

NOTE: This disposition is nonprecedential.

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

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**ETHICON LLC, CILAG GMBH INTERNATIONAL,**  
*Appellants*

v.

**INTUITIVE SURGICAL, INC.,**  
*Appellee*

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2021-1601

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Appeal from the United States Patent and Trademark  
Office, Patent Trial and Appeal Board in No. IPR2019-  
00991.

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Decided: May 19, 2022

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Before NEWMAN, CLEVINGER, and STOLL, *Circuit Judges*.

Opinion for the court filed by *Circuit Judge* STOLL.

*Circuit Judge* NEWMAN dissents without opinion.

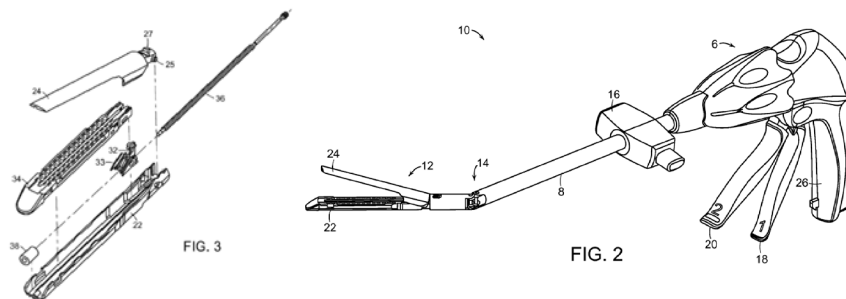
STOLL, *Circuit Judge*.

This is a patent validity case. Ethicon LLC and Cilag GmbH International (collectively, “Ethicon”) appeal from the Patent Trial and Appeal Board’s final written decision holding claims 13–15 and 17–18 of U.S. Patent No. 8,602,287 unpatentable as obvious. Ethicon challenges the Board’s fact findings regarding analogous art and motivation to combine prior art references. Because substantial evidence supports the Board’s findings, we affirm.

## BACKGROUND

### I

Ethicon is the assignee of the ’287 patent which is directed to a motor-driven surgical cutting instrument. Specifically, the ’287 patent is directed to a motor-driven “endocutter,” which is a tool that simultaneously cuts and staples tissue along the edges of the cut.



’287 patent, Figs. 2–3; *see also id.* at col. 1 l. 56–col. 2 l. 9.

Claim 13 of the ’287 patent is representative of the claims on appeal:

13. A surgical instrument, comprising:

an end effector comprising a firing element, wherein the firing element is configured to move along a firing path, and wherein the firing path comprises:

an initial position; and

an end-of-stroke position;

an electric motor, wherein the electric motor drives the firing element in a first direction along the firing path when the electric motor is rotated in a first rotational direction; and

a control circuit for controlling the electric motor, wherein the control circuit is configured to switch between a plurality of operational modes during rotation of the electric motor in the first rotational direction, and wherein the plurality of operational modes comprises:

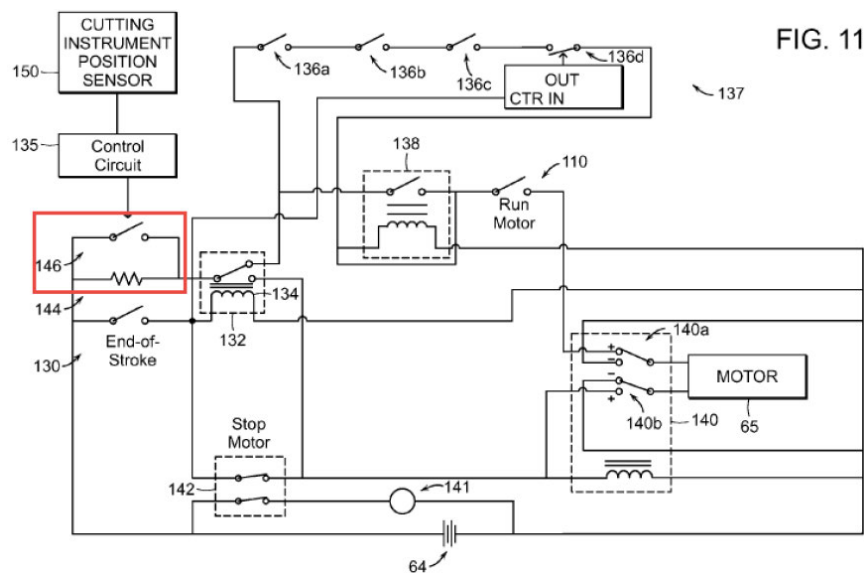
a first operational mode, wherein the control circuit operates in the first operational mode when the firing element is positioned within a first range of positions along the firing path, wherein the first range of positions is positioned between the initial position and a second range of positions, and wherein a first amount of current is supplied to the electric motor during the first operational mode; and

