# **United States Court of Appeals for the Federal Circuit**

04-1302

### HOWMEDICA OSTEONICS CORP.,

Plaintiff-Appellee,

v.

### TRANQUIL PROSPECTS, LTD.,

Defendant-Appellant.

<u>William L. Mentlik</u>, Lerner, David, Littenberg, Krumholz & Mentlik, LLP, of Westfield, New Jersey, argued for plaintiff-appellee. With him on the brief were <u>Paul H.</u> <u>Kochanski</u> and <u>Roy H. Wepner</u>.

<u>George C. Summerfield</u>, Stadheim & Grear, Ltd., of Chicago, Illinois, argued for defendant-appellant. With him on the brief were <u>Joseph A. Grear</u>, <u>Rolf O. Stadheim</u> and <u>Keith A. Vogt</u>.

Appealed from: United States District Court for the Northern District of Indiana

Judge Allen Sharp

## **United States Court of Appeals for the Federal Circuit**

04-1302

HOWMEDICA OSTEONICS CORP.,

Plaintiff-Appellee,

v.

TRANQUIL PROSPECTS, LTD.,

Defendant-Appellant.

DECIDED: March 28, 2005

Before RADER, DYK, and PROST, Circuit Judges.

RADER, Circuit Judge.

Tranquil Prospects, Ltd. (Tranquil) is the owner by assignment of United States Patent Nos. 5,222,985 (June 29, 1993) and 4,636,214 (Jan. 13, 1987) (the '985 and '214 patents respectively) concerning the implantation of intramedullary prostheses. Howmedica Osteonics Corp. (Howmedica) sought a declaratory judgment in the Northern District of Indiana that the claims of the '985 and '214 patents are invalid, unenforceable, and not infringed. Tranquil counterclaimed for patent infringement. On September 25, 2003, the district court construed the disputed terms in the claims. <u>Howmedica Osteonics Corp. v. Tranquil Prospects, Ltd.</u>, No. 3:02-CV-0321-AS (N.D. Ind. Sept. 25, 2003) (<u>Construction Order</u>). Because it was unable to construe the term "transverse sectional dimensions," the district court found that the claims were indefinite. Id., slip op. at 10. The district court also construed the claims of the '985

patent to require a coating on the prosthetic before implantation in the bone. <u>Id.</u>, slip op. at 5-6. Because the district court erred in holding the phrase "transverse sectional dimensions" indefinite and in construing the claims of the '985 patent to require precoating the prosthetic prior to insertion into the bone, this court reverses in part, vacates in part and remands.

I

The '985 and '214 patents have identical written descriptions.<sup>1</sup> The '214 patent claims methods for surgical orthopedic implantation of an intramedullary prosthesis; the '985 patent claims an intramedullary prosthesis apparatus. Intramedullary prostheses replace the ball of the hip joint. '214 patent, col. 1, II. 15-25. "[T]he patient's ball and a part of the neck from the upper end of the femoral bone" are removed. Id. A portion of the "centrally-positioned, softer, cancellous bone of the medullary canal [is] rasped to form a bone cavity [or stem socket] which [is] able to accept therein the stem of the prosthesis." Id. "A metal prosthesis implant, having a ball, neck, and stem, [is] then inserted into the medullary canal of the femur." Id.

Prior art intramedullary prostheses were substantially smaller than the stem sockets to avoid fracturing the femoral bone during installation. <u>Id.</u> at II. 26-31 & 52-56. These prior art prostheses, however, lacked the required stability and load transfer to allow patients a full range of motion without pain. <u>Id.</u> at II. 33-37 & 52-63.

