

The opinion in support of the decision being entered today
is *not* binding precedent of the Board

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte THIERRY RENAULT

Appeal 2006-3219
Application 10/122,270
Technology Center 1700

Decided: May 30, 2007

Before CHUNG K. PAK, CHARLES F. WARREN, and
JEFFREY T. SMITH, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

DECISION ON APPEAL

Applicant appeals to the Board from the decision of the Primary Examiner finally rejecting claims 14, 15, 17 through 26, and 29 in the Final Action mailed September 2, 2005. Appellant canceled claim 21 subsequent to the Final Action leaving claims 14, 15, 17 through 20, 22 through 26, and 29 for our consideration. 5 U.S.C. §§ 6 and 134(a) (2002); 37 C.F.R. § 41.31(a) (2005).

We affirm the decision of the Primary Examiner.

Claim 14 illustrates Appellant's invention of an impact resistant automotive part molded from a plurality of blanks, and is representative of the claims on appeal:

14. An impact resistant automotive part molded from a plurality of blanks including at least two layers, each of the layers having a woven mat made of tows that contain fibers commingled with thermoplastic resin material, and adapted to be attached to an automotive vehicle at a pair of attachment locations spaced a predetermined distance apart, the part comprising,

a central shock-absorbing portion;

a pair of attachment portions having fixation points or holes, and connected to the central shock-absorbing portion and spaced the predetermined distance apart; and

two thermoplastic reinforced fiber structures, each of the structures being formed by a woven mat made of tows that contain woven fibers wetted by the thermoplastic material, wherein each of the woven mats at least partially forms the central shock-absorbing portion and the pair of attachment portions and continuously extends between the attachment portions to link the attachment portions to allow the part to withstand high speed impact and wherein the points or holes are sufficiently located within both of the woven mats so that the part meets high speed impact requirements.

The Examiner relies on the evidence in these references:

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| Manning | US 4,715,630 | Dec. 29, 1987 |
| Yamada | US 4,749,613 | Jun. 7, 1988 |
| Uytterhaeghe | US 5,927,778 | Jul. 27, 1999 |

Appellant relies on the evidence in this reference (Br. 5 and Evidence Appendix):

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|----------|--------------|---------------|
| Drummond | US 4,158,557 | Jun. 19, 1979 |
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Appellant requests review of the grounds of rejection under 35 U.S.C. § 103(a) (Br. 3): claims 14, 15, 17, 19, 20, 22 through 26, and 29 as unpatentable over Yamada in view of Manning; and claims 18 and 23 as

unpatentable over Yamada and Manning further in view of Uytterhaeghe (Answer 3-7).

Appellant argues the claims in the first ground of rejection as a group (Br. 4-8). With respect to the second ground of rejection, Appellant relies on the same arguments advanced with respect to the first ground (*id.* 8). Thus, we decide this appeal based on claim 14. 37 C.F.R. § 41.37(c)(1)(vii) (2006).

The Examiner contends Yamada discloses an automotive part molded from a plurality of layers including “two layers having tows of fibers commingled with thermoplastic resin material” having sections corresponding to the claimed automotive part “portions.” The sections are formed from blanks of thermoplastic reinforced fibers including the layers having tows of fibers which extend continuously between the “attachment portions” having holes. The Examiner contends the disclosed part meets high speed standard requirements (Answer 3-4, citing Yamada cols. 2, 5, and 6, and Figs. 1-3). The Examiner contends Yamada’s part differs from the claimed part in that the tows of the reinforced fibers are not woven (*id.* 4). The Examiner contends Manning discloses an automotive “bumper system comprising outer and inner layers of woven fiberglass . . . able to withstand the required . . . collision impact loads” (*id.*, citing Manning col. 6). The Examiner concludes it would have been obvious to one of ordinary skill in this art to use “tows that are woven . . . to withstand the required . . . collision impact loads” as taught by Manning (*id.*).

Appellant contends Yamada fails to teach or suggest the claimed automotive part requiring “each of the woven mats continuously extends

between the attachment portions (28) to link attachment portions (28), as illustrated in representative [Specification] Figure 6” (Br. 4-5; original emphasis omitted). Appellant contends “Yamada teaches a swirled fiber mat disposed adjacent to reinforcing fibers and joined to the reinforcing fibers by needling” (*id.* 5, citing Yamada claims 1, 9, and 14, and col. 4, ll. 24-39; original emphasis omitted). Appellant contends Drummond, cited by Yamada, discloses that “when a mat is needled, continuous strands are broken up by the needles of the needled into a plurality of short and long fibers” which does not result in “a woven mat made of tows that contain woven fibers” as claimed in claim 14 and illustrated in Specification Fig. 6 (*id.* 5-6, citing Drummond col. 6, ll. 49-55, and Yamada, col. 4, ll. 32-39; original emphasis omitted).

