

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ETHICON ENDO-SURGERY, INC.,
Petitioner,

v.

COVIDIEN AG,
Patent Owner.

Case IPR2015-01274
Patent 7,887,536

PATENT OWNER'S NOTICE OF APPEAL

Director of the United States Patent and Trademark Office
c/o Office of the General Counsel
Madison Building East, 10B20
600 Dulany Street
Alexandria, VA 22314-5793

Notice is hereby given, pursuant to 37 C.F.R. § 90.2(a), that Patent Owner Covidien AG (“Covidien”) appeals to the United States Court of Appeals for the Federal Circuit from the Final Written Decision entered on November 30, 2016, (Paper 25) (the “Final Written Decision”) by the United States Patent and Trademark Office, Patent Trial and Appeal Board (the “Board”), and from all underlying orders, decisions, rulings, and opinions. A copy of the Final Written Decision is attached.

In accordance with 37 C.F.R. § 90.2(a)(3)(ii), Covidien indicates that the issues on appeal include, but are not limited to, the Board’s determination of unpatentability of claims 1-13 of U.S. Patent No. 7,887,536 under 35 U.S.C. § 103, and any finding or determinations supporting or related to those rulings including, without limitation, the Board’s application of the broadest reasonable interpretation standard, the Board’s interpretations of the claim language, and the Board’s interpretation of the references.

Simultaneous with this submission, a copy of this Notice of Appeal is being filed with the Board. In addition, the Notice of Appeal and the required fee are

being filed electronically with the Clerk of Court for the United States Court of Appeals for the Federal Circuit.

Respectfully submitted this 31st day of January, 2017.

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CERTIFICATE OF SERVICE

The undersigned certifies that, in addition to being filed electronically through Patent Trial and Appeal Board End to End (PTAB E2E), the original version of this Notice of Appeal was filed by hand on January 31, 2017 with the Director of the United States Patent and Trademark Office, at the following address:

Director of the United States Patent and Trademark Office
c/o Office of the General Counsel
Madison Building East, 10B20
600 Dulany Street
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The undersigned also certifies that a true and correct copy of this Notice of Appeal and the required fee were filed electronically via CM/ECF on January 31, 2016, with the Clerk of Court for the United States Court of Appeals for the Federal Circuit.

The undersigned also certifies that a true and correct copy of this Notice of Appeal was served on January 31, 2016 on counsel of record for Petitioner Ethicon Endo-Surgery, Inc. by electronic mail (by agreement of the parties) at the following addresses:

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v.

COVIDIEN AG,
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Case IPR2015-01274
Patent 7,887,536 B2

Before JAMES A. TARTAL, ZHENYU YANG, and JAMES A. WORTH,
Administrative Patent Judges.

YANG, *Administrative Patent Judge.*

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

INTRODUCTION

Ethicon Endo-Surgery, Inc. (“Petitioner”) filed a Petition for an *inter partes* review of claims 1–13 of U.S. Patent No. 7,887,536 B2 (“the ’536 patent,” Ex. 1001). Paper 1 (“Pet.”). On December 17, 2015, the Board instituted a review of the patentability of the challenged claims. Paper 10 (“Dec.”). Thereafter, Covidien AG (“Patent Owner”) filed a Response (Paper 16 (“PO Resp.”)), and Petitioner filed a Reply (Paper 20). An oral hearing for this proceeding was held on August 8, 2016. *See* Paper 24 (“Tr.”).

The Board has jurisdiction under 35 U.S.C. § 6 and issues this Final Written Decision pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

For the reasons provided below, we determine that Petitioner has met its burden of proving the unpatentability of claims 1–13 of the ’536 patent by a preponderance of the evidence. *See* 35 U.S.C. § 316(e).

The ’536 Patent

The ’536 patent relates to a bipolar electrosurgical instrument for use in open surgery. Ex. 1001, 3:40–41.

Certain surgical procedures require sealing and cutting blood vessels or vascular tissue. *Id.* at 1:45–46. An electrosurgical instrument utilizes both mechanical clamping action and electrical energy to coagulate, cauterize and/or seal tissue. *Id.* at 1:41–44. “In order to effect a proper seal with larger vessels, two predominant mechanical parameters must be accurately controlled—the pressure applied to the vessel and the gap between the electrodes both of which affect thickness of the sealed vessel.” *Id.* at 2:13–17.

The '536 patent discloses at least one non-conductive stop member disposed on an electrically conductive sealing surface of at least one of the jaw members. *Id.* at 4:33–35. “The stop members are designed to control/regulate the distance, i.e., gap, between the jaw members when tissue is held therebetween during activation.” *Id.* at 4:35–38.

Illustrative Claims

Claims 1, 8, and 11 are independent claims. Claim 1 is illustrative. With bracketed numbering added for each limitation, it reads:

1. An electrosurgical instrument for use in open surgery, comprising:

- [1] first and second shafts each having a jaw member extending from a distal end thereof, the jaw members being movable relative to one another from a first, open position to a second, closed position for grasping tissue, at least one of the jaw members being adapted to connect to an electrosurgical energy source such that electrosurgical energy may be selectively communicated through tissue held between the jaw members to effect a tissue seal, at least one jaw member including a knife channel defined therein configured to reciprocate a knife therealong for severing tissue held between the jaw members;
- [2] at least one stop member operatively coupled to at least one of the jaw members or at least one of the shafts, the at least one stop member being configured to control a gap distance between jaw members to within a range of about 0.001 inches to about 0.006 inches; and
- [3] a locking mechanism operably coupled to at least one shaft for locking the jaw members in the second closed position and for regulating the closure pressure between jaw members between about 3 kg/cm² to about 16 kg/cm².