In an attempt to stabilize the prostheses, the prior art filled the stem socket with bone cement to help stabilize the prosthesis within the stem socket. This process did

<sup>&</sup>lt;sup>1</sup> To avoid redundancy, this opinion will provide citations to the written description of only the '214 patent when discussing issues pertinent to both the '214 and '985 patents.

not work well because an uneven distribution of the bone cement within the stem socket often caused the same problems. <u>Id.</u> at col. 1, II. 64-68 & col. 2, II. 35-42. These bone cement prostheses also tended to wear out and break more quickly due to the poor fit of the undersized prostheses and uneven distribution of the stabilizing cement. <u>Id.</u> at col. 2, II. 38-52. Finally, the bone cement also introduced new problems, namely "migration of unreacted monomer from the bone cement to tissue, and the need for the bone cement to undergo an exothermic polymerization . . . ." <u>Id.</u> at col. 2, II. 58-63.

To avoid the problems of bone cement, the prior art coated the stem of prostheses with a composite porous outer coating. <u>Id.</u> at col. 2, II. 64-68. Although coated stems ameliorated some of the bone cement problems, patients continued to experience problems because the stems were undersized relative to the medullary canal. <u>Id.</u> at col. 3, II. 13-20. "[T]he void space in the stem socket was surrounded substantially by relatively soft cancellous bone which could not sustain the mechanical stress loads imposed thereon." <u>Id.</u> at col. 3, II. 15-18.

The '985 and '214 patents overcame these problems in the prior art by introducing methods and apparatus for installation of a intramedullary prosthetic that is substantially the same size and shape as the medullary canal, as defined by the softer cortical bone or cortex. <u>Id.</u> at II. 50-58. Substantially conforming the stem of the prosthesis to the shape of the medullary canal and rasping a complementary stem socket results in improved stem stabilization, improved load transfer from the stem to the surrounding dense cortical bone, and reduced localized stress zones. <u>Id.</u> at II. 39-48.

Claim 1 of the '214 patent is representative of the claim language at issue in that

patent, and states:

1. A method of surgical orthopedic implantation of an intramedullary prosthesis device having an elongate stem with distal and proximate ends into the medullary canal of a long bone defined by the cortex of a long bone and comprising the steps of:

forming in said medullary canal a stem socket;

sizing the stem socket with an appropriately sized tool to form a socket defined substantially by the inner periphery of compact bone formed by cortical or dense cancellous bone, said stem having transverse sectional dimensions along substantially its entire length which are undersized with respect to adjacent corresponding transverse sectional dimensions of said stem socket;

then injecting bone cement in the completed stem socket; and

finally pushing said stem into said stem socket with said bone cement therein surrounding the stem for its entire length including its distal and proximate ends whereby said cement forms a liner around the outer surface of said stem between the stem and the adjacent compact bone, the transverse sectional dimensions of the liner and stem constituting at least around seventy percent (70%) of the corresponding transverse sectional dimensions of the long bone defined by cortical bone or metaphyseal and epiphyseal segments of said long bone, and at least around ninety percent (90%) of the corresponding transverse sectional dimensions of the long bone defined by cortical bone or metaphyseal and epiphyseal segments of said long bone, and at least around ninety percent (90%) of the corresponding transverse sectional dimensions of the long bone defined by cortical bone of the diaphyseal segment of said long bone.

Claim 1 of the '985 patent is representative of the claim language at issue in that

patent, and states:

1. An intramedullary prosthesis comprising:

an elongate stem having distal and proximal ends and adapted to be forcibly inserted within an elongated stem socket having its inner periphery defined by compact bone formed by cortical bone or dense cancellous bone of a long bone, said stem having transverse sectional dimensions along substantially its entire length undersized with respect to corresponding transverse sectional dimensions of said socket;

a layer of coating material surrounding said undersized stem along its

entire length including its distal and proximal ends and covering substantially the entire outer surface of said stem, the coated stem having transverse sectional dimensions constituting at least around seventy percent (70%) of the transverse sectional dimensions of said medullary canal defined by cortical bone of the metaphyseal and epiphyseal segments of said long bone, and at least around ninety percent (90%) of the corresponding transverse sectional dimensions of the long bone defined by the cortical bone of the diaphyseal segment of said long bone;

said layer of coating material being of a generally uniform predetermined thickness along the entire length of the stem sufficient to provide improved load transfer between the stem and the adjacent compact bone formed by hard cancellous bone and hard cortical bone, said tapered stem being of minimal cross-sectional area adjacent said distal end and of maximum cross-sectional area adjacent said proximal end with said generally uniform thickness coating material progressively increasing in crosssectional area from said distal end to said proximal end of said stem.

