

IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF PENNSYLVANIA

THE TIMKEN COMPANY, ET AL.,       :       CIVIL ACTION  
                                      :       NO. 99-37  
                  PLAINTIFFS,        :         
                                      :         
                  v.                    :         
                                      :         
SKF U.S.A., INC.,                    :         
d/b/a MBC BEARINGS, AN              :         
UNINCORPORATED DIVISION OF         :         
SKF U.S.A., INC.                     :         
                                      :         
                  DEFENDANT.         :       

M E M O R A N D U M

EDUARDO C. ROBRENO, J.

March 22, 2002

This is a patent infringement action, in which The Timken Company ("Timken") alleges that SKF U.S.A., Inc. ("SKF") has infringed upon its United States Reissue Patent No. Re. 35,860 ("860 patent"). The '860 patent uses a particular corrosion resistant coating on a standard roller bearing. The focus of this litigation is not the structure of the roller bearing, but the protective coating, or plating, applied to the bearing. Timken argues that the patent protects coatings consisting of all zinc alloys, while SKF contends that the patent is limited to a coating of a zinc-nickel alloy, and thus SKF's bearing with a pure zinc coating does not infringe upon Timken's

patent. Before the court is SKF's motion for summary judgment.<sup>1</sup> Because the court determines that the patent is limited to a zinc-nickel alloy, the court will grant SKF's motion for summary judgment.

I.

The history of the '860 patent begins with United States Patent Application S.N. 07/710,656 filed on June 5, 1991, listing Peter Ward as the sole inventor. This application, "Corrosion-Resistant Zinc-Nickel Plated Bearing Races," was rejected over certain pieces of prior art, including U.S. Patent 3,212,834 (Mayer et al.) and U.S. Patent No. 4,756,871 (Hsu '871 patent). Mayer et al. discloses a spherical ball bearing in

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<sup>1</sup> Summary judgment is appropriate if the moving party can "show that 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). When ruling on a motion for summary judgment, the court must view the evidence in the light most favorable to the non-movant. See Matsushita Elec. Co., Ltd. v. Zenith Radio Corp., 475 U.S. 574, 587, 89 L. Ed. 2d 538, 106 S. Ct. 1348 (1986). The court must accept the non-movant's version of the facts as true, and resolve conflicts in the non-movant's favor. See Big Apple BMW, Inc. v. BMW of N. Amer., Inc., 974 F.2d 1358, 1363 (3d Cir. 1992).

The moving party bears the initial burden of demonstrating the absence of genuine issues of material fact. See Celotex Corp. v. Catrett, 477 U.S. 317, 322-23, 91 L. Ed. 265, 106 S. Ct. 2548 (1986). Once the movant has done so, however, the non-moving party cannot rest on its pleadings. See Fed. R. Civ. P. 56(e). Rather, the non-movant must then "make a showing sufficient to establish the existence of every element essential to his case, based on the affidavits or by depositions and admissions on file." Harter v. GAF Corp., 967 F.2d 846, 852 (3d Cir. 1992); see also Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 255, 91 L. Ed. 2d 202, 106 S. Ct. 2505 (1986).

which the bearing races are plated to provide corrosion resistance. The Hsu '871 patent discloses a zinc-nickel alloy plated layer on an article for providing corrosion resistance. The examiner determined that it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the zinc-nickel of the Hsu '871 patent as the layer disclosed in Mayer et al. The Patent and Trademark Office ("PTO") filed a Notice of Abandonment on November 15, 1992.

On July 31, 1992, Peter Ward filed a Continuation-in-Part application for the "Corrosion Resistant Zinc-Nickel Plated Bearing Races." In this application, Ward adds a description of how most processes for plating steel rely on electrochemical reactions within plating solutions that contain and often release hydrogen. This process infuses hydrogen into the steel, which can result in making the steel brittle. This hydrogen can get trapped in the steel and cannot be driven off by baking. The application notes that "zinc and traditional zinc alloys have exhibited this characteristic when deposited by conventional electro-plating processes." In the "Summary of the Invention" section, Ward notes the advantages of the zinc-nickel plating because it is porous, allowing hydrogen to escape when the plated steel is baked.

This application was rejected by the PTO as unpatentable over the Hsu '871 patent in view of Mayer et al.