The preamble and limitation [1] of claim 8 are nearly identical to those of claim 1. The rest of claim 8 recites:

- [2] at least one stop member operatively associated with at least one of the jaw members for maintaining a minimum separation distance between the jaw members; and
- [3] a ratchet disposed on the first shaft and a complementary interlocking mechanical interface disposed on the second shaft, the ratchet and complementary interlocking mechanical interface being selectively positionable to interlocking positions to maintain a specific closure pressure.

The preamble and second and third limitations of claim 11 are similar to the preamble and limitations [2] and [3] of claim 8. Limitation [1] of claim 11 recites:

- [1] first and second shafts each having a jaw member extending from a distal end thereof, the jaw members being movable relative to one another from a first, open position to a second, closed position for grasping tissue, each of the jaw members including an electrically conductive tissue sealing surface at least one of which being adapted to connect to an electrosurgical energy source such that electrosurgical energy may be selectively communicated through tissue held between the jaw members to effect a tissue seal, at least one electrically conductive tissue sealing surface including a knife channel defined therein configured to reciprocate a knife therealong for severing tissue held between the jaw members.

Reviewed Grounds of Unpatentability

We instituted trial to review the following grounds of unpatentability:

Claims	Basis	References
1–4, 7–13	§ 103	Witt, ¹ Tetzlaff, ² and Yates ³
5–6	§ 103	Witt, Tetzlaff, Yates, and Stern ⁴

ANALYSIS

Preliminary Matters

Priority Date

Petitioner argues that each challenged claim is only entitled to a priority date of October 30, 2002, even though the '536 patent lists related applications with earlier priority dates. Pet. 4–7. Patent Owner does not dispute this assertion. PO Resp. 13. After reviewing the entire record, we agree with Petitioner that October 30, 2002 is the priority date for the challenged claims. As a result, Witt qualifies as prior art under 35 U.S.C.

¹ Witt et al., U.S. Patent Pub. No. 2002/0107517, published Aug. 8, 2002 (Ex. 1006, “Witt”).

² Tetzlaff et al., PCT Publication No. WO 00/24330, published May 4, 2000 (Ex. 1007, “Tetzlaff”).

³ Yates et al., U.S. Statutory Invention Reg. No. H1,904, published Oct. 3, 2000 (Ex. 1008, “Yates”).

⁴ Stern et al., U.S. Patent No. 5,443,463, issued Aug. 22, 1995 (Ex. 1009, “Stern”).

§102(a) and §102(e),⁵ and each of Tetzlaff, Yates, and Stern qualifies as prior art under 35 U.S.C. §102(b).

Expert Testimony of Mr. Yates

In support of its patentability challenge, Petitioner relies on the Declaration of Mr. David C. Yates. Ex. 1003. Patent Owner contends that because Mr. Yates “failed to consider, let alone opine on, how any of the claim features are disclosed in asserted references in his expert declaration,” we should accord that declaration “little, if any, weight.” PO Resp. 53. We should do so also because, according to Patent Owner, Mr. Yates “is employed by Petitioner and used confidential information in arriving at his opinions.” *Id.* at 55. We do not need to address these arguments because, for purposes of this Decision, we do not rely on the Yates Declaration for any substantive issues.⁶

Claim Construction

In an *inter partes* review, the Board interprets a claim term in an unexpired patent according to its broadest reasonable construction in light of the specification of the patent in which it appears. 37 C.F.R. § 42.100(b);

⁵ In the Patent Owner Response, Patent Owner states that “*Witt* is not prior art under 35 U.S.C. § 102(a).” PO Resp. 21 n.6. During oral argument, counsel for Patent Owner explained that footnote 6 is a typo, and that Patent Owner does not challenge the qualification of *Witt* as prior art. Tr. 29:22–30:6.

⁶ We, however, cite to and credit paragraphs 51 and 52 of the Yates Declaration for the conversion of pounds per square inch (psi) to kg/cm². *See infra* at 13, 14. Specifically, Mr. Yates testifies that 1 psi is equal to 0.07 kg/cm² (Ex. 1003 ¶ 51), and converts the pressure range in psi as taught in Yates into kg/cm² for comparison purposes (*id.* ¶ 52).

Cuozzo Speed Techs., LLC v. Lee, 136 S. Ct. 2131, 2144–46 (2016). Under that standard, and absent any special definitions, we assign claim terms their ordinary and customary meaning, as would be understood by one of ordinary skill in the art at the time of the invention, in the context of the entire patent disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

Each independent claim recites “effect a tissue seal.” Patent Owner proposes that we construe the term to mean “liquefy the collagen in the tissue so that it reforms into a fused mass.” PO Resp. 19. Petitioner states that it “agrees with PO’s definition to the extent ‘tissue’ is not read as only ‘vessels,’ and so long as the dimension of the tissue is not limited.” Reply 5. We agree with Petitioner.

First, the ’536 patent does not equate tissue with vessel. *See, e.g.*, Ex. 1001, 2:55–57 (describing “electrosurgical instruments for coagulating, cutting and/or sealing *vessels or tissue*”) (emphasis added); *see also id.* at 1:41–44 (stating electrosurgical forceps function “by heating the *tissue and blood vessels* to coagulate, cauterize and/or seal tissue”) (emphasis added). In addition, contrary to Patent Owner’s assertion (*see* PO Resp. 19), neither the claim nor the specification focuses on vessel sealing. Indeed, none of the claims even recites “vessel.” Instead, the claims repeatedly refer to “tissue” and “tissue sealing.” Similarly, although Patent Owner is correct that the ’536 patent mentions “vessel sealing” in the Technical Field section, the Summary and Detailed Description sections of the specification use the term “vessel” only once (*see* Ex. 1001, 7:52 (“the walls of the vessel”)). In contrast, the ’536 patent discusses tissue sealing throughout.