As noted above, Howmedica initiated a declaratory judgment action to invalidate

the '985 and '214 patents or to show noninfringement. Tranquil counterclaimed for infringement. After construing the claims, the district court determined that the ambiguities in the term "transverse sectional dimensions" rendered the claims of both patents indefinite. <u>Construction Order</u>, slip op. at 10. The district court also construed the '985 claims to require a coating on the prosthetic before implantation. <u>Id.</u>, slip op. at 5-6. The trial court then denied Tranquil's motion for reconsideration, <u>Howmedica Osteonics Corp. v. Tranquil Prospects, Ltd.</u>, No. 3:02-CV-0321-AS (N.D. Ind. Nov. 24, 2003), and entered final judgment in favor of Howmedica, <u>Howmedica Osteonics Corp.</u> <u>v. Tranquil Prospects, Ltd.</u>, No. 3:02-CV-0321-AS (N.D. Ind. Jan. 14, 2004) (<u>Final Order</u>).<sup>2</sup> Tranquil timely appealed; we have jurisdiction under 28 U.S.C. § 1295(a)(1).

<sup>&</sup>lt;sup>2</sup> The Final Order does not specify the grounds upon which the district court entered declaratory judgment for Howmedica. However, the parties do not dispute that the stems of Howmedica's prostheses are not precoated, and therefore Howmedica does not infringe any claim of the '985 patent under the district court's construction. In addition to finding the claims of both the '214 and '985 patents indefinite, this court

This court reviews a grant of summary judgment without deference to the district court. <u>Anderson v. Liberty Lobby, Inc.</u>, 477 U.S. 242, 255 (1986); <u>Johns Hopkins Univ.</u> <u>v. CellPro, Inc.</u>, 152 F.3d 1342, 1353 (Fed. Cir. 1998). Summary judgment is appropriate only where "there is no genuine issue as to any material fact and . . . the moving party is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(c); <u>see also</u> Celotex Corp. v. Catrett, 477 U.S. 317, 322 (1986).

A finding of invalidity under 35 U.S.C. § 112, paragraph 2, is a question of law also reviewed without deference. <u>Union Pac. Res. Co. v. Chesapeake Energy Corp.</u>, 236 F.3d 684, 692 (Fed. Cir. 2001) (citing <u>Personalized Media Communications, LLC v.</u> <u>Int'l Trade Comm'n</u>, 161 F.3d 696, 702 (Fed. Cir. 1998)). A court determines patent infringement by construing the claims and then applying that construction to the accused process or product. <u>Markman v. Westview Instruments, Inc.</u>, 52 F.3d 967, 976 (Fed. Cir. 1995) (<u>en banc</u>), <u>aff'd</u>, 517 U.S. 370 (1996). This court reviews claim construction without deference. <u>Cybor Corp. v. FAS Techs., Inc.</u>, 138 F.3d 1448, 1454 (Fed. Cir. 1998) (<u>en banc</u>).

