section is specifically said to comprise ***compressed crosslinked foam*** material. Accordingly, Kimura's teaching that crosslinking aids viscosity control during foam formation to provide more uniform pore structure would not lead one skilled in the art to later mold and compress such crosslinked foam into a compressed hinge section. [Pages 16 and 17.]

The appellant's arguments are not persuasive. While the obviousness of an invention cannot be established by combining the teachings of the prior art absent some teaching, suggestion or incentive supporting the combination ***(see, e.g., ACS Hospital Systems, Inc. v. Montefiore Hospital***, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984)), this does not mean that the cited references or prior art must

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[2] Reference by Kiley to grinding of the polyethylene starting resin into powder is made ***only*** with the respect to a discussion of U.S. Pat. No. 4,738,810 in column 3, lines 9-15.

specifically suggest making the combination (***B.F. Goodrich Co. V. Aircraft Braking Systems Corp.***, 72 F.3d 1577, 1582, 37 USPQ2d 1314, 1318 (Fed. Cir. 1996) and ***In re Nilssen***, 851 F.2d 1401, 1403, 7 USPQ2d 1500, 1502 (Fed. Cir. 1988)). Instead, obviousness may be established by what the combined teachings of the references would have suggested to those of ordinary skill in the art. ***In re Young***, 927 F.2d 588, 591, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991) and ***In re Keller***, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981)[3]. Moreover, in evaluating such references it is proper to take into account not only the specific teachings of the references but also the inferences which one skilled in the art would reasonably be expected to draw therefrom (***In re Preda***, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968)), and all of the disclosures in a reference

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[3] More specifically, as stated by the court in ***Keller***, 642 F.2d at 425, 208 USPQ at 881:

> The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.

must be evaluated for what they fairly teach one having ordinary skill in the art (***In re Boe***, 355 F.2d 961, 965, 148 USPQ 507, 510 (CCPA 1966)).

As both the appellant and the examiner recognize, Kiley teaches a one-piece box which (1) is formed from a foamed polyetheylene resin material (see col. 3, line 42, through col. 4, line 16) and (2) has a hinge section (see Figs. 2 and 4) that has been formed by compressing the foam material (see col. 6, lines 30-34; Fig. 5). Although the box of Kiley is formed from a foamed high-density polyetheylene resin material (see, e.g., col. 3, lines 65 and 66) which is not cross-linked (see col. 3, line 18), in the BACKGROUND OF THE INVENTION Kiley discusses various materials used in the container art, including foamed or expanded resinous materials (see column 2, lines 8-45). Immediately thereafter Kiley states that:

> Illustrative methods relating to the expansion of polyetheylene resin are disclosed in U.S. Pat. Nos. 3,098,831; 4,473,516; 4,552,708 [i.e., the reference to Kimura relied on by the examiner]; 4,738,810; 4,952,352; and Japanese Patent No. 0174423. In general, these references teach methods of expanding a low density polyethylene starting material employing both blowing and ***cross-linking agents***. The disclosure of these patents is

> incorporated by reference herein. [Column 2, lines 46-54; emphasis added.]

Kiley further states that:

> A variety of materials are commonly employed within the packaging/protective coverings industry, each chosen for a given application based on a variety of factors which, invariably, include durability and relative expense. [Column 4, lines 39-42.]

In our view, the teachings of Kiley taken as a whole would have fairly suggested to the artisan that any of the materials mentioned in the BACKGROUND OF THE INVENTION (including the foamed polyetheylene resin that is cross-linked according to the teachings of Kimura and the five other references, all of which have been incorporated by reference by Kiley) may be employed dependent upon the particular application involved and taking into account such factors as durability and relative expense. In making this selection of materials the artisan, as implicitly suggested by the above-quoted portion of column 4 of Kiley, would have been well aware of the respective advantages and disadvantages of each. ***See, e.g., In re Heinrich***, 268 F.2d 753, 756, 122 USPQ 388,

390 (CCPA 1959). Indeed, as conceded by the appellant on page 4 of the brief, "it is well known that crosslinking rigidizes a thermoset material, and increases the value of the elastic modulus" (footnote omitted) and the artisan would have been well aware of this "well known" knowledge. Accordingly, one of ordinary skill in this art would have found it obvious to select a foamed polyetheylene resin that was cross-linked (such as that taught by Kimura) for the material of the box of Kiley, particularly where rigidity and the value of the elastic modulus were of concern.

