

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* DAVID J. NICKEL, PEIGUANG ZHOU,  
PETER GEBHARDT, TIMOTHY J. BLENKE,  
DARYL S. BELL, and THOMAS D. EHLERT

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Appeal 2008-5076  
Application 10/744,332  
Technology Center 1700

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Decided: September 25, 2008

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Before BRADLEY R. GARRIS, LINDA M. GAUDETTE, and  
MICHAEL P. COLAIANNI, *Administrative Patent Judges*.

COLAIANNI, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 the final rejection of claims 1-10, 13, 16, 18-29, 32, 35, 37-49, 52, 55, 57-59, 99-108, and 111. We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b).

We AFFIRM.

## INTRODUCTION

Appellants' invention is directed to laminated products such as diapers, having a topsheet, backsheets, and absorbent core that are ultrasonically bonded, wherein the laminated structure further comprises an embossed pattern (Spec. ¶ [0001]). The claimed adhesive composition having a mixture of atactic and isotactic polymers is such that the composition is suitable for use with thermoplastic materials to be ultrasonically embossed and bonded (Spec. ¶ [0001]).

Claims 1, 20, 40, and 99 are illustrative:

1. An article comprising an ultrasonically bonded laminated structure, the laminated structure comprising a liquid permeable topsheet, an absorbent core, and an adhesive composition, the adhesive composition comprising an atactic polymer and an isotactic polymer, the atactic polymer having a degree of crystallinity of less than about 20% and a number-average molecular weight of from about 1,000 to about 300,000 and the isotactic polymer having a degree of crystallinity of at least about 40% and a number-average molecular weight of from about 3,000 to about 200,000, wherein the liquid permeable topsheet and absorbent core comprise an embossed pattern which is ultrasonically bonded together.

20. An article comprising an ultrasonically bonded laminated structure, the laminated structure comprising a liquid permeable topsheet, a liquid impermeable backsheets, an absorbent core positioned between the liquid permeable topsheet and the liquid impermeable backsheet, and an adhesive composition, the adhesive composition comprising an atactic polymer and an isotactic polymer, the atactic polymer having a degree of crystallinity of less than about 20% and a number-average molecular weight of from about 1,000 to about 300,000 and the isotactic polymer having a degree of crystallinity of at least about 40% and a number-average molecular

weight of from about 3,000 to about 200,000, wherein the liquid permeable topsheet, liquid impermeable backsheet, and absorbent core comprise an embossed pattern which is ultrasonically bonded together.

40. An article comprising an ultrasonically bonded laminated structure, the laminated structure comprising a liquid permeable topsheet, a liquid impermeable backsheet, an absorbent core positioned between the liquid permeable topsheet and the liquid impermeable backsheet, and an adhesive composition, the adhesive composition comprising an atactic polymer and an isotactic polymer, the atactic polymer having a degree of crystallinity of less than about 20% and a number-average molecular weight of from about 1,000 to about 300,000 and the isotactic polymer having a degree of crystallinity of at least about 40% and a number-average molecular weight of from about 3,000 to about 200,000, wherein the absorbent core comprises an embossed pattern and the liquid permeable topsheet, liquid impermeable backsheet, and absorbent core are ultrasonically bonded together.

99. An article comprising an ultrasonically bonded laminated structure, the laminated structure comprising an absorbent core and an adhesive composition, the adhesive composition comprising an atactic polymer and an isotactic polymer, the atactic polymer having a degree of crystallinity of less than about 20% and a number-average molecular weight of from about 1,000 to about 300,000 and the isotactic polymer having a degree of crystallinity of at least about 40% and a number-average molecular weight of from about 3,000 to about 200,000, wherein the absorbent core comprises an ultrasonically embossed pattern.

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

Meyer	4,798,603	Jan. 17, 1989
Zhou	US 2002/0123538 A1	Sep. 5, 2002

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The rejections as presented by the Examiner are as follows:<sup>1</sup>

1. Claims 1-10, 13, 16, 18-29, 32, 35, 37-49, 52, 55, 57-59, 99-108, and 111 are rejected under 35 U.S.C. § 102(b) as being unpatentable over Zhou.<sup>2</sup>
2. Claims 1-10, 13, 16, 18-29, 32, 35, 37-49, 52, 55, 57-59, 99-108, and 111 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-104 of copending Application No. 10/743,222.