А

Patent claims must "particularly point[] out and distinctly claim[] the subject matter which the applicant regards as his invention." 35 U.S.C. § 112, para. 2 (1982). "A determination of claim indefiniteness is a legal conclusion that is drawn from the

assumes that the district court's entry of final judgment for Howmedica also implies a declaratory judgment of no infringement of the '985 patent under the district court's "precoated stem" limitation. Consequently, this court will address the construction of terms supporting the district court's finding of indefiniteness and the terms supporting the district court's finding of the '985 patent.

court's performance of its duty as the construer of patent claims." <u>Personalized Media</u> <u>Communications</u>, 161 F.3d at 705. The perspective of a person of ordinary skill in the art at the time of the patent application governs the definiteness analysis. <u>W.L. Gore &</u> <u>Assocs., Inc. v. Garlock, Inc.</u>, 721 F.2d 1540, 1556-57 (Fed. Cir. 1983). The definiteness of a patent claim depends on whether one skilled in the art would understand the bounds of the claim when read in light of the specification. <u>Union Pac.</u> <u>Res.</u>, 236 F.3d at 692 (citing <u>Orthokinetics, Inc. v. Safety Travel Chairs, Inc.</u>, 806 F.2d 1565, 1576 (Fed. Cir. 1986)). "A claim is indefinite if its legal scope is not clear enough that a person of ordinary skill in the art could determine whether a particular [product or method] infringes or not." <u>Geneva Pharms., Inc. v. GlaxoSmithKline PLC</u>, 349 F.3d 1373, 1384 (Fed. Cir. 2003).

The district court found the claims of the '214 and '985 patents invalid because it found that one of ordinary skill in the art would not understand the meaning of the phrase "transverse sectional dimensions." <u>Construction Order</u>, slip op. at 9-10. The claims of the '214 and '985 patents require that the "transverse sectional dimensions" of the coated prosthesis constitute certain percentages of the "transverse sectional dimensions" of the medullary canal, defined by the cortical bone. '214 patent, col. 9, II. 26-36; '985 patent, col. 9, II. 17-26. A "transverse section" is a slice taken perpendicular to the vertical axis of the bone. The parties dispute which "dimensions" of the "transverse section" define the claimed percentages. Tranquil, relying on citations to the prosecution histories and expert testimony, argues that the "transverse sectional area. Howmedica argues that the term is indefinite because the patent does not specify

whether the term refers to a two-dimensional measurement of area or single-dimension linear measurement.

A simple example in the record points out the significant difference between a one-dimensional measurement and a two-dimensional measurement. Consider, for example, a cylindrical medullary canal having a diameter of 1 inch, and a cylindrical implant within that canal having a diameter of 0.75 inch. A one-dimensional linear measurement of the diameter of the implant is seventy-five percent of the diameter of the canal, and meets the "at least around seventy percent (70%)" limitation of the claims. On the other hand, a two-dimensional measurement of the cross-sectional area of the implant is only about fifty-six percent (56%) of the cross-sectional area of the canal and does not meet the limitation of the claims. Consequently, one of ordinary skill in the art must know which measurement to use to determine the boundary of the claims.

The record shows that one of ordinary skill in the art would readily ascertain from the written description of the patents that the "transverse sectional dimension" calls for a two-dimensional measurement. The '214 and '985 patents claim an invention that shapes the prosthesis to fit snugly inside the medullary canal. From the very outset, the written description of these patents disclose this overriding purpose of the invention. For instance, the abstract of the '214 patent states: "The prosthesis device and the method of implantation utilize an elongate stem <u>undersized precisely with respect to a precisely formed stem socket</u> defined by the cortical bone . . . ." '214 patent, col. 3, II. 52-55. The same abstract emphasizes: "[T]his invention is based on selecting a prosthesis having a stem part which is <u>shaped and sized to correspond substantially to</u>

