UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROBERT READDY and DANIEL J. DURHAM

Appeal 2007-3798
Application 11/154,582
Technology Center 1700

Decided: January 24, 2008

Before EDWARD C. KIMLIN, CATHERINE Q. TIMM, and JEFFREY T. SMITH, *Administrative Patent Judges*.

TIMM, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's decision rejecting claims 1-7 and 9-12. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

I. BACKGROUND

The invention relates to a method of blow molding a container so that the exterior surface of the container has a frosted appearance. Claim 1 is illustrative of the subject matter on appeal:[1]

1. A method of placing on the exterior surface of a blowmolded polyester resin container frosted appearance surface features comprising forming onto a mold inner surface a negative of such surface features to be replicated onto the surface of said container, heating said mold to a temperature of about 110C to about 150C, placing a preform heated to about 75% to about 125% of the mold temperature into said mold, and blowmolding said preform to the shape of said mold to replicate onto the surface of said container the frosted appearance surface features of the mold, and during blowmolding blowing into the bottle a cooling gas to cool the inside surface of the container.

Appellants request review of the rejection of claims 1-5 and 9-12 under 35 U.S.C. § 103(a) over Ota et al. (US 4,481,163 issued Nov. 6, 1984) in view of Barry et al. (US 4,151,250 issued Apr. 24, 1979); and the rejection of claims 6 and 7 over the above references further in view of Mortani et al. (US 4,774,114 issued Sep. 1988).

II. DISCUSSION

Appellants do not dispute that Ota, as found by the Examiner, suggests blow molding a heated preform into a heated mold with a rough surface to form a container with a frosted appearance. Appellants further acknowledge that Ota suggests flowing a cooling gas into the container after the container is fully formed (App. Br. 7). The Examiner cited Barry as

[1] As noted by the Examiner, the Claims Appendix to the Brief contained some minor errors (Ans. 2). We reproduce the claim with the corrections noted by the Examiner (Ans. 2; *see also* the Claims filed Jan. 25, 2006).

evidence of what was known about blowing cooling gas into containers during blow molding (Ans. 3-4). Appellants contend that Ota and Barry have contradictory objectives and that the combination of the teachings of these references is improper (App. Br. 7; Reply Br. 2). Appellants' arguments directed to the rejection of claims 6 and 7 are principally the same as those presented for the rejection of claims 1-5 and 9-12. (App. Br. 8).

The sole issue on appeal arising from the contentions of Appellants and the Examiner is: Does the evidence support a finding that it was known in the art to blow a "cooling gas" as claimed into a container during blow molding to cool the inside surface of the container?

We answer that question in the affirmative.

Before we can reach the above question, there is an initial question that must be answered: What is the meaning of "during blowmolding blowing into the bottle [sic; container] a cooling gas" as used in claim 1?[2] To answer that question we turn to the Specification. The last paragraph of page 4 of the Specification contains the most relevant discussion. Here it is stated that: "In addition during the blowmolding process a cooling gas, *such as air*, should be blown into the bottle to cool the plastic surface from the inside outward." (Specification 4: 27-29 (emphasis added)). The Specification further contains an example which states that "[t]he bottles were high pressure blowmolded at 38 bar." No particular temperature or timing is discussed, nor any definitions provided. Therefore, we determine it reasonable to interpret the claim as encompassing the use of compressed

[2] There is no antecedent basis for the word "bottle" in claim 1, it appears that "container" is meant. Upon further prosecution, the Examiner should address this issue.

air as a "cooling gas" to cool the surface of the container at any time during the blow molding process. *See In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004) (During examination, "claims . . . are to be given their broadest reasonable interpretation consistent with the specification, and . . . claim language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art.").

Further, we also determine that, in view of the above quoted Specification language which refers to "the blowmolding process," it is reasonable to interpret "during blowmolding" as recited in claim 1 as encompassing the entire blow molding process, not just the step of expanding the preform. The entire blow molding process includes the time the blown container spends in the mold and only ends when the container is removed. The Specification as a whole refers to the blowmolding process generally and in a way that suggests the entire process. There is nothing in the Specification limiting the blowmolding process to the expansion step. Moreover, the claim states that the cooling gas cools the container, not the expanding preform; the claim itself would be internally inconsistent if "during blowmolding" were interpreted as limited to the expanding step.

A preponderance of the evidence of record supports the following Findings of Facts (FF):

1. Ota describes two embodiments for blow molding a container having a frosted appearance: In the first, the outer surface of the preform 7 is sandblasted (Ota, col. 3, ll. 52-68); and, in the second, the preform is blow molded into a roughened mold cavity (Ota, col. 7, l. 66 to col. 9, l. 26). To develop an opaque white or milky white appearance, the

outer surface of the preform is crystallized before blow molding (Ota, col. 8, ll. 3-9).

