

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

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*Ex parte*

JAN ANTHONY LEWIS, IAN ROBERT MAHONEY, and  
LEYTON MARK STEVENS

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Appeal 2008-4561  
Application 11/035,121  
Technology Center 3600

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Decided: November 18, 2008

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Before TONI R. SCHEINER, LORA M. GREEN, and  
RICHARD M. LEOVITZ, *Administrative Patent Judges*.

GREEN, *Administrative Patent Judge*.

**DECISION ON APPEAL**

This is a decision on appeal under 35 U.S.C. § 134 from the Examiner's final rejection of claims 1-23. We have jurisdiction under 35 U.S.C. § 6(b).

## STATEMENT OF THE CASE

The claims are directed to a pressure relieving mattress for use with a profiling bed. Claims 1, 7, 16, 22, and 23 are the independent claims on appeal, and read as follows:

1. A mattress for use within a profiling bed comprising a base portion and an upper portion overlying the base portion characterized in that an interface between the portions has a coefficient of friction low enough such that the portions can slide relative to each other.
7. A mattress for use within a profiling bed comprising of a base portion and an upper portion overlying the base portion characterized in that an interface formed between the portions is constituted by a material layer having a lower coefficient of friction with the base and upper portions than the two portions would otherwise have with each other.
16. A pressure relieving mattress for use within a profiling bed comprising a base portion and a pressure relieving portion characterized in that the interface between the portions is formed to allow relative longitudinal movement between the portions in response to changes in the profile of an underlying bed.
22. A mattress for use within a profiling bed comprising:
  - a base portion and an upper portion overlying the base portion characterized in that the an interface between the portions has a coefficient of friction low enough such that the portions can slide relative to each other, wherein both base and upper portions further comprise:
    - a head portion, for supporting the head of a user,
    - a trunk portion, connected to said head portion, for supporting the trunk of the user, and
    - a leg portion, connected to the trunk portion, for supporting the legs of the user,
  - and further wherein the head, trunk, and leg portions of the combined base and upper portions can separately be moved relative to one another.
23. A mattress for use within a profiling bed comprising a base portion and an upper portion overlying the base portion characterized in that an

interface between the portions has a coefficient of friction low enough such that the portions can slide relative to each other; and

both the base and upper portions also have inter-engaging formations to prevent or limit relative lateral movement therebetween.

The Examiner relies on the following references:

Frydman '314	US 6,182,314 B1	Feb. 6, 2001
Silver et al.	US 6,230,349 B1	May 15, 2001
Frydman '401	US 6,345,401 B1	Feb. 12, 2002
Davis	US 6,739,005	May 25, 2004

We reverse.

#### ISSUE

The Examiner finds that claims 1, 8, 16-18, and 23 are anticipated by Frydman '401, and that claims 1-8, 13-16, and 22 are anticipated by Davis.

Appellants contend that neither Frydman '401 nor Davis discloses a mattress comprising a base portion and an upper portion that has an interface between the portions that has a coefficient of friction low enough so that the portions can slide relative to each other.

Thus, the issue on Appeal is: Whether Frydman '401 or Davis discloses a mattress comprising a base portion and an upper portion that has an interface between the portions that has a coefficient of friction low enough so that the portions can slide relative to each other so as to anticipate the claimed subject matter?

### FINDINGS OF FACT

FF1. A profiling bed is a bed wherein the head, trunk, and leg portions may be articulated relative to one another (Spec. 1).

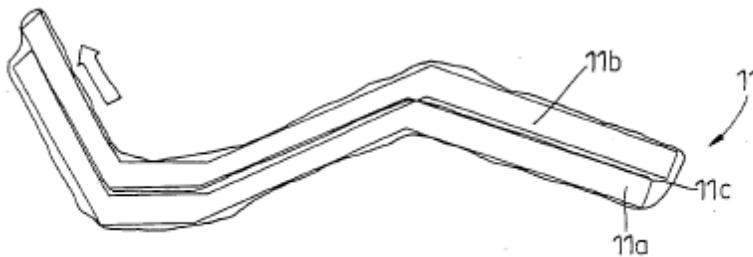
FF2. Shear and friction contribute to the development of pressure sores, as when a user is present, and the bed is profiled, the body of the user is effectively pushed along the mattress each time the bed is profiled (*id.* at 2).

