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The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ULRICH HAACK
and BERNHARD PFEIFFER

Appeal 2007-4190
Application 10/187,702
Technology Center 1700

Decided: January 9, 2008

Before BRADLEY R. GARRIS, CATHERINE Q. TIMM, and
LINDA M. GAUDETTE, *Administrative Patent Judges*.

GARRIS, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from the Examiner's decision rejecting claims 19, 22-31, 34, and 37-41. We have jurisdiction under 35 U.S.C. § 6.

We AFFIRM.

Appellants claim a load bearing structure comprising a metal and uncross-linked polypropylene which comprises glass fibers having a length

of from 1 to 12 mm and which has a coefficient of thermal expansion differing from the metal by not more than 20 x 10^{-6} K^{-1}.

Representative claim 19 reads as follows:

19. A load bearing structure used in vehicle construction and/or in industrial applications comprising at least one metal having a surface and optionally an opening and comprising at least one uncross-linked polypropylene which comprises glass fibers of a length of from 1 to 12 mm and which has a coefficient of thermal expansion differing from that of the metal used by not more than 20 x 10^{-6} K^{-1}.

The references set forth below are relied upon by the Examiner as evidence of obviousness:

BASF	GB 1,512,735	Sep. 25, 1975
Shirai	JP 04-041216 A	Feb. 12, 1992
Nishida	5,449,722	Sep. 12, 1995

Under 35 U.S.C. § 103(a): claims 19, 23, 27, 29-31, 34, and 37-41 are rejected as being unpatentable over the British reference in view of Nishida, and claims 19, 22-31, 34, and 37-41 are rejected under as being unpatentable over the Japanese reference in view of Nishida.

The Examiner finds that the British and Japanese references disclose structures comprising metal and glass fiber reinforced polymer generally but not the specific glass fiber reinforced polymer defined by claim 19 (Ans. 4, 6). In this latter regard, the Examiner also finds that: Nishida teaches thermoplastic resin having dimensional stability to thereby avoid problems caused by different thermal expansion degrees between the plastic and metal of a molded product (para. bridging cols. 1-2); the resin comprises 30 to

97% by weight of a crystalline thermoplastic resin and 0 to 40% by weight of an inorganic filler (col. 3, ll. 33-45); the thermoplastic resin comprises polyolefin preferably a crystalline polypropylene (para. bridging cols. 6-7); and the inorganic filler comprises glass fibers having preferably a length of about 1 to 8 mm (col. 13, ll. 19-37)(Ans. 4-7).

In light of these findings, the Examiner concludes that it would have been obvious for one with ordinary skill in this art to use as the glass fiber reinforced polymer in the structures of the British and Japanese references a thermoplastic resin composition of the type taught by Nishida comprising uncross-linked polypropylene with glass fibers having a 1 to 8 mm length and which has a coefficient of thermal expansion corresponding to the metal of the structures (Ans. 5, 6-7).

Appellants argue that "[t]here is no teaching in Nishida that CETs [i.e., coefficients of thermal expansion] as low as those of metals can be achieved by reinforcing polypropylene with long glass fibers (Br. 5, 10). We cannot agree.

We share the Examiner's above-noted finding that Nishida is directed to improving dimensional stability by controlling thermal expansion coefficients in plastic molded products including those used in combination with metal (para. bridging cols. 1-2). All of Nishida's embodiments, including the above-discussed embodiment of polypropylene reinforced with glass fibers having a length of 1 to 8 mm, relate to patentee's goal of improving dimensional stability by minimizing thermal expansion differences, for example, in the combination of a plastic molded product and

metal. Therefore, contrary to Appellants' argument, Nishida teaches or at least would have suggested a structure comprising metal in combination with a plastic molded product comprising the aforementioned embodiment of polypropylene reinforced with glass fibers having a length of 1 to 8 mm wherein the metal and plastic molded product have corresponding coefficients of thermal expansion as required by the appealed claims.

Appellants further argue Nishida teaches away from their invention because (1) Tables 2, 4, and 6 disclose resin compositions with inorganic fillers such as talc, potassium titanate and clay which exhibit coefficients of thermal expansion almost 10 times higher than metals and (2) a person of ordinary skill in the art "would have assumed that said glass fibers [of Nishida] would have the same effect on CET [i.e., coefficient of thermal expansion] as talc, potassium titanate and clay" (Br. 6, 10-11). On the record before us, there is no support for Appellants' contention that an artisan would have assumed Nishida's glass fibers would produce the same coefficient of thermal expansion as talc, potassium titanate and clay. Therefore, we are not persuaded by Appellants' argument based on this unsupported contention.

In addition, Appellants argue that Nishida's glass fiber length teaching of 1 to 8 mm relates to an initial length prior to processing and that subsequent processing such as kneading would reduce this length to below 0.5 mm as evidenced by the Truckenmüller article attached to the Brief (Br. 7, 11). This argument is without persuasive merit for several reasons.

First, we perceive no support for Appellants' assumption that Nishida's glass fiber length of 1 to 8 mm relates to an initial fiber length. Certainly, patentee's disclosure of this glass fiber length (col. 13, ll. 27-37) does not use the term "initial" to describe the fiber length. Secondly, as correctly indicated by the Examiner (Ans. 10-11), Nishida does not require further processing such as kneading which would necessarily reduce the fiber length. In this regard, we reiterate the Examiner's point that, according to Nishida, "[a] method for obtaining the thermoplastic resin composition of the present invention is not particularly limited" (col. 16, ll. 40-43). That is, Nishida's resin and glass fiber combination need not be obtained by an operation (such as kneading) which would reduce fiber length. Third, even if a kneading operation were performed, Appellants have not specifically identified any disclosure in the Truckenmüller article which evinces that the length of glass fibers, having an initial length of 1 to 8 mm, "will be reduced to below 0.5 mm" (Br. 7, 11) as urged by Appellants. Fourth, Nishida's above discussed goal of dimensional stability would have led an artisan to employ fiber lengths, such as the 1 to 8 mm glass fiber lengths expressly disclosed by patentee, that would achieve the desired dimensional stability by minimizing differences in coefficients of thermal expansion for the metal and glass fiber reinforced polypropylene combination.

Finally, we are unconvinced by Appellants' argument that the applied prior art contains no teaching or suggestion of the slot or aperture feature of claims 25, 26, and 28 (Br. 12-13). As correctly indicated by the Examiner (Ans. 11), the metal mesh of the Japanese reference necessarily would

contain an aperture. Likewise, we find no convincing merit in Appellants' argument that the applied prior art contains no teaching or suggestion concerning dependent claims 25 and 39. These dependent claims additionally require that the polypropylene comprise from 30 to 50 wt.% of glass fibers, and this concentration would have been suggested by Nishida's 0 to 40 % by weight concentration for the inorganic filler (i.e., glass fiber)(col. 3, l. 41; col. 14, l. 36).

In light of the foregoing, it is our determination that the Examiner has established a prima facie case of obviousness with respect to each of the argued claims on appeal which Appellants have failed to successfully rebut with argument or evidence of nonobviousness. We hereby sustain each of the § 103 rejections before us in this appeal.

The decision of the Examiner is affirmed.

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).

AFFIRMED

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