

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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INTUITIVE SURGICAL, INC.,  
Petitioner,

v.

ETHICON LLC,  
Patent Owner.

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Case IPR2019-00880  
Patent 7,490,749 B2

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

WOOD, *Administrative Patent Judge*.

DECISION  
Granting Institution of *Inter Partes* Review  
35 U.S.C. § 314

## I. INTRODUCTION

### A. *Background*

Intuitive Surgical, Inc. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting *inter partes* review of claims 1 and 3 of U.S. Patent No. 7,490,749 B2 (Ex. 1001, “the ’749 patent”). Ethicon LLC (“Patent Owner”) did not file a Preliminary Response.

We have authority under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted “unless . . . 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 considering the Petition, we determine that Petitioner has shown a reasonable likelihood that it would prevail in showing the unpatentability of at least one of the challenged claims. Accordingly, we authorize an *inter partes* review to be instituted as to all challenged claims of the ’749 patent on all grounds raised in the Petition. Our factual findings and conclusions at this stage of the proceeding are based on the evidentiary record developed thus far (prior to Patent Owner’s Response). This is not a final decision as to patentability of the challenged claims. Any final decision will be based on the record as fully developed during trial.

### B. *Related Proceedings*

The parties state that the ’749 patent is the subject of Civil Action No. 1:18-cv-01325 filed August 27, 2018 in the U.S. District Court for the District of Delaware. Pet. 1; Paper 5, 2. Petitioner also states that it has filed other petitions for *inter partes* review of patents owned by Patent Owner and asserted against Petitioner in the District of Delaware. *Id.*

C. The '749 Patent

The '749 patent issued February 17, 2009 from an application filed March 28, 2007, and is titled "Surgical Stapling and Cutting Instrument with Manually Retractable Firing Member." Ex. 1001, at codes (45), (22), (54). The '749 patent describes a surgical stapler that applies lines of staples to tissue and cuts the tissue between the staple lines, and particularly to such staplers with manual retraction capabilities. *Id.* at 1:17–24. Figure 1, reproduced below, depicts a surgical stapler according to the '749 patent:

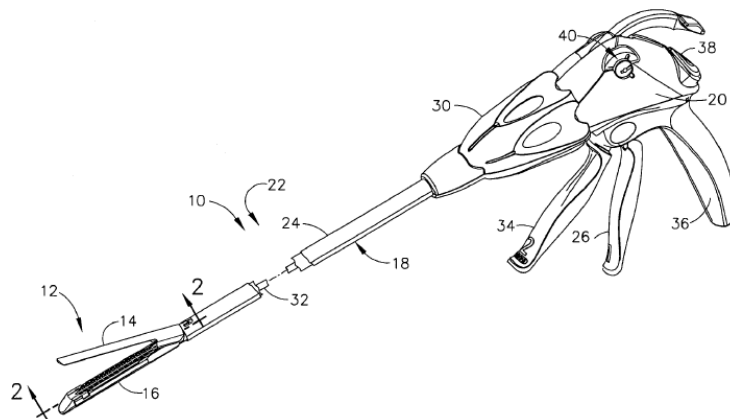


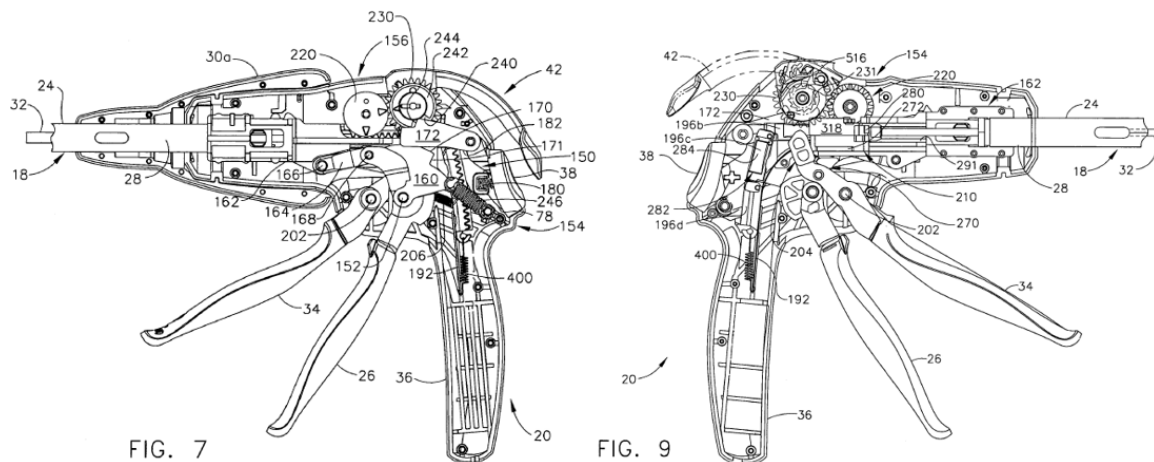
FIG. 1

Figure 1, reproduced above, depicts surgical stapling and severing instrument 10 comprising end effector 12 coupled to elongate shaft assembly 18, which in turn is coupled to handle 20. *Id.* at 5:36–43. End effector 12 comprises anvil 14 pivotally attached to elongate channel 16 to form opposing jaws for clamping tissue. *Id.* at 5:39–41. Closure tube 24 of shaft assembly 18 is coupled between closure trigger 26 and anvil 14. *Id.* at 5:60–