Second, Patent Owner's emphasis on the title of the '536 patent, "Vessel Sealing Instrument," is misplaced. *See* PO Resp. 19. After all, "if we do not read limitations into the claims from the specification that are not found in the claims themselves, then we certainly will not read limitations into the claims from the patent title." *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1312 (Fed. Cir. 1999).

Third, Dr. Kenneth D. Taylor, Patent Owner's expert witness, testified that certain tissue in the human body does not contain vessels, and that such tissue can be sealed by liquefying the collagen therein. Ex. 1019, 26:12–28:6. In other words, tissue is broader than vessel, and tissue sealing is broader than vessel sealing. Thus, we determine that the term "effect a tissue seal" is not limited to effecting a vessel seal.

Patent Owner argues that "the '536 patent distinguishes vessel sealing from other tissue effects." PO Resp. 20. The '536 patent defines vessel sealing as "liquefying the collagen in the tissue so that it reforms into a fused mass" and coagulation as "desiccating tissue wherein the tissue cells are ruptured and dried." Ex. 1001, 2:38–42. It also states, and Patent Owner emphasizes, that while coagulation is sufficient to permanently close small vessels, "[l]arger vessels need to be sealed to assure permanent closure." *Id.* at 2:42–44; *see also* PO Resp. 8–9. We, however, agree with Petitioner that the term "effect a tissue seal" is not limited to any particular vessel size. *See* Reply 6. Indeed, according to the '536 patent, sealing can be used to close small vessels. Ex. 1001, 1:46–53 (stating prior art "disclosed methods for sealing small blood vessels"). And Patent Owner similarly acknowledges

that vessel sealing “assures permanent closure of both small and large vessels.” PO Resp. 14.

In sum, we adopt Patent Owner’s construction of the term “effect a tissue seal” as “liquefy the collagen in the tissue so that it reforms into a fused mass,” but clarify that the tissue is not limited either by its type or its size.

Prior Art Disclosures

Witt

Witt relates to “an electrosurgical combination grasper/scissor for surgical applications.” Ex. 1006 ¶ 2. Witt teaches that the instrument has a pair of jaws, each jaw having first and second electrodes of opposite polarity. *Id.* ¶ 16. “The first and second electrodes of one jaw are in offset opposed relation, respectively, with the first and second electrodes of the other jaw.” *Id.*

Witt also teaches that the instrument has a sliding knife to sever tissue following cauterization, and a ratchet mechanism to provide the surgeon with a method of setting clamp pressure. *Id.* ¶ 83.

Tetzlaff

Tetzlaff relates to “a bipolar forceps having a disposable electrode assembly for sealing, cauterizing, coagulating/desiccating and/or cutting vessels and vascular tissue.” Ex. 1007, 1. Tetzlaff recognizes that “[i]n order to effect a proper seal with larger vessels, two predominant mechanical parameters must be accurately controlled - the pressure applied to the vessel and the gap between the electrodes both of which affect thickness of the sealed vessel.” *Id.* at 3.

Tetzlaff teaches that the electrode assembly includes at least one stop member for controlling the distance between the opposing electrodes. *Id.* at 5. Tetzlaff also teaches that other mechanisms, such as a ratchet, may be used to further control and/or limit the movement of the jaw members. *Id.* at 11–12. According to Tetzlaff, a design without a ratchet or similar system may yield inconsistent results. *Id.*

Yates

Yates relates to an electrosurgical instrument for cauterization, coagulation, and/or tissue welding in surgical procedures. Ex. 1008, 1:6–9. Yates teaches that, in a preferred embodiment, the instrument “compresses tissue to a pressure within a predetermined range in a compression zone . . . and applies electrical energy through the compression zone.” *Id.* at 3:53–57. An example of the predetermined pressure ranges between 30 and 250 psi. *Id.* at 4:26–29.

Stern

Stern provides coagulating forceps having an intermediate cutting blade to sever the ligated vessel in the center of a coagulated area. Ex. 1009, 3:14–17. Stern teaches that the cutting blade is attached to an electrosurgical unit power generator. *Id.* at 4:37–38.

Level of Ordinary Skill

According to Patent Owner, “[a] person of ordinary skill in art would have had at least a bachelor’s degree in a relevant field of engineering (*e.g.*, biomedical engineering, electrical engineering, mechanical engineering) with considerable experience in the relevant field (*e.g.*, electrosurgical instruments and sealing tissue using the same).” PO Resp. 17 n.5.

Petitioner agrees. *See* Pet. 7; Reply 3 n.4. Upon considering the full record, we adopt Patent Owner’s definition of the level of ordinary skill in the art.

Obviousness over Witt, Tetzlaff, and Yates

Petitioner asserts that claims 1–4 and 7–13 would have been obvious over the combination of Witt, Tetzlaff, and Yates. Pet. 9–30. Petitioner asserts that one of ordinary skill in the art would have been motivated to combine the teachings of Witt, Tetzlaff, and Yates. *Id.* at 11–15. Petitioner also refers to the prior art for teaching each and every limitation of the challenged claims. *Id.* at 16–22. Relying on the Declaration of Dr. Kenneth D. Taylor (Ex. 2008), Patent Owner counters that an ordinary artisan would not have combined the references. PO Resp. 32–52. In addition, Patent Owner argues that the combination does not teach the limitation “effect a tissue seal,” as all the challenged claims require. *Id.* at 27–32. We find that a preponderance of the evidence supports Petitioner’s position.