Wade responded with certain amendments and advanced the argument that the zinc alloy used has pores that allow hydrogen to escape and thus protects against hydrogen embrittlement. Wade contended that while the Hsu '871 patent discloses a porous zinc alloy, it does not recognize that the alloy has any use in a bearing. The PTO issued a Notice of Allowance several weeks later. United States Patent No. 5,532,046 ('046 patent) issued October 4, 1994.

Two years following the issuance of this patent, Timken applied for reissue and added claims 21-23, noting that the claims of the '046 patent did not cover a ball bearing in which only one of two bearing races was plated. Timken surrendered the '046 patent, pursuant to 35 U.S.C. § 251, and the PTO allowed all 23 claims, with the '860 patent issuing on July 28, 1998.

On September 8, 1999, following the commencement of this lawsuit, SKF filed a request for reexamination with the PTO. SKF sought reexamination because it claimed that Timken's broad definition of "zinc alloy," covering any "product containing zinc in combination with one or more other metal elements," would render the patent invalid based on prior art. The PTO initially rejected Timken's claims and noted that the definition of "zinc alloy" must be limited to what is described in the disclosure of the specification of the '860 patent, namely, the Hsu '871 patent, U.S. Patent No. 4,818,632 (Hsu '632 patent), and SAE Paper 830686. The reexaminer stated that the Hsu '871 patent,

describing a zinc-nickel alloy comprising about 80-94% by weight zinc, "defines the scope of the zinc alloy of the patent claims."

Timken responded to the reexaminer's action, noting that the Hsu patents and the SAE paper describe but one example of a zinc alloy that is part of the claimed invention, and that the specification discloses other appropriate zinc alloys, including zinc-tin, zinc-cobalt and zinc-iron. The reexaminer filed a Notice of Intent to Issue Reexamination Certificate on October 16, 2000. The reexaminer commented, however, that although no specific composition of the alloy is given in the patent, the composition must be that of the Hsu '871 patent, which was incorporated by reference into the '860 patent. In the Hsu '871 patent the alloy is a zinc-nickel alloy comprising about 80-94% by weight zinc. The reexaminer concluded that "the claims are patentable/confirmable with respect to the scope of the zinc alloy as limited by the patent specification, noted above."

Timken appealed to the Under Secretary of Commerce for Intellectual Property and Acting Director of the PTO to reverse the narrow claim construction of the reexaminer. The appeal was denied, and the Office of Patent Legal Administration determined that Timken's "arguments regarding the definition of 'zinc-alloy' have already been presented and considered in the reexamination proceeding, but were not found to be persuasive." It concluded that the reexaminer had not committed plain error, and that its

comments, as well as the reexaminer's, are part of the record in the reexamination proceeding.

## II.

In a patent infringement action, the court must conduct a two-step analysis. One, the court must "determin[e] the meaning and scope of the patent claims asserted to be infringed." Markman v. Westview Instruments, Inc., 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370 (1996). Two, the court must "compar[e] the properly construed claims to the device accused of infringing." Id. The first step of the infringement analysis is a question of law, with the court discerning the meaning of the claim language. See Pitney-Bowes, Inc. v. Hewlett Packard Co., 182 F.3d 1298, 1304 (Fed. Cir. 1999).

### A.

The court, in interpreting the meaning of an asserted claim, "should look first to the intrinsic evidence of record, i.e. the patent itself, including the claims, the specification and, if in evidence, the prosecution history." Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996). This intrinsic evidence "is the most significant source of legally operative meaning of disputed claim language." Id.

Based on an interpretation of the '860 patent, considering the claim language, the specification and the prosecution history, it appears that the term "zinc alloy" should

be interpreted as the zinc-nickel alloy disclosed in the Hsu '871 patent.<sup>2</sup> Claim interpretation begins with the actual words of

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<sup>2</sup> SKF argues that Timken is bound by the determination of the reexaminer, who conditioned the confirmation of the claims based on a limited reading of "zinc alloy." In his attached statement of reasons for patentability and confirmation, the reexaminer defined the "zinc alloy" to be limited to the alloy disclosed in the Hsu '871 patent. The reexaminer then conditioned his allowance of the patent based on this definition of "zinc-alloy."

