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Paper No. 8
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

INTUITIVE SURGICAL, INC.,
Petitioner,

v.

ETHICON ENDO-SURGERY, INC.,
Patent Owner.

Case IPR2018-00938
Patent 9,113,874 B2

Before JOSIAH C. COCKS, BENJAMIN D. M. WOOD, and MATTHEW S. MEYERS, *Administrative Patent Judges.*

MEYERS, *Administrative Patent Judge*.

DECISION

Denying Institution of *Inter Partes* Review

35 U.S.C. § 314(a)

I. INTRODUCTION

A. OVERVIEW

Intuitive Surgical, Inc., ("Petitioner") filed a Petition (Paper 2, "Pet.") requesting *inter partes* review of claims 1–21 of U.S. Patent No. 9,113,874 B2 (Ex. 1001, "the '874 patent").[1] Pet. 1. Ethicon Endo-Surgery, Inc., ("Patent Owner") filed a Preliminary Response. Paper 7 ("Prelim. Resp.").

Section 314(a) of Title 35 of the United States Code provides that an *inter partes* review may not be instituted "unless . . . the information presented in the petition . . . shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition." 35 U.S.C. § 314(a). Upon consideration of the Petition, Preliminary Response, and the associated evidence, for the reasons explained below, we conclude that the information presented in the Petition does not establish a reasonable likelihood that Petitioner would prevail with respect to any of the challenged claims.

Accordingly, we decline to institute an *inter partes* review.

B. RELATED PROCEEDINGS

The parties indicate that the '874 patent is involved in: *Ethicon LLC et al. v. Intuitive Surgical, Inc. et al.*, No. 1:17-cv-00871 in the United States

[1] As discussed below in Section II.A, Patent Owner identifies that claims 16, 17, and 21 are disclaimed via statutory disclaimer, filed September 5, 2018, under 35 U.S.C. § 253(a) and 37 C.F.R. § 1.321(a). *See* Ex. 2002. In light of this disclaimer, only claims 1–15 and 18–20 remain under review. The remainder of this decision modifies the grounds of unpatentability presented by Petitioner to reflect only those claims under review. See 37 C.F.R. § 42.107(e).

District Court for the District of Delaware ("the Delaware litigation").[2] Pet. 2; Paper 6, 2.

Petitioner is also challenging related patents in the following proceedings before the Board: (1) Case No. IPR2018-00933 (the '601 patent); (2) Case No. IPR2018-00934 (the '058 patent); (3) Case No. IPR2018-00935 (the '677 patent); (4) Case Nos. IPR2018-01248 and IPR2018-01254 (the '969 patent); (5) Case Nos. IPR2018-01247 and IPR2018-00936 (the '658 patent); and (6) Case No. IPR2018-01703 (the '431 patent).

C. THE '874 PATENT

The '874 patent relates generally to endoscopic surgical instruments that are suitable for precise placement of a distal end effector at a desired surgical site. Ex. 1001, 2:49–60. More particularly, the '874 patent describes a surgical cutting and fastening instrument that in some embodiments includes an end effector comprising an anvil with staple forming features (*see*, *e.g.*, Ex. 1001, 3:47–60) and in other embodiments includes an end effector comprising a first jaw, second jaw, and a firing element. *See, e.g.*, Ex. 1001, 3:61 – 4:8. Reproduced below is Figure 1 of the '874 patent.

[2] Patent Owner asserts that U.S. Pat. Nos. 9,585,658 ("the '658 patent"), 8,616,431 ("the '431 patent"), 8,479,969 ("the '969 patent"), 8,998,058 ("the '058 patent"), 9,084,601 ("the '601 patent"), and 8,991,677 ("the '677 patent") are also asserted in the Delaware litigation. Paper 6, 2.

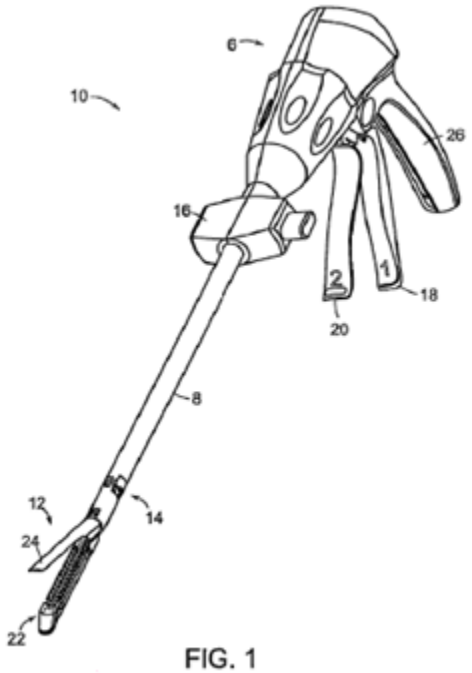


FIG. 1

FIG. 1 illustrates a perspective view of a surgical cutting and fastening instrument.

Figure 1 depicts surgical cutting and fastening instrument 10 comprising handle 6, shaft 8, and articulating end effector 12 pivotally connected to shaft 8 at articulation pivot 14. Ex. 1001, 6:29–32. The ’874 patent describes that “[i]n other embodiments, different types of clamping members besides the anvil 24 could be used, such as, for example, an opposing jaw, etc.” Ex. 1001, 7:7–9. The ’874 patent discloses that “handle **6** of the instrument **10** may include a closure trigger **18** and a firing trigger **20** for actuating the end effector **12**.” Ex. 1001, 6:44–46. More particularly, the’874 patent discloses:

> [t]he handle **6** includes a pistol grip **26** toward which a closure trigger **18** is pivotally drawn by the clinician to cause clamping or closing of the anvil **24** towards the staple channel **22** of the end effector **12** to thereby clamp tissue positioned between the anvil **24** and channel **22**. The firing trigger **20** is farther outboard

> of the closure trigger **18**. Once the closure trigger **18** is locked in the closure position as further described below, the firing trigger **20** may rotate slightly toward the pistol grip **26** so that it can be reached by the operator using one hand. Then the operator may pivotally draw the firing trigger **20** toward the pistol grip **26** to cause the stapling and severing of clamped tissue in the end effector **12**.

Ex. 1001, 6:62–7:7.

D. ILLUSTRATIVE CLAIM

Petitioner challenges claims 1–15 and 18–20 of the '874 patent. Each of claims 1, 9, 19, and 20 is independent. Independent claims 1 and 9 are illustrative of the challenged claims, and are reproduced below:

> 1. A surgical cutting and fastening instrument comprising:
>
> an end effector comprising an anvil with staple forming features thereon, a housing frame generally opposed to the anvil to hold a cartridge, a replaceable cartridge holding staples that can be urged out of the cartridge with a distal actuation of a deploying wedge, and at least one sensor;
>
> an elongated shaft, said shaft having a motor therein that is operably coupled to an actuation mechanism, said shaft having at least one articulation joint for positioning the cartridge at an angle not parallel to a longitudinal axis of said shaft;
>
> an electrically coupled remote user-controllable actuation console; and
>
> a linear drive motion converter to convert rotary motion from said motor to linear motion.
>
> 9. A surgical instrument comprising:
>
> a surgical end effector comprising:
>
> a first jaw;
>
> a second jaw, wherein said first and second jaws are supported relative to each other such that one of said first and second jaws is movable between open and closed positions

relative to the other of said first and second jaws in response to opening and closing motions applied thereto; and

a driver element supported for axial travel through the surgical end effector in response to firing motions applied thereto and wherein said surgical instrument further comprises:

a motor powered firing element configured to apply said firing motions to said driver element;

a remotely user-controlled console electrically coupled to said surgical instrument; and

a reciprocatable closure element configured to apply said opening and closing motions to said one of said first and second jaws.

E. EVIDENCE AND ASSERTED GROUNDS OF UNPATENTABILITY

Petitioner challenges the claims on the following grounds:

Claims	Basis	Reference(s)
1–7, 9–14, 19, and 20	§ 102(b)	Hooven[3]
2–4, 9–15, and 18	§ 103(a)	Hooven and Knodel[4]
8	§ 103(a)	Hooven and Bays[5]
1–8 and 19	§ 103(a)	Hooven, Knodel, and/or Bays, and Wales[6]

Pet. 13–73. Petitioner relies upon a Declaration of Dr. Bryan Knodel. Ex. 1003.

[3] U.S. Patent No. 5,383,880, issued Jan. 24, 1995 (Ex. 1004; "Hooven").
[4] U.S. Patent No. 5,662,667, issued Sept. 2, 1997 (Ex, 1005; "Knodel").
[5] U.S. Patent No. 5,796,188, issued Aug. 18, 1998 (Ex. 1006; "Bays").
[6] U.S. Patent No. 5,702,408, issued Dec. 30, 1997 (Ex. 1007; "Wales").

II. ANALYSIS

A. PATENT OWNER'S DISCLAIMER OF CLAIMS 16, 17, AND 21

As noted above, Petitioner seeks, among other things, *inter partes* review of claims 16, 17, and 21 of the '874 patent. *See, e.g.*, Pet. 1, 4. Subsequent to the filing of the Petition, Patent Owner filed a statutory disclaimer of claims 16, 17, and 21 of the '874 patent. *See* Ex. 2002; *see also* Prelim. Resp. 6. Patent Owner argues "[b]ased on this disclaimer, the 874 Patent is to be treated as though claims 16, 17, and 21 never existed." Prelim. Resp. 6 (citing *Vectra Fitness, Inc. v. TNWK Corp.*, 162 F.3d 1379, 1383 (Fed. Cir. 1998)). Patent Owner further argues that "[a]s a result of the statutory disclaimer of claims 16, 17, and 21, and pursuant to 37 C.F.R. § 42.107(e), it is respectfully submitted that the institution decision in this proceeding should be based only on the remaining challenged claims 1–15 and 18–20 of the '874 patent." Prelim. Resp. 6.

