

The opinion in support of the decision being entered today  
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* MICHAEL G. HARWELL,  
DALE L. HANER, and LEISA A. RYAN

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Appeal 2007-2967  
Application 10/274,827  
Technology Center 1600

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Decided: September 25, 2007

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Before TONI R. SCHEINER, DONALD E. ADAMS, and DEMETRA J.  
MILLS, *Administrative Patent Judges*.

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DECISION ON APPEAL

This appeal under 35 U.S.C. § 134 involves claims 1-5 and 7-21, the only claims pending in this application. We have jurisdiction under 35 U.S.C. § 6(b).

Representative claims follow.

1. A packaged hot melt adhesive comprising a hot melt adhesive encased in a thermoplastic film, said film being a multi-layer film comprising at least two thermoplastic layers which have different melting points, wherein one layer of said at least two layers comprises more than 50 % of the film.
4. The packaged hot melt adhesive of claim 1 wherein said one layer of said multi-layer film has a melting point of below 100°C and at least one other layer has a melting point above 100°C.
5. The packaged hot melt adhesive of claim 4 wherein said one layer has a melting point of below about 90° C.
16. The method of claim 15 wherein the molten hot melt adhesive is pumped or poured into a cylindrical tube of plastic film, said film being a multilayer film comprising at least two layers that have different melting points and where one layer comprises more than 50% of the film and has a melting point below 100°C, and at least one other layer has a melting point above 100°C, the cylindrical tube being in direct contact with a heat sink, sealing the adhesive filled cylinder and allowing the filled cylinder to cool.

*Cited References:*

Flieger	US 5,789,048	Aug. 4, 1998
Bozich	US 5,987,852	Nov. 23, 1999
Kik	US 6,138,441	Oct. 31, 2000

*Grounds of Rejection*

Claims 1, 2, and 13 stand rejected under 35 U.S.C. § 102(b) as anticipated by Bozich.

Claims 1-5 and 7-15 stand rejected under 35 U.S.C. § 103(a) as obvious over Flieger in view of Bozich.

Claims 16-21 stand rejected under 35 U.S.C. § 103(a) as obvious over Flieger in view of Bozich and Kik.

## DISCUSSION

### *Background*

Hot melt adhesives, which are generally applied while in the molten or liquid state are, solid at room temperature.

Typically, these adhesives are provided in the form of blocks and because of the nature of these materials, particularly the pressure sensitive hot melts, there are problems associated with handling and packaging them. The solid adhesive blocks not only stick or adhere to hands or mechanical handling devices but also to each other. They also pick up dirt and other contaminants. Additionally, certain applications which require high tack formulations result in blocks that will deform or cold flow unless supported during shipment.

The need and advantages for providing tackless or non-blocking hot melt adhesives are apparent and various ways of accomplishing this have been developed. While most of these prior art methods have provided some degree of improvement in the packaging and handling of hot melt adhesives, they have suffered by virtue of either the need to unwrap or otherwise unpackage the hot melt or, in the cases of coated hot melts which are added directly to the melting pots, by virtue of the contamination resulting from the build-up over time of large quantities of the packaging materials in the melt pot and application equipment.

(Spec. 1.)

The claimed invention addresses these problems by encasing the hot-melt adhesive “within a multi-layer film . . . [that] is meltable together with the film and blendable into the molten adhesive” (Spec. 4). “Multi-layer films may be made by the coextrusion of multiple polymer film resins into a

single composite film in which the layers have distinct thermal properties, i.e., distinct melting points as opposed to a polymer blend with a single or depressed melting point" (*id.*). In a preferred embodiment of the claimed invention the individual film layers are copolymers of polyethylene or polypropylene with another comonomer such as vinyl acetate or methyl acrylate. (*Id.* at 2.)

*Anticipation*

Claims 1-2, and 13 stand rejected under 35 U.S.C. § 102(b) as anticipated by Bozich.

The Examiner finds Bozich discloses a

packaged hot melt adhesive comprising a hot melt adhesive encased in a thermoplastic multi-layer film comprising two thermoplastic layers (26a and 27a) which have different melting points (by the fact they can comprise different materials, see column 3, ... lines 43-50 and column 4, line 56 through column 5, line 11). ... [T]wo layers (26a and 27a) are disclosed.

(Answer 4-5.)

Bozich indicates that the two film layers used in processing the hot melt adhesive on a conveyorized belt may be different. (Bozich, col. 2, ll. 55-65; col. 3, ll. 43-45.) In Bozich the film layers may also be the same material, but of different thicknesses. (Bozich, col. 5, ll. 32-43.)

