

The opinion in support of the decision being  
is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* DON H. CLARKE

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Appeal 2007-1675  
Application 10/158,708  
Technology Center 3700

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Decided: July 12, 2007

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Before DONALD E. ADAMS, TONI R. SCHEINER, and LORA M. GREEN, *Administrative Patent Judges*.

ADAMS, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal under 35 U.S.C. § 134 involves claims 1, 6, 10, 11, 14-25, and 27-32. Claims 33-62, the only remaining pending claims, were withdrawn from consideration as drawn to a non-elected invention. We have jurisdiction under 35 U.S.C. § 6(b).

## INTRODUCTION

The claims are directed to a polymeric plumbing fixture, e.g. a sink, lavatory or tub (Specification 1: ¶ 0001). Claims 1, 6 and 27 are illustrative:

1. A polymeric plumbing fixture having a desired configuration, the fixture comprising:

a continuous polymeric shell thermoformed from an extruded, calendered or cast polymeric sheet, said shell having a predetermined shape and size, and an underside;

a continuous polymeric cap thermoformed from an extruded, calendered or cast polymeric sheet, said cap substantially conforming to the shape and size of the shell;

a substantial portion of the shell being nestable inside a substantial portion of the cap;

and an intermediate layer applied to the underside of the shell while the shell is inverted, the intermediate layer comprising a cross-linkable polyester resin, a cross-linking agent and a chopped fibrous filler that bonds the shell, cap and intermediate layer into an integral structure conforming to the desired configuration of the fixture when the cap is inverted and pressed into seated, contacting engagement with the intermediate layer and cured.

6. The fixture of claim 1 wherein the fixture is a sink.
27. The fixture of claim 6, further comprising a plurality of adjustment rails.

The Examiner relies on the following prior art references to show unpatentability:

Schulz	US 3,673,617	Jul. 4, 1972
Wimmer	US 3,720,540	Mar. 13, 1973
Sauter	US 5,016,297	May 21, 1991
Bortz	US 4,289,717	Sep. 15, 1981

The rejections as presented by the Examiner are as follows:

1. Claims 1, 6, 10, 11, 14-25, and 29 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Schulz and Wimmer.
2. Claims 27, 28, and 30 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Schulz, Wimmer, and Sauter<sup>1</sup>.
3. Claims 1, 14, 16, 29, 31, and 32 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Bortz and Wimmer.

We reverse.

## DISCUSSION

The combination of Schulz and Wimmer:

Claims 1, 6, 10, 11, 14-25, and 29 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Schulz and Wimmer.

Claim 1 is drawn to a polymeric plumbing fixture having a desired configuration. Claims 6, 10, 11, 14-25, and 29 depend from claim 1. According to Appellant's Specification, the fixture may be a sink, lavatory or tub (Specification 1: ¶ 0001). The claimed fixture comprises three elements: (1) a continuous polymeric shell, having a predetermined shape, size and underside; (2) a continuous polymeric cap; and (3) an intermediate layer comprising a cross-linkable polyester resin, a cross-linking agent and chopped fibrous filler.

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<sup>1</sup> The Examiner's statement of the rejection reads “[c]laims 27, 28 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over the modified Schulz, Jr. (as discussed supra) in view of Sauter et al. . .” (Answer 6). We interpret the Examiner's statement of the rejection to mean that it is the combination of Schulz, Wimmer and Sauter that is relied upon. This interpretation is consistent with Appellant's understanding of the rejection (Br. 11-12).

Claim 1 describes the claimed fixture in terms of its manufacture. Specifically, claim 1 requires that the shell and the cap are both thermoformed from an extruded, calendered or cast polymeric sheet. The cap will substantially conform to the shape and size of the shell so that a substantial portion of the shell is nestable inside a substantial portion of the cap. The intermediate layer bonds the shell, cap and intermediate layer into an integral structure conforming to the desired configuration of the fixture when the cap is inverted and pressed into seated, contacting engagement with the intermediate layer and cured.

