

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* KEVIN T. FOLEY

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Appeal 2007-2372  
Application 10/395,654  
Technology Center 3700

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Decided: 8 August 2007

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Before TEDDY S. GRON, CAROL A. SPIEGEL, and MARK NAGUMO,  
*Administrative Patent Judges.*

GRON, *Administrative Patent Judge.*

DECISION ON APPEAL

Introduction

This is an appeal under 35 U.S.C. § 134 from an Examiner's final rejection of Claims 29-33, 40, 42-50, and 53-59 of Application 10/395,654,

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filed March 24, 2003,<sup>1</sup> under 35 U.S.C. § 103(a) in view of the combined teachings of Michelson, U.S. Patent Publication 2002/0004683, published January 10, 2002, from Application 09/903,141, filed July 10, 2001; Morris, U.S. Patent Publication 2003/0120274, published June 26, 2003, from Application 10/032,778, filed October 22, 2001; and Scarborough, U.S. Patent 6,383,221, patented May 7, 2002.<sup>2</sup> Claims 29-33, 40-51, and 53-60 are pending in the application. The Examiner objected to Claims 41, 51, and 60 as being dependent on a finally rejected claim yet allowable in independent form.

Applicant argues the claims in separate groups of: (1) Claims 29-33, 40, and 42; (2) Claims 43-50; and (3) Claims 53-59 (Br., p. 8). However, Applicant has made the same argument for each of the groups. Therefore, we decide this appeal on the basis of independent method Claim 29. 37 CFR § 41.37(c)(1)(vii) (2006). Claim 29 is transcribed below (Br. App. A):

29. A method of inserting an interbody fusion implant made of bone, comprising:

providing an implant formed of bone and having a body portion with an upper bearing surface and opposite lower bearing surface, said body portion further including a flexible upper flange member and an

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<sup>1</sup> Application 10/395,654 is said to be a divisional of application 09/777,702, filed February 6, 2001, now U.S. Patent 6,562,073, dated May 13, 2003.

<sup>2</sup> Applicant has not contested the status of Michelson or Morris as prior art. We therefore hold such arguments waived.

opposite flexible lower flange member each extending from said body portion;

accessing the disc space between adjacent vertebrae;

inserting the body portion of the implant into the disc space;

securing the flexible upper flange member to the body of the upper vertebra; and

securing the flexible lower flange member to the body of the lower vertebra.

In deciding this appeal, we have considered the following: (1) the Final Rejection, mailed October 18, 2005, (2) the Appeal Brief, filed May 18, 2006, (3) the Examiner's Answer, mailed August 1, 2006, and (4) the Reply Brief, filed October 2, 2006. We have also studied Applicant's Specification and Drawings and the disclosures of Michelson, Morris, and Scarborough.

#### Findings of Fact

1. Claim 29 recites a method of inserting an interbody fusion implant into "the disc space between adjacent vertebrae" (Br. App. A).

2. Michelson discloses "an interbody spinal fusion implant ... for introduction into a disc space between adjacent vertebral bodies" (Michelson, p. 1, par. 6).

3. Morris discloses an implant retaining device for securing “an intervertebral implant in a receiving bed formed between adjacent vertebrae” (Morris, p. 1, par. 3).

4. The method of Claim 29 requires “an implant formed of bone” (Br. App. A).

5. Michelson teaches that its implant is “any interbody spinal fusion implant regardless of the material from which it is formed, including ... cortical bone, and other material useful for the intended purpose” (Michelson, p. 2, par. 41).

6. Claim 29 recites an implant having “a body portion with an upper bearing surface and opposite lower bearing surface” (Br. App. A).

7. Michelson’s implant “has a vertebral body engaging upper surface 110 and an opposite vertebral body engaging lower surface 112” (Michelson, p. 2-3, par. 42).

8. Claim 29 recites “a flexible upper flange member and an opposite flexible lower flange member” (Br. App. A).

9. Michelson employs an interbody implant with the trailing end configured into a flanged portion (Michelson, p. 3, par. 44).