SKF relies on C.R. Bard, Inc. v. United States Surgical Corp., 103 F. Supp.2d 199, 217 (D. Del. 2000), where the examiner provided an explanation as to why a certain claim was allowable. The court subsequently adopted the examiner's limitation on the claim. The court confirmed the examiner's determination, noting that "the examiner would not have allowed claim 20 but for his conclusion, as he stated in his Notice of Intent to Issue Reexamination Certificate." Id. at 216. The court rejected the patentee's argument that Eastman Kodak Co. v. Goodyear Tire & Rubber Co., 114 F.3d 1547, 1556 (Fed. Cir. 1997), abrogated on other grounds, Cybor Corp. v. FAS Technologies, Inc., 138 F.3d 1448, 1454-55 (Fed. Cir. 1998), prohibits the court from using prosecution history to "enlarge, diminish or vary" the meaning of claim language. 103 F. Supp.2d at 217. The court noted that Eastman Kodak was distinguishable, because in C.R. Bard, "the examiner's statements . . . were made in his Notice of Intent to Issue Reexamination Certificate, where he gave his interpretation as to why claim 20 was allowable. There is no indication in Eastman Kodak that the examiner's remarks were determinative of the meaning of the disputed claim." Id.

The plaintiffs in this case, however, contend that Eastman Kodak is directly applicable and that the case requires the court to reject the reexaminer's comments. Timken notes that although the reexaminer commented on the claim, the reexaminer allowed the claims without requiring any amendment. Timken contends that this is precisely the situation as in Eastman Kodak, where the court noted, "Thus, without creating any additional limitations, as the examiner conceded by granting the reexamination certificate without any changes in claim language, the claims sufficiently distinguished [the prior art]." 114 F.3d at 1556. Timken argues that the reexaminer's failure to require amendment of the claims during reexamination of the '860 patent renders his extraneous comments irrelevant. Accordingly, Timken contends that C.R. Bard, where the examiner required the claims to be amended, is not applicable.

the claims. See Johnson Worldwide Assoc., Inc. v. Zabco Corp., 175 F.3d 985, 989 (Fed. Cir. 1999). "The intrinsic evidence, and, in some cases, the extrinsic evidence, can shed light on the meaning of the terms recited in a claim, either by confirming the ordinary meaning of the claim terms or by providing special meaning for claim terms." Renishaw PLC v. Marposs Societa' Per Azioni, 158 F.3d 1243, 1248 (Fed. Cir. 1998). The ultimate interpretation of the claim, however, must "accord with the words chosen by the patentee to stake out the boundary of the claimed property." Id.

In the '860 patent, the claims refer to zinc alloy layers. The intrinsic evidence, notably the patent specification, however, provides guidance as to the scope of that zinc alloy. "To determine the meaning of disputed technical terms in claims, the first resource is the patent specification of which they are part." Frosman v. Anitec Printing Plates, Inc., 132 F.3d 1437, 1442 (Fed. Cir. 1997). Since the specification describes the invention in a way that must be clear and complete so as to allow those of ordinary skill in the art to use the invention, the patent specification is "highly relevant" and "usually, it is dispositive." Vitronics Corp., 90 F.3d at

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It is not necessary to determine whether or not the court is bound to follow the comments of the reexaminer. The court concludes, based on its own analysis of the claim language, patent specification, and the prosecution history, that SKF has not infringed upon Timken's patent.

1582.

The focus of the '860 patent is a zinc-nickel plating for bearings. The zinc-nickel alloy is referred to almost exclusively throughout the patent, though not in the actual claims section. It is this zinc-nickel plating, however, that was emphasized in the patent text describing hydrogen embrittlement problems. Ward, the inventor of the '860 patent, added this text to the original patent in order to overcome the examiner's original objections. The "Summary of the Invention" section lauds the corrosion resistance and durability advantages of the zinc-nickel plating, as well as the porousness of this plating, which allows hydrogen to escape from the steel when the plated steel is baked. In contrast, the "Background of the Invention" section notes that "zinc and traditional zinc alloys," presumably those zinc alloys other than zinc-nickel, do not perform as effectively in allowing hydrogen to escape. Traditional zinc alloys may "trap hydrogen in steel so that it may not be driven off by baking." Thus the patent itself notes the advantages of zinc-nickel alloys and states the disadvantages of other zinc alloys.

Illustrative is Scimed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc., 242 F.3d 1337, 1341 (Fed. Cir. 2001), where the court found persuasive the patent's "Summary of the Invention" section, which described the invention in a particular

manner. The court noted that, “[w]here the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question.” Scimed Life Sys., 242 F.3d at 1341. In this case, the “Summary of the Invention” section mentions only the zinc-nickel plating. Therefore, the patent should not be read to encompass all zinc alloys, when the patent, read in its entirety, suggests that only a zinc-nickel alloy will conform to the functions of the invention. The patent’s specification thus suggests that the patent should be limited to disclosing a zinc-nickel alloy.