Appellants separately argue claims 1, 20, 40, and 99. Accordingly, with regard to the propriety of the § 102 rejection, we address the rejection with regard to the argued claim features of claims 1, 20, 40, and 99.

Appellants do not present any substantive arguments regarding the provisional obviousness-type double patenting rejection over copending Application No. 10/743,222. Instead, Appellants merely state that “Applicants would like to delay responding to this rejection” because this provisional rejection is still not the only rejection in the present application (Br. 11). Appellants’ only argument appears to be on procedural grounds that it is unclear whether application 10/743,143 or application 10/743,222

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<sup>1</sup> Appellants’ Appeal Brief indicates that the provisional obviousness-type double patenting rejection of claims 1-10, 13, 16, 18-29, 32, 35, 37-49, 52, 55, 57-59, 99-108, and 111 over copending Application No. 10/743,174 is on appeal. However, the Examiner correctly indicates in the Answer that Application No. 10/743,174 was abandoned January 26, 2007 (Ans. 3). Accordingly, the provisional obviousness-type double patenting rejection over Application No. 10/743,174 is moot and not before us.

<sup>2</sup> Zhou’s disclosure incorporates by reference Meyer’s disclosure relating to the “composite materials, laminates, and disposable absorbent articles” in which Zhou’s adhesives may be utilized (Zhou ¶ [0072]). The Examiner relies upon Meyer in the § 102 rejection (Zhou ¶ [0072]).

would be considered the “base application” since both applications were filed on the same day. However, Appellants fail to recognize that 10/743,143 has been abandoned such that the provisional rejection over application 10/743,222 is the only obviousness-type double patenting rejection remaining. Accordingly, because Appellants failed to provide any substantive arguments regarding the merits of the provisional obviousness-type double patenting rejection over application 10/743,222, we summarily affirm this rejection.

## OPINION

### 35 U.S.C. § 102 REJECTION OVER ZHOU CLAIMS 1 AND 20

Appellants argue that Zhou does not teach that the liquid permeable topsheet and absorbent core comprise an embossed pattern which is ultrasonically bonded as required by claim 1 (Br. 7). Appellants contend that, contrary to the Examiner’s claim construction that only one of the absorbent core *or* permeable topsheet needs to be embossed, claim 1 requires that both the topsheet and absorbent core have an embossed pattern that is ultrasonically bonded together (Reply Br. 1-2). Appellants argue that Zhou does not teach the liquid permeable topsheet, liquid impermeable backsheet, and absorbent core comprise an embossed pattern which is ultrasonically bonded together as recited in claim 20 (Br. 9). We agree.

Appellants do not contest that Zhou discloses an adhesive composition satisfying the atactic and isotactic features recited in the claims. Appellants further do not contest that Zhou discloses using the adhesive in disposable absorbent articles having a permeable topsheet, an impermeable

backsheet, and an absorbent core. Accordingly, we focus our factual findings regarding the prior art on the argued embossed feature.

We begin by construing Appellants' claim phrase "wherein the liquid permeable topsheet and absorbent core comprise an embossed pattern which is ultrasonically bonded together" (claim 1), and "wherein the liquid permeable topsheet, liquid impermeable backsheet, and absorbent core comprise an embossed pattern which is ultrasonically bonded together" (claim 20).

Appellants' Specification defines "embossing" as "essentially the stamping or rolling of a pattern onto a substrate or structure" (Spec. ¶ [0057]). The Specification further indicates that embossing may be accomplished by using the ultrasonic bonding system to compress the embossed pattern or designs onto the liquid permeable topsheet layer, the liquid impermeable backsheet layer, the absorbent core, or any combination thereof (Spec. ¶ [0057]). Appellants further describe that the embossing may be accomplished by the heat and pressure provided by a stamp or pattern roller that reshapes the surface of the material to create the image (Spec. ¶ [0057]). Appellants disclose "ultrasonic bonding" as "a conventional process wherein polymeric materials, and specifically thermoplastic materials, are exposed to a high-frequency vibration which results in a heating, melting, and flowing of the materials to form a mechanical and/or chemical bond" (Spec. ¶ [0017]).