We are persuaded by Patent Owner's argument that, based on Federal Circuit precedent and our rules, we cannot institute a trial on claims that have been disclaimed and no longer exist. "The Federal Circuit has held consistently that claims disclaimed under § 253(a) should be treated as though they never existed." *Facebook, Inc. v. SKKY, LLC*, Case CBM2016-00091, slip op. at 8 (PTAB Sept. 28, 2017) (Paper 12) (expanded panel) (precedential) (citing *Vectra Fitness, Inc.*, 162 F.3d at 1383 ("This court has interpreted the term 'considered as part of the original patent' in section 253 to mean that the patent is treated as though the disclaimed claims never existed."); *Guinn v. Kopf*, 96 F.3d 1419, 1422 (Fed. Cir. 1996); *Genetics Inst., LLC v. Novartis Vaccines & Diagnostics, Inc.*, 655 F.3d 1291, 1299 (Fed. Cir. 2011). Recognizing that a disclaimed claim is treated as one that

never existed, our rules prohibit instituting *inter partes* review on disclaimed claims. 37 C.F.R. § 42.107(e).

This is also consistent with the statutory scope of an *inter partes* review. Section 311(b), which defines the scope of an *inter partes* review, states that "[a] petitioner in an *inter partes* review may request to cancel as unpatentable 1 or more *claims of a patent* only on a ground that could be raised under section 102 or 103 and only on the basis of prior art consisting of patents or printed publications." 35 U.S.C. § 311(b) (emphasis added). Similarly, the final written decision, in the event an *inter partes* review is instituted, "shall [address] the patentability of *any patent claim* challenged by the petitioner." 35 U.S.C. § 318(a) (emphasis added). In both cases, the scope of review is limited to patent claims.

The decision in *SAS Inst., Inc. v. Iancu*, 138 S. Ct. 1348, 1359–60 (2018) does not mandate a different result. In *SAS*, the Supreme Court held that a decision to institute under 35 U.S.C. § 314 may not institute on less than all claims challenged in the petition. 128 S. Ct. at 1359–60. However, as discussed above, claims 16, 17, and 21 are treated as if they never existed. Therefore, those claims are no longer claims challenged in the Petition. Accordingly, we treat claims 16, 17, and 21 as if they were never part of the '874 patent. Because those claims were never part of the '874 patent, Petitioner cannot seek *inter partes* review of those claims.[7]

[7] We note that the remaining grounds of the Petition address claims 1–15 and 18–20, which constitute all of the claims that have not been disclaimed.

B. CLAIM INTERPRETATION

In this *inter partes* review, filed May 16, 2018, a claim in an unexpired patent shall be given its broadest reasonable construction in light of the specification of the patent in which it appears. 37 C.F.R. § 42.100(b) (2016); *see also Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2142 (2016) (affirming that USPTO has statutory authority to construe claims according to 37 C.F.R. § 42.100(b)).[8] Under the broadest reasonable construction standard, claim terms are generally given their ordinary and customary meaning, as would have been understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007). Any special definition for a claim term must be set forth in the specification with reasonable clarity, deliberateness, and precision. *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). We must be careful not to read a particular embodiment appearing in the written description into the claim if the claim language is broader than the embodiment. *In re Van Geuns*, 988 F.2d 1181, 1184 (Fed. Cir. 1993).

The Petitioner does not identify terms for construction or provide any proposed constructions. *See* Pet. 13. Patent Owner asserts that the claim terms "a remote user-controllable console" and "remote user-controllable actuation console" require construction (*see* Prelim. Resp. 17–21). However, for the purposes of this Decision, we determine that no claim term

[8] The claim construction standard to be employed in an *inter partes* review has changed. *See* Changes to the Claim Construction Standard for Interpreting Claims in Trial Proceedings Before the Patent Trial and Appeal Board, 83 Fed. Reg. 51,340 (Nov. 13, 2018) (to be codified at 37 C.F.R. pt. 42). That new standard, however, applies only to proceedings in which the petition is filed on or after November 13, 2018.

needs express construction. *See Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999) ("[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.").

III. PATENTABILITY

A. ANTICIPATION BY HOOVEN – GROUND 1

Petitioner asserts that claims 1–7, 9–14, 19, and 20 are anticipated by Hooven. Pet. 13–50 (citing Exs. 1001, 1003, 1004). Patent Owner responds to Petitioner's assertions. Prelim. Resp. 23–42 (citing Exs. 1001, 1003, 1004; Pet.).

1. Overview of Hooven

Hooven is directed to an endoscopic stapling and cutting instrument 30 that includes "a sensing means which controls and/or monitors the operation of the instrument while conducting the desired step[, e.g., ligating, stapling, cutting, manipulation of the tissue,] in the procedure and provides feedback information to the surgeon." Ex. 1004, 2:54–58, 61–63. Reproduced below is Figure 1 of Hooven.

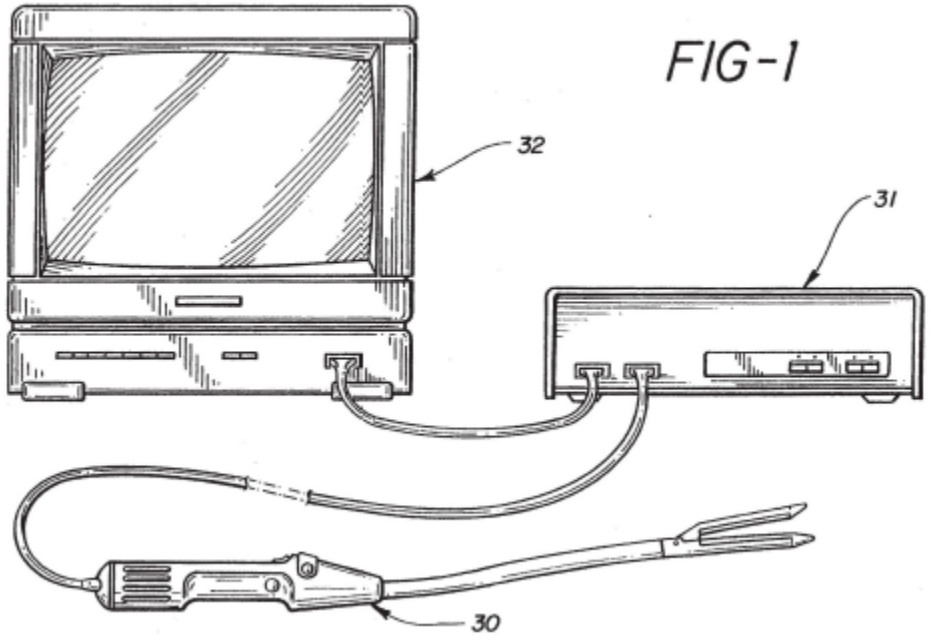


FIG. 1 illustrates is a schematic view of an endoscopic surgical system of the present invention interconnected with a microprocessor/controller and a video display screen.

Figure 1 depicts:

> endoscopic stapling and cutting instrument **30** is interconnected with a controller **31** and a video display monitor **32**. The controller includes a microprocessor, power supply, hardwired logic, sensor interface and motor drive circuits. The instrument is connected to the controller so that the controller can accept, store, manipulate, and present data. The controller may feed appropriate signals back to the instrument in order to operate the instrument.

Ex. 1004, 4:15–24; *see also id.* at 9:15–17. Hooven discloses that "[a]ll sensors, switches, and motors are connected to the controller via the interface cable **205**. This information, fed into the appropriate controller, is stored and manipulated and fed to a central processing communication system." Ex. 1004, 9:1–5.

Reproduced below is Figure 6 of Hooven.

FIG-6

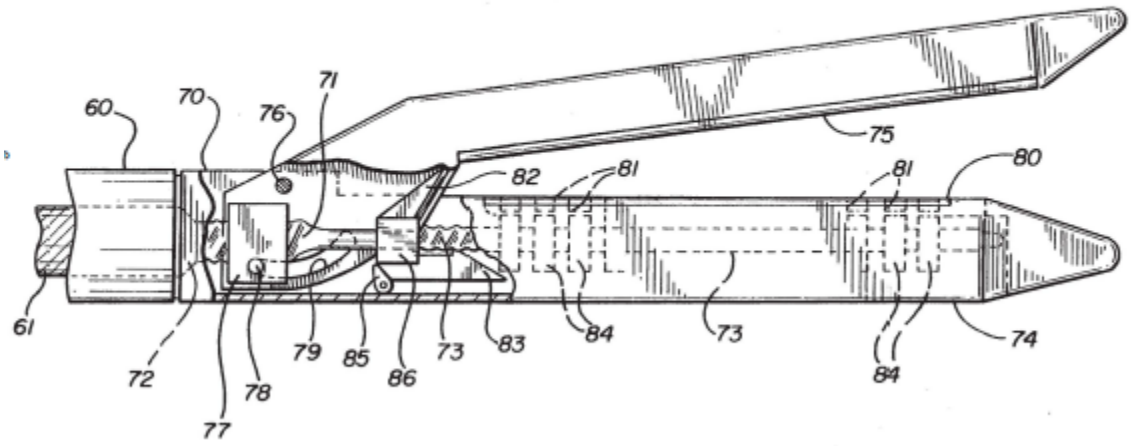


FIG. 6 depicts an enlarged longitudinal cross-sectional view of the active or business head of endoscopic stapling and cutting instrument 30.