10. Morris describes an implant retaining plate. “When the plate is formed from bone, it may be partially or fully demineralized. Partially

demineralized bone provides a degree of flexibility to the plate such that it can be manipulated to conform to the surface to which it is secured, e.g., the vertebrae” (Morris, p. 1, par. 15).

11. The method of Claim 29 inserts the body portion of the implant into the disc space between adjacent vertebrae (Br. App. A).

12. Michelson teaches that “implant 200 is inserted into an implantation space formed across the disc space into the adjacent vertebral bodies” (Michelson, p. 4, par. 53).

13. The method of Claim 29 secures “the flexible upper flange member to the body of the upper vertebra” and “the flexible lower flange member to the body of the lower vertebra” (Br. App. A).

14. Michelson teaches that “[f]langed portion 118 includes bone screw receiving holes 124 for receiving bone screws 170 for securing implant 100 to the adjacent vertebral bodies” (Michelson, p. 3, par. 45).

#### Discussion

To establish the obviousness of the claimed subject matter, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 985, 180 USPQ 580, 583 (CCPA 1974). “All words in a claim must be considered in judging the patentability of that claim against

the prior art.” *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Applicant admits that “Michelson discloses an interbody implant with upper and lower flanges that are secured to adjacent vertebrae to prevent or resist backout” (Br., p. 9). The Michelson implant has upper and lower bearing surfaces (Michelson, p. 2, par. 42) and may be formed from bone, among other materials (Michelson, p. 2, par. 41). Furthermore, Michelson discloses a process of accessing the space between vertebrae, inserting the body portion of the implant, and securing the flanges to the vertebrae (Michelson, pp. 4-5, par. 53-54, 61). Besides describing this process, Michelson depicts the result in Figures 9, 10, and 15.

The difference is, Michelson does not explicitly state that the flange portions are made of a flexible bone material. However, Morris describes a “plate ... secured to one or both vertebral bodies to prevent the intervertebral implant from backing out of the receiving bed” (Morris, p. 1, par. 14). This plate “may be partially of fully demineralized ... bone [to provide] ... a degree of flexibility to the plate” (Morris, p. 1, par. 15). Thus, each and every limitation of Applicant’s claimed invention is described by the combination of Michelson and Morris.

Applicant argues that “Morris et al. teaches away from its combination with Michelson” (Br., p. 12). Morris teaches an implant retaining device that is separate from the implant positioned in the disk space. Morris states (Morris, p. 1, par. 11-12):

A variety of different devices have been developed to retain an intervertebral implant at a fixed position within the intervertebral space. These devices include, inter alia, screws and formations formed on the implant itself. Such devices often inhibit insertion of the implant into the intervertebral space.

Accordingly, a need exists for an improved implant retaining device which is configured to reduce the likelihood of expulsion or repulsion of an intervertebral implant from between adjoining vertebrae during normal patient activity, without inhibiting insertion of the implant into the intervertebral space.

Based on these two paragraphs, Applicant argues (Br., p. 11):

Morris et al. clearly teaches that formations on the implant, such as flanges extending from the interbody portion, inhibit insertion of the implant and are undesirable. To address this problem with prior art devices, Morris et al. teaches an implant retaining device that forms no part on the implant in order that insertion of the implant is not inhibited. Therefore, Morris et al. teaches away from providing any flanges or other structure extending from an interbody portion of the implant, and therefore teaches away from its combination with Michelson where formations that resist backout, including the flanges, are provided extending from the portion of the implant that is inserted between the vertebrae.