The appellant does not appear to specifically dispute the above-noted position of the examiner regarding the recitation of "molded" in each of the independent claims under consideration. In any event, Kiley teaches that the material forming the box is "extruded" (column 3, line 43) which, as a broad proposition, can be considered to be a molding operation. Thus, giving the term "molded" its broadest

reasonable interpretation,[4] we are of the opinion that the box of Kiley can be considered to be molded as claimed.

The appellant argues that Kiley does not teach or suggest a hinge that is "essentially free of pores," (claim 15), has cell walls that are plasticated (claim 16), has a thickness less than 0.060 inches (claims 16 and 17) and is "solid" (claim 17). Kiley, however, states that:

> The effect of mechanical die-scoring on the material of the present invention is depicted in FIG. 5 which shows the upper **14** and lower **16** die components which compress the panel material to form the inner **18** and outer **20** depressions of the resulting die-score. Also shown is an enlarged, graphically depicted cross-section of the subject material revealing the macrocellular **52** nature of its interior. [Column 6, lines 30-37.]

Viewing Fig. 5 of Kiley, in the region of the depressions 18 and 20 (i.e., the hinge structure) the foamed polyetheylene material is depicted as being very significantly compressed and the large macrocells 52 are conspicuously absent in this

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[4] It is well settled that the terminology in a pending application's claims is to be given its broadest reasonable interpretation (***In re Morris***, 127 F.3d 1048, 1056, 44 USPQ2d 1023, 1028 (Fed. Cir. 1997) and ***In re Zletz***, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989)) and limitations from a pending application's specification will not be read into the claims (***Sjolund v. Musland***, 847 F.2d 1573, 1581-82, 6 USPQ2d 2020, 2027 (Fed. Cir. 1988)).

region. In our view, the artisan would reasonably infer (***see In re Preda, supra***) that the hinge of Kiley is "essentially free of pores" (claim 15) and that the cell walls have been collapsed so as to form a "solid" hinge (claim 17). Moreover, with respect to the recitation of "essentially free of pores" (claim 15), "pore" is defined by The American Heritage Dictionary[5] as -- 2 A minute ***surface opening*** or passageway -- (emphasis added) and Kiley expressly states that the surface of the box is "smooth, closed, substantially non-porous" (see col. 7, line 16) and, accordingly, Kiley clearly teaches a hinge which is "essentially free of pores" as claimed. As to the limitation of the hinge being "less than 0.060 inches in thickness" (claims 16 and 17), this dimensional limitation solves no stated problem insofar as the record is concerned, leading us to conclude that such a provision is an obvious matter of design choice. ***See In re Kuhle***, 526 F.2d 553, 555, 188 USPQ 7, 8-9 (CCPA 1975). See also ***Gardner v. TEC Systems, Inc.*** 725 F.2d 1338, 1349, 220 USPQ 777, 786 (Fed. Cir. 1984),

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[5] ***The American Heritage Dictionary, Second College Edition***, 1982, Houghton Mifflin Company, Boston, MA.

cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the particular dimensions do "not specify a device which perform[s] and operate[s] any differently from the prior art."

The appellant has not separately argued the patentability of dependent claims 5-9 and 11 with any reasonable degree of specificity. Accordingly, these claims fall with the claims from which they depend. ***In re Nielson***, 816 F.2d 1567, 1572, 2 USPQ2d 1525, 1528 (Fed. Cir. 1987). See also 37 C.F.R. § 1.192(c)(7): "Merely pointing out differences in what the claims cover is not an argument as to why the claims are separately patentable."

In view of the foregoing, we will sustain the rejections under 35 U.S.C. § 103(a) of claims 1, 5-7, 11 and 15-17 based on the combined teachings of Kiley and Kimura, claim 8 based on the combined teachings of Kiley, Kimura and Solomon and claims 1, 8 and 9 based on the combined teachings of Kiley, Kimura, Davis and Solomon.