Figure 6 illustrates:

Hooven discloses that its "head includes a staple or staple cartridge portion **74** and an anvil portion **75**. The staple portion and the anvil portion are pivotally connected [t]o each other by the anvil pivot pin **76**." Ex. 1004, 5:38–41. Hooven further discloses a knife member 82 and driving wedge member 83 which are interconnected. Ex. 1004, 6:9–19.

2. Independent claim 20[9]

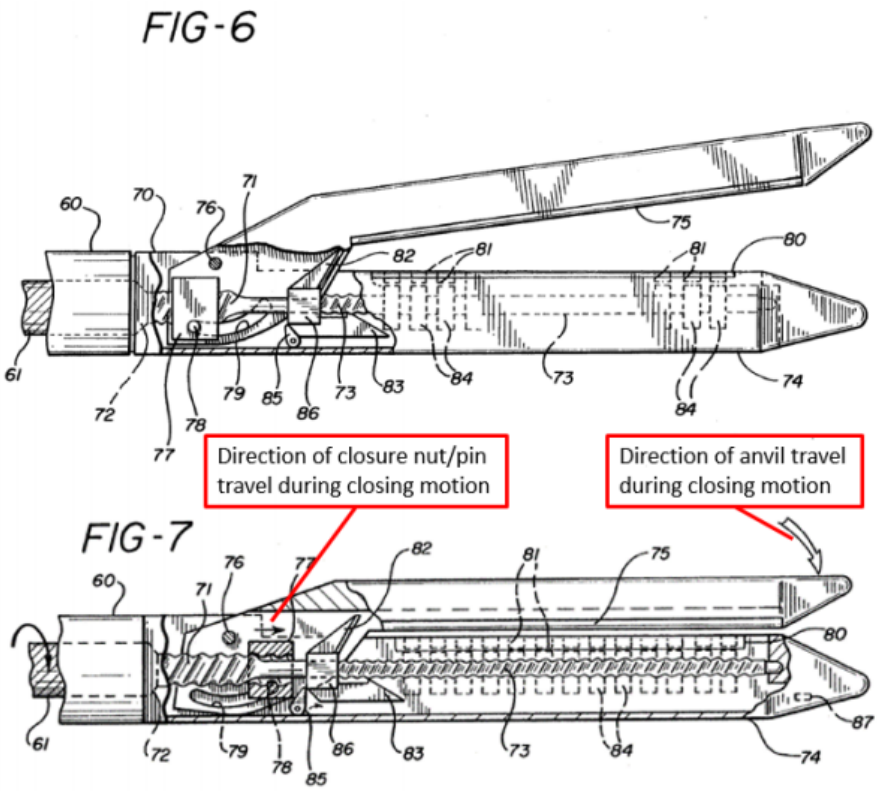
Petitioner asserts that Hooven anticipates independent claim 20 of the '874 patent. Pet. 14–24 (citing Exs. 1001, 1003, 1004). Patent Owner disagrees. Prelim. Resp. 23–31 (citing 1001, 1003, 1004; Pet.). In particular, Patent Owner asserts that Petitioner does not adequately establish

[9] We address the claims in the same order as the parties.

that Hooven discloses "an opening/closing motion and a firing motion – that are respectively applied to a jaw and a driver element of the surgical instrument," as required by independent claim 20. Prelim. Resp. 23–31; *see also id.* at 7–13. We agree with Patent Owner.

Independent claim 20 recites in part "an end effector, comprising: a first jaw [and] a second jaw." Petitioner asserts that "[t]he exemplary end effector of Hooven is the same type as the exemplary end effector in the '874 patent—namely a cutting and stapling end effector." Pet. 15 (citing Ex. 1004, 4:12–20, 4:36–42; Ex. 1003 ¶ 39; Ex. 1001, 4:9–13). Petitioner asserts that "Hooven's end effector 42 includes 'an anvil portion 75,' which is a first jaw" (Pet. 16 (citing Ex. 1004, 5:38–40, Fig. 6)) and "'a staple or staple cartridge portion 74,' which is a second jaw." Pet. 17 (citing Ex. 1004, 5:38–40, Fig. 6; Ex. 1003 ¶ 41).

Independent claim 20 further recites "wherein one of said first and second jaws is movable between an open position and a closed position relative to the other of said first and second jaws in response to a closing motion." Petitioner asserts that "Hooven's anvil 75 (i.e., the first jaw) is movable between open and closed positions relative to the staple cartridge portion 74 (i.e., the second jaw)." Pet. 17 (citing Ex. 1004, Fig. 6 (open position), Fig. 7 (closed position); Ex. 1003 ¶ 42). To support this assertion, Petitioner provides the following reproduction of Figures 6 and 7 of Hooven, annotated to identify, the "[d]irection of closure nut/pin travel during closing motion" and "[d]irection of anvil travel during closing motion." Pet. 18.



FIGS. 6 and 7, annotated, depict an enlarged longitudinal cross-sectional view of the active or business head of endoscopic stapling and cutting instrument 30. Figure 7 depicts the head in the closed position. *See* Ex. 1004, 3:37–42.

Petitioner asserts Hooven discloses that the required "closing motion":

> is in response to distal motion of closure pin 78 (*i.e.*, a closing motion) applied to the slot 79 in anvil portion 74. IS1003, ¶42; *see also* IS1004, 5:40–55 (describing the closing motion of closure pin 78), FIGs. 6–7 (above). In the opening motion of closure pin 78, "the closure nut 77[, which includes closure pin 78,] retract[s] and open[s] the anvil portion 75 of the head of the instrument." IS1004, 5:40–55, 6:40–44; *see also* IS1004, FIGs. 6–10. The proximal and distal motions of closure pin 78 are opening and closing motions, respectively, to move the jaws between open and closed positions.

Pet. 18–19 (citing Ex. 1003 ¶ 42 (modification in original)).

Independent claim 20 additionally recites that the "end effector" comprises "a driver element supported for axial travel through said end effector in response to a firing motion." Petitioner asserts that Hooven discloses "a 'firing nut 86' that forcibly propels knife 82 via threads that interact with threaded rod 71, and it is thus a driver element." Pet. 19 (citing Ex. 1004, 6:30-34; Ex. 1003 ¶¶ 43–44). Petitioner further asserts that "Hooven's firing nut 86 and knife 82 are supported on smaller diameter portion 73 of threaded rod 71 for axial travel through the surgical end effector after the anvil has been closed." Pet. 19 (citing Ex. 1003, ¶ 44; Ex. 1004 ¶ 6:30–34, Figs. 7 and 8).

Independent claim 20 still further recites "a motor-powered firing element configured to apply the firing motion to said driver element." Petitioner asserts that "[t]he smaller diameter portion 73 of Hooven's 'threaded rod 71' is a motor powered firing element that is configured to apply firing motions to the knife via the drive nut." Pet. 20 (citing Ex. 1003 ¶¶ 45–47; Ex. 1004, Fig. 7; Ex. 1001; Fig. 3, element 36).

In response, Patent Owner asserts that Petitioner has not shown sufficiently that Hooven discloses two motions, i.e., "a closing motion,"[10] and a "firing motion,"[11] as required by independent claim 20. Prelim. Resp. 23–31 (citing Exs. 1001, 1004; Pet.); *cf.* Prelim. Resp. 7–13. Patent Owner

[10] Independent claim 20 recites "wherein one of said first and second jaws is movable between an open position and a closed position relative to the other of said first and second jaws in response to a closing motion."

[11] Independent claim 20 recites further "a motor-powered firing element configured to apply the firing motion to said driver element."

asserts that "Hooven's surgical instrument only applies a single motion – the rotation of a threaded rod." Prelim. Resp. 23. We agree with Patent Owner.

Patent Owner provides (*id.* at 25) the following copy of Figure 8 of Hooven, annotated to identify, among several items, main drive shaft 48, secondary drive shaft 38, and helical screw shaft 36.

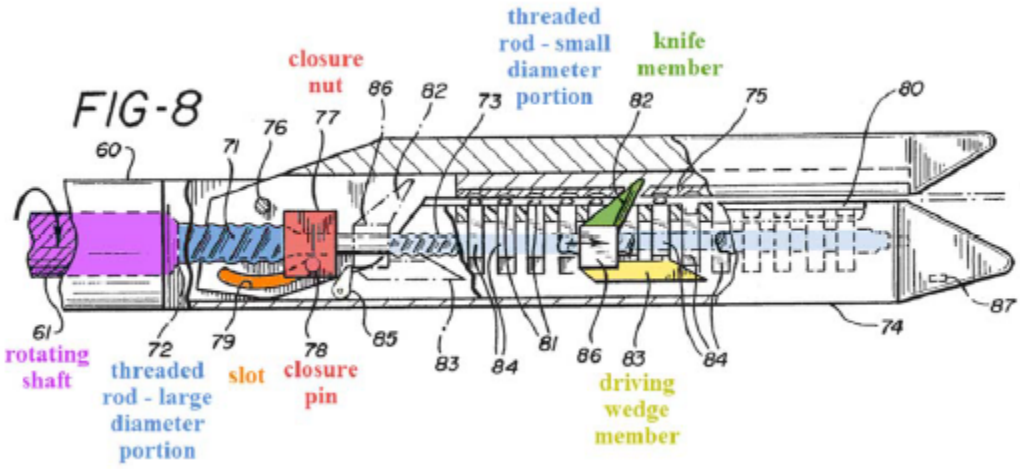


FIG. 8 is an enlarged longitudinal cross-sectional view of the head of endoscopic stapling and cutting instrument 30 with the head in the position of firing staples.