For claim 1, Petitioner argues that Witt and Tetzlaff teach the preamble and the limitations of shafts/jaw members, knife channel, stop member, and locking mechanism. Pet. 16–21. Petitioner also contends that Yates teaches a pressure range substantially identical to the claimed range. *Id.* at 21. We agree.

Tetzlaff teaches an electrode assembly in combination with a mechanical forceps. Ex. 1007, 4. In Tetzlaff, the end effectors on the shafts of the mechanical forceps are movable relative to each other in between an open position and a closed position. *Id.* at 9. The end effector has a jaw member, which works in combination with an electrode assembly. *Id.* at 9–10. The electrodes are connected to a source for supplying electrosurgical

energy. *Id.* at 34 (claim 29); *see also id.* at 1–2 (stating that “electrosurgical forceps utilize both mechanical clamping action and electrical energy to effect hemostasis”).

Tetzlaff recognizes that, in determining the thickness and effectiveness of a tissue seal, the pressure applied to the tissue and the gap between the electrodes must be accurately controlled. Pet. 10 (citing Ex. 1007, 3); *see also* Ex. 1007, 16 (stating the same). To achieve the desired gap range and the correct force, Tetzlaff teaches at least one stop member, designed to regulate the movement of the electrodes relative to one another. Pet. 10 (citing Ex. 1007, 17), 19 (citing Ex. 1007, 18 (stating that the stop member can be positioned on handles, jaws, and/or shafts)). In Tetzlaff, the gap distance between the opposing electrodes is “in the range of about 0.001 inches to about 0.006 inches,” identical to the claimed gap distance. *Id.* at 20 (citing Ex. 1007, 7, 16–18, 26).

Tetzlaff characterizes its device as “a bipolar forceps having a disposable electrode assembly for sealing, cauterizing, coagulating/desiccating and/or *cutting* vessels and vascular tissue.” Pet. 10 (citing Ex. 1007, 1 (emphasis added)). Tetzlaff, however, does not appear to explicitly teach a knife for cutting. Witt provides this missing element.

Witt teaches a bipolar electrosurgical device having a pair of relatively movable jaws, each of which includes a tissue contacting surface. Ex. 1006 ¶¶ 16, 17. In Witt, the tissue contacting surfaces are disposed between two spaced-apart electrodes on each jaw. *Id.* The electrodes are adapted for connection to the opposite terminals of a bipolar RF generator so as to generate a current flow therebetween. *Id.* In addition, according to

Petitioner, Witt also teaches the stop member. *See* Pet. 19–20 (asserting that each tissue dam maintains a minimum distance between the electrodes (citing Ex. 1006 ¶¶ 109, 113, Figs. 45, 49)).

Witt teaches a knife channel in the jaw, which accommodates a sliding knife. Pet. 19 (citing Ex. 1006 ¶ 83, Figs. 7–16, 20). The sliding knife may include a feature to provide actuation force to sever tissue. Ex. 1006 ¶ 83. According to Witt, “the mechanism for advancing the knife is well known.” Pet. 19 (citing Ex. 1006 ¶ 89).

Petitioner argues that both Witt and Tetzlaff teach the claimed locking mechanism. Pet. 21. In Witt, a ratchet mechanism near the ring handles provides the surgeon with a method for setting and maintaining clamp pressure. *Id.* at 14, 21 (citing Ex. 1006 ¶¶ 83, 84, Figs. 13, 15). In Tetzlaff, each shaft member includes a ratchet portion. *Id.* at 21 (citing Ex. 1007, 11, Figs. 3, 8). According to Tetzlaff, “each ratchet position holds a specific, i.e., constant, strain energy in the shaft members . . . which, in turn, transmit a specific force to the end effectors.” *Id.* (citing Ex. 1007, 11).

Even though Petitioner asserts that Witt and Tetzlaff teach regulating closure pressure, Petitioner acknowledges that “they do not explicitly recite the enumerated pressures of claim 1.” Pet. 21. According to Petitioner, however, appropriate pressures were well known in the art at the time of the invention. *Id.* Specifically, Petitioner contends that Yates teaches applying pressure to tissue between 2.1 kg/cm² and 17.5 kg/cm² to provide hemostasis. *Id.* (citing Ex. 1008 4:26–34); Ex. 1003 ¶¶ 51, 52. This range, Petitioner asserts, “is substantially identical to (and fully encompasses) the

claimed range.” *Id.* As a result, Petitioner concludes that the combination of Witt, Tetzlaff, and Yates teaches each and every limitation of claim 1.

Patent Owner counters that the claimed vessel sealing instrument as a whole would not have been obvious. PO Resp. 27–32. Patent Owner, again, emphasizes that Witt is directed to a coagulator, and not a vessel sealing instrument. *Id.* at 27–28. Thus, Patent Owner argues, Witt does not teach “effect a tissue seal” as claimed. In addition, according to Patent Owner, each of Witt, Tetzlaff, and Yates lacks certain claimed limitations; that is, according to Patent Owner, Witt does not teach controlling a gap distance and the pressure range, Tetzlaff does not teach the pressure range and the reciprocating knife, and Yates does not teach the stop member. *Id.* at 29–30. We find Patent Owner’s arguments unpersuasive.

