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BEFORE THE PATENT TRIAL
AND APPEAL BOARD

Ex parte GÉRARD DENIS, ALAIN CONTAL,
and CYRILLE DURAND

Appeal 2011-011705
Application 10/553,329
Technology Center 1700

Before CHARLES F. WARREN, MICHAEL P. COLAIANNI, and GRACE KARAFFA OBERMANN, *Administrative Patent Judges*.

COLAIANNI, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 the final rejection of claims 1-24. We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b).

We AFFIRM.

Appellants' invention is directed to containers for beverages and flowable products (Spec. para. [0001]).

Claim 1 is illustrative:

1. A container comprising a body formed by at least one wall having a diameter S1, a bottom portion, and a neck with a diameter S2 and a ratio S2:S1 ranging between 1:2 and 1:15, the container being made from a semi-crystalline

PET, having a wall thickness of less than 100 μm, substantially in the middle of its body, having a bottom portion thickness between 100 μm and 150 μm, and having a three dimensional shape that is so constructed and arranged to make it convenient for gripping, having a diameter S3.

Appellants appeal the following rejections[1]:

1. Claims 1-14, 16-19, and 21-23 are rejected under 35 U.S.C. §103(a) as being unpatentable over Hideaki (JP 2001-122237 published May 8, 2001)[2] in view of Beck (WO 01/56896 A1 published August 9, 2001) and Hutchinson (US 2003/0031814 A1 published February 13, 2003).
2. Claims 15, 20, and 24 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hideaki in view of Beck, Hutchinson, and Schaupp (US 2002/0185212 A1 published December 12, 2002).

Appellants argue the claims under rejection (1) as a group (App. Br. 15-20). We select claim 1 as representative. Though appealed, Appellants do not separately argue claims 15, 20, and 24 under rejection (2) (App. Br. 8, 15-21). As no argument against the Examiner's rejection of claims 15, 20 and 24 has been proffered by Appellants, we summarily affirm the Examiner's rejection of these claims.

ISSUE

[1] The Examiner withdrew the 35 U.S.C. § 112, second paragraph, rejection of claims 4-7, 12, and 17-20 (Ans. 3).
[2] We refer to the translation of Hideaki of record, which is not contested by Appellants.

Did the Examiner reversibly err in determining that the combined teachings of Hideaki and Beck[3] would have rendered obvious a container having the claimed S2:S1 ratio and a bottom thickness from 100 to 150 μm as recited in claim 1? We decide this issue in the negative.

FINDINGS OF FACT AND ANALYSES

The Examiner's findings regarding Hideaki, Beck and Hutchinson may be found on pages 5-8 of the Answer. Specifically, the Examiner finds that Hideaki teaches a container that has the features of claim 1, except for the S2:S1 ratio and the bottom portion of the container having a wall thickness from 100 to 150 mm and the three-dimensional shape of the bottle constructed and arranged to a make it easier for gripping at a diameter S3 (Ans. 5-7). The Examiner finds that Beck discloses forming a bottle with a gripping section having a smaller diameter than the rest of the bottle and that the bottom portion of the bottle should be thicker than the rest of the walls of the bottle (Ans. 5-6). The Examiner finds that Hideaki discloses that the container has a structurally stable portion with a thickness from 0.2 to 0.3 mm and ultrathin wall portion having a thickness from 0.02 to 0.05 mm (Ans. 6). The Examiner concludes that it would have been obvious to have modified Hideaki's bottle design to include a gripping section as disclosed by Beck in order to improve grippability of the bottle (Ans. 5-6). The Examiner further concludes that it would have been obvious to make the bottom portion of Hideaki's bottle thicker than side walls to provide stability to the bottle and the thicker bottom portion would fall within the range of

[3] We limit our discussion to Hideaki and Beck as the Examiner relies on Hutchinson to teach using semi-crystalline PET to make the bottle, which is not disputed by Appellants (App. Br. 17-21; Ans. 6).