the geometry of the medullary canal . . . and then forming a <u>complementary stem socket</u> in the canal which will receive the selected prosthesis." <u>Id.</u> at col. 3, II. 64-65 (emphasis added). To make the invention abundantly clear, the patent repeatedly describes a very tight fit for the prosthesis. <u>See, e.g., id.</u> at col. 3, II. 67-68 ("[T]]he stem must be <u>forcibly</u> <u>inserted</u> into the socket."); col. 4, II. 3-4 ("The compressed coating provides a <u>compression fit</u> . . . ."); col. 4, II. 24-30 ("The <u>compression fit initially instantly stabilizes</u> the stem within its socket . . . ."); col. 4, II. 31-32 ("By shaping the stem part of the prosthesis to <u>conform substantially to the geometrical shape of the medullary canal</u> . . . it is now possible to obtain, at implantation, a generally <u>uniform press fit</u> . . . ."); col. 4, II. 31-32 ("Such <u>press fit</u> allows the stem to distribute mechanical loads to the cortical bone . . . .") (emphases added); '985 patent, Abstract ("The prosthesis utilizes a tapered elongate stem <u>undersized precisely with respect to a precisely formed stem socket</u> in the medullary canal with the stem socket defined by cortical bone . . . .") (emphasis added).

These extensive references clarify that the invention requires a very tight fit for the prosthesis. Given the choice between a construction of "transverse sectional dimensions" that would require a relatively loose fit and a construction that would require a much tighter fit, the record shows that one of skill in the art would readily understand and adopt the latter construction. One of ordinary skill in this art would recognize that a one-dimensional linear measurement of the "transverse sectional dimensions" would defeat the purpose of the invention to provide a snug fit of the prosthesis in the medullary canal. A two-dimensional measurement, on the other hand, provides the snug fit that is the centerpiece of this invention.

This proper and evident construction also finds support in numerous references to the "cross-sectional area" in the prosecution history of both patents. See, e.g., J.A. 75 ("[T]he existence of five sizes of prostheses does not teach anything about . . . whether those sizes will fill the cross[-]sectional area of the medullary canal.") (reexamination of the '214 patent); J.A. 101 ("Nor is there any discussion of the desirability of making the cross-sectional area of the prosthesis large in comparison to the cross-sectional area of the medullary canal as defined by the cortical bone.") (reexamination of the '985 patent) (emphases added). Thus, the applicant and the patentee both understood that the "cross-sectional dimensions" referred to in the patents meant cross-sectional areas. These references occurred during a reexamination proceeding. Thus, these references do not directly address the definiteness requirement – an assessment relevant to the time of filing, not a later reexamination proceeding. See Hybritech, Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1385 (Fed. Cir. 1986) (analyzing definiteness as of the time of filing). Nonetheless, these references to "cross-sectional areas" in the discussion between the examiner and the applicant at a later time are relevant to the meaning of "transverse sectional dimensions" to one of skill in the art at the earlier time of filing. See Kopykake Enters. v. Lucks Co., 264 F.3d 1377, 1383 (Fed. Cir. 2001) ("[T]he literal scope of the term is limited to what it was understood to mean at the time of filing.") (citing Schering Corp. v. Amgen Inc., 222 F.3d 1347, 1352-54 (Fed. Cir. 2000)).

To satisfy the definiteness requirement, the term "transverse sectional dimensions" also need not specify percentage limitations nor the locations along the prosthesis that the percentage must satisfy to constitute a proper dimensional fit. The

patent clearly specifies that "[t]he present invention is rooted in the recognition of the importance and criticality of the stem's transverse sectional dimensions, along the entire length thereof, relative to the corresponding transverse sectional dimensions of the medullary canal . . . ." '214 patent, col. 3, II. 33-37 (emphasis added). Similar language also appears in the claims of both patents. See id. at col. 9, II. 14-18 ("said stem having transverse sectional dimensions along substantially its entire length which are undersized with respect to adjacent corresponding transverse sectional dimensions of said stem socket"); '985 patent, col. 9, II. 11-13 ("said stem having transverse sectional dimensions along substantially its entire length undersized with respect to corresponding transverse sectional dimensions of said socket") (emphases added). Thus the record shows that the percentage limitations of the "transverse sectional dimensions" for each portion of the bone specified in the claims must be met along "substantially the entire length" for each respective portion. Because one of ordinary skill would understand these requirements from the patent, the claim language is not indefinite. In sum, this record shows that "transverse sectional dimensions" refers to two-dimensional measurements, or the cross-sectional area. The district court erred in holding the claims of the '214 and '985 patents invalid under 35 U.S.C. § 112.