One cannot show non-obviousness by attacking references individually where, as here, the patentability challenge is based on combinations of references. *In re Keller*, 642 F.2d 413, 426 (CCPA 1981). Instead, we must read each prior art, not in isolation, but for what it fairly teaches in combination with the other references as a whole. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986). Here, as Patent Owner recognizes, “[l]ike the ’536 patent, *Tetzlaff* describes a bipolar electrosurgical instrument for vessel sealing.” PO Resp. 24. Thus, even if we agree with Petitioner that Witt does not teach “effect a tissue seal,” Tetzlaff plainly does so. Similarly, both Witt and Yates teach the knife (Ex. 1006 ¶ 83, Ex. 1008, 11:38–40), Tetzlaff teaches the stop member for controlling the gap distance (Ex. 1007, 17), and Yates teaches the pressure range (Ex. 1008 4:26–34; Ex. 1003 ¶¶ 51, 52).

In sum, a preponderance of the evidence supports that the combination of Witt, Tetzlaff, and Yates teaches each and every limitation of claim 1. Next, we determine whether Petitioner has demonstrated that one of ordinary skill in the art would have had a reason to combine the teachings of Witt, Tetzlaff, and Yates. And we conclude Petitioner has done so by a preponderance of the evidence.

Petitioner argues that one of ordinary skill in the art would have been motivated to combine, for example, the slidable knife of Witt with the stop members on the sealing surfaces of Tetzlaff. *See* Pet. 14. Petitioner also contends that an ordinary artisan, “reading *Witt* and *Tetzlaff* and understanding the importance of applying the referenced pressures, would have been motivated to look to other references, like *Yates*, that specifically enumerate the appropriate pressure ranges to achieve optimal treatment.” *Id.* at 15. Patent Owner disagrees. We find Petitioner’s argument persuasive.

As Petitioner correctly points out, each of Witt and Tetzlaff teaches a bipolar electrosurgical device having a pliers-like configuration with a ratchet mechanism to regulate pressure. Pet. 14 (citing Ex. 1006 ¶¶ 83, 84; Ex. 1007, 11–12). Because “the general mechanical and electrical principles underlying the devices of *Witt* and *Tetzlaff* are nearly identical . . . a person of skill in the art would have been motivated to look to each reference for its additional specific teachings.” *Id.*

Patent Owner counters that an ordinary artisan would not have combined the teachings of Witt and Tetzlaff. PO Resp. 33–45. According to Patent Owner, the vessel sealing forceps taught in Tetzlaff is

fundamentally different from the coagulator taught in Witt. *Id.* at 34, 38. We disagree.

According to Dr. Taylor, Patent Owner's expert witness, both Witt, which Patent Owner alleges as directed to a coagulator only, and Tetzlaff, which Patent Owner acknowledges as relating to a sealing instrument, teach using radiofrequency current to deliver the energy necessary to achieve hemostasis in open and endoscopic surgery. *See* Ex. 1019, 64:16–65:10; *see also* Ex. 1006 ¶ 4 (discussing coagulation); Ex. 1007, 1–2 (discussing vessel sealing electrosurgical forceps). Thus, an ordinary artisan working on a hemostat would have looked at both the teachings Witt and Tetzlaff.

We conclude so despite that the '536 patent defines coagulation and vessel sealing differently. *See* Ex. 1001, 2:38–42. According to the '536 patent, while coagulation is sufficient to permanently close small vessels, “[l]arger vessels need to be sealed to assure permanent closure.” *See id.* at 2:42–44. The '536 patent suggests, however, that sealing also closes small vessels. *See id.* at 1:46–53 (stating prior art “disclosed methods for sealing small blood vessels”). Indeed, Patent Owner acknowledges that vessel sealing “assures permanent closure of both small and large vessels.” PO Resp. 14. As a result, one of ordinary skill in the art, when seeking to improve the sealing instrument of Tetzlaff, would have had a reason to modify it with the teachings of a coagulator in Witt.

Our conclusion is further supported by the fact that Witt specifically refers to Tetzlaff. *See* Pet. 12 (citing Ex. 1006 ¶ 12). Patent Owner argues that Witt considers Tetzlaff “only for its disclosure of ‘a removable electrode assembly for use in combination with a forceps having opposing end

effectors.’ *Witt* does not disclose or suggest that the stop members disclosed in *Tetzlaff* are pertinent to *Witt*’s teachings.” PO Resp. 33–34 (internal citation omitted). We are not persuaded.

Witt discusses several other prior-art instruments for sealing. *Id.* ¶ 9 (describing “an electrosurgical instrument for cutting and sealing relatively large structures”), ¶ 10 (describing “a bipolar electro-surgical instrument having opposable seal surfaces on its jaws for grasping, sealing vessels, and vascular tissue”), ¶ 11 (describing “a bipolar instrument to seal tissue with bipolar electrosurgery”). Read in context, *Witt* refers to *Tetzlaff* as an example of the prior-art sealing instruments, and not merely for its teaching of a removable electrode assembly. Thus, we agree with Petitioner that “*Witt*’s explicit recognition that *Tetzlaff* discloses subject matter pertinent to *Witt*’s teachings would motivate those of skill in the art to consider *Tetzlaff* when reading *Witt*.” Pet. 12.