We agree with the Examiner that the phrase “thermoformed from an extruded, calendered or cast polymeric sheet” is a process limitation relating to the manner in which the shell and cap are made (Answer 3). Therefore, if the product, a polymeric plumbing fixture, in this product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 777 F.2d 695, 697, 227 USPQ 964, 966 (Fed. Cir. 1985). We find, however, that the phrase “thermoformed from an extruded, calendered or cast polymeric sheet” limits the structure of Appellant’s claimed fixture, more specifically the cap and shell, by requiring that the fixture is composed of a material that can be thermoformed.

The Examiner finds that Schulz teaches an integrated sink that comprises three elements: (1) a polymeric shell, having a predetermined shape, size and underside; (2) a polymeric cap; and (3) an intermediate layer (Answer 3). The Examiner finds that Schulz teaches that the cap and shell are both molded from an acrylic polymer (*id.*). According to the Examiner,

“polyester, epoxy is a form of acrylic polymer[ ] . . .” (*id.*). For the reasons set forth below, we disagree with the Examiner’s assertion.

Nevertheless, recognizing that Schulz does not teach an intermediate layer comprising a cross-linkable resin, a cross-linking agent and chopped fibers, the Examiner directs attention to Wimmer (Answer 4). The Examiner finds that Wimmer teaches a composition comprising a cross-linkable polyester resin, a cross-linking agent and chopped fibrous filler (Answer 4).

Wimmer teaches that this composition can be used in the production of articles, such as bathtubs, to bond one acrylic sheet to another acrylic sheet (Wimmer, abstract and col. 6, ll. 47-54). According to Wimmer,

[t]he essence of the present invention is the discovery that adding a monomeric styrene compound, such as styrene itself, and chalk or talc to a general purpose thermosetting unsaturated polyester resin material results in an improved bond between the thermosetting coating and the thermoplastic substrate, particularly when the substrate is made of acrylic . . .

(Wimmer, col. 2, ll. 26-33.)

Based on this evidence, the Examiner finds that it would have been *prima facie* obvious to a person of ordinary skill in the art at the time the invention was made to substitute the intermediate layer composition taught by Wimmer for that taught by Schulz (Answer 4).

Notwithstanding the Examiner’s assertion to the contrary, Schulz does not teach an acrylic polymer shell and cap. To the contrary, Schulz teaches an integral sink bowl and top having an outer layer, both top and bottom, formed of glass fibers embedded in and reinforcing an outer surface of rigid resin such as *polyester resin* (Schulz, col. 1, ll. 52-55). According to Schulz,

the rigid resin may be an epoxy resin or any other of the well-known rigid resins used in fiber glass resin molding systems (Schulz, col. 1, ll. 55-57).

As Appellant points out, Schulz does not teach the use of an acrylic polymer and the Examiner does not provide any evidence to support his assertion that Schulz's cap and shell are molded from an acrylic polymer (Br. 10). More specifically, Appellant directs attention to Wimmer's teaching that thermosetting plastics like the fiber-reinforced polyester or an epoxy that are disclosed in Schulz are in a different category from thermoplastics such as acrylics (*id.*).

According to Wimmer, *acrylics* are typical *thermoplastics* (Wimmer, col. 1, ll. 16-17). In contrast, Wimmer teaches that unsaturated *polyester resin* is a typical example of a *thermosetting material* (Wimmer, col. 1, ll. 25-30). Wimmer teaches that “[t]hermoplastics may be softened by heating and set or hardened again by cooling without undergoing a chemical change; this physical change is reversible. . .” (Wimmer, col. 1, ll. 10-12). In contrast, Wimmer teaches that thermosetting plastics “become increasingly infusible on heating, undergoing a chemical change which is not reversible. This reaction or chemical change is normally called curing” (Wimmer, col. 1, ll. 25-28).