Based on these disclosures, we determine that the broadest reasonable construction consistent with the Specification of the two disputed claim phrases requires the embossed pattern formed in the absorbent core and topsheet (claim 1), or formed in the impermeable backsheet, topsheet and

absorbent core (claim 20) is ultrasonically bonded together. In our view and as argued by Appellants, claims 1 and 20 are limited to the disclosed embodiment of forming the embossed pattern in the various layers by ultrasonic bonding, and the structural features attendant therewith (e.g., melting and flowing to form the ultrasonic bond), such that the layers are ultrasonically bonded together via the embossed pattern.

Zhou discloses an adhesive composition useful in laminated absorbent articles having selected ratios of crystalline and amorphous polymers (Zhou ¶ [0005]). Zhou discloses that the laminated structure may be passed through a unit operation (e.g., ultrasonic-bonding equipment) in which the laminated structure is exposed to energy (e.g., ultrasonic energy) (Zhou ¶ [0016]). Zhou discloses that an ultrasonic bonder may be a rotary ultrasonic bonder having a horn and “dot-pattern anvil design” (Zhou ¶ [0096]). Zhou discloses that the dot-pattern anvil with each pin of the dot-pattern having a 45 mil diameter and a height of 31 mil (Zhou ¶ [0097]). Zhou further discloses that “[s]pecific examples of composite materials, laminates, and disposable absorbent articles with which adhesives of the present invention may be utilized are disclosed in the following U.S. Patents . . . : U.S. Pat. No. 4,798,603 [i.e., Meyer] . . . ” (Zhou ¶ [0072]). Zhou further indicates that Meyer is incorporated-by-reference (Zhou ¶ [0072]).

Meyer discloses an absorbent article having a transfer layer configured to increase the rate of liquid absorption by the article (Meyer, col. 1, ll. 8-12). Meyer discloses a laminated absorbent article structure having liquid permeable topsheet layer 14, a backsheet layer 12, and an absorbent body 16, which are assembled together using conventional techniques, such as thermal or sonic bonds, or adhesives (Meyer, col. 3, ll.

17-27, 67-68; col. 4, ll. 1-5). Meyer discloses that the topsheet may be embossed (Meyer, col. 4, ll. 56-59). Meyer further discloses that the absorbent body 16 may include a fibrous mass surrounded by a wrapsheet 30, which is sonically bonded together through the fibrous mass to form a quilts or funnels on the absorbent body (i.e., an embossed pattern) (Meyer, col. 6, ll. 20-41).

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co.*, 814 F.2d 628, 631 (Fed. Cir. 1987).

A § 102 rejection based on the subject matter of an incorporated-by-reference document can be sustained only if the primary reference that incorporates-by-reference the document refers to a particular part of the incorporated-by-reference document. *In re Saunders*, 444 F.2d 599, 602 (CCPA 1971). *See also Zenon Envtl., Inc. v. U.S. Filter Corp.*, 506 F.3d 1370, 1378 (Fed. Cir. 2007) (“To incorporate material by reference, the host document must identify with *detailed particularity* what specific material it incorporates and *clearly indicate* where that material is found in the various documents.”); *Advanced Display Sys. Inc. v. Kent State Univ.*, 212 F.3d 1272, 1282 (Fed. Cir. 2000). Whether and to what extent material has been incorporated by reference into a host document is a question of law. *Quaker City Gear Works, Inc. v. Skil Corp.*, 747 F.2d 1446, 1453-54 (Fed. Cir. 1984).

Based on the proper claim construction, we do not find any disclosure in Zhou or in the incorporated by reference “composite materials, laminates, and disposable absorbent articles” of Meyer (i.e., the particular part of the

incorporated by reference disclosure) to ultrasonically bond the layers together via the embossed pattern in the absorbent core and topsheet, or the absorbent core, topsheet and backsheet.

The Examiner appears to have erroneously construed claims 1 and 20 as merely requiring any one of the layers have an embossed pattern, or that Meyer discloses embossing more than one layer so as to satisfy the claim (Ans. 6). However, Meyer's non-specific disclosure of embossed layers cannot anticipate Appellants' claim to an embossed pattern being ultrasonically bonded together on the topsheet and absorbent core as recited in claim 1, or on the topsheet, backsheet, and absorbent core as recited in claim 20. The Examiner's claim construction that only one of the layers need have an embossed pattern to satisfy the claim is contrary to the express language of the claims that uses the conjunctive language "and" to claim the various portions of the article that have an embossed pattern, and the portions of the Specification noted above, which describe the embodiment recited in claims 1 and 20.