Rejection (2)

Considering first the rejection of claims 3, 4 and 18 as being unpatentable over Kiley in view of Kimura and Lux, the appellant argues that it would have been unobvious to form the box of Kiley, as modified by Kimura, with a cross-linked polyethylene foam having a density within the claimed ranges in view of the teachings of Lux. However, even if we were to agree with the appellant that this is the case, we must point out that the court in ***In re Woodruff***, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (Fed. Cir. 1990) stated:

> Nor can patentability be found in the difference in . . . ranges recited in the claims. The law is replete with cases in which the difference between the claimed invention and the prior art is some range or other variable within the claims. . . . These cases have consistently held that in such a situation, the applicant must show that the particular range is ***critical***, generally by showing that the claimed range achieves unexpected results relative to the prior art range . . . (obviousness determination affirmed because dimensional limitations in claims did not specify a device which performed and operated differently from the prior art) . . . . [Citations omitted.]

Here, the appellants have made no persuasive showing that the density ranges of "about 1 lb/ft^3 to about 10 lb/ft^3" (claims 3 and 18) or "about 4 lb/ft^3 to about 6 lb/ft^3" (claim 4) are in any way critical or are anything which would be unexpected.

To the contrary, page 8 of the specification merely states that these ranges are "preferred."[6] Similarly, we do not believe that the range thicknesses (i.e. about 0.015-0.060 inches) set forth in claim 18 serves to patentably distinguish this claim over the prior art. This being the case, we will sustain the rejection of claims 3, 4 and 18 based on the combined teachings of Kiley, Kimura and Lux.

Turning to the rejection of claim 10, the examiner considers that it would have been obvious to form the one-piece box of Kiley, as modified by Kimura, from two sheets of cross-linked polyethylene foam that have been adhered together and which have different densities in view of the teachings of Lux.[7] We do not agree. In column 2 Lux broadly teaches that

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[6] As the court in ***In re Rauch***, 390 F.2d 760, 156 USPQ 502, 503 (CCPA 1968) stated: "[m]erely because appellant's specification denotes those limitations as 'preferred' does not, without more, establish them as critical."

[7] The examiner should consider whether dependent claims such as 10 (which recites that the box is formed of two sheets of different density that are adhered together) and 12-14 (which recite that a fabric material is affixed to the hinge) may properly depend from parent claim 1 which recites a ***one-piece*** box. ***See In re Hotte***, 475 F.2d 644, 647, 177 USPQ 326, 329 (CCPA 1973) for a discussion of the difference between "one-piece" and "integral." Note also ***Advanced Cardiovascular Systems Inc. v. Scimed Life Systems, Inc.***, 887 F.2d 1070,

an outer skin may be formed by chilling the surface of a foam cigarette package. While Lux indicates that the density of the outer skin may be greater, we are not of the opinion that this teaching by Lux would fairly suggest adhering two sheets of foam having different densities to one other as set forth by claim 10. Accordingly, we will not sustain the rejection of claim 10 under 35 U.S.C.
§ 103(a) as being unpatentable over the combined teachings of Kiley, Kimura and Lux.

Rejection (5)

According to the examiner it would have been obvious to affix a fabric material to the outer surfaces of the cover, bottom section and the hinge of the box of Kiley, as modified by Kimura, in view of the teachings Johnson. Johnson, however, teaches affixing an elastic fabric to a substantially non-elastic film in order to provide a stretchable laminate construction that is suitable for use in waterproof garments (see, generally, col. 3). Absent the appellant's own

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1072, 12 USPQ2d 1539, 1541 (Fed. Cir. 1989).

teachings, we are at a total loss to understand why one of ordinary skill in this art would have been motivated to single out this disparate teaching of Johnson and incorporate it into the box of Kiley, as modified by Kimura, as the examiner proposes. This being the case, we will not sustain the rejection of claims 12-14 under 35 U.S.C. § 103(a) based on the combined teachings of Kiley, Kimura and Johnson.

In summary:

The rejections of claims 1-9, 11 and 15-18 under 35 U.S.C. § 103(a) are all affirmed.

The rejections of claims 10 and 12-14 under 35 U.S.C. § 103(a) are reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED-IN-PART

JAMES M. MEISTER Administrative Patent Judge	)
JOHN P. McQUADE Administrative Patent Judge	) BOARD OF PATENT APPEALS AND INTERFERENCES
JEFFREY V. NASE Administrative Patent Judge	)

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