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 SHIGEYUKI and TAKAHARU IMAMURA

Appeal 2007-1800
Application 10/206,235
Technology Center 1700

Decided: July 31, 2007

Before EDWARD C. KIMLIN, BRADLEY R. GARRIS, and JEFFREY T. SMITH*, Administrative Patent Judges*.

GARRIS, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the final rejection of claims 1, 2, 4, and 6-19. We have jurisdiction under 35 U.S.C. § 6.

We AFFIRM.

The Appellants claim a tempered glass having a curved shape and used as a window glass for automobiles which comprises a compressive stress layer having a peripheral portion with a minimum thickness within a specified range of values. Further details regarding this tempered glass are set forth in representative claims 1 and 2 which read as follows:

1. A tempered glass having a curved shape and used as a window glass for automobiles, comprising:

a compressive stress layer; and

a tensile stress layer formed inside the compressive stress layer,

wherein the compressive stress layer has a peripheral portion in which the minimum thickness (a) of the compressive stress layer is from 0.15 to 0.7 mm, the tempered glass has a thickness (t) between 1.5 and 3.5 mm, and the minimum thickness (a) of the compressive stress layer in a direction of glass thickness is equal to or greater than 10% and less than or equal to 17% of the thickness (t).

2. The tempered glass according to Claim 1, wherein the relation between the thickness (t) and an average thickness (b) of the compressive stress layer satisfies $0.15 \leq b/t \leq 0.25$.

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

Hashemi	US 5,525,138	Jun. 11, 1996
Yoshizawa	US 5,972,513	Oct. 26, 1999
Kaneko	US 6,107,360	Aug. 22, 2000

Claims 1, 2, 4, 6, 7, and 16-19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Yoshizawa in view of Hashemi, and claims 8-15

are correspondingly rejected over these references and further in view of Kaneko.

The arguments presented in the Brief (i.e., filed Jan. 23, 2006) and Reply Brief (i.e., filed Sep. 26, 2006) are focused on the thickness limitations of claims 1 and 2. No other claimed features are separately argued by the Appellants on the record of this appeal. Therefore, in our disposition of this appeal, we likewise will focus on claims 1 and 2.

It is the Examiner's basic position that it would have been obvious to provide the tempered glass of Yoshizawa with compression layer thicknesses in accordance with the teachings of Hashemi and that the resulting tempered glass would possess thickness values within the ranges defined by claims 1 and 2 (Answer 4-5).

The Appellants argue that there is no motivation to combine Yoshizawa with Hashemi and that, even if combined, the result would not correspond to the tempered glass of claims 1 and 2 (Br. 3-4).

Findings of Fact

(1) It is undisputed that Yoshizawa discloses tempered glass having a curved shape for use in automobiles (col. 1, ll. 4-16) which has a thickness of 1.5 to 3.2 mm and a compressive stress at the edge of the glass sheet periphery (col. 4, ll. 44-52). Concomitantly, it is undisputed that Yoshizawa discloses all aspects of claims 1 and 2 except for the minimum and average thickness features of the compressive stress layer.

(2) Hashemi discloses optimizing the strength of tempered glass by providing a compressive stress layer thickness which is a certain percentage of the glass sheet thickness (col. 2, ll. 33-48).

(3) Hashemi's afore-noted compressive stress layer thickness is related to the glass composition and thickness (col. 3, ll. 28-34; col. 5, ll. 43-46).

(4) For a particular glass composition of 3.8 mm thickness, Hashemi teaches that the optimal compression layer (i.e., compressive stress layer) thickness is about 18-20% of the total glass thickness (col. 6, ll. 5-16 and 39-42).

(5) Hashemi discloses that his teachings would enable those skilled in the art to determine the percent compression layer thickness for glass sheets having other compositions and thicknesses (col. 6, ll. 20-26; col. 7, ll. 25-30).

Claim Construction

Claim 1 recites "the compressive stress layer has a peripheral portion in which the minimum thickness (a) of the compressive stress layer is from 0.15 to 0.7 mm." This language might be interpreted as defining a minimum thickness value which excludes compressive stress layer thicknesses of lesser value and includes compressive stress layer thicknesses of greater value. However, at the oral hearing of July 10, 2007, Appellants' representative indicated that the recitation should be interpreted as requiring a compressive stress layer with a minimum thickness which is literally within the claim 1 range.