Appellant contends Manning does not cure the deficiencies of Yamada since Manning discloses a “modular design” bumper system with “two substantially identical, laterally extending members . . . secured at the laterally innermost ends to define an integrated bumper device (10)” (Br. 6, citing Manning Abstract and Fig. 1). Appellant contends, on this basis, that Manning does not “teach or suggest woven mats continuously extending between the attachment portions to link the attachment portions,” and thus, the combination does not teach this claim limitation (*id.* 6-7; original emphasis omitted).

Appellant contends that one of ordinary skill in this art considering the claim language and the disclosure in the Specification would not consider “holes (18) of Yamada [Fig. 2] equivalent to the attachment portions (28) of claim 14 as the holes (18) of Yamada are for fitting a rim

skin, not for attaching to an automotive vehicle” (Br. 6). Appellant further contends the “combination of Yamada and Manning [differ] in that the claimed invention discloses a pair of attachment portions (28) having fixation points or holes (26) sufficiently located within both of the woven mats so that the part meets high speed impact requirements” (*id.* 7). Appellant contends Yamada does not teach this claim limitation as “disclosed, for example, in the Specification . . . at page 2 line 26 through page 3 line 16” (*id.*). Appellant contends the claim limitation “so that the part meets high speed impact requirements” acts to further limit the location of the points or holes within the woven mats” and is thus, of patentable significance and not merely intended use (*id.*)

Appellant contends Yamada “teaches away” from using a woven mat by the use of needling to “join the fiber mat and a layer of arranged (i.e., unidirectional) fibers” and Manning “teaches away from using woven mats continuously extending between attachment portions to link the attachment points” (Br. 8, citing Yamada col. 2, ll. 55-59, and col. 4, ll. 24-42; original emphasis omitted).

The Examiner responds the claim limitation “automotive part is 'adapted to be attached to an automotive vehicle at a pair of attachment locations spaced a predetermined distance apart” does not limit the “attachment portion” with respect to attachment to an automotive vehicle (Answer 9).

The issue in this appeal is whether the Examiner has carried the burden of establishing a prima facie case of obviousness under § 103(a) over the combined teachings of Yamada and Manning.

The language of claim 14 specifies, in product-by-process format, any automotive part that can be obtained by molding from a plurality of any manner of blanks, including any length, width and depth, that include at least two layers of blanks, each of the layers having any manner of woven mat made of tows that contain any manner of fibers commingled with any manner and amount of thermoplastic resin material, regardless of the manner in which the part is molded or otherwise prepared from the blanks. *See generally, In re Thorpe*, 777 F.2d 695, 697, 227 USPQ 964, 966 (Fed. Cir. 1985).

The claimed part comprises at least any manner of central shock-absorbing portion. The part further “is adapted” in any manner to be attached to an automotive vehicle through any manner of a pair of attachment locations spaced apart a predetermined distance of any length, however short, and either horizontally or vertically. Indeed, in the body of the claim, the part further comprises at least the said spaced apart pair of attachment locations as “portions” further having fixation points or holes and connected to the central shock-absorbing portion.

The part still further comprises at least any manner of two thermoplastic reinforced fiber “structures,” each formed by any manner of “woven mats” made of tows that contain any manner of woven fibers wetted by said any manner of thermoplastic resin material. The “woven mats,” and thus, the “structures,” “at least partially forms to any extent the central shock-absorbing portion and the pair of attachment portions, and continuously extends between the attachment portions to link the attachment portions.” The “woven mats” can be the same “woven mats” forming the

required two layers of blanks which can be of any length, width and depth. Thus, the “woven mats” or “structures” can range from extending between the inner margins of the two attachment portions and thus, across at least some portion of the central shock absorbing portion, to extending from one end of the part to the other. Indeed, claim 14 encompasses any automotive part that can be obtained by molding at least the two specified layers of woven mat having thermoplastic resin materials therein.