0.02 to 0.3 mm as Hideaki teaches these are suitable thicknesses for the walls of the bottle (Ans. 6-7).

Regarding the S2:S1 ratio, the Examiner finds that Beck's and Hideaki's bottles shown in the figures appear to possess a S2:S1 ratio within the claimed ratio range (Ans. 7). The Examiner concludes that it would have been obvious for the ordinarily skilled artisan to have adjusted the ratio of the diameter of the body to the diameter of the neck to within the claimed range as part of the normal process of designing the bottle to accommodate the amount of liquid required in its final use while still remaining aesthetically appealing (Ans. 7). As evidence to support this conclusion, the Examiner finds that Beck teaches in Table 3 and Figures 3a to 3c a neck (S2) to bottle diameter (S1) of approximately 1:4 which is within the claimed range (Ans. 10).

Appellants argue that Hideaki, Beck and Hutchinson fail to teach the bottom portion having a thickness from 100 to 150 μm and a container with a wall thickness of less than 100 μm having the claimed S2:S1 ratio (App. Br. 17-19). Appellants contend that there is no reason to combine Beck's teachings with Hideaki's bottle because Hideaki's ultrathin bottle teaches away from the using Beck's teachings regarding bottles with thicker walls (App. Br. 19-20). Appellants argue that the Examiner's rejection is based upon hindsight (App. Br. 20).

The preponderance of the evidence favors the Examiner's obviousness conclusion. Contrary to Appellants' arguments, Hideaki teaches that the bottom portion of the container is thicker than the wall portions in order to support the load of the contents in the bottle (Hideaki para. [0012]). As found by the Examiner (Ans. 6), Beck's Figure 6 shows that that the bottom

portion is relatively thicker than the wall portion. Accordingly, one of ordinary skill in the art would have known to make the bottom portion thicker than the wall segments. Hideaki teaches that thicknesses in the bottle may range from 0.02 to 0.3 mm, which overlaps the claimed bottom thickness (Ans. 6-7). As explained by the Examiner, Hideaki further discloses that the shoulder part 2 (i.e., the top portion of the bottle) is thicker for stability and thus permits the ultrathin barrel portion of the bottle to be crushed into the shoulder part (Ans. 6). In other words, one of ordinary skill in the art would have understood from Hideaki's teachings that the bottom portion thickness of Hideaki's bottle may be within the range of 0.02 to 0.3 mm which overlaps Appellants 100 to 150 μm thickness range for the bottom portion to support the load of the bottle.

Though Appellants contend that Hideaki's entire barrel part thickness including the bottom portion is within the thickness range of 0.02 to 0.05 mm, we agree with the Examiner that Hideaki does not limit the bottom to be solely within the thickness range of 0.02 to 0.05 mm. Rather, Hideaki teaches that the "barrel part" has a thickness from 0.02 to 0.05 mm (Hideaki para. [0013]). We understand Hideaki's disclosure that the "portion below the barrel part" has a thickness of 0.02 to 0.05 mm to mean that the portion below the middle of barrel part 3 but not including bottom portion 4 as shown in Hideaki's Figure 1 to be within the disclosed ultrathin thickness range (Hideaki para. [0010]). Indeed, Hideaki discloses that the thickness of the wall portion from the barrel part *to* the bottom part 4 is between 0.02 to 0.05 mm and that the bottom part is thicker than the barrel part thickness, which would include values greater than 0.05 mm when the barrel wall thickness is 0.05 mm (Hideaki para. [0010], emphasis added). Taking all of

Hideaki's disclosures as a whole, we find that Hideaki discloses that the bottle is formed with a thickness of 0.02 to 0.05 mm from the barrel part to, but not including, the bottom portion. As such we agree with the Examiner that Hideaki and Beck would have suggested a bottle or container with a bottom portion having a thickness within the claimed range.