In this latter regard, we observe that claim 1 inconsistently defines the uppermost value of the minimum thickness. More specifically, in the afore-quoted recitation, this uppermost value is defined as 0.7 mm whereas, in the last two lines of claim 1, the uppermost value is defined as 17% of tempered glass thickness (t) which is equal to an uppermost value of 0.485 (i.e., 17% of a 3.5 mm thickness (t)). When asked at the oral hearing to resolve this inconsistency, Appellants' representative indicated claim 1 should be construed as requiring minimum thicknesses that satisfy all claim requirements which therefore would include a range from 0.15 to 0.485 mm.

For purposes of resolving the § 103 issues advanced by the Appellants and the Examiner on this appeal, we will interpret claim 1 in the manners indicated by Appellants' representative at the oral hearing.[1]

Principles of Law and Analysis

As recently stated by the Supreme Court, "if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill." *KSR Int'l v. Teleflex Inc.*, 127 S. Ct. 1727, 1740, 82 USPQ2d 1385, 1396 (2007).

[1] In any further prosecution that may occur, the Examiner and the Appellants should address and resolve whether this claim interpretation is the broadest reasonable interpretation consistent with the Specification disclosure. *See In re Am. Acad. of Sci. Tech. Ctr..,* 367 F.3d 1359, 1364, 70 USPQ2d 1827, 1830 (Fed. Cir. 2004). *See also* Philips v. AWH Corp., 415 F.3d 1303, 75 USPQ2d 1321 (Fed. Cir. 2005).

Here, an artisan would have recognized that Hashemi's technique for optimizing the strength of tempered glass generally (Finding of Fact 2) would likewise optimize the strength of Yoshizawa's specific tempered glass having a curved shape for use as automobile window glass. This is evinced by Hashemi's express disclosure that his teachings would enable an artisan to determine optimal compressive stress layer thicknesses for tempered glass sheets other than the one exemplified by patentee (Finding of Fact 5). For these reasons, an artisan would have been motivated to so combine Yoshizawa and Hashemi based upon a reasonable expectation of success.

Appellants' contrary view derives from the Examiner's proposal that an artisan would have combined these references by making Yoshizawa's compressive stress layer thickness about 18-20% of the total glass thickness as specifically taught by Hashemi with respect to a particular glass composition of 3.8 mm thickness (Finding of Fact 4). According to the Appellants, Hashemi's disclosure of a relationship between compression layer thickness and glass sheet composition/thickness (Finding of Fact 3) teaches away from applying Patentee's specific range of about 18-20% to Yoshizawa's glass sheet of 3.2 mm thickness (Br. 9-10). In other words, Appellants believe there is no motivation or reasonable expectation of success for applying Hashemi's specific range of about 18-20% to a glass sheet thickness other than 3.8 mm (Br. 12). This argument is unpersuasive for a number of reasons.

First, as previously explained, Hashemi expressly discloses that an artisan would be able to apply his technique to glass sheets having compositions and thicknesses other than the one exemplified. While the Examiner focused on Hashemi's specifically disclosed range of about 18-20%, an artisan would not have so restricted his or her focus.

Regardless, in applying the teachings of Hashemi to the 1.5-3.2 mm thick glass sheet of Yoshizawa, the artisan might well have developed an optimal compressive stress layer thickness of about 18-20% of the total glass thickness. This is because Hashemi explicitly teaches that "[t]he optimal % thickness and tension for other thicknesses/compositions of glass may vary from those described in the example above and could be similarly determined as would be apparent to those skilled in the art in view of the present disclosure" (col. 7, ll. 25-30; emphasis added). This teaching would have given the artisan motivation and a reasonable expectation of success for providing Yoshizawa's glass sheet with a compressive stress layer thickness equal to about 18%, such as the here-claimed 17% value, of the total glass thickness.

Finally, Appellants argue that application of Hashemi's technique to glass sheets having a thickness below his exemplified 3.8 mm value, such as the 1.5-3.2 mm thick glass sheets of Yoshizawa, may have led to compressive stress layer thickness values larger than Hashemi's exemplified range of about 18-20% since a thinner glass sheet would require a thicker compressive layer (Reply Br. 2-3). This argument is unpersuasive for two

reasons. First, it appears to be based entirely on speculation by Appellants' representative. Second, the aforenoted proposition that a thinner glass sheet would require a thicker compressive layer is contrary to Appellants' Specification disclosure at pages 2, 3, and 6.

Conclusion of Law

For the above-stated reasons, we conclude that it would have been obvious for an artisan to combine Yoshizawa and Hashemi in order to provide the former with an optimal compressive stress layer thickness such as equal to 17% of the total glass thickness. The tempered glass resulting from this combination would have compressive stress layer thicknesses within the minimum and average thicknesses required by claims 1 and 2. We hereby sustain, therefore, the Examiner's § 103 rejection of these claims as well as the § 103 rejections of the other non-argued claims on appeal.

Order

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

clj

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