Moreover, while “there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness . . . the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim.” *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 418 (2007). Instead, we consider the background knowledge in the field and the “demands known to the design community or present in the marketplace.” *Id.* Here, we are persuaded that, even though *Witt* does not specifically suggest an ordinary artisan to look to *Tetzlaff* for the stop members, one of ordinary skill in the art would have had a reason to combine the teachings of *Witt* and *Tetzlaff*. For example, one of ordinary skill in the art would have been motivated to add a slideable knife as taught

in Witt to the bipolar forceps in Tetzlaff (*see* Pet. 14), especially because Tetzlaff already teaches that its instrument can be used not only for sealing, but also for cutting, vessels and vascular tissue (*see* Pet. 10 (citing Ex. 1007, 1)).

Further, referring to Figures 44 and 45 in Witt, Patent Owner argues that the tissue dam members, positioned along the periphery of the sealing surfaces and extend along the length of each jaw, decrease the risk of unwanted lateral thermal damage. PO Resp. 40. Patent Owner contends that the function of the tissue dam members in Witt is different from that of the stop member in Tetzlaff, which aims to regulate the gap distance between opposing electrodes. *Id.* at 34–35. Thus, according to Patent Owner, an ordinary artisan would not have been motivated to combine the teachings of Witt and Tetzlaff. *Id.* We, again, are not persuaded.

As explained above, one of ordinary skill in the art, even if with no reason to modify Witt with stop members of Tetzlaff, would have been motivated to add a slideable knife as taught in Witt to the bipolar forceps in Tetzlaff. Moreover, Witt does not appear to limit the function of the tissue dam members to decrease lateral thermal spread only. Indeed, as Petitioner points out, in one embodiment, Witt teaches a tissue dam as located at the distal end of the jaw, and not along the periphery of the sealing surfaces and extend along the length of each jaw. *See* Reply 13–14 (citing Ex. 1006 ¶ 113, Figs. 47, 49). Patent Owner does not explain how a single tissue dam so located would limit thermal damage. Instead, Witt teaches that each dam member may extend from the jaw from 0.0005 to 0.015 inches. Pet. 20; Reply 10; Ex. 1006 ¶ 107. As a result, the dam members effectively

regulate the distance between electrodes on the opposing jaws. Pet. 20; Ex. 1006 ¶ 107, Figs. 44, 45.

Patent Owner also contends that modifying Witt's instrument to incorporate Tetzlaff's stop members would have frustrated the purpose of Witt. PO Resp. 39–45. Patent Owner characterizes Witt as directed to “overcoming the problems of and providing a solution to the issue of lateral thermal spread that arise with standard bipolar electrosurgical instruments.” *Id.* at 39 (citing Ex. 1006 at ¶¶ 5–7). According to Patent Owner, in the obviousness analysis, Petitioner argued to add the stop members of Tetzlaff onto Witt's jaws. *Id.* at 41 (citing Pet. 11–12). Such an addition, Patent Owner contends, “would not have limited thermal spread but would have achieved the opposite: it would have facilitated the spread of thermal energy outside the jaws of the instrument.” *Id.* On this issue, Patent Owner misunderstands the argument in the Petition.

In the Petition, Petitioner asserts that Witt teaches the stop member. *See* Pet. 19–20 (asserting that each tissue dam maintains a minimum distance between the electrodes (citing Ex. 1006 ¶¶ 109, 113, Figs. 45, 49)). Patent Owner is correct that Petitioner also contends “a person of skill in the art would have been motivated to look to each reference for its additional specific teachings (e.g., to *Witt* for a slidable knife and to *Tetzlaff* for stop members on the sealing surfaces).” *Id.* at 14. But, Petitioner clarifies that to mean “a person of skill would understand that applying *Tetzlaff's* stop member teachings to *Witt* provides an alternative” to the tissue dams in Witt. *Id.* at 13. “[N]owhere did Petitioner suggest that the stop members of *Tetzlaff* would be *added* to the tissue dam of *Witt*.” Reply 12.

“The test for obviousness is not whether the features of one reference may be bodily incorporated into the structure of the other reference, but rather ‘what the combined teachings of the references would have suggested to those of ordinary skill in the art.’” *Keller*, 642 F.2d at 425. Instead, “we do not ignore the modifications that one skilled in the art would make to a device borrowed from the prior art.” *In re ICON Health & Fitness, Inc.*, 496 F.3d 1374, 1382 (Fed. Cir. 2007). Here, we understand Petitioner as arguing that an ordinary artisan would have modified, not added, the tissue dam members of Witt with the stop members of Tetzlaff. *See* Pet. 19–20.

Additionally, Patent Owner asserts that Tetzlaff is directed to a disposable electrode assembly. PO Resp. 37. As a result, Patent Owner contends, one of ordinary skill in the art would have been discouraged from adding a slideable knife to the instrument in Tetzlaff because “it would have added both manufacturing costs and further complexity in the device.” *Id.* We disagree. First, it is the technical merit of the claimed invention, and not commercial viability of the modified device, that controls the obviousness determination. As the Federal Circuit instructed:

[T]he fact that the [prior art disclosures] would not be combined by businessmen for economic reasons is not the same as saying that it could not be done because skilled persons in the art felt that there was some technological incompatibility that prevented their combination. Only the latter fact is telling on the issue of nonobviousness.

Orthopedic Equip. Co., Inc. v. United States, 702 F.2d 1005, 1013 (Fed. Cir. 1983). Second, Tetzlaff characterizes its device as a bipolar forceps for not only sealing, but also cutting, vessels and vascular tissue. Pet. 10 (citing

Ex. 1007, 1). Indeed, Figure 11 in Tetzlaff shows “the sealing site . . . after separation of the tubular vessel.” Ex. 1007, 8, Fig. 11. Thus, we are not persuaded that an ordinary artisan would have been deterred from adding a slideable knife to the forceps in Tetzlaff. *See* Reply 22. In sum, Petitioner has shown, by a preponderance of the evidence, that an ordinary artisan would have had a reason to combine the teachings of Witt and Tetzlaff.