With respect to the "closing motion," Petitioner asserts that "[t]he proximal and distal motions of closure pin 78 are opening and closing motions, respectively, to move the jaws between open and closed positions." Pet. 18–19 (citing Ex. 1003 ¶ 42). And, with respect to the "firing motion," Petitioner asserts that that "[t]he smaller diameter portion 73 of Hooven's 'threaded rod 71' is a motor powered firing element that is configured to apply firing motions to the knife via the drive nut." Pet. 20 (citing Ex. 1003 ¶¶ 45–47; Ex. 1004, Fig. 7; Ex. 1001; Fig. 3, element 36). The difficulty, however, with Petitioner and their expert witness, Dr. Bryan Knodel's mapping is that both of the "motions," relied upon to address the "closing

motion" and "firing motion" in the Petition depend on the same motion, i.e., the rotation of the threaded rod. *See* Prelim. Resp. 25–26.

In taking note of that difficulty, we note that Hooven discloses "[w]hen the flexible shaft is rotated, the threaded rod is also rotated and on rotating the closure nut will move down the threaded rod and move the closure pin in the closure slot to close the anvil portion against the staple portion of the head of the instrument." Ex. 1004, 5:46–50. Similarly, Hooven discloses:

> [w]hen the anvil portion **75** is closed as shown in FIG. **7**, the closure nut **77** moves a stop member **85** forward so that the firing nut **86** on which the knife **82** and wedges **83** are disposed is moved forward and engages the threads of the smaller diameter portion **73** of the threaded rod to move forward along the rod and drive the staples **81** and cut tissue.

Ex. 1004, 6:28–34. Thus, we agree with Patent Owner that in Hooven "the rotation of the threaded rod is applied to the jaw to close the anvil portion of the end effector" and "also applied to drive the knife member and driving wedge member to cut/staple tissue." Prelim. Resp. 25 (citing Ex. 1004, 5:46–50, 6:10–15).

Patent Owner's position as to the above-noted "motion" described in Hooven is consistent with the disclosure of the '874 patent. In this regard, the '874 patent discloses, with respect to the "closing motion," that when proximate closure tube 40 moves distally it causes distal closure tube 42 to also move distally, which causes "anvil **24** to rotate about the pivot pins **25** into the clamped or closed position." Ex. 1001, 11:65–12:4; *see also* Prelim. Resp. 8–10. Conversely, when proximate closure tube 40 moves proximately, it causes distal closure tube 42 slide proximately, which subsequently causes "anvil **24** to pivot about the pivot pins **25** into the open

or unclamped position." Ex. 1001, 12:4–11; *see also* Prelim. Resp. 8–10. Patent Owner provides the following copy of Figure 5 of the '874 patent, annotated to identify, among several items, proximate closure tube, main drive shaft, distal closure tube, and end effector.

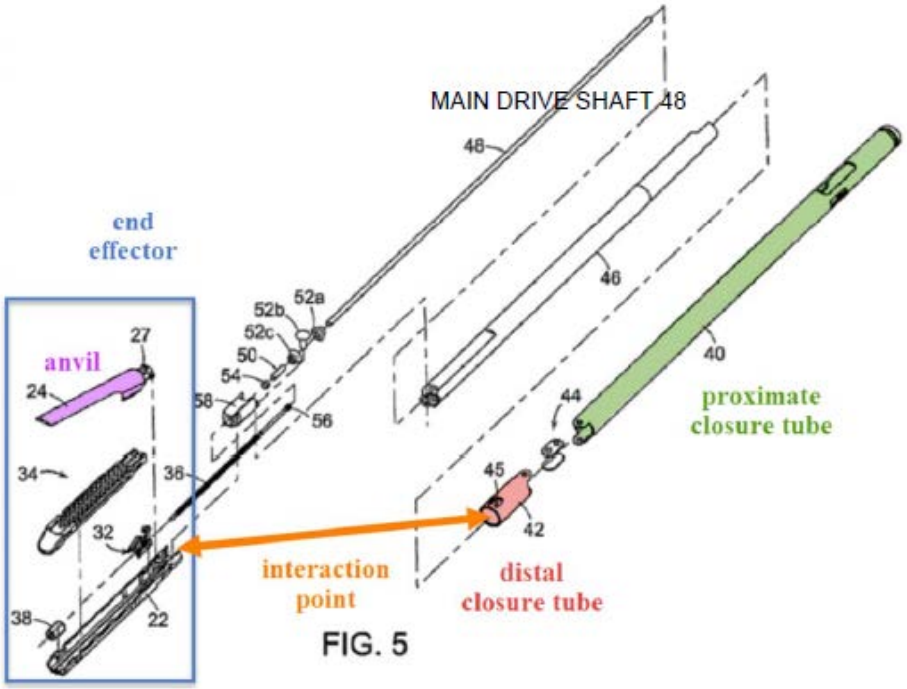


FIG. 5 is an exploded view of an end effector and shaft of the instrument according to the invention of the '874 patent.

Patent Owner's annotated Figure 5 illustrates that anvil 24, i.e., "a first jaw" (*see* Pet. 16 (citing Ex. 1004, 5:38–40, Fig. 6)) is able to close and open in response to the application of the opening/closing motion of the distal closure tube 42 in conjunction with pivot pins 25 (shown in Figure 3). *See* Prelim. Resp. 10.

With respect to the "firing motion," the '874 patent discloses that motor 65 causes main drive shaft 48 to rotate,

> bevel gear assembly **52***a-c* causes the secondary drive shaft **50** to rotate, which in turn, because of the engagement of the drive

> gears **54**, **56**, causes the helical screw shaft **36** to rotate, which causes the knife driving member **32** to travel longitudinally along the channel **22** to cut any tissue clamped within the end effector **12**.

Ex. 1001, 8:49–57; *see also* Prelim. Resp. 10–11. We note that main rotational (or proximate) drive shaft 48 communicates with secondary (or distal) drive shaft 50 via bevel gear assembly 52, and are disposed ultimately inside closure tubes 40, 42. Ex. 1001, 8:27–34. For these reasons, we agree with Patent Owner that "[u]nlike the 874 Patent, Hooven's surgical instrument only applies a single motion – the rotation of a threaded rod." Prelim. Resp. 23.

For the above reasons, we determine that Petitioner fails to show a reasonable likelihood that Hooven discloses two motions, i.e., "a closing motion" and a "firing motion," as required by independent claim 20, and therefore, has not shown a reasonable likelihood of prevailing on its assertion that Hooven anticipates independent claim 20.

3. Independent claim 9 and dependent claims 10–14

Independent claim 9 contains similar language and requirements as independent claim 20, i.e., claim 9 requires "a closing motion" and a "firing motion."[12] Petitioner performs a similar analysis for independent claim 9, and claims 10–14, which ultimately depend from independent claim 9. Pet. 24–28. Accordingly, Petitioner's assertions of anticipation by Hooven with

[12] Independent claim 9 recites "one of said first and second jaws is movable between open and closed positions relative to the other of said first and second jaws in response to opening and closing motions applied thereto" and "a motor powered firing element configured to apply said firing motions to said driver element."

respect to independent claim 9–14 are deficient for the same reasons as for independent claim 20.

4. Independent claim 1

Petitioner asserts that Hooven anticipates independent claim 1 of the '874 patent. Pet. 28–37 (citing Exs. 1001, 1003, 1004). Patent Owner disagrees. Prelim. Resp. 31–35 (citing Exs. 1001, 1003, 1004). In particular, Patent Owner asserts that Petitioner does not adequately establish that Hooven discloses an elongated shaft with "at least one articulation joint for positioning the cartridge at an angle not parallel to a longitudinal axis of said shaft," as recited by independent claim 1. Prelim. Resp. 31–35 (citing Exs. 1001, 1003, 1004); *see also id. at* 14–17. We agree with Patent Owner.

Independent claim 1 recites-in part "an elongated shaft . . . having a motor therein that is operably coupled to an actuation mechanism." Petitioner provides the following copy of Figure 3 of Hooven, annotated to identify, among several items, an elongated shaft with a motor.

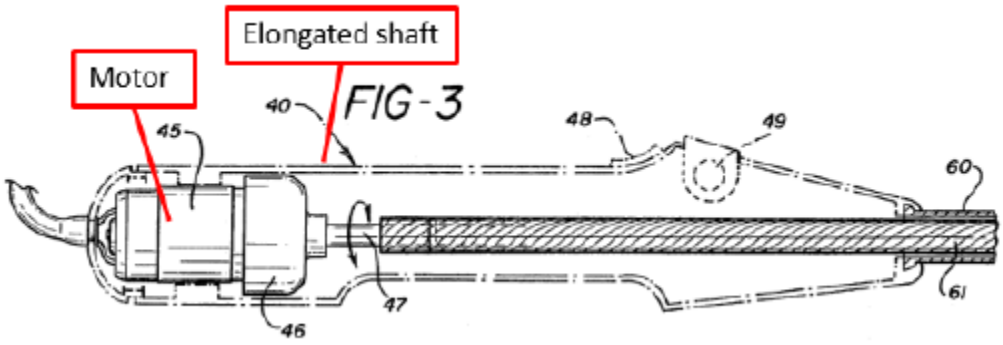


Figure 3 depicts a longitudinal cross-sectional view of the handle portion of one embodiment of Hooven's endoscopic stapling and cutting system.