FF3. Thus, According to the Specification:

[T]he present invention provides a pressure relieving mattress . . . comprising a base portion . . . and an upper portion . . . overlying the base portion and having an interface . . . between the portions which has a coefficient of friction low enough such that the portions can slide relative to each other. The mattress of the present invention enables relative movement of the portions, when the mattress is lying on a profiling bed and the bed is being profiled.

(*Id.*)

FF4. Figure 3 of the disclosure is reproduced below:



***Fig. 3***

Figure 3 is a mattress according to the invention illustrating “the relative movement that can take place between the layers when a bed is profiled.”

(Spec. ¶ [010].)

FF5. The Specification teaches further:

[T]he mattress 11 should be formed of a base portion 11a and an upper profiling portion 11b with an interface 11c between them, which interface 11c is designed to allow relative movement between the portions 11a and 11b when the bed 10 is profiled. Thus, as can be seen in Figure 3, the upper portion 11b slides longitudinally on the base portion 11a because of the reduced friction interface between them. The upper portion 11b accordingly moves with patient removing friction and shear forces and the mattress as a whole properly follows the profile of the bed reducing any additional compressive forces such as E. It will be noted in Figure 3 that the upper portion 11b projects beyond each end of the lower portion 11a. This is because the lower portion effectively becomes shortened as it takes up the shorter path formed by the bend in the bed profile. This shortening is also facilitated by the relative movement.

(Spec. ¶ [027].)

FF6. The Examiner rejects claims 1, 8, 16-18, and 23 under 35 U.S.C. § 102(b) as being anticipated by Frydman '401 (Ans. 3).

FF7. As to claims 1 and 8, the Examiner finds that Frydman '401 “discloses a mattress (Fig. 1) comprising a base portion (32) and an upper portion (28) characterized in that the two portions are removably attached slidably relative to each other with the dove tail connection (Col. 3, Lines 49-55).” (*Id.*) The Examiner finds further that the mattress of Frydman '401 “is **capable of** being used within a profiling bed,” that the “sliding direction of the Frydman reference to be the longitudinal direction.” (*Id.*)

FF8. Frydman '401 is drawn to “adjustable orthopedic support pillows which can be mechanically customized to support a large variation of the size and preferences of individuals.” (Frydman '401, col. 1, ll. 5-7.)

FF9. Figure 1 of Frydman '401 is reproduced below.

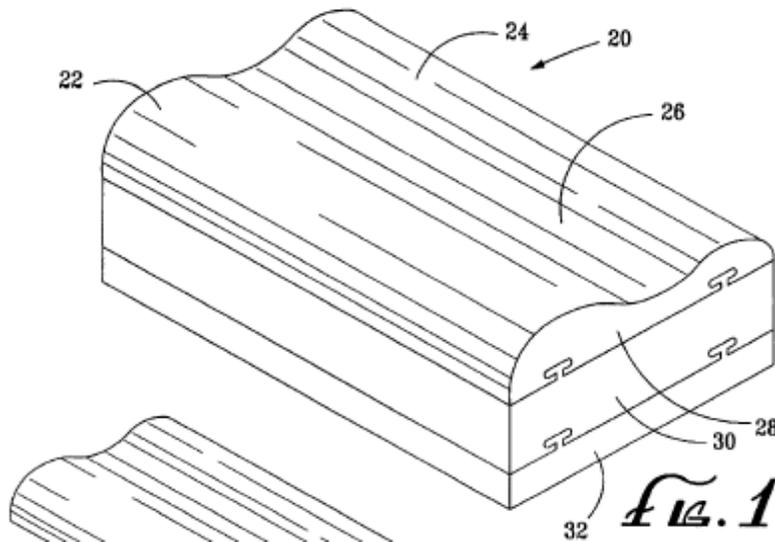


Figure 1 is a perspective view of the orthopedic pillow, 20, which includes two semi-cylindrical support rolls 22 and 24, and a valley 26 for receiving the head (col. 2, ll. 24-35). The pillow includes three layers, 28, 30, and 32 (col. 2, ll. 35-38).

FF10. Thus, Frydman '401 is drawn to a pillow, not a mattress.

