

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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* JON D. PEARSON

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Appeal No. 2006-1667  
Application No. 10/775,634

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ON BRIEF

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Before OWENS, CRAWFORD and BAHR, *Administrative Patent Judges*.  
OWENS, *Administrative Patent Judge*.

*DECISION ON APPEAL*

This appeal is from a rejection of claims 1-18, which are all of the pending claims.

*THE INVENTION*

The appellant claims an apparatus and method for adjusting the firmness, support or sag of a mattress. Claims 1 and 13 are illustrative:

1. Apparatus for adjusting firmness, support, or sag of a mattress, comprising:
  - a) a substantially convex cross-sectional shape that is thicker in the center region and gradually thinner toward the edges;

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- b) a material and constitution for maintaining the convex shape under the weight of the mattress and a person; and
  - c) a set of dimensions large enough to adjust firmness, support, or sag for the majority of an area of the mattress used by the person.
13. A method of providing adjustability of firmness, support, or sag to a mattress comprising the steps of:
- a) providing an inflatable apparatus and inflating it so that it attains a substantially convex shape;
  - b) inflating the apparatus to a desired degree for a desired level of firmness, support, or sag to the mattress;
  - c) placing the apparatus under the mattress; and
  - d) positioning the apparatus so that it supports the majority of an area of the mattress used by a person.

*THE REFERENCES*

Pepe	5,787,531	Aug. 4, 1998
Reeder et al. (Reeder)	6,460,209	Oct. 8, 2002
Gordon	6,665,898	Dec. 23, 2003

*THE REJECTIONS*

The claims stand rejected as follows: claims 1-3, 7-9 and 13-18 under 35 U.S.C. § 102(e) as anticipated by Gordon; claims 4, 5, 10 and 11 under 35 U.S.C. § 103 as obvious over Gordon in view of Reeder; and claims 6 and 12 under 35 U.S.C. § 103 as obvious over Gordon in view of Pepe.

*OPINION*

We reverse the rejection of claims 1-3 and 7-9 under 35 U.S.C. § 102(e), affirm the rejection of claims 13-18 under 35 U.S.C. § 102(e), affirm the rejections under 35 U.S.C. § 103, and remand the application to the examiner to consider rejecting claims 1-3 and 7-9 under 35 U.S.C. § 103.

*Claims 1-3 and 7-9*

We need to address only the independent claims among claims 1-3 and 7-9, i.e., claims 1 and 7. Claim 1 requires an apparatus for adjusting the firmness, support or sag of a mattress, comprising a material and construction capable of maintaining, under the weight of a mattress and a person, a convex shape that is thicker in the center region and gradually thinner toward the edges. Claim 7 requires an apparatus for adding adjustability of firmness, support or sag to a mattress, comprising a plurality of inflatable chambers, wherein the apparatus has a substantially convex cross-sectional shape, after inflation, that is thicker in the center region and gradually tapers toward the edges, and the chambers have an arrangement and shape that renders them capable of maintaining the convex shape under the weight of a mattress and a person.

Gordon discloses a device "configured to be placed under the center region of a sagging or new mattress, after which the

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device is inflated to correct the sagging portion, or to provide additional support" (col. 1, lines 41-44). The device includes a bladder (24) that is inserted into the center region (20) between a mattress (18) and a box spring (16), and then is inflated until any dip or sagging in the center region essentially disappears (col. 3, lines 1-5). Figure 3B shows the inflated bladder between the mattress and box spring as having a convex shape in the longitudinal direction. The bladder can have multiple, independently inflatable lobes to correct side-to-side sag variation and provide increased sag compensation for the overall center region (col. 3, line 16 - col. 4, line 15; figures 5-8).

The examiner argues that Gordon discloses "a material and constitution for maintaining the convex shape under the weight of the mattress and a person (Figure 3B)" (answer, page 3). That figure shows a convex bladder shape only under the weight of a mattress, not under the weight of a mattress and a person.