As Appellant explains, “the term ‘thermoformed’ is well understood in the art to be the process of taking a sheet of plastic, heating (not melting) it, then shaping it” (Br. 8). In support of this assertion, Appellant submits “a photocopy of an internet web page<sup>[2]</sup> of Cox-Thermoforming Limited, a UK company in the thermoforming business” (*id.*). The Cox-Thermoforming

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<sup>2</sup> <http://www.cox-thermoforming.co.uk/thermoforming/centre.htm> (Br. Ex. A).

Limited web page teaches that “[a]lmost any thermoplastic sheet material can be [thermo]formed. . .” (Br. Exhibit A).

We find no evidence on this record that the *Polyester resin* taught by Schulz is an acrylic, or a thermoplastic that is capable of being thermoformed. Wimmer fails to make up for this deficiency in Schulz. To the contrary, Wimmer teaches that polyester resin is a thermosetting material, not a material that is capable of being thermoformed. As Appellant explains, Wimmer teaches a bathtub “produced by shaping thermoplastic material into a body and then applying a sprayable mixture of thermosetting unsaturated polyester resin material and a bond-improving additive to the body to form a coating thereon” (Br. 5). Wimmer, however, fails to teach a cap and a shell, which are both produced from a thermoplastic material. Accordingly, the product taught by the combination of Schulz and Wimmer is materially different from the product set forth in Appellant’s claim 1.

On reflection, we find that claim 1 requires that the shell and cap of Appellant’s claimed fixture must be made from a material that is capable of being thermoformed, e.g., a thermoplastic material. Neither Schulz nor Wimmer teach a fixture comprising a shell and cap that is made from a material that is capable of being thermoformed, e.g., a thermoplastic. Accordingly, we reverse the rejection of claims 1, 6, 10, 11, 14-25, and 29 under 35 U.S.C. § 103(a) as unpatentable over the combination of Schulz and Wimmer.

The combination of Schulz, Wimmer, and Sauter:

Claims 27, 28, and 30 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Schulz, Wimmer, and Sauter. Claim

27 ultimately depends from and further limits the fixture of claim 1 to a sink that further comprises a plurality of adjustment rails. Claims 28 and 30 depend from claim 27.

Schulz and Wimmer are relied upon as set forth above. The Examiner relies on Sauter to teach a plurality of adjustment rails (Answer 6). Sauter, however, fails to make up for the deficiency in the combination of Schulz and Wimmer. Specifically, there is no teaching in Schulz, Wimmer, or Sauter of a fixture comprising a shell and cap that is made from a material that is capable of being thermoformed, e.g., a thermoplastic.

Accordingly, we reverse the rejection of claims 27, 28, and 30 under 35 U.S.C. § 103(a) as unpatentable over the combination of Schulz, Wimmer, and Sauter.

Bortz and Wimmer:

Claims 1, 14, 16, 29, 31, and 32 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Bortz and Wimmer. Claim 1 is discussed above. Claims 14, 16, 29, 31, and 32 depend from claim 1.

According to the Examiner, Bortz teaches a fixture, a tub, that includes a polymeric shell, polymeric cap and an intermediate layer (Answer 7). The Examiner asserts that both of Bortz's "cap and shell are molded from an acrylic polymer (note: polyester resin is a form of acrylic polymers) . . ." (*id.*). We disagree with the Examiner's assertion.

Bortz makes no mention of an acrylic polymer. Instead, Bortz teaches the use of a polyester resin (Bortz, col. 3, ll. 32-33). As discussed above, Wimmer teaches that unsaturated polyester resin is a typical example of a thermosetting material while acrylics are typical thermoplastics (Wimmer,

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col. 1, ll. 16-17 and 25-30). Accordingly, we find no evidence on this record to support the Examiner's assertion that Bortz teaches an acrylic polymer or a material that is capable of being thermoformed, e.g., a thermoplastic.

Accordingly, we reverse the rejection of claims 1, 14, 16, 29, 31, and 32 under 35 U.S.C. § 103(a) as unpatentable over the combination of Bortz and Wimmer.

#### CONCLUSION

In summary, we reverse all grounds of rejection.

REVERSED

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