However, the flanges used in Michelson do not reasonably appear to inhibit the insertion of the implant into the vertebral space. Michelson’s flanges follow the body portion of the implant as it is inserted into the

vertebral space and attach to the vertebrae sides in the same way that Morris' implant retaining device attaches to the vertebrae. Michelson discloses that "[i]mplant 200 is installed with leading end 202 inserted first into the disc space and flanged portion 218 contacts the anterior aspect of the vertebral bodies" (Michelson, p. 4, par. 53). There would have been no apparent reason to expect that Michelson's flanges would inhibit the insertion of the implant in any way. Indeed, Morris states that "[s]uch devices *often* inhibit insertion" (Morris, p. 1, par. 11; emphasis added). In this case, however, Michelson's flanges do not appear to do so.

Applicant's argument that Morris teaches away from the combination with Michelson has no merit. Even so, we look for some motivation to combine the two references. While the Supreme Court recently rejected a rigid application of the teaching, suggestion, or motivation test in an obviousness inquiry in *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 82 USPQ2d 1385 (2007), the Court acknowledged the importance of identifying "a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does[.]" *id.* at 1731, 82 USPQ2d at 1396, to avoid hindsight reconstruction of the claimed invention.

Even though an express reason to combine prior art teachings may not be required, in this case a reason to combine is provided. Morris states

(Morris, p. 3, par. 37):

When plate 12 is formed from bone, it may be partially or fully demineralized using, for example, a controlled acid treatment. Plate 12 may be partially demineralized to provide a degree of flexibility to the plate such that it can be manipulated to conform to the surface to which it is secured, e.g., the vertebrae.

Thus, Morris provides a specific reason to demineralize the flanged portions of Michelson's implant. It is to provide the insert retaining means with a degree of flexibility to conform to the surface of the vertebrae to which it is secured.

Furthermore, Michelson states (Michelson, p. 2, par. 41; emphasis added):

As used herein, the term "implant" includes any interbody spinal fusion implant regardless of the material from which it is formed, including specifically surgical quality metal, plastics, ceramics, *cortical bone, and other materials useful for the intended purpose, including materials that may be in whole or in part bioresorbable.*

Thus, Michelson allows for a variety of materials useful for the intended purpose to be used in the implant. Demineralized bone, as Morris teaches, is useful for the purpose of conforming Michelson's securing means to the vertebrae to which they attach. Additionally, Michelson teaches that "[t]he implant can include at least in part materials that are bioabsorbable in the

body” (Michelson, p. 6, par. 74). Accordingly, Michelson teaches that parts of its implant, including the flanges, may be made from different materials.

Appellant finally argues that “when Morris et al. is combined with Michelson and Scarborough et al. ... the retaining devices are separate from the body portion of the implant” (Br., pp. 13-14). However, “[t]he test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference ... [r]ather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art.” *In re Keller*, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). “Common sense teaches ... that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle.” *KSR Int’l Co.*, 127 S.Ct. at 1742, 82 USPQ2d at 1397. “[W]hen a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result.” *Id* at 1740, 82 USPQ2d at 1395. Accordingly, it would have been obvious to a person of ordinary skill in the art at the time Applicant’s invention was made to form Michelson’s implant, including the

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flanges, in whole or in part from demineralized bone in light of the teaching of Morris.

Scarborough relates to aspects of certain dependent claims that are not at issue in this appeal. Applicant has not made any arguments for patentability based on unexpected results or other "secondary" indicia of patentability, and we consider such arguments to have been waived. All claims fall with Claim 29.

#### Conclusion

Having considered all the evidence of record for and against the patentability of Claims 29-33, 40, 42-50, and 53-59 of Application 10/395,654 under 35 U.S.C. § 103(a), we affirm the appealed final rejections.

#### Order

Upon consideration of the appeal, and for the reasons given, it is

ORDERED that the decision of the Examiner rejecting Claims 29-33, 40, 42-50, and 53-59 of Application 10/395,654 under 35 U.S.C. § 103(a) is affirmed;

FURTHER ORDERED that a copy of this decision be placed in "pending U.S. Patent Application Ser. No. 10/933,667[, filed September 3, 2004]" (Br., p. 2); and

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FURTHER ORDERED that the time for taking future action in this appeal cannot be extended under 37 CFR § 1.136(a)(2006).

AFFIRMED

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