61. Firing rod 32<sup>1</sup> is positioned for longitudinal movement and coupled between anvil 14 and multiple-stroke firing trigger 34. *Id.* at 6:6–8.

In an endoscopic operation, a surgeon first inserts end effector 12 and shaft assembly 18 in the surgical site and positions the end effector around the tissue to be stapled and severed. The surgeon then depresses closure trigger 26 fully toward pistol grip 36 to move closure tube 24 distally to push anvil 14 pivotally toward elongate channel 16, thereby clamping the tissue between the anvil and elongate channel. *Id.* at 6:19–22, 7:20–23.

The surgeon then fires the instrument. *Id.* at 6:26–30. Figures 7 and 9, reproduced below, depict portions of the instrument's firing mechanism:

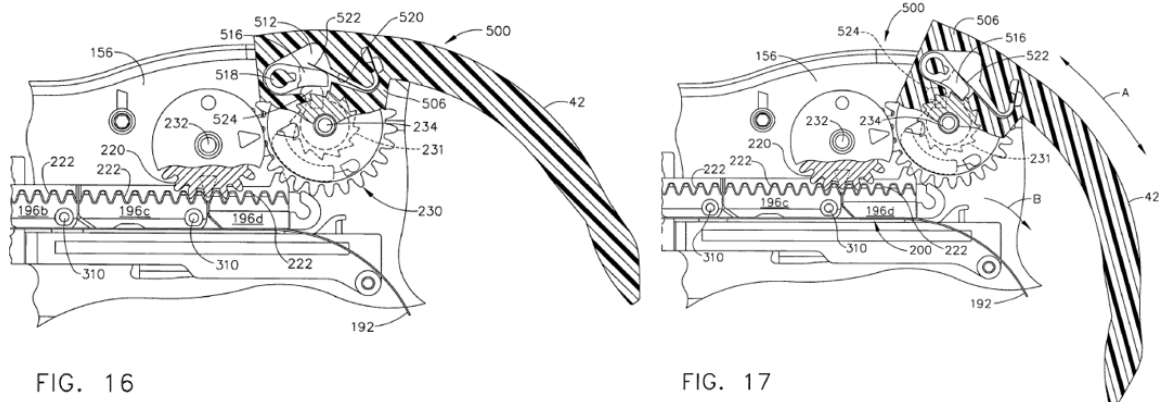


Figures 7 and 9, reproduced above, provide left and right views, respectively, of portions of linked transmission firing drive 150. Upper portion 204 of firing trigger 34 engages each of links 196a–d of linked rack 200 (shown more clearly in Figures 8 and 10) during each firing stroke depression, incrementally advancing linked rack 200 distally. *Id.* at 10:19–43. Because firing rod 32 is attached to linked rack 200, it also advances

<sup>1</sup> The '749 patent also refers to this structure as “firing bar 32.” *See, e.g.*, Ex. 1001, 12:11, 56–57.

distally, causing a wedge-shaped sled and cutting blade to simultaneously staple and cut the tissue. *Id.* at 6:26–35, 7:24–8:18.

Instrument 10 also comprises a manual retraction system that allows the surgeon to retract firing rod 32 after the firing operation. The manual retraction system is depicted in Figures 16 and 17, reproduced below:



FIGS. 16 and 17, reproduced above, depict retraction assembly 500. *Id.* at 12:9–10. First gear 220 meshes with toothed upper surface 222 of linked rack 200. *Id.* at 12:16–18. First gear 220 also engages second gear 230, which is attached to smaller right-side ratchet gear 231. Ratchet gear 231 fits into handle 42 and engages with pawl 516, which is fitted into upper recess 512 of the handle. *Id.* at 12:37–45.

After the firing sequence has been completed, the surgeon can retract firing rod 32 by sequentially depressing and releasing manual retraction lever 42. *Id.* at 12:55–59. When handle 42 is depressed, pawl 516 drives ratchet gear 231, and thus second gear 230, clockwise when viewed from the left. *Id.* at 12:59–64. This drives first gear 220 counterclockwise, which moves linked rack 200 and firing rod 32 longitudinally in the proximal direction until it is fully retracted. *Id.* at 12:64–13:6. Retraction assembly 500 generates a “sole” retraction motion because it is “configured to enable

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