The examiner argues that "[a]s seen in Figure 3B and disclosed in column 2 at lines 38 through 44 and column 3 at lines 3 through 6, the mattress [i.e., inflatable bladder] maintains its shape under the weight of a mattress. Furthermore, the apparatus shown by Gordon '898 is capable of being inflated to a degree that it will maintain its shape under the additional weight of a person" (answer, page 8). The examiner is arguing

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that Gordon's bladder inherently is capable of being inflated sufficiently that it maintains a convex shape under the weight of a mattress and a person. When an examiner relies upon a theory of inherency, "the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic *necessarily* flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Int. 1990). Inherency "may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *Ex parte Skinner*, 2 USPQ2d 1788, 1789 (Bd. Pat. App. & Int. 1986). The examiner has not provided the required facts and/or technical reasoning showing that Gordon's inflatable bladder necessarily is capable of maintaining a convex shape under the weight of a mattress and a person.

The declaration under 37 CFR § 1.132 of Jon Pearson (filed Jan. 25, 2005), the inventor, relied upon in the brief (pages 6-11), states that Gordon's inflatable bladder has nothing to create or maintain a convex shape (¶ 11).<sup>1</sup> Gordon's figure 3B

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<sup>1</sup> Pearson's supplemental declaration (filed July 18, 2005) was not entered by the examiner (answer, page 9). The appellant presents an argument in the reply brief (page 2) as to why the supplemental declaration should be entered. That argument is not well taken because the examiner's refusal to enter the supplemental declaration is a petitionable issue, not an appealable issue before the board. See *Manual of Patent Examining Procedure* § 1002.02(c)(3)(d) (8<sup>th</sup> ed., rev. 2, May 2004). Consequently, we have not

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shows that a convex shape is created. The declaration is correct, however, in stating that Gordon does not disclose anything (such as the appellant's pieces of flexible material (figures 4A-4C), hollow chambers (figures 5A-5C) or multiple chambers of varying diameters (figures 6A-6D)) for maintaining the convex shape under the weight of both a mattress and a person. The examiner argues that the declaration is ineffective because "a declaration under 37 CFR 1.132 can only be used to overcome a provisional rejection under 35 USC § 102(e) to show that the claimed invention is not by another" (answer, page 9). The examiner is incorrect. Rule 132 (65 FR 57057, Sep. 20, 2000) states that "[w]hen any claim of an application or a patent under reexamination is rejected or objected to, any evidence submitted to traverse the rejection or objection on a basis not otherwise provided for must be by way of an oath or declaration under this section." Thus, that rule is not limited in the manner argued by the examiner. The examiner's argument, therefore, is not effective for refuting the statement in the declaration that Gordon's device has nothing to maintain the convex shape under the weight of a mattress and a person.

For the above reasons we find that the examiner has not carried the burden of establishing a prima facie case of

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considered the supplemental declaration in reaching our decision.

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anticipation of the invention claimed in the appellant's claims 1-3 and 7-9.

*Claims 13-18*

The appellant argues, regarding claims 13-18, that Gordon's "mattress support at least must have a substantially convex cross-sectional shape overall and maintain the convex cross-sectional shape under the weight of the mattress and a person..." (brief, pages 4-5). Those claims merely require that a substantially convex shape is attained. They do not require that the convex shape is maintained under the weight of either a mattress or a person.

The appellant argues that claims 13-18 require that "the apparatus must also support the majority of an area of the mattress used by the person" (brief, page 5). Those claims are open to the manner of use being lying on one's side. The bladder (24B) in Gordon's figure 5 is shown as being sufficiently large in relation to the size of the box spring (16) that it would support the majority of an area of the mattress used by a person lying on his or her side.

We therefore are not convinced of reversible error in the examiner's rejection of claims 13-18.

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*Claims 4, 5, 10 and 11*

Reeder discloses a mattress structure that is customized for the individual user and can be assembled by the user from a kit or can be assembled at the factory or some assembly location based upon the user's reaction to a test mattress at the point of sale (col. 1, lines 16-25). The core (88) of the mattress structure can include an air bladder (96) having I-beams (218, 219) therein with varied heights forming varied air pocket (224, 224') heights that provide additional support and firmness for the portions of the user's body adjacent to the taller air pockets (col. 22, lines 36-63; col. 23, lines 17-23 and 44-51; figures 12, 14 and 15).