In interpreting claims, in addition to analyzing the claim language and claim specification, the court must also review the prosecution history. See Pall Corp. v. PTI Tech., Inc., 259 F.3d 1383, 1391 (Fed. Cir. 2001). In doing so, the court may use statements made during the prosecution history to interpret the scope and meaning of the patent claims. See id. at 1392. In this case, the original patent application and Ward’s remarks in response to the examiner’s original rejection provide evidence that Ward considered the zinc alloy described in the patent to be the zinc-nickel plating disclosed in the Hsu ‘871 patent. Ward notes that it is the Hsu ‘871 patent that

"describes the zinc-nickel plating process that is used in the described embodiment of the present invention." Furthermore, Ward attempts to persuade the examiner that his invention is nonobvious by pointing to experiments that demonstrate the durability and non-corrosiveness of his zinc alloy layer. He concludes that "[t]hese unexpected results further support the nonobviousness of applying the zinc alloy plating process of Hsu et al. onto the functional surfaces of a rolling element bearing."

Elsewhere during the prosecution history, Ward and Timken sought to overcome the examiner's objections by noting the nonobviousness of applying the Hsu '871 patent to a steel bearing. During the Continuation-in-Part application, which ultimately resulted in the issuance of the '046 patent, Ward attempted to overcome the examiner's rejection by arguing that the zinc alloy plating disclosed by its invention "has microscopic pores which enable hydrogen to escape during a heat treatment, thus substantially diminishing hydrogen embrittlement in the steel substrate." Ward then stated that he had cited the Hsu '871 patent and has referenced it in its specification "noting that it discloses the process for producing the porous plating suitable on the races of Applicant's improved bearing." By referencing the Hsu '871 patent as disclosing the process for producing the zinc alloy plating, the applicant incorporated the

Hsu '871 zinc-nickel plating as that of the invention, and may not now claim that zinc-nickel is but one embodiment of the invention.

Timken contends that reading the claim language, patent specification and prosecution history to restrict the scope of the patent to a zinc-nickel alloy is inappropriate for two reasons. First, Timken claims that such a reading impermissibly limits the claims to the preferred embodiment. Timken notes that "the preferred embodiment does not limit broader claims that are supported by the written description." Toro Co. v. White Consolidated Indus., Inc., 199 F.3d 1295, 1301 (Fed. Cir. 1999). Timken points to the "Structure and Operation" section of the patent, where the patent states: "In addition, any one of a broad range of zinc alloy plated deposits may be used to provide similar corrosion resistance on the functional surfaces. Other appropriate zinc alloys include zinc-tin, zinc-cobalt, and zinc-iron, to name a few." Thus, argues Timken, zinc-nickel is merely the preferred embodiment, and that other embodiments are contemplated by the patent.

Nevertheless, although other embodiments are mentioned in the patent specification, the zinc-nickel embodiment is the only claim supported by the written description and the prosecution history. The "Background of the Invention" section notes that zinc and traditional zinc alloys do not provide the

appropriate porousness required, and thus they trap hydrogen into the steel bearings, causing them to be brittle. On the other hand, the "Summary of the Invention" section contains several examples of how zinc-nickel alloys provides advantages, including the benefit of allowing hydrogen to escape from the steel bearing. There are, however, no such advantages listed of the other zinc alloys referenced in the specification. Indeed, the only other reference to any alloy other than a zinc-nickel alloy, besides for the listing of several zinc alloys that might be appropriate, is the comment that traditional zinc and zinc alloys do not provide for the porousness needed to protect from hydrogen embrittlement.

As the Federal Circuit has required, "in order to be covered by the claims that subject matter must be sufficiently described as the applicant's invention to meet the requirements of section 112." Wang Lab., Inc. v. American Online, Inc., 197 F.3d 1377, 1383 (Fed. Cir. 1999). Those requirements provide that disclosure of an invention must be described in "full, clear, concise and exact terms" and "enable any person skilled in the art . . . to make and use the same." 35 U.S.C. § 112. Thus, although Timken suggests that the zinc-nickel embodiment is only the preferred embodiment of several potential embodiments, the specification and the prosecution history support only one embodiment. Merely calling the embodiment "preferred" does not

broaden the claims beyond their support in the specification.  
See Wang, 197 F.3d at 1383.