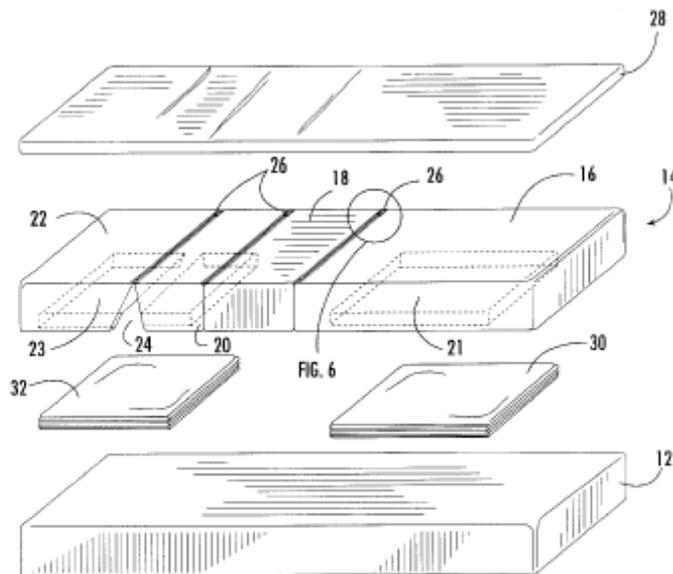
FF11. The Examiner rejects claims 1-8, 13-16, and 22 under 35 U.S.C. § 102(e) as being anticipated by Davis (Ans. 4).

FF12. As to claims 1 and 16, the Examiner finds that:

[T]he Davis reference discloses a mattress (Fig. 1) comprising a base portion (12) and an upper portion (comprising 22, 20, 18 and 16) characterized in that the two portions are formed to allow relative longitudinal movement between the portions (Fig. 2). It is noted that the bottom edge of section 16 closest to section 18 will slide along the top surface of section 12 when air sac 30 is filled causing a friction force. Once the air sac (30) is fully inflated the bottom edge of section 16 closest to section 18 will no longer be in contact with section 12 (meaning the friction force is reduced to zero).

(Ans. 4.)

FF13. Davis teaches an adjustable bed “having an elevated back section and an elevated leg section that may be used as a conventional mattress with a conventional bed frame and box springs.” (Davis, col. 1, ll. 56-59.) Figure 5 of Davis is reproduced below.



*FIG. 5.*

Figure 5 shows an exploded view of the elements of the bed of Davis (col. 2, l. 52).

FF14. Figure 5 shows a bed 10 which has a conventional foundation or box spring 12 (col. 3, ll. 1-4). The mattress 14 has a pair of air chambers 30 and 32 which may be inflated or deflated to elevate and incline sections of the mattress (col. 3, ll. 5-9). The mattress 14 also has a plurality of sections, including a buttock section 18, a back section 16, an upper leg section 20, and a lower leg section 22 (col. 3, ll. 9-16). The mattress is preferably made of flexible foam (col. 3, ll. 24-25).

FF15. The reference numeral 12 is drawn to a box spring, and not a base portion of a mattress. In addition, the box spring supports the air chambers, and the Examiner has made no findings as to why the ordinary artisan would choose an interface between the portions that has a coefficient of friction low enough so that the box spring 12 can slide relative to the mattress 14 containing the air chambers 30 and 32.

FF16. The mattress 14 may also be provided with a cushioning top layer 28 (col. 3, ll. 60-61). The cushioning top layer may be a mattress pad or a flexible foam layer (col. 3, ll. 60-63). The material for the cushioning top layer needs to be flexible so that it lies flat against the mattress as sections of the mattress are elevated (col. 3, ll. 62-64).

FF17. Thus, the mattress 14 and the top layer are preferably the same material. There is no teaching that the interface between them has a coefficient of friction low enough so that the top portion 28 can slide relative to the mattress 14. In addition, as Davis specifically teaches that 28 remains flat on the mattress 14 while sections are elevated (FF16), Davis does not teach or suggest the use of such an interface.

#### PRINCIPLES OF LAW

We recognize that during prosecution before the Office, claims are to be given their broadest reasonable interpretation consistent with the Specification as it would be interpreted by one of ordinary skill in the art. *In re American Academy Of Science Tech Center*, 367 F.3d 1359, 1364 (Fed. Cir. 2004). Claim language, however, “should not be treated as

meaningless.” *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 951 (Fed. Cir. 2006).

As to the preamble of a claim,

[i]f the claim preamble, when read in the context of the entire claim, recites limitations of the claim, or, if the claim preamble is “necessary to give life, meaning, and vitality” to the claim, then the claim preamble should be construed as if in the balance of the claim. . . . If, however, the body of the claim fully and intrinsically sets forth the complete invention, including all of its limitations, and the preamble offers no distinct definition of any of the claimed invention’s limitations, but rather merely states, for example, the purpose or intended use of the invention, then the preamble is of no significance to claim construction because it cannot be said to constitute or explain a claim limitation.

*Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305 (Fed. Cir. 1999).

Finally, for a reference to serve to be anticipatory, every element and limitation of the claimed invention must be found in a single prior art reference, arranged as in the claim. *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383 (Fed. Cir. 2001).

## ANALYSIS

As to the rejection over Frydman ’401, with respect to claim 1, Appellants argue that “Frydman discloses a pillow not a mattress.” (App. Br. 9.)

Claim 1 is drawn to “[a] mattress for use within a profiling bed comprising a base portion and an upper portion overlying the base portion

characterized in that an interface between the portions has a coefficient of friction low enough such that the portions can slide relative to each other.” While we agree “for use within a profiling bed” is merely a statement of intended use, we interpret “mattress” as an essential part of the claim, “‘necessary to give life, meaning, and vitality’ to the claim.” *Pitney Bowes*, 182 F.3d at 1305. The Specification is drawn to a mattress (*see, e.g.*, FF3-FF5), and the ordinary artisan would not find that the pillow of Frydman ’401, which supports the head and neck (FF8 and FF9), to be equivalent to the claimed mattress, which is a part of a bed and supports the entire body of the user. Thus, we agree with Appellants, and the rejection is reversed.

In addition, as all of the independent claims are drawn to a mattress that has a base portion and an upper portion overlying the base portion, characterized in that an interface between the portions has a coefficient of friction low enough so that the portions can slide relative to each other, or that the interface is designed to allow longitudinal movement between the portions, the rejection of claims 1, 8, 16-18, and 23 under 35 U.S.C. § 102(b) as being anticipated by Frydman ’401 is reversed.

Claims 7 and 19 stand rejected under 35 U.S.C. § 103(a) as being obvious over the combination of Frydman ’401 and Frydman ’314, and claims 9-12, 20, and 21 stand rejected under 35 U.S.C. § 103(a) as being obvious over the combination of Frydman ’401 and Silver (Ans. 6-7).

Frydman ’314 is drawn to a stress relieving orthopedic pillow (Frydman ’314, abstract), and Silver is relied upon for teaching a pillow cover (Ans. 7). Thus, neither Frydman ’314 nor Silver remedy the deficiencies of Frydman ’401, and these rejections are reversed as well.

As to the rejection over Davis, Appellants argue that the Examiner relies on element 12 as being drawn to a base portion, but that in fact 12 is drawn to a box spring, and that “[i]t is factually untrue that a conventional set of box springs is identical to a part of a mattress; the box springs and a mattress are two separate things.” (App. Br. 12.) Appellants argue further that “Davis does not disclose actual or potential relative sliding motion between the box springs and portions of the mattress (14),” and that in fact, Davis teaches that the chambers 30 and 32 may be made from conventional or elastomeric material, and that in general, “elastomeric materials, such as rubber, are known for their high coefficient of friction.” (*Id.*)

As noted above, we agree that a box spring would not read on a base portion of a mattress (FF15). Moreover, even if the box spring were to be interpreted as reading on the base portion of a mattress, the Examiner has made no findings as to why the ordinary artisan would choose an interface between the portions that has a coefficient of friction low enough so that the box spring 12 can slide relative to the mattress 14 containing the air chambers 30 and 32 (*id.*).

Moreover, even if we were to read the top layer 28 as the upper portion of the mattress, and the mattress 14 as the base portion, Davis does not teach or suggest the use of an interface that has a coefficient of friction low enough so that the top portion 28 can slide relative to the mattress 14, or that that the interface is designed to allow longitudinal movement between the portions. Thus, the rejection of claims 1-8, 13-16, and 22 under 35 U.S.C. § 102(e) over Davis is reversed as well.

Claims 9-12, 20 and 21 stand rejected under 35 U.S.C. § 103(a) as being obvious over the combination of Davis and Silver (Ans. 8). Silver again is relied upon for teaching a cover (*id.*) and thus does not remedy the deficiencies of the Davis patent, and this rejection is reversed as well.

### CONCLUSION

We thus find that neither Frydman '401 nor Davis discloses a mattress comprising a base portion and an upper portion that has an interface between the portions that has a coefficient of friction low enough so that the portions can slide relative to each other, and thus neither reference anticipates the claimed subject matter. In addition, as to the obviousness rejection over Frydman '401 and Davis, as the additional references relied upon by the Examiner do not remedy the deficiencies of Frydman '401 or Davis, the Examiner has also failed to set forth a prima facie case of obviousness.

We therefore reverse all of the rejections on appeal.

REVERSED

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