a second operational mode, wherein the control circuit operates in the second operational mode when the firing element is positioned within the second range of positions along the firing path, wherein the

second range of positions is positioned between the first range of positions and the end-of-stroke position, wherein a second amount of current is supplied to the electric motor during the second operational mode, and wherein the second amount of current is greater than the first amount of current.

*Id.* at col. 18 l. 58–col. 19 l. 24.

The purportedly inventive feature of claim 13 is that the motor for driving the endocutter uses two “operational modes,” which apply two different amounts of current to the motor based on the positioning of the firing element in the firing path. In describing how this two-mode operation works, Ethicon repeatedly cites a specific portion of column 12. There, the '287 patent describes a “soft’ start quality by limiting the motor’s ability to exert full load immediately.” *Id.* at col. 12 ll. 33–41. This is accomplished by initially having “resistive element 144” in series with the motor on startup “from time T0 to time T1.” *Id.* at col. 12 ll. 5–11.

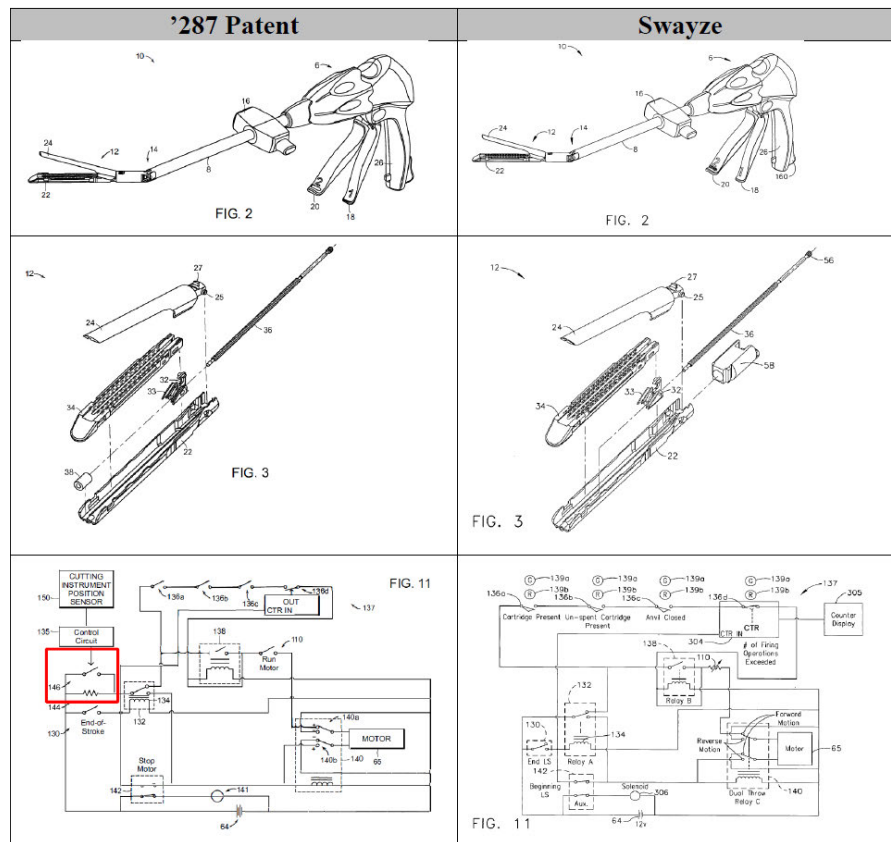


Appellants' Br. 14 (annotating '287 patent, Fig. 11). At time T1, the "switch 146" is closed, "thereby shorting the resistive element 144 and supplying increased power to the motor 65." '287 patent col. 12 ll. 11–14. The patent explains that this "limit[s] the sudden jerking start." *Id.* at col. 12 ll. 35–37. "In addition, by starting the soft start mode, the likelihood of the motor overpowering the cartridge lockout mechanism is reduced." *Id.* at col. 12 ll. 37–39. The section finishes by referencing an additional feature of "reducing the power prior to the knife reaching its end-of-stroke (or distal) position [in order to] ease[] reversal of the motor direction." *Id.* at col. 12 ll. 39–41.