We also agree with Petitioner that one of ordinary skill in the art would have combined the teachings of Yates with those of Witt and Tetzlaff. *See* Pet. 14–15, 21–22. Both Witt and Tetzlaff recognize the importance of the pressure applied in achieving hemostasis. *Id.* at 14–15 (citing Ex. 1006 ¶¶ 83, 84; Ex. 1007 at 3), 21 (citing Ex. 1006 ¶¶ 83, 84, Figs. 13, 15; Ex. 1007, 11, Figs. 3, 8). Although neither reference specifies the pressure levels (*id.* at 15, 21), Dr. Taylor, Patent Owner’s expert witness, testified that, at the time of the ’536 patent invention, prior art taught the optimal closure pressure necessary to effect a tissue seal (Ex. 1019, 60:18–63:4). Thus, we are persuaded that an ordinary artisan would have been motivated to look to references, such as Yates, which teaches the appropriate pressure ranges to achieve hemostasis. Pet. 15 (citing Ex. 1008, 4:26–34, 8:45–50).

Patent Owner disagrees. PO Resp. 46–49. First, Patent Owner argues the instrument in Yates “achieve[s] fundamentally different forms of hemostasis” from tissue sealing. PO Resp. 49. According to Patent Owner, “[t]he Yates instrument effects hemostasis by a combination of mechanical stapling and energy-based techniques including coagulation and cauterization.” *Id.* at 46. Second, Patent Owner asserts that, unlike Witt and Tetzlaff, which teach instrument used in open surgery, Yates teaches a

laparoscopic instrument that requires different design considerations. *Id.* at 47–48. Thus, Patent Owner concludes, “absent hindsight,” an ordinary artisan would not have considered the teachings of pressures in Yates. *Id.* at 49. We find Petitioner’s arguments more persuasive.

Yates teaches an electrosurgical instrument for cauterization, coagulation, and/or tissue welding in surgical procedures, especially endoscopic procedures. Ex. 1008, 1:6–9. Indeed, Dr. Taylor, Patent Owner’s expert witness, testified that the instrument in Yates, like those in Witt and Tetzlaff, is used for energy-based hemostasis. *See* Ex. 1019, 64:16–65:10. As explained above, we are not persuaded that an ordinary artisan would have been dissuaded from considering a prior art merely because the reference is not specifically directed to a sealing instrument.

We also are not persuaded that Yates is directed to a laparoscopic instrument only. Patent Owner cites the Abstract, 1:6–9, 5:44–46, and 6:29–33 of Yates to support its argument that “Yates discloses a laparoscopic instrument.” PO Resp. 47. Yet, all those citations demonstrate that Yates is directed to an *endoscopic* instrument. *See* Ex. 1008, Abstract (describing an electrosurgical instrument for cauterization and/or welding of tissue “in the performance of endoscopic procedures”), 1:6–9 (the same), 5:44–46 (describing “an endoscopic electrocautery linear stapling and cutting instrument of one embodiment of the present invention”), 6:29–33 (the same). Thus, to the extent Patent Owner argues that Yates teaches a laparoscopic instrument to the exclusion of an endoscopic instrument, we disagree.

In addition, both Witt and Tetzlaff teach endoscopic instruments. *See* Ex. 1006 ¶ 17 (“The present invention has application in conventional endoscopic and open surgical instrumentation as well application in robotic-assisted surgery.”); Ex. 1007, 20 (“Figs. 12-14 show another embodiment of the present disclosure for use with endoscopic surgical procedures.”). As a result, we agree with Petitioner that, an ordinary artisan, reading Witt and Tezlaff, and understanding the importance of pressures, would have had a reason to combine the teachings of Yates with those of Witt and Tetzlaff. *See* Pet. 15, 21.

Because Petitioner has demonstrated by a preponderance of the evidence that one of ordinary skill in the art would have had a reason to combine the teachings of Witt, Tetzlaff, and Yates, and that the combination teaches each and every limitation of claim 1, we hold that claim 1 would have been obvious over the combination of Witt, Tetzlaff, and Yates.

Independent claims 8 and 11 recite limitations either similar or identical to those of claim 1. Petitioner refers to specific disclosures in Witt, Tetzlaff, and Yates for teachings the different limitations. *See* Pet. 23–30. Each of claims 2–4, and 7 depends from claim 1, claims 9 and 10 each depends from claim 8, and claims 12 and 13 each depends from claim 11. Petitioner argues that the combination of Witt, Tetzlaff, and Yates teaches the additional limitations. *See* Pet. 22–25, 27, 30. Patent Owner does not dispute Petitioner’s assertions. PO Resp. 52. After reviewing the entire record, we conclude Petitioner has shown by a preponderance of the evidence that claims 2–4 and 7–13 are unpatentable as obvious over the combination of Witt, Tetzlaff, and Yates.

Obviousness over Witt, Tetzlaff, Yates, and Stern

Petitioner asserts that claims 5 and 6 would have been obvious over the combination of Witt, Tetzlaff, Yates, and Stern. Pet. 30–35. After reviewing the entire record, we find that a preponderance of the evidence supports Petitioner’s position.

