

**STRYKER CORPORATION, Plaintiff-Cross Appellant, v. DAVOL  
INCORPORATED, Defendant-Appellant.**

99-1202, 99-1555

**UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT**

*234 F.3d 1252; 2000 U.S. App. LEXIS 31527; 57 U.S.P.Q.2D (BNA) 1133*

**December 12, 2000, Decided**

**SUBSEQUENT HISTORY:** **[\*\*1]** Rehearing and Rehearing En Banc Denied February 6, 2001, Reported at: *2001 U.S. App. LEXIS 3560*.

**PRIOR HISTORY:** Appealed from: United States District Court for the Western District of Michigan. Judge David W. McKeague.

**DISPOSITION:** AFFIRMED.

**LexisNexis(R) Headnotes**

**COUNSEL:** Gregory J. Vogler, McAndrews, Held & Malloy, Ltd., of Chicago, Illinois, argued for plaintiff-cross appellant. With him on the brief was Timothy J. Malloy. Of counsel on the brief was Charles E. Ritter, Miller, Canfield, Paddock and Stone, P.L.C. Of counsel were Sharon A. Hwang and Scott P. McBride, McAndrews, Held & Malloy, Ltd.

Peter C. McCabe III, Winston & Strawn, of Chicago, Illinois, argued for defendant-appellant. With him on the brief was Raymond C. Perkins. Of counsel on the brief was Michael J. Sweedler, Darby & Darby, P.C., of New York, New York. Of counsel was Peggy M. Balesteri, Winston & Strawn.

**JUDGES:** Before MAYER, Chief Judge, NEWMAN and SCHALL, Circuit Judges.

**OPINIONBY:** MAYER

**OPINION:** [\*1254]

MAYER, Chief Judge.

Davol, Inc. (Davol) appeals the orders of the United States District Court for the Western District of Michigan (1) granting summary judgment that Stryker Corp.'s (Stryker) instruments do not infringe Davol's United States Patent Nos. 5,391,145 ('145 patent) directed to an "irrigation control valve for endoscopic instrument," and 5,586,977 **[\*\*2]** ('977 patent) directed to a "quick disconnect fitting for coupling interchangeable probe tip to laparoscopic instrument," see *Stryker Corp. v. Davol, Inc.*, 10 F. Supp. 2d 841 (W.D. Mich. 1998); (2) denying Davol's motion for judgment as a matter of law (JMOL) contesting the jury verdict of willful infringement of claims 8, 11, 13, and 14 of Stryker's United States Patent No. 5,484,402 ('402 patent), directed to a "surgical suction irrigator," by Davol's Hydro-Surg and Hydro-Surg Plus devices and denying Davol's motion for a new trial, see id. (May 26, 1999); and (3) awarding enhanced damages and costs to Stryker for pre-verdict infringement, awarding supplemental damages to Stryker for infringement from the date of the jury's verdict to the entry of the permanent injunction, and finding Davol in contempt for continuing infringement of Stryker's patent rights after issuance of the permanent injunction, see id. (Jul. 29, 1999). Stryker cross-appeals the denial of its attorney fees for Davol's pre-verdict infringement. See id. We affirm.

**Background**

Stryker filed the application that matured into the '402 patent on December 30, **[\*1255]** 1993, and began selling a commercial **[\*\*3]** embodiment of the patented invention, the Stryke-Flow, in 1994. Davol formed a design team in the Spring of 1995 to develop its own battery-powered suction irrigator. It is undisputed that, prior to allowance of the '402 patent, Davol examined and copied the Stryke-Flow, in developing its Hydro-

Surg device. After the '402 patent issued on January 16, 1996, Davol sought opinions of counsel regarding possible infringement of the '402 patent by its four-battery Hydro-Surg and eight-battery Hydro-Surg Plus products.