## II

Intuitive Surgical, Inc. challenged certain claims of the '287 patent based on four obviousness combinations. J.A. 112–113. The obviousness combination accepted by the Board and at issue on appeal is U.S. Patent Application Publication No. 2007/0175956 A1 (Swayze) in view of U.S. Patent No. 4,346,335 (McInnis). We describe each reference below.

Swayze discloses a similar endocutter to the one described in the '287 patent, lacking only the soft start circuit (boxed in red below):



Appellee’s Br. 5.

Instead of using a resistor in series with the motor that controls the amount of current flowing into the motor for a certain period of time (e.g., when the motor is starting), which is then short circuited when the motor gets up and running (i.e., the '287 patent, “soft start” approach), Swayze describes a “sensor 110” that can either be (1) an “on-off” type sensor or a (2) rheostat / variable resistor that allows more voltage to go to the motor based on how far the user pulls the endocutter trigger. J.A. 1522–23 (Swayze ¶ 55).

McInnis is a 1982 patent directed to the “Speed Control of a D.C. Electric Motor.” J.A. 1532. McInnis explains that its motor circuitry is “particularly advantageous when the

motor is used to drive an electric vehicle,” J.A. 1535 (McInnis col. 2 ll. 51–53), but it also teaches that its “motor controller may be suitably modified for other appropriate motor control applications,” J.A. 1537 (McInnis col. 5 ll. 34–37). Notably, McInnis discloses a “starting resistor 60” that is “connected in series” with its motor in a way that is “conventional in the art,” and then this resistor is short circuited “shortly after the motor is started.” J.A. 1537 (McInnis col. 5 ll. 56–62).

After a standard briefing schedule and oral hearing, the Board held the claims unpatentable as obvious over Swayze in view of McInnis. J.A. 46. The Board found that McInnis was analogous prior art, J.A. 34–37, and found that a person of ordinary skill in the art would have been motivated to combine Swayze with McInnis, J.A. 37–38. The Board rejected Intuitive’s three other obviousness grounds because it determined that Ethicon had successfully antedated the references involved in those combinations.

Ethicon appeals. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

#### DISCUSSION

Ethicon challenges the Board’s findings as to analogous art and motivation to combine. Both are fact findings that we review for substantial evidence. *Airbus S.A.S. v. Firepass Corp.*, 941 F.3d 1374, 1379 (Fed. Cir. 2019) (analogous art); *Arthrex, Inc. v. Smith & Nephew, Inc.*, 935 F.3d 1319, 1328 (Fed. Cir. 2019) (motivation to combine). The substantial evidence standard does not ask us to reweigh the facts and evidence, but instead asks whether there is “evidence that a reasonable mind might accept as adequate to support a conclusion.” *Cleo Inc. v. United States*, 501 F.3d 1291, 1296 (Fed. Cir. 2007). “Although a reviewing court must take into account contradictory evidence or any evidence in the record that undermines the agency’s finding, the substantial evidence test does not require that there be

an absence of evidence detracting from the agency’s conclusion, nor is there an absence of substantial evidence simply because the reviewing court would have reached a different conclusion based on the same record.” *Id.*

The Board adequately supported its findings on both issues with evidence in the record, including expert testimony. We address each finding in turn.

## I

We begin with the Board’s finding that McInnis is analogous art. Prior art is analogous when the reference is: (1) “within the field of the inventor’s endeavor” or (2) “reasonably pertinent to the particular problem with which the inventor was involved.” *In re Wood*, 599 F.2d 1032, 1036 (C.C.P.A. 1979); *see also In re Clay*, 966 F.2d 656, 658–59 (Fed. Cir. 1992); *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004). Here, the Board found that McInnis is analogous art because it “address[ed] at least one problem faced by the inventors of the ’287 patent.” J.A. 36. Specifically, the Board found McInnis addressed a problem in electric motor control that the inventors of the ’287 patent also faced—an in rush of current potentially leading to a jerking start. J.A. 35–36. This fact finding is supported by substantial evidence.

