

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 73

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SHINICHI OHTAKE
and
TATSUYA TAMURA

Appeal No. 1998-2039
Application No. 08/326,806

HEARD: September 9, 2003

Before KIMLIN, DELMENDO, and POTEATE, Administrative Patent Judges.

DELMENDO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 (2003) from the examiner's refusal to allow claims 13 through 18, 20 through 25, and 31 through 36 in the above-identified application.¹ Claims 26 through 30, which are the only other

¹ In reply to the final Office action mailed Apr. 30, 1997 (paper 53), the appellants submitted two separate amendments pursuant to 37 CFR § 1.116 (1981), both of which have been entered. (Amendments filed Jul. 8, 1997, paper 54; advisory action mailed Jul. 30, 1997, paper 55; amendment filed

pending claims, stand withdrawn from further consideration pursuant to 37 CFR § 1.142(b) (1959).

The subject matter on appeal relates to a method of manufacturing windows for automobiles. (Specification, pages 1-5.) According to the appellants, the invention overcomes various problems of prior art processes. These problems include: increased cycle time, which makes it difficult to achieve improved manufacturing productivity; a relatively high injection pressure often resulting in undesirable formation of burrs or flash along the parting surface of the mold halves or in damages to the window plate from higher tightening (clamping force); severe compression stress on the window plate as the frame member is subjected to cooling; and dimensional fluctuations in the window plates. (Id.; appeal brief filed Oct. 29, 1997, paper 61, pages 3-4.) Further details of this appealed subject matter are recited in representative claims 31 and 32, the only independent claims on appeal, as well as claim 35 reproduced below:

31. A method of manufacturing windows, including a window plate and a frame member which is composed of a thermoplastic synthetic resin material and formed integrally with the window plate along at least one

Oct. 29, 1997, paper 62; examiner's answer mailed Feb. 9, 1998, paper 61 mislabeled as paper "63," p. 2.)

edge thereof, said frame member including a lip section and a web section which are spaced from and opposed to each other on outer and rear surfaces of the window plate, respectively, and further including a bridge section connecting the lip and web sections with each other, wherein said method comprises the steps of:

(A) placing at least one edge of the window plate between a cavity plate and a core plate of an injection mold, and connecting the cavity plate and the core plate to each other with said at least one edge of the window plate clamped therebetween, to define a mold cavity, having a volume, which corresponds to the frame member along the clamped edge of the window plate;

(B) pressurizing and injecting a predetermined amount of a molten thermoplastic synthetic resin material into the mold cavity, said predetermined amount being sufficient to form a frame member with a continuous hollow inner space;

(C) injecting into the synthetic resin material within said mold cavity a compressed gas under a predetermined pressure, from that side of the core plate which forms part of the web section of the frame member, thereby causing the synthetic resin material to flow along the clamped edge of the window plate forcing the resin against the window plate while forming a continuous hollow inner space within the synthetic resin material, said hollow space acting to reduce the pressure of the resin material against the window plate;

(D) maintaining said pressure of the compressed gas thereby urging the synthetic resin material against surfaces of the mold defining the mold cavity and against outer and rear surfaces of the window plate along the clamped edge thereof, while placing the synthetic resin material under cooling and solidification conditions in the mold cavity; and

(E) separating the cavity plate and the core plate from each other, and removing from the injection mold the window plate integrally provided with the frame member along said at least one edge thereof.

32. A method of manufacturing windows, including a window plate and a frame member which is composed of a thermoplastic synthetic resin material and formed integrally with the window plate along at least one edge thereof, said frame member including a lip section and a web section which are spaced from and opposed to each other on outer and rear surfaces of the window plate, respectively, and further including a bridge section connecting the lip and web sections with each other, and an ornamental element arranged on outer surfaces of the lip section, wherein said method comprises the steps of:

(A) placing at least one edge of the window plate between a cavity plate and a core plate of an injection mold, with the ornamental element placed on the cavity plate, and connecting the cavity plate and the core plate to each other with said at least one edge of the window plate clamped therebetween, to define a mold cavity, having a volume, which corresponds to the frame member along the clamped edge of the window plate;

(B) pressurizing and injecting a predetermined amount of a molten thermoplastic synthetic resin material into the mold cavity, said predetermined amount being sufficient to form a frame member with a continuous hollow inner space;

(C) injecting into the synthetic resin material within said mold cavity a compressed gas under a predetermined pressure, from that side of the core plate which forms part of the web section of the frame member, thereby causing the synthetic resin material to flow along the clamped edge of the window plate forcing the resin against the window plate while forming a continuous hollow inner space within the synthetic resin material, said hollow space acting to reduce the pressure of the resin material against the window plate;

(D) maintaining said pressure of the compressed gas thereby urging the synthetic resin material against surfaces of the mold defining the mold cavity and against outer and rear surfaces of the window plate along the clamped edge thereof, while placing the synthetic resin material under cooling and solidification conditions in the mold cavity; and

(E) separating the cavity plate and the core

plate from each other, and removing from the injection mold the window plate integrally provided with the frame member along said at least one edge of the window plate, said frame member having the ornamental element on the outer surface of the lip section.