Stryker sued Davol, alleging that its Hydro-Surg and Hydro-Surg Plus devices infringe claims 8, 11, 13, and 14 of the '402 patent. Only claims 8 and 14 are independent claims. The claim limitations at issue read as follows:

8. A surgical irrigation system suitable for endoscopic and other surgical procedures, comprising:

a) a hand held handpiece for supplying irrigation liquid to a surgical site;

b) a self contained pumping unit locatable adjacent a source of irrigation liquid and remote from said handpiece, said pumping unit comprising a housing containing an outlet for irrigation liquid a pumping member for pumping irrigation liquid through said outlet, a motor [\*\*4] for driving said pumping member, and electric battery means for energizing said motor;

c) an elongate tube for connecting said pumping outlet to said handpiece for supplying pumped irrigation liquid to said handpiece, said pumping unit housing comprising an open topped cup and a locator coaxially received in the open top of said cup and a cover closing the top of said locator, said locator comprising a generally radially extending deck overlying the open top of the cup and a column coaxially depending from said deck into said cup, said column having a central recess for receiving said motor, said motor having a shaft protruding up through a hole in the deck and facing into a pumping chamber defined between said deck and said cover.

'402 patent, col. 15, ll. 8-32 (subdivisions added).

14. An endoscopic surgical irrigation system, comprising;

a) a handpiece for directing irrigation liquid to a surgical site;

b) a pumping unit locatable remotely from the handpiece and surgical site, an elongate irrigation liquid tube connecting said pumping unit to said handpiece for delivery of pumped irrigation liquid from said pumping unit to said handpiece, said pumping [\*\*5] unit comprising a motor, a pumping member connected to said motor for pumping irrigation liquid into said elongate tube and through said elongate tube to said handpiece, means enclosing a pumping chamber occupied by said pumping member and having an outlet connected to said elongate tube, said pumping chamber enclosing means further including an elongate, hollow, generally tubular spike having means for

A. sealingly inserting into an outlet fitting of an irrigation liquid supply container,

B. receiving irrigation liquid from said liquid supply container and directing irrigation liquid into said pumping chamber,

C. fixing said pumping chamber enclosing means to an irrigation liquid supply container,

D. independently supporting said pumping unit from an irrigation liquid supply container and

E. gravitationally and substantially instantaneously priming said pumping chamber upon connection to an irrigation liquid supply container.

Id. at col 16, ll. 5-30 (subdivisions and emphasis added). [\*1256]

Davol countered by alleging that Stryker's Stryke-Flow device infringes Davol's '145 patent directed to an "irrigation control valve for [\*\*6] endoscopic instrument," and that a Stryker adapter infringes Davol's '977 patent directed to a "quick disconnect fitting for

coupling interchangeable probe tip to laparoscopic instrument." The district court granted summary judgment of non-infringement of Davol's '145 patent because the Stryke-Flow did not have the present capability for "simultaneous suction and irrigation." Summary judgment of non-infringement of the '977 patent was similarly granted because the claimed "second groove" was not present, either literally or equivalently, in Stryker's accused adapter.

Davol moved for summary judgment of non-infringement of claims 8, 11, and 13 of the '402 patent and for judgment that claim 14 was invalid as anticipated by the United States Patent No. 5,176,629 (Kullas patent) and Davol's Endo-Flo device. These motions were denied and the case proceeded to trial on infringement of the '402 patent. The jury returned a verdict on November 20, 1998, that Davol had willfully literally infringed the claims of the '402 patent and that the '402 patent was not invalid. On December 2, 1998, the district court entered judgment for a reasonable royalty and prejudgment interest totaling \$ 1,510,647, [\*\*7] enhanced damages of 50% of that amount, and costs to Stryker, but denied Stryker's motion for attorney fees. Davol continued to sell the Hydro-Surg and Hydro-Surg Plus devices. Davol's motions for JMOL and for a new trial were denied.

The court entered a permanent injunction against Davol's infringement of the '402 patent on December 23, 1998. Based on Davol's continued willful infringement through sale of the Hydro-Surg and Hydro-Surg Plus between the jury verdict and entry of the permanent injunction, the district court awarded an additional \$ 132,588.40 as a reasonable royalty plus prejudgment interest. The court then doubled those amounts as enhanced damages.