Petitioner asserts that Hooven discloses an elongated shaft that includes motor 45 within handle portion 40 of Hooven's elongated shaft. Pet. 31–32 (citing Ex. 1004, Figs. 2–3; Ex. 1003 ¶ 67). Petitioner further asserts that "Hooven's motor 45 is operably coupled to the microprocessor, hardwired logic, and motor drive circuits in controller 31 via cable 205." Pet. 32–33 (citing Ex. 1004, 4:17–20, 8:40–42, 9:1–30, Figs. 1, 2, 18; Ex. 1003 ¶ 68). Petitioner still further asserts that "Hooven's motor 45 is also operably coupled to a drive shaft (i.e., shaft 47, shaft 61, and threaded rod 71), which is another actuation mechanism." Pet. 33 (citing Ex. 1004, Figs. 3, 6; Ex. 1003 ¶ 69).

Independent claim 1 further recites the "elongated shaft" has "at least one articulation joint for positioning the cartridge at an angle not parallel to a longitudinal axis of said shaft." Petitioner provides the following copy of Figure 2 of Hooven, annotated to identify, among several items, an elongated shaft with a handle portion and flexible portion.

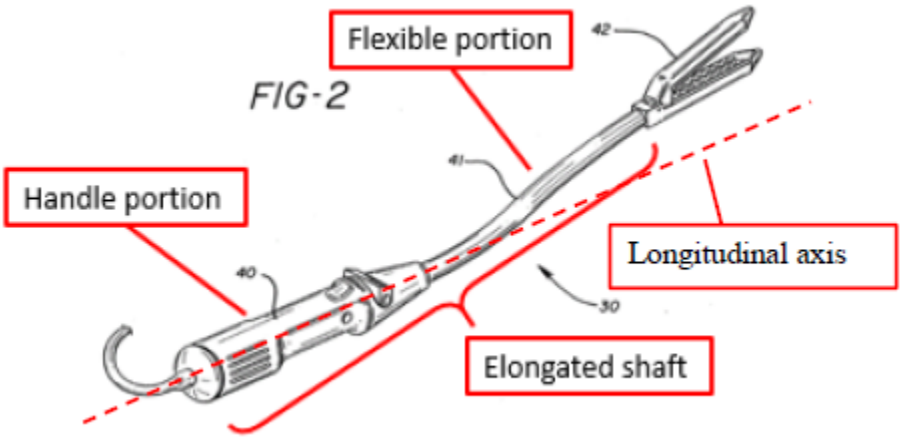
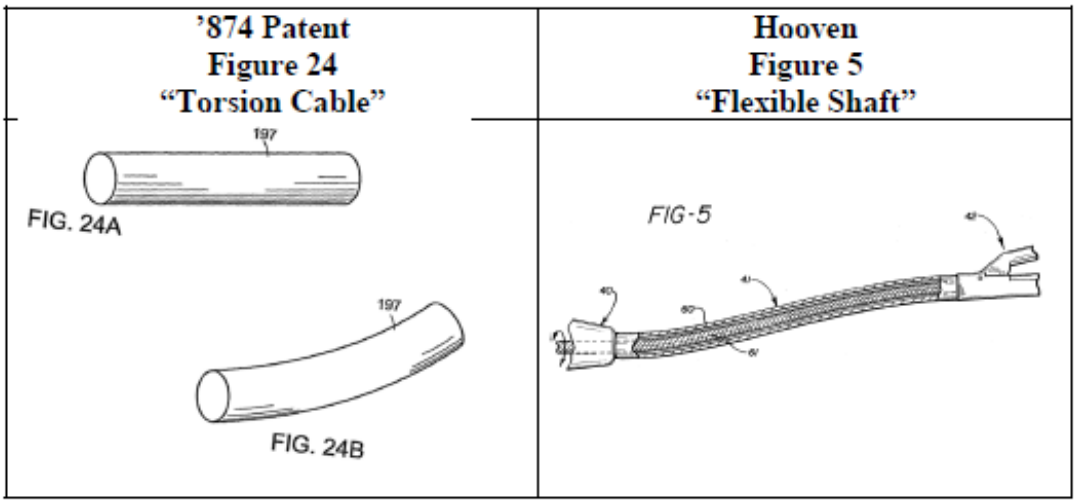


Figure 2, annotated, depicts a perspective view of Hooven's endoscopic stapling and cutting system.

Petitioner asserts that the ’874 patent discloses a “torsion cable that may be employed at the articulation point of the instrument according to various embodiments of the present invention” (Pet. 34 (citing Ex. 1001, 5:29–31)), and Hooven discloses that “[t]hrough the center of the housing there extends the rotating, axially flexible, torsionally stiff shaft 61.” Pet. 34 (citing Ex. 1004, 5:17; Ex. 1003 ¶ 71; Ex. 1001, 5:29–31).

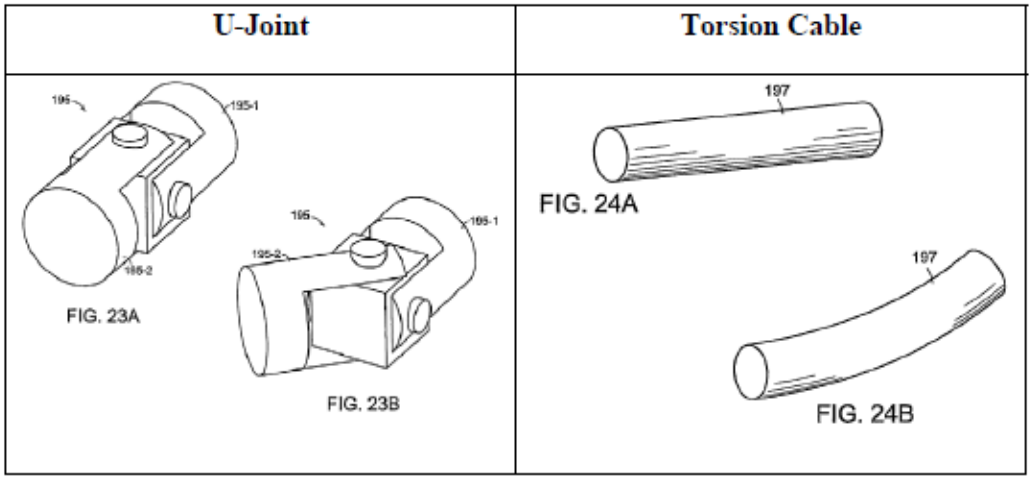
In response, Patent Owner asserts that Petitioner has not shown sufficiently that Hooven discloses an elongated shaft with “at least one articulation joint for positioning the cartridge at an angle not parallel to a longitudinal axis of said shaft,” as recited by independent claim 1. Prelim. Resp. 31–35 (citing Exs. 1001, 1003, 1004); *cf.* Prelim. Resp. 14–17. Independent claim 19 includes a similar feature. Prelim. Resp. 14–17, 31–35. Patent Owner argues that Hooven’s surgical instrument “utilizes a flexible shaft ***without*** an articulation joint.” Prelim. Resp. 32. More particularly, Patent Owner argues that “Petitioner only reaches the conclusion that Hooven’s flexible shaft is an articulation joint by mistakenly asserting that a torsion cable described in the 874 Patent is an ‘articulation joint.’” Prelim. Resp. 33.

Initially, we agree with Petitioner that the ’874 patent identifies three embodiments for providing “articulation point **14**.” *See* Pet. 34 (citing Ex. 1001. 5:29–31). In this regard, the ’874 patent discloses that “a torsion cable **197** . . . may be used in lieu of both the bevel gears **52***a-c* and the u-joint **195** to realize articulation of the end effector **12**.” Ex. 1001, 14:41–51. To support their position, Petitioner provides the following side-by-side comparison of Figure 24 of the ’874 patent with Figure 5 of Hooven.



Petitioner's graphic illustrates the "torsion cable" depicted in Figure 24 of the '874 patent next to the "flexible shaft" depicted in Figure 5 of Hooven.

The difficulty with Petitioner's position, however, is that independent claims 1 and 19 require an "articulation joint" (*see* Prelim. Resp. 33) rather than an "articulation point." We do not discern on this record that an "articulation point" reasonably is viewed the same as the "articulation point" described in the Specification, and relied upon by Petitioner. *See* Pet. 34 (citing Ex. 1001, 5:29–31). Patent Owner provides the following side-by-side comparison of Figures 23 and 24 of the '874 patent.



FIGS. 23A–B depict "a universal joint ('u-joint') that may be employed at the articulation point of the instrument" and FIGS. 24A–B depict "a torsion cable that may be employed at the articulation point of the instrument according to various embodiments of the present invention." Ex. 1001, 5:26–31.

Here, as Patent Owner points out, "the 874 Patent refers to a "u-joint," but then refers to an alternate component for realizing articulation as a "torsion cable." Prelim. Resp. 33; *see also* Prelim. Resp. 15–16 (Ex. 1001, 14:46–48). For this reason, agree with Patent Owner that the "torsion cable" disclosed in Hooven, and relied upon by Petitioner, is not the same, as the "articulation joint" required by independent claim 1.