Appellants' arguments that Hideaki teaches away from using Beck's thicker bottom portion and the combination is based on hindsight are not persuasive because we agree with the Examiner's finding that Hideaki does not teach that the bottom portion needs to be ultrathin (i.e., 0.02 to 0.05 mm). As explained above, Hideaki discloses that the bottom is thicker than the barrel part and we agree with the Examiner that in light of Hideaki's and Beck's teachings, it would have been obvious to make the bottom portion with a thickness within the claimed range for the reasons discussed *supra*.

Also, we agree with the Examiner's finding that Beck is not limited to the bottle wall thicknesses disclosed in the examples (Ans. 13). Rather, Beck teaches that the relative thicknesses of the wall portions need to have a particular relationship but do not require the particular thicknesses in the examples. Beck's disclosure of a "normal" thickness is, as found by the Examiner, merely an indication of a base thickness from which the relative thicknesses of the other portions of the parison are measured. For example, Table 1 describes "typical upper body thickness" as t1 and the thickening rib has a thickness as (1.02 to 1.5) x t1. Table 1 includes "Examples" of wall thickness, but these exemplary wall thicknesses do not limit the underlying teaching of a relative thickness relationship.

Appellants' argument regarding the S2:S1 ratio is unpersuasive. The Examiner determines that the claimed S2:S1 ratio would have been obvious

to the ordinary artisan as part of designing and making the bottle and that the conventional 2-liter bottle possesses a S2:S1 ratio within the claimed range. Appellants do not dispute that the conventional 2-liter bottle has a S2:S1 ratio that falls within the claimed range (Reply Br. *generally*). We agree that it would have been obvious to use a S2:S1 ratio falling within the claimed range in designing and making a bottle for consumer use as is taught by the prior art. Indeed, Beck discloses via Figures 3a to 3c and the data in Table 3 that values within the S2:S1 ratio range claimed were known to be used in making bottles as found by the Examiner.

Appellants dispute whether Hideaki teaches a S2:S1 ratio based on Figure 1, arguing that Hideaki teaches that S2:S1 ratio of less than 1:2 (Reply Br. 2). Appellants have not explained how they arrived at that conclusion from Hideaki's drawings. Nevertheless, it would appear that Appellants used the measurement from the widest part of the neck (i.e., the protrusion on the neck near the shoulder 2) as S2. However, it would appear that the relative dimension of Hideaki's inner neck diameter S2 (shown in Appellants' Fig. 1 as the proper measure of S2) to the S1 (inner wall diameter of the bottle) would have yielded at least a 1:3 ratio. *In re Mraz*, 455 F.2d 1069, 1072 (CCPA 1972) (Drawings in patents are not working drawings, but may be relied upon for what they show clearly).

Appellants further argue that neither Hideaki nor Beck teach the incompressibility of their bottles (App. Br. 18). We agree with the Examiner's analysis on page 12 of the Answer. Appellants' arguments regarding the compressibility of Hideaki's or Beck's bottle when empty are not relevant as the claims do not state that bottles are substantially

incompressible when empty. Rather, for example, claim 4 states that the bottle is "substantially incompressible when filled with product."

We have fully considered the Declaration of Alain Contal (hereinafter the "Contal Declaration"). As pointed out by the Examiner, Appellants' statement that Appellants "surprisingly found" that the bottle with thickness and S2:S1 ratio requires less plastic and has comparable mechanical properties appears to be arguing unexpected results with regard to the claimed bottle structure (App. Br. 16). However, the Contal Declaration fails to provide any concrete evidence to establish criticality of the claimed S2:S1 range or the combination of wall thicknesses and S2:S1 range (Ans. 9-10). As such, Appellants have not established unexpected results with regard to the bottle structure.

On this record and for the above reasons, we affirm the Examiner's § 103 rejections.

DECISION

The Examiner's decision 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).

ORDER

AFFIRMED

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