The appellant argues that customized areas of support is not the problem solved by the appellant (brief, page 15). To establish a prima facie case of obviousness, references need not be combined for the purpose of solving the problem solved by the appellant. See *In re Kemps*, 97 F.3d 1427, 1430, 40 USPQ2d 1309, 1311 (Fed. Cir. 1996); *In re Beattie*, 974 F.2d 1309, 1312, 24 USPQ2d 1040, 1042 (Fed. Cir. 1992); *In re Dillon*, 919 F.2d 688, 693, 16 USPQ2d 1897, 1901 (Fed. Cir. 1990) (*en banc*), *cert. denied*, 500 U.S. 904 (1991). Reeder would have fairly suggested, to one of ordinary skill in the art, using Reeder's I-beams having varied heights in Gordon's bladder to provide the benefit

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of the I-beams disclosed by Reeder, i.e., more firmness and support adjacent to the taller air pockets (col. 22, lines 59-63; col. 23, lines 20-23 and 44-51). Thus, contrary to the appellant's argument (brief, page 15), impermissible hindsight is not required in combining the teachings of Gordon and Reeder.

The appellant argues that Gordon and Reeder would not have suggested an inflatable mattress support having a substantially convex cross-sectional shape that is thicker in the center region and gradually thinner toward the edges (brief, page 15). Gordon discloses an inflatable bladder that is convex at least from the center region to the front and back regions (figure 3B), and Reeder discloses a longitudinally convex series of air pockets (col. 18, line 64 - col. 19, line 2). Reeder would have fairly suggested, to one of ordinary skill in the art, using longitudinally varied height air pockets in Gordon's inflatable bladder to obtain the benefits of the varied height air pockets disclosed by Reeder, i.e., additional firmness and support at longitudinal zones adjacent to the taller air pockets (col. 22, lines 59-63). Moreover, Gordon's teaching that the greatest portion of a sleeper's weight is in the center region of a mattress rather than at the edges (col. 2, lines 38-42) would have fairly suggested, to one of ordinary skill in the art, making Reeder's I-beams taller in the center region than at the

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side edges of Gordon's bladder to provide greater firmness and support in the center region relative to the side edges to accommodate the relatively high sleeper's weight in the center region.

Accordingly, we are not convinced of reversible error in the examiner's rejection of claims 4, 5, 10 and 11.

*Claims 6 and 12*

Pepe discloses an inflatable pad or mattress having contiguous air cells, a portion of which span the central region and have a gradation in at least one dimension relative to air cells of the foot and/or head region such that the heavier portions of a persons body contact the higher cells while the lighter portions contact shorter air cells (abstract; col. 1, lines 54-64; col. 4, lines 45-47; col. 5, lines 50-57; figures 1, 8 and 9). Pepe thereby achieves a reasonably constant pressure distribution over the length of the mattress (col. 2, lines 58-65). Preferably, when a person lies on the mattress some fluid in the central region shifts to the end regions to allow the mattress to conform to the person's back and buttocks, thereby providing essentially contiguous surface area engagement between the person's skin and the mattress and relatively uniform pressure on the person's skin over the area of the person's body being supported (col. 4, line 63 - col. 5, line 9).

The appellant argues that Pepe does not disclose or suggest a mattress support having a substantially convex cross-sectional shape that is thicker in the center region and gradually thinner towards the edges (brief, page 17). Gordon discloses a mattress support having a convex shape at least from the center region toward the front and back edges (figure 3B). Pepe's inflatable pad is convex in the length direction (figure 1). Pepe, therefore, would have fairly suggested, to one of ordinary skill in the art, using Pepe's convex series of air cells in Gordon's inflatable bladder to provide the benefit of the air cells disclosed by Pepe, i.e., achieving a reasonably constant pressure distribution over its length (col. 2, lines 61-64). Moreover, in view of Gordon's teaching that the center portion of a mattress tends to sag first because that is where the greatest portion of the sleeper's weight is located (col. 2, lines 40-42), Gordon and Pepe would have fairly suggested, to one of ordinary skill in the art, making Gordon's inflatable bladder convex from the center portion, where the sleeper's weight is the greatest and, therefore, the greatest thickness is needed, to the side edges where there is less sleeper's weight and, therefore, less need for bladder thickness.