#### В

In construing the term "coated stem" the district court held that "the '985 patent calls for a coated stem, and the '214 patent calls for an uncoated stem."<sup>3</sup> <u>Construction</u>

<sup>&</sup>lt;sup>3</sup> The district court's generalization of the '214 patent is inaccurate. The primary difference between the claims of the '214 patent and the '985 patent is that the claims of the '214 patent cover methods of implanting prostheses and the claims of the '985 patent cover apparatuses for implantation. <u>Compare</u> '214 patent, col. 9, I. 4 – col. 10, I. 55, <u>with</u> '985 patent, col. 9, I. 4 – col. 10, I. 60. By describing the '214 patent as

<u>Order</u>, slip op. at 5-6. This appeal asks whether the "coated stem" limitation in the claims of the '985 patent is broad enough to cover prostheses with stems that become coated by bone cement upon insertion into the stem socket. The "coated stem" limitation in the '985 claims, as the parties agree, encompasses a stem coated with bone cement before insertion into the stem socket.

At the outset, this court notes that claim 4, which depends from claim 1, claims "[t]he prosthesis as set forth in claim 1 wherein said coating material is bone cement . . . " '985 patent, col. 9, II. 51-52 (emphasis added). This observation suggests that the "coated stem" limitation in claim 1 includes stems coated by bone cement. Claim 1, however, also requires that the "coating material" cover the prosthesis in a "generally uniform predetermined" thickness. Id. at II. 27-29. Howmedica argues that bone cement, when injected into the stem socket before prosthesis insertion, could not achieve this limitation. Howmedica argues that "the only way the layer of [bone cement] coating material could be 'generally uniform' would be if the medullary canal and the stem had the exact same shape." The claim language, however, suggests only "generally" the same shape for the layer of bone cement in the void between the stem and walls of the stem socket. Thus, the claims require only a "generally uniform" thickness, not an exact uniformity as Howmedica apparently argues. In fact, this relationship between the shape of the stem and the shape of the stem socket mirrors the description of the invention set forth in the '985 patent, namely, a "stem part whose

not covering precoated stems the district court did not consider the language of claim 4 that requires "[i]nserting a deformable material and said elongate stem within said stem socket with said deformable material surrounding the stem for its entire length including its distal and proximate ends . . . ." Although this court does not here construe this language because the parties did not raise this issue on appeal, this language may be broad enough to encompass precoated stems.

transverse sectional dimensions <u>substantially approximate</u> the transverse sectional dimension of the medullary canal." <u>Id.</u> at col. 4, II. 10-14; <u>see also id.</u> at col. 3, II. 52-58 ("a prosthesis having a stem part which is shaped and sized to <u>correspond substantially</u> to the geometry of the medullary canal in the patient's bone"), col. 4, II. 24-26 ("stem part of the prosthesis to <u>conform substantially</u> to the geometrical shape of the medullary canal") & II. 45-50 (stem socket made having a "predetermined shape" to conform to the shape of the prosthesis) (emphases added). Consequently, the record shows that the language of claim 1 can accommodate coating the stem by injecting bone cement into the stem socket before insertion of the prosthesis. This particular coating method could satisfy the "generally uniform" limitation of claim 1 of the '985 patent.