Within one week of the entry of the permanent injunction, Davol began selling a modified version of its Hydro-Surg Plus suction irrigator in which it removed the motor bracket and attached the motor by screws, replaced the spike in the Hydro-Surg Plus with a narrower, smooth spike, added clips to support the pumping unit when attached to an IV pole, and included set-up instructions to use the clips and not rely on the spike for support.

Davol received an oral opinion of counsel, which was later committed to writing on December 15, 1998, advising [\*\*8] that the revised Hydro-Surg Plus did not infringe the claims of the '402 patent. The opinion did note, however, that Stryker might assert that the revised Hydro-Surg Plus infringes the claims of the '402 patent under the doctrine of equivalents, that Davol therefore violates any permanent injunction that might be issued by the district court, and that Stryker might move to hold

Davol in contempt. The opinion stated that it was more likely than not that the district court would consider allegations of infringement by the revised Hydro-Surg Plus in a contempt proceeding. The opinion went on that, while it could not state with certainty that there is no risk whatever, the risk in selling the revised Hydro-Surg irrigator is "well within acceptable limits."

When ordered to show cause why it was not in contempt of the permanent injunction, Davol provided test results to show that there was an unacceptable failure rate if the pump was used without the clips in simulated operating room conditions, and affidavits from a hospital physician and an FDA expert asserting that it would be contrary to the directions and unreasonable to use the revised Hydro-Surg Plus without the clips. Stryker responded [\*\*9] with evidence showing that on five occasions hospitals had used the product without attaching the clips and had ignored Davol's instructions. The court found Davol in [\*1257] contempt for selling products insubstantially modified from the enjoined design after entry of the injunction, and awarded attorney fees, costs, and \$ 373,788 in reasonable royalties for the post-injunction infringing sales. The district court tripled the royalties as enhanced damages for willfulness. Davol appeals and Stryker cross-appeals the original denial of attorney fees.

#### Discussion

"We review a district court's grant of summary judgment de novo." *Vanmoor v. Wal-Mart Stores, Inc.*, 201 F.3d 1363, 1365, 53 U.S.P.Q.2D (BNA) 1377, 1378 (Fed. Cir. 2000) (citing *Petrolite Corp. v. Baker Hughes, Inc.*, 96 F.3d 1423, 1425, 40 U.S.P.Q.2D (BNA) 1201, 1203 (Fed. Cir. 1996)). "Summary judgment is appropriate when there is no genuine issue as to any material fact and the moving party is entitled to judgment as a matter of law." *Id.* Summary judgment is improper "if the evidence is such that a reasonable jury could return a verdict for the nonmoving party." *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248, 91 L. Ed. 2d 202, 106 S. Ct. 2505 (1986) [\*\*10] When ruling on a motion for summary judgment, all of the nonmovant's evidence is to be credited, and all justifiable inferences are to be drawn in the nonmovant's favor. See *id.* at 255.

Davol argued that the Stryke-Flow could be modified to meet the simultaneous suction and irrigation limitation of the '145 patent, or could meet that limitation if it were attached to an appropriately designed, newly-fabricated probe or an easily-modified existing probe. Stryker submitted an affidavit by its Director of Disposable Product Development that it does not manufacture, use, or sell any control valve assembly which permits or has been used for simultaneous irrigation to and suction from a surgical site. In the

absence of evidence that the accused hand piece is presently capable of permitting simultaneous suction and irrigation, the court properly granted summary judgment of non-infringement of the '145 patent. See *High Tech Med Instrumentation v New Image Ind, Inc.*, 49 F.3d 1551, 1555, 33 U.S.P.Q.2D (BNA) 2005, 2008 (Fed. Cir. 1995) ("[A] device does not infringe simply because it is possible to alter it in a way that would satisfy all the limitations of a patent [\*\*11] claim.").