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The appellant argues that the examiner's motivation to combine Gordon and Pepe to achieve a constant pressure distribution over the length of the mattress is not the problem solved by the appellant (brief, page 17). As pointed out above, establishing a prima facie case of obviousness does not require that references be combined for the purpose of solving the problem solved by the appellant. The references would have fairly suggested, to one of ordinary skill in the art, combining their teachings to provide a relatively constant pressure distribution over the length or width of Gordon's inflatable bladder (Pepe, col. 2, lines 61-65). Hence, contrary to the appellant's argument (brief, page 17), combining the references does not require impermissible hindsight.

The appellant argues that Pepe does not disclose a material and constitution for maintaining the convex shape under the weight of a mattress and a person, and that "merely achieving constant pressure distribution over the length of the mattress is insufficient to produce and maintain the claimed convex shape under the weight of the mattress and a person" (brief, page 17). What is required by the independent claims from which claims 6 and 12 depend is maintaining a substantially convex cross-sectional shape. Pepe discloses that even with a person lying on the inflatable pad, the cells in the central region are higher

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than the cells at the ends (col. 5, lines 46-53; figure 16).<sup>2</sup> Hence, the pad still has a substantially convex overall shape, tapering from the central region toward the ends. Thus, it reasonably appears that Pepe's inflatable pad would maintain its convex shape at least under the weight of a lightweight mattress and a lightweight person such as an infant.

We therefore are not convinced of reversible error in the examiner's rejection of claims 6 and 12.

*Remand*

We remand the application for the examiner and the appellant to address on the record whether the combined disclosures of Gordon, Reeder and Pepe would have rendered obvious to one of ordinary skill in the art under 35 U.S.C. § 103 the subject matter of claims 1-3 and 7-9.

*DECISION*

The rejection of claims 1-3, 7-9 and 13-18 under 35 U.S.C. § 102(e) over Gordon is reversed as to claims 1-3 and 7-9 and affirmed as to claims 13-18. The rejections under 35 U.S.C. § 103 of claims 4, 5, 10 and 11 over Gordon in view of Reeder, and claims 6 and 12 over Gordon in view of Pepe, are

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<sup>2</sup> Pepe states, regarding figure 16, that "[t]he cell upper surface is shown at **52** without any body weight thereon, and numeral **53** indicates the cell upper surface contour when deflected downwardly by body weight" (col. 5, lines 47-50). Numeral 53 is omitted from figure 16. It reasonably appears that numeral **53** should correspond to the curve in figure 16 with less convexity

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affirmed. The application is remanded to the examiner.

In addition to affirming the examiner's rejection of one or more claims, this decision contains a remand. 37 CFR § 41.50(e) (effective September 13, 2004, 69 Fed. Reg. 49960 (August 12, 2004), 1286 Off. Gaz. Pat. Office 21 (September 7, 2004)) provides that

[w]hensoever a decision of the Board includes a remand, that decision shall not be considered final for judicial review. When appropriate, upon conclusion of proceedings on remand before the examiner, the Board may enter an order otherwise making its decision final for judicial review.

Regarding any affirmed rejection, 37 CFR § 41.52(a)(1) provides "[a]ppellants may file a single request for rehearing within two months from the date of the original decision of the Board."

The effective date of the affirmance is deferred until conclusion of the proceedings before the examiner unless, as a mere incident to the limited proceedings, the affirmed rejections are overcome. If the proceedings before the examiner do not result in allowance of the application, abandonment or a second appeal, this case should be returned to the Board of Patent Appeals and Interferences for final action on the affirmed rejections, including any timely request for rehearing thereof.

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below the curve having more convexity indicated by numeral 52.

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

*AFFIRMED-IN-PART and REMANDED*

TERRY J. OWENS	)	
Administrative Patent Judge	)	
	)	BOARD OF PATENT
	)	APPEALS
	)	AND
MURRIEL E. CRAWFORD	)	INTERFERENCES
Administrative Patent Judge	)	
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JENNIFER D. BAHR	)	
Administrative Patent Judge	)	

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