Claim 5 depends from claim 1. It further requires that “a knife is disposed in the knife channel, the knife is made from a conductive material and is adapted to connect to the electrosurgical energy source, the knife being selectively activatable to separate tissue disposed between the jaw members.” Claim 6 depends from claim 5. It further requires that “the knife is spring-biased such that once tissue is severed the knife automatically returns to a first position within a recess associated with at least one of the jaw members.”

Petitioner contends that Witt, Yates, and Stern teach the additional limitations of claims 5 and 6. Pet. 33–35. Patent Owner does not dispute Petitioner’s assertions. PO Resp. 52–53. Instead, Patent Owner relies on the same arguments it advances in addressing the patentability of claim 1. *Id.* In addition, Patent Owner, in a conclusory fashion, asserts that:

Petitioner continues to rely on hindsight and the claims as a guide to piece together the teachings of the references relying on *Stern* only for its teaching of an energized knife. *See Cheese Sys. Inc.*, 725 F.3d at 1352. Claims 5 and 6 are not unpatentable for this additional reason. (Ex. 2008 at ¶ 95.)

Id. at 53.

Paragraph 95 of the Taylor Declaration merely states that for at least the same reasons as those discussed in analyzing claim 1, “the cited

references do not disclose or suggest the features of these other claims and one of ordinary skill in the art would not have combined the teachings of *Witt, Tetzlaff, Yates, and Stern.*” Ex. 2008 ¶ 95. Because Dr. Taylor offers no credible evidence or persuasive analysis to support his opinion here, we accord no weight to his testimony on this issue. Thus, we are not persuaded by Patent Owner’s conclusory assertion that one skilled in the art would not have combined the teaching of an energized knife in *Stern* with the other asserted prior art.

Nevertheless, because Petitioner bears the burden of persuasion, we must analyze whether Petitioner has shown claims 5 and 6 would have been obvious. *See* 35 U.S.C. § 316(e). And we conclude Petitioner has done so by a preponderance of evidence.

First, Petitioner argues that both *Witt* and *Stern* teach electrosurgical devices capable of coagulating and cutting. Pet. 31–32 (citing Ex. 1006 ¶ 114; Ex. 1009, 2:11–16). As Petitioner points out, *Witt* suggests that the use of the knife depends on whether the device is energized. *Id.* at 32 (citing Ex. 1006 ¶ 78). Petitioner also cites to *Stern*, where it teaches “the cutting blade either directly by mechanical force or through the action of an electrosurgical cutting accomplishes the actual cutting through of the tissue whose blood supply has been cut off by the prior coagulation.” *Id.* (citing Ex. 1009, 4:61–65); *see also* Ex. 1009, 4:36–39, 4:45–51 (stating that the cutting blade is attached to an electrosurgical unit power generator). We, thus, agree with Petitioner that both *Witt* and *Stern* suggest the knife is “selectively activatable” to separate tissue, as claim 5 requires. Regarding claim 6, Petitioner refers to *Witt* for teaching a scissors cutting member “that

is spring loaded open.” Pet. 34 (citing Ex. 1006 ¶ 84, Fig. 13). As a result, we agree with Petitioner that Witt teaches or suggests a knife that is “spring-biased,” as claim 6 requires.

As explained above, we determine that an ordinary artisan would have had a reason to combine the teachings of Witt, Tetzlaff, and Yates. According to Petitioner, Witt suggests a metal knife as part of the “electrode configuration.” Pet. 31 (citing Ex. 1006 ¶¶ 79, 84, 114). In Witt, the knife blade can be energized. *Id.* at 32 (citing Ex. 1006 ¶ 78). Thus, Petitioner asserts, Witt teaches “whether energy is delivered affects a surgeon’s decision to extend the knife blade,” and an ordinary artisan would have had a reason to look to other references, such as Stern, for teaching delivering bipolar energy. *Id.* at 31–32.

Dr. Taylor, Patent Owner’s expert, testified that, like Witt, Tetzlaff, and Yates, Stern is also directed to an instrument capable of energy-based hemostasis. *See* Ex. 1019, 65:11–15; *see also* Ex. 1009, 1:12–14 (stating Stern relates to an apparatus for “electrosurgical coagulation and cutting of regions of tissue or blood vessels”). According to Stern, tissue may be cut either by applying mechanical force to the blade, or through activating the electrosurgical cutting. Pet. 32 (citing Ex. 1009, 4:61–64). Stern teaches attaching a cutting blade to an electrosurgical power generator. *Id.* at 33 (citing Ex. 1009, 4:36–39, 4:45–51). It also discusses the advantages of electrosurgical cutting. *Id.* at 32 (citing Ex. 1009, 4:51–53). Thus, we agree with Petitioner that an ordinary artisan would have had a reason to incorporate the teachings of Stern into the dual-function instruments taught in Witt. *Id.*

In sum, we determine that Petitioner has demonstrated by a preponderance of the evidence that one of ordinary skill in the art would have had a reason to combine the teachings of Witt, Tetzlaff, Yates, and Stern, and that the combination teaches each and every limitation of claims 5 and 6. As a result, we hold that claims 5 and 6 would have been obvious over the combination of Witt, Tetzlaff, Yates, and Stern.

CONCLUSION

We conclude that Petitioner has shown by a preponderance of the evidence that claims 1–13 of the '536 patent are unpatentable.

ORDER

In consideration of the foregoing, it is hereby:

ORDERED that claims 1–13 of the '536 patent are held unpatentable;
and

FURTHER ORDERED that, because this is a Final Written Decision, the parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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Patent 7,887,536 B2

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