The standard under § 102 is one of strict identity. "Under 35 U.S.C. § 102, every limitation of a claim must identically appear in a single prior art reference for it to anticipate the claim." *Gechter v. Davidson*, 116 F.3d 1454, 1457, 43 USPQ2d 1030, 1032 (Fed. Cir. 1997). "Every element of the

claimed invention must be literally present, arranged as in the claim." *Richardson v. Suzuki Motor Co., Ltd.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). We find the Examiner has not presented sufficient evidence to support a *prima facie* case of anticipation.

Bozich's packaging method

employs a moving (conveyorized) stainless steel belt that has bottom cooling capabilities . . . [A] tack-free thermoplastic material [ ] is applied to the conveyor belt, either as an unrolled film, or as an extruded, dispensed, sprayed or poured film or layer thereon . . . The molten hot-melt adhesive that is to be packaged is then poured, dispensed or extruded thereon. The conveyorized hot-melt adhesive then moves downstream [ ] while still molten, and encounters a compatible second tack-free thermoplastic material that is applied thereon, either as an unrolled film . . . or as a layer extruded thereon. . . . Before [the] adhesive has solidified, two or more cooled surfaces, preferably pattern rollers, are placed on top of the second thermoplastic material causing it to be pushed against the first thermoplastic material and the cooled belt beneath. One of the cooled surfaces compresses the sandwiched hot melt to the desired thickness. Then . . . [baffles or fins on] the two cooled surfaces press a series of crossing sealed seams (channels) into the sandwiched adhesive . . . compress[ing] the second thermoplastic film to the first thermoplastic film and caus[ing] a continuous seal to be formed in the . . . sandwiched hot-melt adhesive that passes thereunder. . . . [The] baffles or fins are deeper than the depth of the extruded adhesive and push the second thermoplastic material (i.e., the top layer) down until it touches the bottom layer (or film) and the chilled belt underneath. This contact forms [ ] sealed seam[s] . . . and results in the production of a series of individually packaged adhesive packs (or bricks) connected to one another by . . . seams. . . . At the end of the cooling belt, these seams are cut . . .

(Bozich, Col. 6, ll. 5-51.)

Thus, the seams of Bozich's packaged adhesive are the only place where the thermoplastic film can be said to be multi-layered, but the seams lie *between* the individually packaged blocks of adhesive. Therefore, we agree with Appellants that “[t]he hot melt adhesive of Bozich is not encased in a multilayer film, but rather sandwiched between two films” (Appeal Br. 5), each of which has only a single layer. Stated another way, Bozich's hot-melt adhesive is encased in a single-layer film, even though the single layer on the top of the package may differ from the single layer on the bottom.

We find that the Bozich does not anticipate the claimed invention. The rejection of claims 1, 2, and 13 under 35 U.S.C. § 102 (b) as anticipated by Bozich is reversed.

#### *Obviousness*

Claims 1-5 and 7-15 stand rejected under 35 U.S.C. § 103(a) as anticipated by Flieger in view of Bozich. According to the Examiner,

Flieger discloses a packaged hot melt composition comprising a hot melt polymeric composition encased in a multilayer thermoplastic film. Bozich et al. disclose a packaged hot melt adhesive comprising a hot melt adhesive encased in a multilayer thermoplastic film, the layers being different materials and having different melting points, and being of different thicknesses. To modify the packaged hot melt composition of Flieger employing the differing materials and thicknesses of Bozich et al. would have been obvious as a matter of choice, the prior art already suggesting employing differing materials and layers of differing thicknesses as a matter of course.

(Answer 5-6.)

In order to determine whether a *prima facie* case of obviousness has been established, we considered the factors set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1996); (1) the scope and content of the prior art; (2) the differences between the prior art and the claims at issue; (3) the level of ordinary skill in the relevant art; and (4) objective evidence of nonobviousness, if present.

Flieger describes “a consumable package . . . which comprises: a container and a melt-processable product retained therein” (Flieger, col. 1, ll. 35-36). Melt-processable products include hot-melt adhesives (*id.* at col. 1, ll. 52-60). The container portion of the consumable package comprises a “flat extruded or blown extruded film of a film-forming ethylene copolymer which has a melting point lower than the temperature of the melt processing operation used for the packaged product and a stiffness as measured by ASTM D 882 greater than 400 megapascals. Typically such copolymers will be ethylene/acid copolymers and ionomers derived therefrom” (*id.* at col. 1, l. 63 to col. 2, l. 2). Flieger’s focus is on producing a copolymer with “[t]he correct combination of melting point and stiffness” for a given application (*id.* at col. 2, ll. 14-25).

Flieger teaches that “[t]he film for the [container] can be formed of one layer or it can be of several coextruded layers, each layer providing different properties for different kinds of contents protection” (*id.* at col. 2, ll. 64-67).