The "predetermined" limitation also erects no barrier to a process that does not coat the stem until insertion into a stem socket filled with bone cement. Although this language requires determination of the coating thickness before stem insertion, the invention disclosure explains a way to satisfy this requirement by inserting the stem into a socket already charged with bone cement. As discussed <u>supra</u>, the '985 patent specifically states that the shape of the medullary canal (which is rasped to form a suitable stem socket) governs the selection of a suitable prosthesis. <u>See, e.g.</u>, '985 patent, col. 3, II. 52-58 ("Broadly, the improved method of surgical orthopedic implantation of this invention is based on <u>selecting a prosthesis having a stem part</u> which is shaped and sized to correspond substantially to the geometry of the medullary canal in the patient's bone . . . and then forming a complementary stem socket in the canal which will receive the selected prosthesis."), col. 4, II. 39-50 ("When utilizing the method of selecting the shape and size of the prosthesis and of preparing the stem

socket in accordance with this invention, significant improvements in stem stabilization and in stem fixation can be obtained, even when using uncoated stems that are to be implanted with the aid of bone cement. After the proper prosthesis is selected, the medullary canal in the femur is reamed and rasped to form a <u>stem socket having a</u> <u>predetermined shape and length</u> to receive therein . . . the slightly undersized uncoated stem together with a thin cement layer.") (emphases added). Thus, the '985 patent suggests use of "a suitable radiograph" to predict the "proper prosthesis shape" and using the "instruments subsequently used to develop [the] socket 25 [to] verify whether the proper shape for [the] prosthesis 10 was predicted with the radiograph." <u>Id.</u> at col. 7, II. 12-16. By selecting a prosthesis of a particular size and shape for insertion into a particular medullary canal, the insertion process predetermines the width of the void and the thickness of the layer of bone cement filling that void and coating the stem. Thus, this court perceives that claim 1 can cover a prosthesis whose stem is coated by inserting the prosthesis into a canal already charged with bone cement.

Finally, this court reaches this conclusion with the understanding that the written description of the '985 patent includes references to "coated" and "uncoated" stems. The '985 patent discusses two general embodiments of the invention -- one embodiment with stems coated before insertion and another with stems that are not coated before insertion. <u>See, e.g.</u>, '985 patent, col. 4, II. 15-30 (stem coated before insertion), II. 39-50 (stem not coated before insertion). The references in the '985 patent to a "coated stem" merely refer to the stem and its coating, not to the naked stem or the coating alone. <u>See, e.g.</u>, '985 patent, col. 4, II. 15-21 ("In a preferred embodiment, the <u>stem</u>'s base material is a suitable metal whose transverse sectional dimensions along

its entire length are only slightly undersized relative to the transverse sectional dimensions of the prepared stem socket. The stem's base material is fully covered with a thin coating. The transverse sections of the coated stem part are oversized in relation to the corresponding sections of the prepared socket . . . .") (emphases added). In contrast the embodiment using an "uncoated" stem requires that "[t]he uncoated stem 18 will have to be implanted by the use of a bone cement to form a cement liner around stem 18." Id. at col. 8, II. 32-35 (emphasis added). Indeed, a stem lined with cement after insertion satisfies the "coated" limitation. Both parties agreed that placing a layer of bone cement on the stem before insertion meets the "coated stem" limitation of claim 1. Because claim 1 is an apparatus claim without process limitations, this court detects no difference in "coating" for a stem covered with bone cement before insertion and a stem covered with bone cement upon insertion into the stem socket. Consequently, this court vacates the portion of the district court's claim construction precluding stems coated with bone cement, either before or after insertion, from satisfying the "coated stem" limitation.

#### Ш

In sum, this court reverses the district court's finding of summary judgment that the claims of the '214 and '985 patents are indefinite and invalid under 35 U.S.C. § 112. This court construes the term "transverse sectional dimensions" to refer to the crosssectional area of the prosthesis along the entire length of the portions of the bone specified by the claims. This court vacates the district court's grant of summary judgment of no infringement of the claims of the '985 patent in view of its erroneous claim construction which precludes infringement for stems coated with bone cement,

either before or after insertion. Finally, this court remands this case to the district court for further proceedings.

## COSTS

Each party shall bear its own costs.

# REVERSED-IN-PART, VACATED-IN-PART, and REMANDED