First, the Board considered the problems facing the inventors of the ’287 patent as part of the “reasonably pertinent” inquiry. *See Clay*, 966 F.2d at 659 (“[T]he purposes of both the invention and the prior art are important in determining whether the reference is reasonably pertinent to the problem the invention attempts to solve.”). The Board noted that the ’287 patent “describes more than one problem,” one of which being a “sudden jerking start.” J.A. 35 (quoting ’287 patent col. 12 ll. 33–37). In addition to citing the ’287 patent specification, the Board pointed to an invention disclosure submitted by Ethicon, written by a named inventor on the ’287 patent. The disclosure described the invention as “limit[ing] the sudden jerking



start” and described one of the “problem[s] to be solved” as limiting “gyroscopic effects on the handle due to rotating masses.” J.A. 35 (quoting J.A. 2951). The Board explained that evidence of record suggests that a second “problem faced by the inventors of the ’287 patent” involved “limiting the motor’s ability to exert full load immediately.” J.A. 35–36 (quotations omitted). For this proposition, the Board pointed to a different invention disclosure by another named inventor on the ’287 patent. There, the inventor listed the “[p]roblem to be [s]olved” as the ability “to limit a powered endocutter start-off and end power capabilities.” J.A. 36 (quoting J.A. 2949).

The Board then examined McInnis to determine whether, under the second prong of the analogous art inquiry, it was “reasonably pertinent” to those problems addressed by the ’287 patent. The Board noted that McInnis is directed to controlling the speed of an electric motor. J.A. 36 (citing J.A. 1532 (McInnis, Abstract)). McInnis accomplishes speed control by “changing the field strength of the motor, by changing the armature voltage, or by inserting a resistance in the armature circuit.” J.A. 1535 (McInnis col. 1 ll. 9–12); J.A. 36. In particular, McInnis teaches an embodiment in which a resistor “is connected in series with the armature circuit . . . to prevent a high inrush of current when the motor is started, as is conventional in the art.” J.A. 1537 (McInnis col. 5 ll. 56–59); J.A. 36.

The Board then credited Intuitive’s expert’s testimony that “an inrush of current,” addressed by McInnis, “can lead to a jerking start or introduction of backlash, and reduce the user’s ability to control the device.” J.A. 36 (quoting J.A. 2567 (Fischer Suppl. Decl. ¶ 58)). Accordingly, the Board concluded that McInnis is analogous art because it “addresses at least one problem faced by the inventors of the ’287 patent”—the sudden jerking start. J.A. 36. Based on the excerpts described above, we conclude that this finding was supported by substantial evidence.

On appeal, Ethicon makes two principal arguments in challenging the Board’s analogous art finding. Neither is persuasive. First, Ethicon points to a different problem addressed in the ’287 patent—motor overpowering the cartridge lockout mechanism, ’287 patent col. 12 ll. 37–39—which it calls the “core problem.” *E.g.*, Appellants’ Br. 34. Ethicon contends that because McInnis is not directed to that specific alternative problem, it is not analogous art. The ’287 patent does mention that “[i]n addition” to addressing a sudden jerking start, the soft start feature reduces “the likelihood of the motor overpowering the cartridge lockout mechanism.” ’287 patent col. 12 ll. 37–39. Indeed, the written description (as well as the invention disclosure statements from the named inventors) makes clear that the inventors were considering multiple problems that would be addressed through improved motor control, one of which being the jerking start that is caused by a high inrush of current. And, as explained above, the Board’s finding that McInnis is reasonably pertinent to the problem of sudden inrush of current upon starting the motor is supported by substantial evidence. Ethicon’s identification of an additional problem faced by the ’287 patent inventors and unaddressed by the Board in finding that McInnis is analogous art is thus irrelevant.