Timken's second reason why limiting the claim to a zinc-nickel alloy is inappropriate is that such an interpretation violates the doctrine of claim differentiation. "Under the doctrine of claim differentiation, each claim in a patent is presumptively different in scope." Intermatic Inc. v. Lamson & Sessions Co., 273 F.3d 1355, 1364 (Fed. Cir. 2001). The doctrine is "clearly applicable when there is a dispute over whether a limitation found in a dependent claim should be read into an independent claim, and that limitation is the only meaningful difference between the two claims." Id. (citing Wenger Mfg., Inc. v. Coating Mach. Sys., Inc., 239 F.3d 1225, 1233 (Fed. Cir. 2001)). Timken notes that in this case, independent claim one discloses a zinc alloy plated roller element bearing. Dependent claim seven, which depends on claim one, recites that the zinc alloy is zinc-nickel. Thus, argues Timken, SKF's reading would render the claim superfluous.

The court disagrees with Timken's argument. "Although the doctrine of claim differentiation may at times be controlling, construction of claims is not based solely upon the language of other claims; the doctrine cannot alter a definition that is otherwise clear from the claim language, description, and prosecution history." O.I. Corp. v. Tekmar Co., 115 F.3d 1576,

1582 (Fed. Cir. 1997). See also Kimberly-Clark Corp. v. Tyco Int'l, Civ. A. No. 00-1080, 2001 U.S. App. LEXIS 2734, at \*11, 4 Fed. Appx. 946 (Fed. Cir. 2001). Indeed, "the doctrine of claim differentiation is not a hard and fast rule of construction." Comark Communs. v. Harris Corp., 156 F.3d 1182, 1187 (Fed. Cir. 1998).

Here, the patent specification repeatedly refers to a zinc-nickel plating layer. The prosecution history also suggests that the zinc alloy disclosed is the zinc-nickel plating of the Hsu '871 patent. The court therefore interprets the term zinc alloy to mean the zinc-nickel plating disclosed in the Hsu '871 patent, which is a zinc-nickel alloy comprising about 80-94% by weight zinc.<sup>3</sup>

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<sup>3</sup> SKF also contends that claims should not be construed in a manner that embraces the prior art. See, e.g., Wilson Sporting Goods Co. v. David Geoffrey & Associates, 904 F.2d 677, 684 (Fed. Cir. 1990) ("since prior art always limits what an inventor could have claimed, it limits the range of permissible equivalents of a claim"). SKF notes that "[c]laims amenable to more than one construction should, when it is reasonably possible to do so, be construed to preserve their validity." Karsten Mfg. Co. v. Cleveland Golf Co., 242 F.3d 1376, 1384 (Fed. Cir. 2001). In this case, SKF contends that Timken's reading places its patent in a precarious position. On one hand, it urges the court to adopt a broad interpretation of the meaning of zinc alloy. But to do so, argues SKF, would read upon the prior art and would make Timken's patent invalid. See id. at 183. SKF argues that the claims can be read narrowly, as the reexaminer read them, so that zinc alloy means a zinc-nickel alloy comprising 80-94% by weight zinc. SKF notes that a broader construction would read on the prior art, as bearings having plating comprising of zinc have been used for at least 30 years to plate millions of bearings for Nice Bearing Co., Virginia Industries, General Bearings, and Kilian Bearings. To the extent that the broad interpretation

B.

The second step in a patent infringement action is to compare the properly construed claim to the accused infringing device. See Markman, 53 F.3d at 976. In this case, the court has concluded that the zinc alloy disclosed in the patent is the zinc-nickel alloy of the Hsu '871 patent, namely a zinc-nickel alloy of 80-94% by weight zinc. Timken contends that there is a question of fact as to whether SKF's bearing contains a zinc-iron alloy. There are, however, no allegations that SKF's bearing contains any amount of nickel so as to infringe upon Timken's product, as defined by the court.

III.

For the reasons set forth above, the court concludes that SKF's bearing does not infringe upon the '860 patent and that summary judgment in favor of SKF and against Timken is appropriate in this case.

An appropriate order follows.

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would read on the prior art, this argument provides additional support that the claim should be read narrowly to encompass only the zinc-nickel alloy disclosed in Hsu '871.