For the above reasons, we determine that Petitioner fails to show a reasonable likelihood that Hooven discloses the "articulation joint" recited by independent claim 1, and therefore has not shown a reasonable likelihood of prevailing on its assertion that Hooven anticipates independent claim 1.

5. Dependent claims 2–7

Petitioner's assertions with respect to claims 2–7 are deficient for the same reasons as for independent claim 1, from which they each depend directly or indirectly.

6. Independent claim 19

Independent claim 19 contains similar language and requirements as independent claim 1, i.e., requires "an articulation joint." Petitioner performs a similar analysis for independent claim 19. Pet. 48–49. Accordingly, Petitioner's assertions with respect to independent claim 19 are deficient for the same reasons as for independent claim 1.

B. OBVIOUSNESS OVER HOOVEN AND KNODEL– GROUND 2

Petitioner asserts that claims 2–4, 9–15, and 18 are obvious over Hooven and Knodel. Pet. 51–67 (citing Exs. 1001, 1003, 1004, 1005). Patent Owner responds to Petitioner's assertions. Prelim. Resp. 42–44 (citing Exs. 1003, 1004; Pet.).

1. Overview of Knodel

Knodel is directed to a surgical clamping mechanism which includes at least "a frame, an elongated shaft, [and] an end effector with first and second jaws for clamping tissue." Ex. 1005, Abs. Reproduced below is Figure 1 of Knodel.

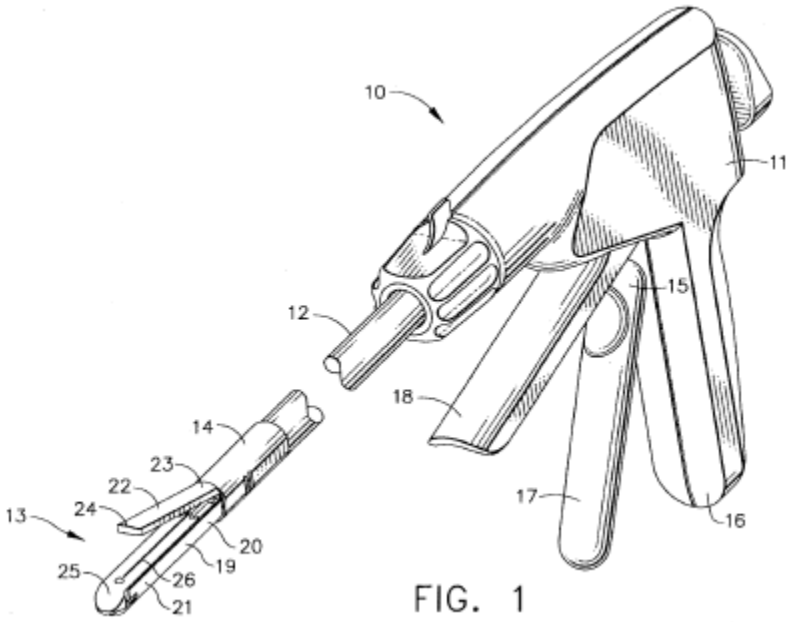


FIG. 1

FIG. 1 is a perspective view of the most preferred surgical instrument of the invention, which is an endoscopic linear cutter.

Figure 1 depicts that endoscopic linear cutter 10:

has a rigid frame **11** for gripping the instrument, an elongated shaft **12** in the form of a cylindrical tube extending from the frame, and an end effector **13** attached to the distal end **14** of the shaft. The frame has an actuator **15** which is operatively connected to the end effector for activating the clamping and firing mechanisms of the end effector. The actuator includes a palm grip handle **16**, a clamping trigger **17** and a firing trigger **18**. The end effector includes a first jaw **19** having proximal and distal ends **20** and **21**, respectively. Similarly, the end effector includes a second jaw **22** having proximal and distal ends **23** and **24**, respectively.

Ex. 1005, 6:40–53. Knodel identifies:

> [a] key feature of the clamping and grasping mechanisms of endoscopic surgical instruments is the mechanism which causes the upper or lower jaw to move from an open position for placing tissue between the jaws to a closed position for clamping that tissue. A common mechanism, particularly for endoscopic

> linear cutters, involves the use of a "camming" closure tube. This tube reciprocates back and forth. In its rearward position, the jaws are in the open position. In its forward most position, the upper jaw has pivoted to its closed position so that the anvil and cartridge are adjacent each other.

Ex. 1005, 2:13–23.

2. Claims 2–4, 9–15, and 18

Petitioner asserts that Hooven and Knodel renders obvious claims 2–4, 9–15, and 18 of the '874 patent. Pet. 51–54, 63–67 (citing Exs. 1003, 1004, 1005). Patent Owner disagrees. Prelim. Resp. 42–44, 28–31 (citing Exs. 1001, 1003, 1004; Pet.). In particular, Patent Owner asserts that Petitioner does not adequately establish that a PHOSITA would have had a reasonable expectation of success combining Hooven and Knodel. Prelim. Resp. 42–44. We agree with Patent Owner.

Petitioner relies on Hooven in combination with Knodel to address the "closure element" of independent claim 9, i.e., "***a reciprocatable closure element configured to apply said opening and closing motions to said one of said first and second jaws***" (Pet. 66 (citing Ex. 1003 ¶ 157), and dependent claims 15 and 18. Pet. 51–55 (citing Ex. 1003 ¶¶ 128, 131, 133, 135; Ex. 1005, Title, Abs., 1:4–6:5, 7:11–14, 54–56, Figs. 2, 4, 5).

Petitioner asserts that "[i]t would have been obvious in view of Knodel to modify Hooven's closure nut 77 and closure pin 78 with a hollow tubular shaft (*i.e.*, a closure tube) configured to interface with one of the first and second jaws." Pet. 51 (citing Ex. 1003 ¶ 128). Petitioner asserts that Knodel establishes that it was known in the art of endoscopic linear cutters to use "camming" closure tubes that reciprocate back and forth to cause "the upper or lower jaw [of endoscopic surgical instruments] to move from an

open position for placing tissue between the jaws to a closed position for clamping that tissue." Pet. 51–52 (citing Ex. 1005, 2:13–23). Petitioner further asserts:

> [a] POSITA would have had reason to modify the closure nut 88 and closure pin 78 of Hooven to add the closure tube of Knodel. IS1003, ¶131. ***First***, as taught by Knodel, the closure tube offers an advantage of both closing and clamping, by pushing down on the outside of the anvil. *Id*. Based on the treachings of Knodel, a POSITA would have understood that it may be desirable to use such a tube in the Hooven device to enhance closing and clamping. *Id*. ***Second***, Knodel teaches numerous benefits of the disclosed closure tube, which would have given a POSITA reason to use such a tube when designing a surgical instrument (the benefits including greater ease in clamping tissue and ability to use the entire surface of anvil for clamping). IS1005, Abstract.

Pet. 53–54. Petitioner states "using a closure tube would have been an obvious design choice, well-known to a POSITA" (Pet. 54 (citing Ex. 1003 ¶ 132) and "within a POSITA's abilities" because:

> ***[f]irst***, it would have been merely the application of a known technique (e.g., adding a closure tube) to a known system (e.g., Hooven's surgical stapler) in the same field of endeavor (i.e., surgical staplers). *Id*.; *KSR*, 550 U.S. at 417. ***Second***, in combination, each element (i.e., Knodel's closure tube and Hooven's stapler) merely performs the same function as it does separately. IS1003, ¶133. And ***third***, the combination of Hooven and Knodel proposed here would yield predictable results without significantly altering or hindering the functions performed by Hooven's device. *Id*.

Pet. 54–55.

> In response, Patent Owner argues that Petitioner:
>
> fails to explain why a POSITA would be motivated to modify the Hooven closure system and do so with a reasonable expectation of success. Indeed, the Hooven device utilizes an

> opening/closing system that is integrated with the firing system. Specifically, the closure nut is driven by a threaded rod, and the movement of the closure nut is required to initiate firing because the closure nut ultimately moves the firing nut into threaded engagement with the threaded rod. Ex. 1004 at 6:28–36. Petitioner completely fails to address the fact that utilizing a closure tube assembly would significantly alter or hinder the operation of Hooven's device.

Prelim. Resp. 44.

We are not persuaded by Petitioner's argument. Instead, we agree with Patent Owner that Petitioner's proposed modification of Hooven and Knodel would result in a substantial reconstruction of Hooven's design. *See In re Ratti*, 270 F.2d 810, 813 (CCPA 1959) (modification would require would require a substantial reconstruction and redesign of its elements as well as a change in the basic principles under which its construction was designed to operate). Here, as Patent Owner points out, Hooven's:

> device utilizes an opening/closing system that is integrated with the firing system. Specifically, the closure nut is driven by a threaded rod, and the movement of the closure nut is required to initiate firing because the closure nut ultimately moves the firing nut into threaded engagement with the threaded rod.

Prelim. Resp. 44 (citing Ex. 1004 at 6:28–36).