To the extent Ethicon argues that there is a disconnect between a sudden jerking start and a sudden inrush of current when the motor is started, the Board expressly credited Intuitive’s expert’s testimony that a high inrush of current can “lead to a jerking start, or introduction of backlash, and reduce the user’s ability to control the device.” J.A. 36 (quoting J.A. 2567 (Fisher Suppl. Decl. ¶ 58)). We see no reason to disturb the Board’s crediting of this testimony. *See ESIP Series 2, LLC v. Puzhen Life USA, LLC*, 958 F.3d 1378, 1384 (Fed. Cir. 2020) (“We find no error in the Board’s decision to credit the opinion of one expert over another, and we do not reweigh evidence on appeal.”). Moreover, the analogous art test does not

require that the references use the exact same words to describe the problem that they seek to solve. *Cf. Donner Tech., LLC v. Pro Stage Gear, LLC*, 979 F.3d 1353, 1359 (Fed. Cir. 2020) (“Although the dividing line between reasonable pertinence and less-than-reasonable pertinence is context dependent, it ultimately rests on the extent to which the reference of interest and the claimed invention relate to a similar problem or purpose.”). Rather, it requires that the prior art reference be “reasonably pertinent to the problem with which the inventor was involved.” *Clay*, 966 F.2d at 659. Even if we might have made a different fact finding were we the fact finder, we cannot say that the Board’s affirmative finding on this point was unreasonable.

Second, Ethicon attempts to create an additional hurdle, as a legal matter, to the “reasonably pertinent” inquiry. Ethicon argues that “[e]ven if the Board had correctly concluded that the [ ]287 [p]atent and McInnis addressed the same problem, McInnis is still not ‘analogous prior art’” because McInnis would not have logically commended itself to an inventor’s attention. Appellants’ Br. 39–40; *see also* Appellants’ Reply Br. 13 (describing this as a “second prong”). Phrased differently, Ethicon argues that in addition to being directed to the same problem as the challenged patent, the prior art must also be such that “a POSA reasonably would have consulted that reference to solve the problem.” Appellants’ Br. 41.

This is not a separate legal test, but instead two sides of the same coin. As we have explained, “[t]o be deemed ‘analogous art,’ a reference outside an inventor’s field of endeavor must be ‘reasonably pertinent’ to the particular problem with which the inventor is involved, *such that* a person of ordinary skill would reasonably have sought a solution to the problem in that outside field.” *Sci. Plastic Prods., Inc. v. Biotage AB*, 766 F.3d 1355, 1358 (Fed. Cir. 2014) (emphasis added). In other words, it is the fact that the reference is “reasonably pertinent” to a problem the

patent is trying to solve that makes it a reference that would have logically commended itself to the inventor's attention, even though that reference was outside the field of endeavor of the patent.

It is clear from Ethicon's application of this supposed "second prong" that Ethicon is impermissibly "collaps[ing] the field-of-endeavor and reasonable-pertinence inquiries." *Donner*, 979 F.3d at 1360. For instance, Ethicon attempts to draw a distinction between "large motors used in electric vehicles" and "small motor[s] for use in a minimally invasive surgical tool." Appellants' Br. 39–40. It suggests that a skilled artisan would not have "bypassed the specific field of endocutters, or even surgical instruments more broadly" and "leaped all the way to motor vehicle motors at the other end of the spectrum." Appellants' Br. 46. But that is the point of the "reasonably pertinent" inquiry, rendering prior art "analogous" when it is directed to solving the same problem, even when it is in a different field of endeavor. See *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007) ("When a work is available in one field, design incentives and other market forces can prompt variations of it, either in the same field or a different one."); see also *Donner*, 979 F.3d at 1361 (noting that "there will frequently be significant differences between a patent and a reference from a different field of endeavor" but "it does not follow that such a reference is, for that reason alone, not reasonably pertinent to one or more problems to which the claimed invention relates").<sup>1</sup>

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<sup>1</sup> Even if Ethicon's proposed legal test were correct (it is not), Ethicon incorrectly asserts as a factual matter that McInnis is restricted to "large motors used in electric vehicles." This does not appear to be the case. As the Board found, McInnis "relates generally to D.C. electric motors, and particularly to the speed control of separately excited or shunt wound D.C. electric motors," listing

For at least these reasons we conclude that substantial evidence supports the Board’s finding that McInnis is analogous art to the ’287 patent.