35. The method according to claim 31 in which the pressure of the compressed gas injected into the synthetic resin is less than the pressure of the synthetic resin which is injected into the mold cavity.

The examiner relies on the following prior art references as evidence of unpatentability:

Friederich	4,101,617	Jul. 18, 1978
Hendry	5,098,637	Mar. 24, 1992
Kida et al. (JP '729) (published JP application)	62-268729	Nov. 21, 1987

Claims 35 and 36 on appeal stand rejected under the first paragraph of 35 U.S.C. § 112 as lacking written description.

(Answer, pages 5-6.) Further, claims 13 through 18, 20 through 25, 31, and 32 on appeal stand rejected under 35 U.S.C. § 103(a) as unpatentable over JP '729 in view of Hendry, while claims 33 through 36 on appeal stand rejected under 35 U.S.C. § 103(a) as unpatentable over JP '729 in view of Hendry and further in view of Friederich. (Id. at pages 4-5.)²

² The examiner withdrew the final rejection under 35 U.S.C. § 112, ¶2, of claims 33-36. (Final Office action, p. 2; advisory action, PTO-303 form.)

We affirm the rejection under 35 U.S.C. § 112, first paragraph, but not the rejections under 35 U.S.C. § 103(a).

35 U.S.C. § 112, ¶1: Written Description

The examiner's position is that while the specification (page 13), as originally filed, describes the pressure of the compressed gas to be "significantly lower" ("on the order of several 10 kg/cm²") than the pressure for injecting the resin material in a "conventional injecting molding process" ("on the order of several 100 kg/cm²"), there is no disclosure of the subject matter of appealed claims 35 and 36, which recite: "the pressure of the compressed gas injected into the synthetic resin is less than the pressure of the synthetic resin which is injected into the mold cavity." (Answer, pages 5-6.)

We agree with the examiner on this issue. We find nothing in the originally filed disclosure that would reasonably convey to one skilled in the relevant art that the appellants, at the time of filing, had possession of the subject matter of these claims. The disclosure on page 13 of the specification refers to specific pressure values of the compressed gas relative to specific pressure values for injecting the resin material in conventional injection molding processes. Accordingly, this

disclosure does not support the subject matter of appealed claims 35 and 36.

Rejections under 35 U.S.C. § 103(a)

The appellants correctly point out that JP '729 does not describe the use of compressed gas as recited in steps (B) through (D) of appealed claims 31 and 32. (Appeal brief, page 8.) The examiner appears to concede this point. (Answer, page 4.)

To account for this difference, the examiner relies on Hendry. Specifically, it is the examiner's basic position that "[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to injection mold as taught by Hendry in the process of Japanese reference '729 in order to form a lightweight frame which would not shrink upon cooling as shown in Figures 6 and 8 and which is reinforced at selected locations." (Answer, pages 4-5.)

We cannot agree with the examiner. As argued by the appellants (appeal brief, pages 9-12), Hendry's use of pressurized gas is quite unlike that of the appellants' claimed invention. Hendry's disclosure relates to "relatively large size structural articles for use in diverse product fields, such

as box-sectioned frame member for an automobile or refrigerator door or the hood of a car having a reinforcing beam." (Column 2, lines 43-47.) By contrast, the appellants' use of pressurized gas is to cause the synthetic resin material to flow along the clamped edge of a window plate forcing the resin against the window plate while forming a continuous hollow inner space within the synthetic resin material. In this way, the appellants have overcome numerous problems in prior art processes. In re Spinnoble, 405 F.2d 578, 585, 160 USPQ 237, 243 (CCPA 1969).

On balance, it is our judgment that the evidence in support of obviousness does not outweigh the evidence of support of nonobviousness.

Summary

In summary, we affirm the examiner's rejection under the first paragraph of 35 U.S.C. § 112 of appealed claims 35 and 36 as lacking written description. We reverse, however, the examiner's rejections under 35 U.S.C. § 103(a) of appealed claims 13 through 18, 20 through 25, 31, and 32 as unpatentable over JP '729 in view of Hendry and appealed claims 33 through 36 as unpatentable over JP '729 in view of Hendry and further in view of Friederich.

The decision of the examiner is therefore affirmed in part.

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

AFFIRMED IN PART

Edward C. Kimlin)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
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