Petitioner contends that "a POSITA would have understood that it may be desirable to use such a tube in the Hooven device to enhance closing and clamping." Pet. 53 (citing Ex. 1003 ¶ 131); *see also id.* at 53–54 (citing Ex. 1005, Abs.). The difficulty with Petitioner's contention, however, is that Petitioner does not provide adequate reasoning as to how or why one of skill in the art would reconfigure Hooven's endoscopic stapling and cutting instrument to incorporate Knodel's closure tube assembly. More particularly, neither Petitioner nor its expert witness, Dr. Bryan Knodel,

explains how one of skill would modify Hooven's opening/closing system that is integrated with its firing system (*see* Ex. 1004, 5:46–50, 6:10–15) to incorporate Knodel's separate clamping and firing triggers. *See* Ex. 1005, 6:48–50, 59–65.

Petitioner suggests adding Knodel's closure tube to Hooven's stapler would be obvious because it is merely the application of a known technique and each element preforms the same function as it does separately. Pet. 54 (citing Ex. 1003 ¶ 133). However, it is unclear what, precisely, are the modifications that need to be made to Hooven or Knodel, or both, to result in the combination proposed by Petitioner. For example, the endoscopic linear cutter disclosed in Knodel includes a palm grip handle 16 with separate clamping trigger 17 and firing trigger 18. Ex. 1005, 6:48–50. Knodel discloses "[w]hen the clamping trigger **17** of the actuator **15** is squeezed against the palm grip handle **16**, the closure tube **12** is caused to move." Ex. 1005, 8:59–64. In contrast, Hooven's endoscopic stapling and cutting instrument comprises a single handle 40 with "a suitable on-off switch **48** and a switch **49** to control the power supply being provided by the motor." Ex. 1004, 4:60–63.

Viewing the evidence as a whole, we determine that Petitioner has not provided adequate motivation for modifying Hooven's surgical instrument with Knodel's closure tube. Instead, we agree with Patent Owner that "Petitioner completely fails to address the fact that utilizing a closure tube assembly would significantly alter or hinder the operation of Hooven's device." Prelim. Resp. 44. "Obviousness requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination." *Unigene Labs., Inc. v.*

Apotex, Inc., 655 F.3d 1352, 1360 (Fed. Cir. 2011) (citing *KSR Int'l. Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). "Rather, obviousness requires the additional showing that a person of ordinary skill at the time of the invention would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention." *Id.*

We, therefore, conclude that Petitioner has not provided adequate explanation or reasoning for the proposed combination of Hooven and Knodel. 37 C.F.R. § 42.104(b)(4),(5); *KSR*, 550 U.S. at 421. Accordingly, Petitioner has not shown a reasonable likelihood of success of prevailing on this combination.

C. OBVIOUSNESS OVER HOOVEN AND BAYS– GROUND 3

Petitioner asserts that claim 8 is obvious over Hooven and Bays. Pet. 67–70 (citing Exs. 1003, 1006). However, Petitioner's discussion of the additional limitation recited in dependent claim 8 does not remedy the deficiencies discussed above regarding the asserted anticipation of independent claim 1 with respect to Hooven. *See* Pet. 67 (stating "[c]laim 8 adds a requirement that the motor be battery powered. Hooven does not disclose batteries, but it would have been obvious to a POSITA in view of Bays to make the Hooven's motor battery powered.").

We, therefore, conclude that that Petitioner has not shown a reasonable likelihood that Petitioner would prevail on its assertion that claim 8 is obvious Hooven and Bays.

D. OBVIOUSNESS OVER HOOVEN, KNODEL, AND/OR BAYS, AND WALES– GROUND 4

Petitioner asserts that claims 1–8 and 19 are obvious over Hooven, Knodel, and/or Bays, and Wales. Pet. 70–73 (citing Exs. 1003, 1007).

Patent Owner responds to Petitioner's assertions. Prelim. Resp. 31, 35–39 (citing Exs. 1001, 1003, 1004 1007; Pet.).

1. Overview of Wales

Wales is directed to a surgical instrument which includes an end effector that can be "'articulated' or pivoted relative to the instrument shaft to facilitate desired positioning." Ex. 1007, 1:4–9. More particularly, Wales discloses an articulation assembly that comprises a four-bar linkage adapted for use with a surgical instrument which has a longitudinal axis. Ex. 1007, 2:23–27. Figure 4 of Wales is reproduced below.

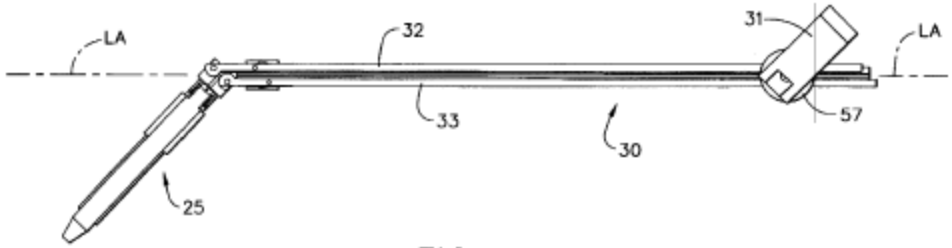


FIG. 4

FIG. 4 is a plan view of the four bar linkage of the articulation assembly for articulating the end effector of an endoscopic linear stapler.

Figure 4 of Wales depicts a four-bar linkage of an articulation assembly 30 which includes first link 31, second and third elongated links, 31 and 32, respectively, and a fourth link is end effector 25. Ex. 1007, 4:46–53. Wales discloses that the second and third links are rigid-elongated links separated by "an elongated, lateral support spider **36** which has a central channel **37** therethrough for enabling the passage of other elements and linkages through the assembly to the end effector **25** for carrying out various surgical functions." Ex. 1007, 5:11–18. Wales further discloses "[t]he fourth link in the form of the end effector has on its proximal end a pivot

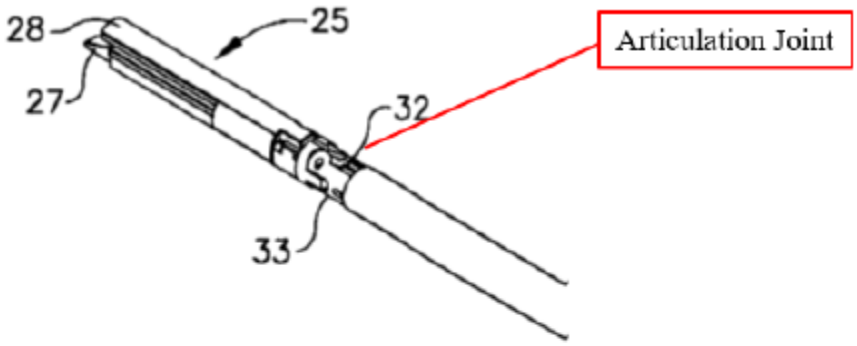
block **47**. The pivot block has a pair of pivot holes **48** which during assembly are aligned with the distal vertical holes **42** of the second and third links, **32** and **33**." Ex. 1007, 5:29–33.

1. Independent claims 1 and 19

Petitioner asserts that independent claims 1 and 19 of the '874 patent are either anticipated by Hooven or obvious over Hooven in view of Knodel. Pet. 70. Petitioner asserts, however,

> [i]f Hooven is deemed not to disclose the "articulation joint for positioning the cartridge at an angle not parallel to [the] longitudinal axis of [the] shaft" recited in claims 1 and 19, it would have been obvious in view of Wales to modify Hooven's shaft 41 to replace Hooven's flexible articulation shaft with Wales's particular "articulation joint."

Pet. 70 (citing Ex. 1003 ¶ 166; Ex. 1007, Fig. 1). To support its assertion, Petitioner provides the following reproduction of Figures 1 and 4 of Wales, annotated to identify the articulation joint described by Wales.



See also IS1007, FIG. 4:

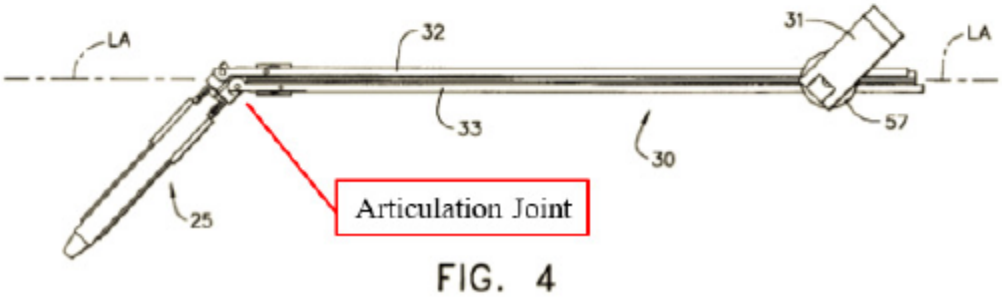


FIG. 4

FIG. 1, annotated, depicts an isometric view of an endoscopic linear stapler incorporating the preferred embodiment of an articulation assembly for articulating the end effector of the stapler. FIG. 4 is a plan view of the four bar linkage of the articulation assembly of FIG. 3 shown in an articulated position.

Petitioner asserts that a "POSITA would have been motivated to modify Hooven's elongated shaft 41 to use Wale's pivoting linkage" because Wales identifies "[o]ften, it is necessary to adjust the positioning of the end effector of a surgical instrument to properly carry out the desired procedure" (Pet. 71 (citing Ex. 1007, 1:16–21)), and Wales discloses that its pivoting linkage (1) "exhibits little or no deflection on the end effector when it is in an articulated position and it is subjected to a high load" (Pet. 71 (citing Ex. 1007, 2:11–20)); (2), allows for room in the center of the shaft (Pet. 72 (citing Ex. 1007, 2:16–19)); and (3) enables user-controlled articulation

"from a location proximal of the articulation point." Pet. 72 (citing Ex. 1003 ¶ 167).