2. Ota describes conventional steps of blowing compressed air into the heated preform to expand it into a mold heated to heat setting temperatures (Ota, col. 5, l. 39 to col. 6, l. 19).
3. According to Barry, it was generally accepted industry-wide practice to use room temperature blow air for blow molding preforms (Barry, col. 1, ll. 46-49). Conventionally, an after cooler was used to reduce the temperature of the compressed air to approximately room temperature (Barry, col. 4, ll. 18-21).
4. Barry discloses that such room temperature blow air cools the inside surface of the parison (preform) (Barry, col. 2, ll. 12-21).
5. Barry uses hot blow air which cools to near room temperature during the blow molding cycle and does not drastically chill the inner surface of the blown article (Barry, col. 2, ll. 49-54). This prevents the problems of non-uniform thickness and stress whitening (Barry, col. 2, ll. 57-59; col. 4, ll. 29-36).
6. The preform of Barry is heated to molecular orientation temperature, e.g., to 165-200 °F for polyethylene terephthalate (PET) (Barry, col. 4, l. 57 to col. 5, l. 2).
7. As the preform of Barry is expanded, it will be cooled as the blow air reaches room temperature (Barry, col. 2, l. 49 to col. 3, l. 5).
8. Ota discloses expanding the preform into a hot mold to heat set the resulting blown container and cooling the container by blowing cooling air into the container (Ota, col. 6, ll. 40-43; Br. 7) as is conventional in the art (Specification 4:30-31).

"Section 103 forbids issuance of a patent when 'the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.'" *KSR Int'l Co. v. Teleflex Inc*., 127 S. Ct. 1727, 1734 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, (3) the level of skill in the art, and (4) where in evidence, so-called secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). *See also KSR*, 127 S. Ct. at 1734 ("While the sequence of these questions might be reordered in any particular case, the [*Graham*] factors continue to define the inquiry that controls."). "The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *KSR*, 127 S. Ct. at 1739.

Applying the preceding legal principles to the Factual Findings in the record of this appeal, we determine that the Examiner has established a prima facie case of obviousness.

As we determined above with regard to the scope of claim 1, Appellants' claimed "cooling gas" includes compressed air. This is the same blowing gas Ota suggests using (FF 2, 4), and is the blowing gas conventionally used in the blow molding industry (FF 3). For these reasons alone, we determine that Appellants have not identified a reversible error in the rejection. Ota alone evinces the obviousness of using the claimed "cooling gas."

We also determine that claim 1 is broad enough to encompass blowing cooling gas into the container after expansion is complete. This is because the cooling gas is only required to cool the inside surface of the "container," i.e., the already expanded article. Moreover, the Specification does not limit the timing of the cooling to during expansion; it only refers to cooling during "the blow molding process," a process that, as we determined above, is reasonably interpreted as being the entire process up until the blown container is removed from the mold.

Ota's use of cooling gas is within the scope of what is claimed. Ota introduces a cooling gas into the blown container in combination with a hot mold used to heat set the blown container (FF 8). Appellants acknowledge that such a use of cooling air was known in the art (App. Br. 7).

Furthermore, the evidence supports the Examiner's finding that there is a reason to combine Barry's hot blow air which cools to room temperature during expansion with the process of Ota. The reason is expressly stated in Barry: To avoid non-uniform wall thickness and hazy stress whitening (FF 5). Even when crystallizing the outer surface of the preform as taught by Ota, one of ordinary skill in the blow molding art would have wanted to avoid incurring an overly thick container bottom and would seek to avoid further whitening due to stress crazing for quality control reasons. Those of ordinary skill in the art would have recognized that employing the hot blow air of Barry would result in a higher quality product.

What the references as a whole evince is knowledge in the art of all of the claimed parameters and their effect on the processing of blow molded containers such that the results were predictable and within the skill of those in the art. *KSR*, 127 S. Ct. at 1739 ("The combination of familiar elements

according to known methods is likely to be obvious when it does no more than yield predictable results.").

III. CONCLUSION

We determine that a preponderance of the evidence supports the Examiner's finding that it was known in the art to conduct a step during blow molding of blowing into the container a "cooling gas" as claimed to cool the inside surface of the container. The evidence supports the Examiner's rejection of claims 1-7 and 9-12 under 35 U.S.C. § 103(a).

IV. DECISION

The decision of the Examiner is affirmed.

V. TIME PERIOD FOR RESPONSE

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

AFFIRMED

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