With respect to infringement of the '977 patent, it is undisputed that Stryker's device does not literally contain the required "second groove." The court properly noted that the doctrine of equivalents must be applied to each limitation of the claim, and applied the function-way-result test to find that the Stryker device did not perform the alignment function required by the second groove limitation. See *Warner-Jenkinson Co., Inc v Hilton Davis Chem Co.*, 520 U.S. 17, 40, 41 U.S.P.Q.2D (BNA) 1865, 1875, 137 L. Ed. 2d 146, 117 S. Ct. 1040 (1997) ("An analysis of the role played by each element in the context of the specific patent claim will thus inform the inquiry as to whether a substitute element matches the function, way, and result of the claimed element, or whether the substitute element plays a role substantially different from the claimed element."). Thus, summary judgment of non-infringement under the doctrine of equivalents was appropriate.

"We review a trial court's decision on a motion for judgment as a matter of law following a jury verdict by reapplying its own standard of review. Therefore, for [Davol] to prevail on appeal it must prove that the [\*\*12] jury's factual findings were not supported by substantial evidence or that the facts were not sufficient to support the conclusions necessarily drawn by the jury on the way to its verdict." *Tec Air, Inc. v. Denso Mfg. Mich., Inc.*, 192 F.3d 1353, 1357, 52 U.S.P.Q.2D (BNA) 1294, 1296 (Fed. Cir. 1999) (citing *Applied Med. Res. Corp. v. United States Surgical Corp.*, 147 F.3d 1374, 1376, 47 U.S.P.Q.2D (BNA) 1289, 1290 (Fed. Cir. 1998)) In evaluating whether Davol met this standard, "we must consider the evidence of record in [\*\*1258] the light most favorable to [Stryker], drawing all reasonable inferences in its favor, without disturbing the jury's credibility determinations or substituting our resolutions of conflicting evidence for those of the jury." *Id.* at 1357-58, 52 U.S.P.Q.2D (BNA) at 1296. If no reasonable person could have reached a verdict for Stryker in light of the record before the jury, Davol will prevail. See *id.* at 1358, 52 U.S.P.Q.2D (BNA) at 1296.

Following the jury verdict, Davol moved for JMOL. contesting, inter alia, the district court's construction of various terms in the claims of the '402 patent. An infringement analysis entails two steps. The first step is determining [\*\*13] the meaning and scope of the patent

claims asserted to be infringed. The second step is comparing the properly construed claims to the device accused of infringing. See *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976, 34 U.S.P.Q.2D (BNA) 1321, 1326 (Fed. Cir. 1995) (en banc). Claim construction is a question of law that we review de novo. See *Cybor Corp v FAS Techs., Inc.*, 138 F.3d 1448, 1456, 46 U.S.P.Q.2D (BNA) 1169, 1174 (Fed. Cir. 1998) (en banc). Infringement, both literal and under the doctrine of equivalents, is a question of fact. See *Insituform Techs., Inc v. Cat Contracting, Inc.*, 161 F.3d 688, 692, 48 U.S.P.Q.2D (BNA) 1610, 1614 (Fed. Cir. 1998).

Stryker argues that the plain language of Claim 8 of the '402 patent defines the structure of the locator while Davol insists that we should look to the specification to read in the modifier "battery and motor" to define locator. Stryker persuasively argues that locator is defined structurally and not functionally in the claims. The court correctly construed the term locator to be defined by the structure claimed without imputing functional limitations from the specification into the claims. [\*\*14] See *Transmatic, Inc v Gulton Indus., Inc.*, 53 F.3d 1270, 1278, 35 U.S.P.Q.2D (BNA) 1035, 1040-41 (Fed. Cir. 1995) Davol further argues that "column" must be construed to mean a columnar or cylindrical structure and that the central recess should be restricted to a downward opening recess. The court properly found that there were no such restrictions mandated by the claims, specification, or file history, and properly construed column to mean a vertically extending structure that performs the function of receiving the motor. See *id.* at 1277, 35 U.S.P.Q.2D (BNA) at 1040 ("In construing a claim, claim terms are given their ordinary and accustomed meaning unless examination of the specification, prosecution history, and other claims indicates that the inventor intended otherwise.").