Based on these assertions, Petitioner concludes that modifying Hooven's elongated shaft 41 to incorporate Wale's pivoting linkage would have been obvious because it is a predictable solution and an obvious design choice. Pet. 72–73 (citing Ex. 1003 ¶¶ 167–169). Petitioner further asserts that modifying Hooven's elongated shaft 41 would have been well within a POSITA's abilities because:

> it would have been merely the application of a known technique (e.g., using a pivoting linkage in an elongated shaft) to a known system (e.g., Hooven's surgical instrument 30) in the same field of endeavor (i.e., surgical staplers). IS1003, ¶170; *KSR*, 550 U.S. at 417. ***Second***, in combination, each element (i.e., Wale's pivoting linkage, Hooven's surgical instrument, Knodel's closure tube, and Bays's battery), merely performs the same function as it does separately. IS1003, ¶170. And ***third***, the combination of Hooven and Wales proposed here would have yielded predictable results without significantly altering or hindering the functions performed by Hooven's device or the devices resulting from the combination of Hooven with Knodel and/or Bays.

Pet. 73 (citing Ex. 1003 ¶ 170).

Patent Owner challenges the sufficiency of Petitioner's reasons for combining Hooven and Wales. Prelim. Resp. 31, 35–39. Patent Owner argues that "Petitioner's arguments to combine Wales with Hooven amount to nothing more than conclusory allegations because they are unsupported by any factual basis or elaboration from the accompanying declaration of Dr. Bryan Knodel." Pet. 35. Patent Owner further argues that "neither the Petition nor the accompanying declaration of Dr. Knodel argues that a POSITA would have had a reasonable expectation of success in combining

Wales' pivoting linkage with Hooven's elongated shaft – instead, Petitioner simply takes this as a given." Prelim. Resp. 37.

The legal conclusion of obviousness "cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning" for combining elements in the manner claimed. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

> To satisfy its burden of proving obviousness, a petitioner cannot employ mere conclusory statements. The petitioner must instead articulate specific reasoning, based on evidence of record, to support the legal conclusion of obviousness.

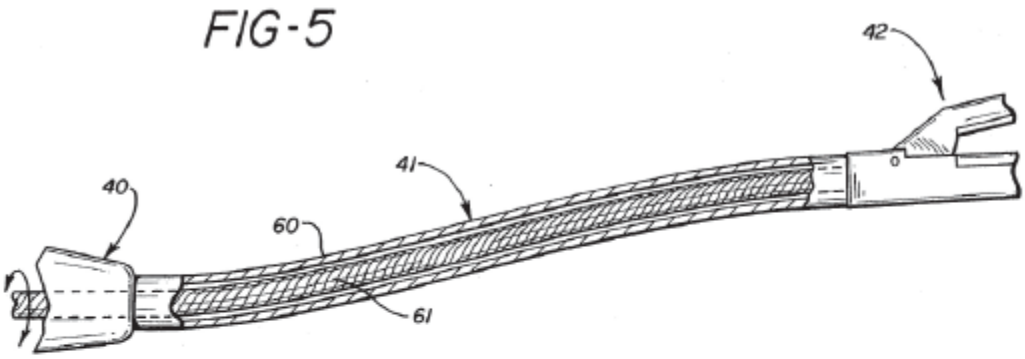
In re Magnum Oil Tools Int'l, Ltd., 829 F.3d 1364, 1380 (Fed. Cir. 2016) (citing KSR, 550 U.S. at 418)). Although the *KSR* test is flexible, we "must still be careful not to allow hindsight reconstruction of references . . . without any explanation as to how or why the references would be combined to produce the claimed invention." *TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1066 (Fed. Cir. 2016) (citation omitted).

Here, we agree with Patent Owner that Petitioner's reasoning with respect to the "articulation joint" recited by independent claims 1 and 19, and the proposed combination of Hooven and Wales is insufficient to support institution of *inter partes* review.

On this record, Petitioner's assertion that "it would have been obvious in view of Wales to modify Hooven's shaft 41 to replace Hooven's flexible articulation shaft with Wales' particular 'articulation joint"' (Pet. 70 (citing Ex. 1003 ¶ 166; Ex. 1007, Fig. 1) is not sufficient to support Petitioner's proposed combination. Petitioner takes the position that the proposed combination "would have yielded predictable results without significantly

altering or hindering the functions performed by Hooven's device" (Pet. 73 (citing Ex. 1003 ¶ 170)), however, neither Petitioner nor Dr. Knodel addresses the specific elements of Hooven and Wales that Petitioner seeks to modify and combine. *See ActiveVideo Networks, Inc. v. Verizon Commc'ns, Inc.*, 694 F.3d 1312, 1328 (Fed. Cir. 2012) (asserted motivation to combine is insufficient if it is "generic and bears no relation to any specific combination of prior art elements" and "fails to explain why a person of ordinary skill in the art would have combined elements from specific references *in the way the claimed invention does*").

Here, as Patent Owner points out, a comparison of Hooven's elongated shaft and Wales' four-bar linkage reveals just how dissimilar the two components are. Prelim. Resp. 37–39. Patent Owner provides the following side-by-side comparison of Figure 5 of Hooven's and Figure 4 of Wales.



Ex. 1001 at Fig. 5 (Hooven's flexible shaft)

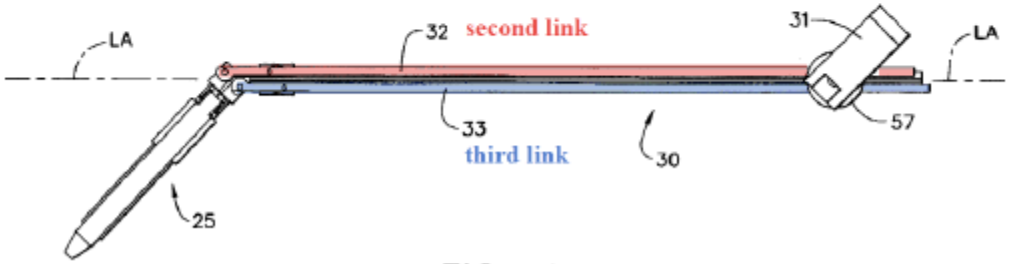


FIG. 4

FIG. 5 of Hooven depicts a longitudinal cross-sectional view of shaft housing 60, which is flexible. Ex. 1004, 3:35–36, 5:16–17. FIG. 4 of is a plan view of the four bar linkage of the articulation assembly, which depicts rigid elongated second and third links 32, 33, respectively. Ex. 1007, 3:24–26, 5:11–12.

Notably missing from the discussion in the Petition and Dr. Knodel's Declaration is a discussion as to whether the proposed combination modifies Hooven's flexible-elongated shaft 41 to utilize Wales' rigid-elongated second/third links, in conjunction with its fourth link in the form of the end effector (*see* Ex. 1007, 5:11–18, 29–33), or if the proposed combination simply modifies Hooven's flexible-elongated shaft 41 by adding an "articulation joint." *Cf.* Pet. 71 (citing Figs. 1, 4). And, while the Petition and Dr. Knodel assert that the proposed combination is simply the use of "a known technique to improve similar devices" and "would have yielded

predictable results without significantly altering or hindering the functions performed by Hooven's device" (Pet. 72–73 (citing Ex. 1003 ¶¶ 168–170)), neither Petitioner nor Dr. Knodel provides any persuasive analysis, fact-based or otherwise, to establish how the proposed combination discloses or suggests the "articulation joint" recited in independent claims 1 and 19.

Petitioner suggests that in the proposed combination, Wales' pivoting linkage and Hooven's surgical instrument "merely performs the same function as it does separately." Pet. 73 (citing Ex. 1003 ¶ 170). The difficulty with Petitioner's contention, however, is that neither Petitioner nor Dr. Knodel provides any reasoning as to how a person of skill would modify Hooven's surgical instrument to incorporate Wales' pivoting linkage. "Obviousness requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination." *Unigene Labs., Inc.*, 655 F.3d at 1360 (citing *KSR*, 550 U.S. at 418). "Rather, obviousness requires the additional showing that a person of ordinary skill at the time of the invention would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention." *Id.* Here, we conclude that Petitioner has not made that required showing on the current record.

We, therefore, conclude that Petitioner has not provided adequate explanation or reasoning for the proposed combination of Hooven, Knodel, and/or Wales. 37 C.F.R. § 42.104(b)(4),(5); *KSR*, 550 U.S. at 421. Accordingly, Petitioner has not shown a reasonable likelihood of success of prevailing on this combination.

2. Claims 2–8

Claims 2–8 depend from independent claim 1 and, therefore include the aforementioned limitation of "an articulation joint," as recited in independent claim 1. Petitioner does not raise additional arguments as to why Hooven, Wales, Knodel, and/or Bays disclose or suggest this limitation in the context of claims 2–8. *See, e.g.*, Pet. 70–73. For the same reasons discussed above, Petitioner has not demonstrated a reasonable likelihood that it would prevail in showing that claims 2–8 are unpatentable over Hooven, Wales, Knodel, and/or Bays.

IV. CONCLUSION

For the foregoing reasons, Petitioner has not demonstrated a reasonable likelihood that it would prevail with respect to any challenged claim of the '874 patent on any of the challenged grounds. Accordingly, we do not institute *inter partes* review.

V. ORDER

For the reasons given, it is:

ORDERED that the Petition is *denied*, and no trial is instituted.

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