The open-ended terms “comprising,” “including,” and, in this instance, “having,” open claim 14 to include a part molded from any manner of other material in the two required blanks; additional blanks containing any manner of materials and of any length, width, and depth; and any other material (*see* Specification, e.g., 4-10). *See, e.g., In re Baxter*, 656 F.2d 679, 686-87, 210 USPQ 795, 802-03 (CCPA 1981) (“As long as one of the monomers in the reaction is propylene, any other monomer may be present, because the term ‘comprises’ permits the *inclusion* of other steps, elements, or materials.”); *In re Bertsch*, 132 F.2d 1014, 1019, 56 USPQ 379, 384 (CCPA 1942) (“it is true that the word ‘comprising’ is usually in patent law held to be synonymous with the word ‘including’”); *cf., Ex parte Davis*, 80 USPQ 448, 449 (Bd. App. 1948) (“the word ‘comprising’ alone being synonymous with ‘including’”). On this record, we interpret the term “having” as used in the claim language to have its ordinary meaning of opening the claim to include additional materials because we find no basis in the claim language or in the written description in the Specification to interpret the term “having” in a limiting manner. *See In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re Zletz*, 893

F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989); *In re Priest*, 582 F.2d 33, 37, 199 USPQ 11, 15 (CCPA 1978).; *compare University of California v. Eli Lilly and Co.*, 119 F.3d 1559, 1573, 43 USPQ2d 1398, 1409-10 (Fed. Cir. 1997)(in a claim encompassing a “cDNA having” an unspecified sequence, “[t]he word ‘having’ still permitted inclusion of other moieties.”) *with In re Deuel*, 51 F.3d 1552,1555,1558, 34 USPQ2d 1210, 1212, 1215 (claims 5 and 7 to a “cDNA . . . having the “ recited sequence defined “the precise cDNA molecules”).

We determine that one of ordinary skill in the art would understand from the Specification that the molding process would involve heating and compression resulting in a unitary, laminated structure (*see* Specification, e.g., 4:26 to 5:4, 6:10-12, 9:6-10; *see also* Yamada, e.g., col. 4, ll. 44-59, and col. 6, ll. 55-66). We find no disclosure of the claim term “structures” in the Specification; only the disclosure that the “woven mat” enters into the molded laminate, forming a layer thereof, and the claim language also describes “structures” as formed from “woven mat” which is one of the blanks that are molded. Thus, we determine that the broadest reasonable interpretation of the term “structure” in the context of the claim language and the disclosure in the Specification is a layer of the molded laminated part. *See Morris*, 127 F.3d at 1054-55, 44 USPQ2d at 1027; *Zletz*, 893 F.2d at 321-22, 13 USPQ2d at 1322; *Priest*, 582 F.2d at 37, 199 USPQ at 15. Indeed, contrary to Appellant’s Summary Of Claimed Subject Matter encompassed by claim 14 (Supp. Br. 2-3), there is no “two thermoplastic reinforced fiber structures (24,30)” identified in the final molded part illustrated in Fig. 6 or in Fig. 9; the numerals 24,30 referring to layers or

blanks 24 and 30 in the arrangement of layers or blanks illustrated in Figs. 4 and 7, respectively (*see* Specification 9:6-7 and 11, and 10:3 and 7-10).

Thus, the language of claim 14 encompasses any automotive part attached inside or outside a vehicle, that can be prepared by molding blanks, is capable of resisting any “high speed impact,” and has fixation points or holes sufficiently located within the woven mats to meet high speed requirements (*see* Specification, e.g., 8:20 to 9:5). There is no claim requirement that the automotive part, including the attachment fixation points, must be directly and/or squarely impacted by a “high speed impact.” Thus, “high speed impact requirements” can be any such requirement determined by any entity, e.g., governmental or commercial, for any automotive part, inside or outside of a vehicle.