In Claim 14 of the '402 patent, the district court construed the "elongate, hollow, generally tubular spike having means for . . ." to be a means-plus-function claim limitation. Stryker disputes this construction and insists that the structure is fully disclosed in the functional limitations of the claim. Claim 14 does not disclose the structure used to perform those functions. See '402 [\*\*15] patent, col. 16, ll. 5-30. The specification describes an embodiment in which the spike was provided with an annular rib adjacent to its upper end to snapfit into the irrigation liquid supply container fitting forcibly enough to support the weight of the pumping unit, yet allowing the pumping unit to be intentionally disconnected by pulling apart the spike and irrigation liquid supply container more forcibly. '402 patent, col. 13, ll. 12-18. Stryker pointed to several references to the

spike without reference to the rib limitation and noted that the spike with a rib is denoted as "one unit built according to the invention." See *id.* at col. 13, ll. 10-24. The court properly determined under 35 U.S.C. § 112, P 6 (1994) that the specification disclosed both a spike with a rib and a spike without a rib utilizing a smooth friction fit. See 35 U.S.C. § 112, P 6 ("An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be [\*1259] construed to cover the corresponding structure, material, or acts described [\*\*16] in the specification and equivalents thereof.").

Davol also challenges the sufficiency of the evidence supporting the verdict of willful infringement. Stryker presented photographs of the accused devices, claim charts, and expert testimony showing that each element of claims 8, 11, and 13 of the '402 patent was present in the accused devices. It is undisputed that Davol's accused devices have a spike, without a rib, which performs the five functions listed in claim 14 and, under the district court's proper claim construction of "elongate, hollow, generally tubular spike having means for . . .", a rib is not a required limitation under 35 U.S.C. § 112, P 6. This substantial evidence supports the jury verdict of literal infringement of Claims 8, 11, 13, and 14 of the '402 patent.

With respect to the jury's verdict of willfulness, Davol argues that its copying of the Stryke-Flow predated the issuance of the '402 patent and that it acted reasonably based on advice of counsel to avoid infringement once the '402 patent issued. As the court properly held, in reaching a verdict of willful infringement, the jury reasonably could have credited the testimony that Davol's [\*\*17] reliance on the opinions of counsel was not reasonable, that it did not in fact follow those opinions, and that the designs for the accused devices were finalized before obtaining an opinion of counsel. See *Graco, Inc. v. Binks Mfg. Co.*, 60 F.3d 785, 793, 35 U.S.P.Q.2D (BNA) 1255, 1261 (Fed. Cir. 1995) ("A critical factor in evaluating the effect of an opinion of counsel on willfulness is the reasonableness of a party's reliance thereon.").

Davol also challenged on JMOL the validity of Claim 14 of the '402 patent as anticipated by the Kullas patent/Endo-Flo device. "Our precedent holds that the presumption of validity afforded a U.S. patent by 35 U.S.C. § 282 requires that the party challenging validity prove the facts establishing invalidity by clear and convincing evidence." *Verdegaal Bros., Inc., v. Union Oil Co. of Cal.*, 814 F.2d 628, 631, 2 U.S.P.Q.2D (BNA) 1051, 1052-53 (Fed. Cir. 1987) (citations omitted). Thus, the precise question is whether Davol's evidence is so clear and convincing that reasonable jurors could only

conclude that the claims in issue were invalid. See *id.*, 2 U.S.P.Q.2D (BNA) at 1053. Stryker produced evidence that [\*\*18] the Kullas patent/Endo-Flo device did not possess a motor as defined by the court and thus could not anticipate the '402 patent claims. Davol failed to prove by clear and convincing evidence that such an element was present. See *Scripps Clinic & Research Found. v. Genentech, Inc.*, 927 F.2d 1565, 1576, 18 U.S.P.Q.2D (BNA) 1001, 1010 (Fed. Cir. 1991) ("Invalidity for anticipation requires that all of the elements and limitations of the claim are found within a single prior art reference.").

"We review the trial court's denial of a motion for a new trial for abuse of discretion." *Tec Air*, 192 F.3d at 1361, 52 U.S.P.Q.2D (BNA) at 1299 "That question turns on whether an error occurred in the conduct of the trial that was so grievous as to have rendered the trial unfair." *Id.* For the reasons set out above, the jury verdict was not against the great weight of the evidence, and the denial of a new trial was not an abuse of discretion.