For the above reasons, we cannot sustain the Examiner's § 102(b) rejection of claims 1-10, 13, 16, 18-29, 32, 35, and 37-39 over Zhou.

## CLAIMS 40 AND 99

With regard to claim 40, Appellants argue, as with claim 20, that claim 40 requires an embossed pattern and the liquid permeable topsheet, liquid impermeable backsheet, and absorbent core are ultrasonically bonded together (Br. 9-10). With regard to claim 99, Appellants argue, as with claim 1, that the absorbent core comprises an ultrasonically embossed pattern (Br 10).

We have considered all of Appellants' arguments regarding claims 40 and 99, and are unpersuaded for the reasons below.

As with claims 1 and 20, Appellants do not contest that Zhou discloses an adhesive composition satisfying the atactic and isotactic features recited in the claims. Appellants further do not contest that Zhou discloses using the adhesive in disposable absorbent articles having a permeable topsheet, an impermeable backsheet, and an absorbent core. Accordingly, we refer to our factual findings regarding Zhou and Meyer noted above in our analysis of claims 1 and 20 concerning the argued embossed feature.

We begin our analysis of claims 40 and 99 by construing the claim phrases "wherein the absorbent core comprises an embossed pattern and the liquid permeable topsheet, liquid impermeable backsheet, and absorbent core are ultrasonically bonded together" (claim 40), and "wherein the absorbent core comprises an ultrasonically embossed pattern" (claim 99).

We refer to our findings regarding the Specification noted above in our construction of the argued features of claims 1 and 20. With regard to claim 40, the plain language of the claim recites that only the absorbent core has an embossed pattern. Claim 40 further plainly recites that the topsheet, backsheet, and absorbent core are ultrasonically bonded. This corresponds with Appellants' disclosure that any or all of the layers may be embossed (Spec. ¶ [0056]) and that the layers may be ultrasonically bonded together, which need not be ultrasonically bonded via the embossed pattern (Spec. ¶¶ [0017], [0057]).

Accordingly, we construe the claim 40 phrase "wherein the absorbent core comprises an embossed pattern and the liquid permeable topsheet,

liquid impermeable backsheet, and absorbent core are ultrasonically bonded together” as only requiring an absorbent core to have an embossed pattern, wherein the topsheet, backsheets, and embossed absorbent core are ultrasonically bonded together (i.e., the topsheet, backsheets and embossed absorbent core need not be ultrasonically bonded together via the embossed pattern).

With regard to claim 99, we construe the claim phrase “wherein the absorbent core comprises an ultrasonically embossed pattern” as requiring only the absorbent core to have an ultrasonically embossed pattern.

Based on these claim constructions and our findings with regard to the prior art, we agree with the Examiner that Zhou anticipates the argued claim features. As noted above, Zhou plainly discloses that the topsheet, backsheets, and absorbent core may be bonded together using ultrasonic bonding and the claimed adhesive. Likewise, Meyer’s incorporated by reference absorbent article is disclosed as having a topsheet, a backsheets, and an absorbent core that may be attached together via sonic bonds. Meyer further discloses that the absorbent body 16 may be comprised of a fibrous mass surrounded by a wrapsheet 30 wherein the wrapsheet 30 is sonically bonded together through the fibrous mass to form quilts or funnels (i.e., an embossed structure formed by sonically bonding the wrapsheet 30).

Accordingly, because Zhou incorporates by reference Meyer’s composite materials, laminates, and disposable absorbent articles, which includes the sonically (i.e., ultrasonically) bonded absorbent article having an ultrasonically embossed absorbent body (i.e., the quilted absorbent body with the wrapsheet 30), Zhou anticipates claims 40 and 99 as properly construed above. Specifically, Zhou incorporated by reference the particular

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Meyer's disclosure that includes the ultrasonically embossed absorbent layer (i.e., the "composite materials, laminates, and disposable absorbent articles" of Meyer), such that Zhou plainly teaches using the ultrasonically embossed absorbent body (i.e., absorbent core) in Zhou's ultrasonically bonded structure having a topsheet, backsheet and absorbent core.

Accordingly, since Zhou discloses the argued claimed features, we sustain the Examiner's § 102 rejection of claims 40-49, 52, 55, 57-59, 99-108, and 111.

#### 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)(1)(iv).

AFFIRMED

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