In this respect, there is no claim limitation specific to the bumper beams and the specific parts thereof, including the particular portions and holes, illustrated in Figs. 6 and 9, or to the particular so-called “high speed impact requirements” set forth in the Specification (Specification 2-3 and 8-10). Indeed, contrary to the manner in which Appellant framed the Summary Of Claimed Subject Matter (Supp. Br. 2-3), we find no basis in the claim language or in the disclosure in the Specification on which to read the bumper beams illustrated in Figs. 6 and 9 or the high speed impact requirements as limitations into claim 14. *See generally, Comark Communications, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186, 48 USPQ2d 1001, 1005 (Fed. Cir. 1998); *In re Paulsen*, 30 F.3d 1475, 1480, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994); *In re Van Genus*, 988 F.2d 1181, 1184, 26 USPQ2d 1057, 1059 (Fed. Cir. 1993); *Zletz*, 893 F.2d at 321-22, 13

USPQ2d at 1322; *Priest*, 582 F.2d at 37, 199 USPQ at 15; *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969). It is well settled that Appellant's mere intent as to the scope of the claimed invention encompassed by a claim does not so limit the scope of the claim which is otherwise definite when construed in light of the Specification as it would be interpreted by one of ordinary skill in the art. *In re Cormany*, 476 F.2d 998, 1000-02, 177 USPQ 450, 451-53 (CCPA 1973).¹

We find Yamada would have disclosed to one of ordinary skill in this art an automotive bumper beam which exhibits mechanical strength that is formed by stamping a composite fiber reinforced thermoplastic resin sheet comprising reinforcing fibers and fibers mats impregnated with thermoplastic resin (Yamada, e.g., col. 1, ll. 8-18, col. 2, ll. 20-35, col. 4, ll. 43-55, col. 5, l. 64, to col. 6, l. 7, and col. 6, ll. 55-67). The fiber mat can be swirled bundles of continuous strands of fibers and the reinforcing fibers arranged on the fiber mat, with the combination being mechanically joined through needling (*id.*, e.g., col. 3, ll. 5-30, and col. 6, ll. 37-41). The number of fiber mat and reinforcing fiber laminates is determined on the requirements of the bumper beam, with a construction of outer mat layers

¹ Any conflict between Appellant's *intended* invention as set forth in the Summary Of Claimed Subject Matter (Supp. Br. 2-3) and the advanced contentions, and the actual scope of claim 14 should be addressed under 35 U.S.C. § 112, second paragraph, on the basis of whether claim 14 and claims dependent thereon are "claiming the subject matter which applicant regards as his invention," in any further prosecution of the appealed claims before the Primary Examiner upon disposition of this appeal. *See Cormany*, 476 F.2d at 1000-02, 177 USPQ at 451-53; *see also Zletz*, 893 F.2d at 321-22, 13 USPQ2d at 1322 (citing *Prater*, 415 F.2d at 1404-05, 162 USPQ at 550-51).

and inner fiber layers illustrated in Fig. 1 (*id.*, e.g., col. 3, l. 31, to col. 4, l. 4, and col. 8, ll. 10-19).

Yamada discloses the mat is formed on top of the fibers as disclosed in Drummond (*id.*, col. 4, ll. 24-32, and col. 6, ll. 46-49). Yamada teaches that with the thus superimposed layers, “the mat on the opposite side from the needles suffers less form breakage of the strands” such that “the possibility of the decline of strength can be curbed to a greater extent” (*id.*, col. 4, ll. 32-42). We find that Yamada does not refer to any particular part of Drummond for the arrangement of the mat and fibers and does not specifically refer to Drummond with respect to needling. In this respect, we find Drummond discloses at column 6, lines 49-55, that during needling of the mat, the continuous strands are broken up into a plurality of short and long fibers.

Yamada discloses bumper beam 11 is prepared by heating a stampable sheet having the desired weight in a metal die to the melting point of the resin in the sheet for a desired “molding cycle” (Yamada, e.g., col. 5, ll. 7-20 and 45-46). One of ordinary skill in this art would have found from Yamada’s Fig. 5 that the fiber mat(s) extends the entire length of the laminate sheets forming the entire length of the bumper beam (*id.*, col. 6, ll. 55-67, and col. 8, ll. 10-19). The bumper beam 11 so formed is attached to each of two stays 14 by nuts/bolts 19 through holes in the bumper beam at positions which are spaced a predetermined distance apart as illustrated in Yamada’s Figs. 2 and 4 (*id.*, col. 5, ll. 45-51).