Davol next argues that the district court abused its discretion in enhancing damages and awarding supplemental damages while Stryker argues that, after finding the case exceptional under 35 U.S.C. § 285 (1994), the district [\*\*19] court abused its discretion in failing to award attorney fees to it. Stryker focused on Davol's deliberate copying and litigation behavior. A verdict of willful infringement authorizes but does not mandate enhanced damages. See *Johns Hopkins Univ. v. CellPro, Inc.*, 152 F.3d 1342, 1365, 47 U.S.P.Q.2D (BNA) 1705, 1722 (Fed. Cir. 1998) The court properly considered the evidence of Davol's culpability and reasonably [\*1260] applied the relevant factors. See *Read v. Portec, Inc.*, 970 F.2d 816, 827, 23 U.S.P.Q.2D (BNA) 1426, 1435 (Fed. Cir. 1992), abrogated in part on other grounds by *Markman*, 52 F.3d at 975, 34 U.S.P.Q.2D (BNA) at 1326 The court's measured approach in enhancing damages for pre-trial infringement by 50% and doubling damages for infringement post-verdict until entry of the permanent injunction represented a reasonable measurement of the culpability of Davol's conduct and was well within its discretion. Denying Stryker's request for attorney fees was not an abuse of discretion. See *SRI, Int'l, Inc. v. Advanced Tech. Labs., Inc.*, 127 F.3d 1462, 1469, 44 U.S.P.Q.2D (BNA) 1422, 1427 (Fed. Cir. 1997) ("All aspects relevant to a particular case should be given [\*\*20] the weight appropriate to their substance. A broad range of discretion is reposed in the trial court, founded on this need to weigh and balance multiple factors in determining a just remedy.").

Finally, we review the district court's decision to proceed via a contempt hearing when considering post-injunction infringement by a modified device for abuse

of discretion. See *Additive Controls & Measurement Sys., Inc. v. Flowdata, Inc.*, 154 F.3d 1345, 1349, 47 USPQ2D (BNA) 1906, 1908 (Fed. Cir. 1998). If the differences between the original infringing product and the redesigned device are such that the new device raises "substantial open issues" of infringement, then contempt proceedings are inappropriate. See *id.* The critical claim element in dispute in claim 14 is "an elongate, hollow, generally tubular spike having means for . . . independently supporting [the] pumping unit from an irrigation liquid supply container . . ." '402 patent, col. 16, ll. 19-27. Davol replaced the spike in the devices held to be infringing by the jury with a narrower, smooth spike, added clips to support the pumping unit when attached to an IV pole, and included set-up instructions to use [\*\*21] the clips and not rely on the spike for support. Stryker submitted pull force test results showing that the revised spike could in fact support the pumping unit independently and unrefuted anecdotal evidence of hospitals using the revised device without the clips engaged. Davol also conceded in the contempt hearing that it had marketed the redesigned device without having first tested its performance under normal

operating room conditions or investigated whether consumers would actually follow instructions provided with the product. See *Stryker Corp. v. Davol, Inc.*, 75 F. Supp.2d 746 (W.D. Mich. 1999). The court properly determined that there were no substantial open issues and found Davol in contempt. Considering the conclusory nature of the opinion of counsel used by Davol to justify selling the revised device and the minor changes made to the original device, the court did not abuse its discretion in awarding treble the compensatory royalty damages, attorney fees, and costs. See *Spindelfabrik Suessen-Schurr v. Schubert & Salzer Maschinenfabrik Aktiengesellschaft*, 903 F.2d 1568, 1578, 14 USPQ2D (BNA) 1913, 1921 (Fed. Cir. 1990) (The district court did not abuse [\*\*22] its discretion in trebling the damages and awarding attorney fees for flagrant contemptuous conduct.).

#### Conclusion

Accordingly, the orders of the United States District Court for the Western District of Michigan are affirmed.

AFFIRMED