## II

We turn next to motivation to combine. The Board found that a person of ordinary skill in the art would have been motivated to implement the soft start circuit taught in McInnis in Swayze’s endocutter system because “a soft start is beneficial to, and thus, would improve an endocutter.” J.A. 37. In particular, the Board relied on a specific prior art reference, U.S. Patent Application Publication No. 2008/0298784 (Kastner), that taught “[s]oft-starting can also be useful in hand-held power tools, such as drills” to “minimize fatigue and potential injury, while allowing greater control of the tool,” as supplying a motivation to combine McInnis and Swayze. J.A. 1821 (Kastner ¶ 30); J.A. 37–38; J.A. 2567–72 (Fischer Suppl. Decl. ¶¶ 57–64). In its final written decision, the Board noted that Ethicon failed to address Kastner, as well as the expert testimony describing Kastner. J.A. 37–38. The Board’s reliance on Kastner and the expert testimony describing Kastner as supplying a motivation to combine was not unreasonable.

On appeal, Ethicon contests the Board’s determination that Ethicon failed to address Kastner, addresses the merits of Kastner (for the first time), and argues that the Board’s analysis was conclusory. Appellants’ Br. 51–56. We address each argument in turn.

First, regarding Ethicon’s failure to address Kastner, Ethicon cites certain pages of its briefing before the Board that it asserts shows it responded to this argument. Appellants’ Br. 53–55 (citing J.A. 369–70 (Patent Owner’s

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“electric vehicle[s]” as an exemplary environment in which its motor control is “particularly advantageous.” J.A. 1535 (McInnis col. 1 ll. 6–8, col. 2 ll. 51–53); J.A. 34.

Response (citing J.A. 2865–70 (Cimino Decl. ¶¶ 101–04, 107–10)); J.A. 529–30 (Sur-Reply (citing J.A. 2872–74 (Cimino Decl. ¶¶ 113–14))). None of these cited portions, however, reference Kastner. We see no error in the Board’s conclusion that Ethicon failed to address Kastner and the expert testimony describing Kastner. Indeed, a simple review of the record supports this determination. Ethicon’s Patent Owner’s Response challenged whether a skilled artisan would have been motivated to combine Swayze and McInnis but did not address Kastner. J.A. 365–70. The cited portions of Ethicon’s expert’s declaration likewise failed to address Kastner. J.A. 2864–70 (Cimino Decl. ¶¶ 98–110). And in its Sur-Reply, the section regarding motivation to combine once again failed to address Kastner. J.A. 527–30.

Second, Ethicon argues that Kastner’s teachings are limited to “drills,” which use more powerful motors than endcutters, and therefore its teachings do not apply to endcutters. Appellants’ Br. 55 (quoting J.A. 1821 (Kastner ¶ 30)). Ethicon does not point to where it made this argument before the Board. Instead, it cites a portion of its expert’s declaration that was not cited in its papers to the Board. Appellants’ Br. 55–56 (citing J.A. 2876–77 (Cimino Decl. ¶ 119)). This argument is therefore waived. *See Redline Detection, LLC v. Star Envirotech, Inc.*, 811 F.3d 435, 450 (Fed. Cir. 2015) (holding arguments waived where they were not presented to the Board).

Third, Ethicon criticizes the Board’s motivation finding (relying on Kastner) as conclusory and without reasoned explanation. Because Ethicon never rebutted Kastner before the Board and did not point to the portions of its expert’s testimony discussing Kastner, we cannot fault the Board for its arguably limited treatment of this issue. *See Novartis AG v. Torrent Pharms. Ltd.*, 853 F.3d 1316, 1328 (Fed. Cir. 2017) (“[W]e are not persuaded that Novartis presented its arguments against the use of mannitol in such a way that it would be appropriate to find fault in the

ETHICON LLC v. INTUITIVE SURGICAL, INC.

15

Board’s arguably limited treatment of those arguments in the Final Written Decision.”).<sup>2</sup>

The Board’s motivation to combine finding is supported by substantial evidence in the form of an un rebutted reference (Kastner) and Intuitive’s expert’s declaration describing Kastner.

#### CONCLUSION

We have considered the remainder of Ethicon’s arguments on appeal and conclude that they are without merit. Accordingly, because the Board’s findings on analogous art and motivation to combine are supported by substantial evidence, we affirm.

**AFFIRMED**

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<sup>2</sup> Because substantial evidence supports the Board’s finding that Kastner provides a different motivation to implement a soft start circuit in Swayze’s endocutter, we need not consider Ethicon’s argument that Swayze already solves the high inrush of current problem with its variable resistor connected in series with the motor. *See* J.A. 37–38 (Board determining that they “do not need to resolve these issues” due to Kastner).