We find Manning would have disclosed to one of ordinary skill in this art C-shaped bumper beams 16 for an energy absorbing vehicle bumper, in

which a bumper beam 16 is present in each module of modular pairs 12,14 that are centrally joined, and each module is secured to the vehicle (Manning, e.g., col. 1, ll. 5-15, col. 2, ll. 45-57, col. 2, l. 65, to col. 3, l. 2, col. 3, ll. 65-66, col. 6, ll. 25-39, and Figs. 1-3, 8, 10, and 11). One of ordinary skill in this art would have found from Manning's Figs. 1 and 3 that each beam 16 has two holes in vertical wall portion 18 for attachment to bracket portion 26 of bracket member 24 which is mounted to the vehicle, wherein the two holes are spaced a predetermined distance apart (*id.*, col. 3, l. 65, to col. 4, l. 26). Manning discloses that for advantageous weight and strength purposes, the bumper beam is a laminate of fiberglass reinforced plastic material which can be thermosetting resin impregnated fiberglass having, inter alia, core elements C of linear and parallel roving elements R and "overlying outer layers M₁ and M₂ [which] are of a mat or woven construction" as illustrated in Manning's Fig. 8 (*id.*, col. 6, ll. 42-66).

We determine the combined teachings of Yamada and Manning, the scope of which we determined above, provide convincing evidence supporting the Examiner's case that the claimed invention encompassed by claim 14, as we interpreted this claim above, would have been prima facie obviousness of to one of ordinary skill in the molding arts familiar with the mechanical strength requirements for bumper beams for vehicles. Contrary to Appellant's contentions, both Yamada and Manning disclose bumper beams having all of the portions specified in claim 14, including the pair of attachment positions spaced a predetermined distance apart and containing holes, wherein all of the portions are made from laminates that include mats which extend from one end of the bumper beam to the other, thus

encompassing all the specified portions. Indeed, a single bumper beam 16 of Manning meets these claim requirements. Thus, we determine that one of ordinary skill in this art would have combined the references on the basis of the common structure and manufacture of the same kind of automotive part for mechanical strength purposes.

We cannot agree with Appellant that one of ordinary skill in this art would have been led away from using woven tows for the mat in the laminates of Yamada as taught by Manning because of the deleterious effects of needling on the woven tows in the mat as taught by Drummond. Indeed, Yamada teaches the steps to be taken so that fiber breakage and strength loss is reduced, which steps are not taught by Drummond. Appellant has not established by argument or evidence that the method of Yamada would result in mats formed with woven tows which would not provide sufficient mechanical strength to meet the objectives of the references or any of the “high speed impact requirements” encompassed by claim 14.

Accordingly, based on our consideration of the totality of the record before us, we have weighed the evidence of obviousness found in the combined teachings of Yamada and Manning alone and as further combined with Uytterhaeghe² with Appellant’s countervailing evidence of and argument for nonobviousness and conclude that the claimed invention encompassed by appealed claims 14, 15, 17 through 26, and 29 would have been obvious as a matter of law under 35 U.S.C. § 103(a).

² Appellant does not advance contentions with respect to Uytterhaeghe and accordingly, a discussion of this reference is not necessary to our decision.

The Primary Examiner's decision is affirmed.

OTHER ISSUES

While we have affirmed the decision of the Primary Examiner based on the grounds of rejection of record, we suggest the Primary Examiner consider the following upon any further prosecution of the appealed claims subsequent to the disposition of this appeal.

Appellant discloses in the Specification that the arrangement of blanks for the claimed automotive part can be that described in acknowledging prior art French Patent No. 2,749,535, characterized in the Specification and illustrated in Specification Fig. 1, to which is added blanks 24 of "Twintex," as illustrated in Specification Fig. 4, to obtain an improvement over that prior art disclosure (Specification, e.g., 3:24 to 4:12, 7:22 to 8:4, 8:23 to 9:1, 9:21-24, and Figs. 1-6). According to Appellant, "Twintex" is a known woven material "manufactured by Vetrotex France" that "includes woven mats made of tows that contain both glass and polypropylene fibers" and used in manufacturing the part disclosed in said French Patent (Specification 4:7-15; *see also* 4:16 to 5:12).

Accordingly, based on Appellant's characterization of said French Patent, it reasonably appears that the addition of a further woven mat reinforcing material, taught in this patent document to provide strength, in the manufacture of the part to further increase the mechanical strength thereof to withstand high speed impacts would be within the ordinary skill in this art at the time the claimed invention was made within the meaning of 35 U.S.C. § 103(a).

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In view of our affirmance of the decision of the Primary Examiner, we decline to exercise our authority under 37 C.F.R. § 41.50(b) (2006) and enter a new ground of rejection of the appealed claims over the French Patent on the above basis, leaving it to the Examiner to consider a translation of this patent document and enter any new ground(s) of rejection based thereon and any other reference(s) as deemed appropriate.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2006).

AFFIRMED

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