Appellants acknowledge that Flieger “discloses that the film can be formed of several coextruded layers, each layer providing ‘different properties for different kinds of contents protection,’” but argue that “the

only disclosed difference in properties is pigmentation” (Appeal Br. 7), and “[t]he layers of the multi-layer films of Flieger are the same composition, and [therefore] have the same melting point” (*id.*).

In this respect, we find that Flieger’s only example of a multi-layer container (Example 2) comprises a film with a black inner layer for ultra-violet light protection, a white middle layer for appearance, and a clear outer layer for printability and tackiness, all made from the same copolymer described in Example 1, “[a]n ionomer copolymer (80% ethylene/20% methacrylic acid neutralized 35% with sodium ions . . . ) . . . [which] melts at 85° and has a . . . stiffness . . . of 517 MPa” (Flieger, col. 3, ll. 1-5 and col. 3, l. 19 to col. 4, l. 8).

Therefore, we agree with Appellants that Flieger does not describe or suggest a multi-layer thermoplastic film with at least two layers which have different melting points, as required by the claims. Moreover, given our interpretation of Bozich’s teachings, discussed above, we agree with Appellants that “[t]he disclosure of Bozich fails to cure the defect of Flieger” (Appeal Br. 7).

We find that the Examiner has not established a prima facie case that the claimed invention would have been obvious over the combined disclosures of Flieger and Bozich. The rejection of claims 1-5 and 7-15 under 35 U.S.C. § 103(a) is reversed.

### *Obviousness*

Claims 16-21 stand rejected under 35 U.S.C. § 103(a) as obvious over Flieger in view of Bozich and Kik.

Claim 16 requires that the molten hot melt adhesive is pumped or poured into a cylindrical tube of plastic film, said film being a multilayer film comprising at least two layers that have different melting points and where one layer comprises more than 50% of the film and has a melting point below 100°C, and at least one other layer has a melting point above 100°C, the cylindrical tube being in direct contact with a heat sink, sealing the adhesive filled cylinder and allowing the filled cylinder to cool.

The deficiencies of Flieger and Bozich are discussed herein. The Examiner relies on Kik for the disclosure of wrapping adhesive in the molten state referencing Fig. 1 of Kik. (Answer 7.) Kik describes that the hot melt adhesive is introduced into the tubular film at a temperature of around 160° (Kik, col. 3, ll. 20-24.)

The Examiner concludes that "[t]o employ the methodology of Kik to provide the multi-layer package of Flieger would have been obvious as it is a field recognized advantageous manner of packaging." (*Id.*)

Appellants contend that, "[t]he Kik invention is directed to stabilizing the shape of a tubular film by providing excess gas pressure and/or a guide in the tube. Only a single type of film, a pure polyethylene film, is mentioned for use." (Br. 10.) Appellants argue, in view of the use of a single film "[t]here is no disclosure or suggestion that the multilayer film described by Flieger (all having the same polymer composition and the same melting point) can be used in the practice of the Kik invention, let alone a multilayer film in which at least two of the layers having different melting points." (*Id.*)

The test of obviousness is whether the teachings of the prior art, taken as a whole, would have made obvious the claimed invention. *In re Gorman*, 933 F.2d 982, 986, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991).

In the present case, Flieger describes the preparation of tubular packaging for a melt processable product with a black inner layer for ultra violet light protection, a white middle layer for appearance, and a clear outer layer for printability. (Flieger, Col. 2, ll. 1-5.) Flieger describes packaging for a melt processable product in the form of multi-layer cylindrical tubular bags. (Flieger, col. 4, ll. 1-8.) As discussed herein, Flieger fails to disclose a multilayer film made of materials having different melting points. We similarly have found that Bozich fails to described multilayer film having differing melting points. Kik describes a process for packaging hot melt adhesives in a single tubular film wherein the hot melt adhesive is introduced into the tubular film at a temperature of around 160° (Kik, col. 3, ll. 20-24.)

We do not find that Kik makes up for the deficiencies of Flieger and Bozich and their failure to teach a multilayer film comprised of film layers with differing melting points. In view of the above, we reverse the obviousness rejection.

## CONCLUSION

The rejection of claims 1-2 and 13 under 35 U.S.C. § 102(b) as anticipated by Bozich is reversed. The rejection of claims 1-5 and 7-15 under 35 U.S.C. § 103(a) as obvious over Flieger in view of Bozich is reversed. The rejection of claims 16-21 under 35 U.S.C. § 103(a) as obvious over Flieger in view of Bozich and Kik is reversed.

Appeal 2007-2967  
Application 10/274,827

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

REVERSED

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