



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/662,385	10/26/2012	David W. Weir	ISRG03830/US	6313
160522	7590	01/24/2020	EXAMINER	
Intuitive Surgical /Kilpatrick Townsend & Stockton Mailstop: IP Docketing - 22 1100 Peachtree Street Suite 2800 Atlanta, GA 30309			HIBBERT-COPELAND, MARY CATHERINE	
			ART UNIT	PAPER NUMBER
			3731	
			NOTIFICATION DATE	DELIVERY MODE
			01/24/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

KTSDocketing2@kilpatrick.foundationip.com
ipefiling@kilpatricktownsend.com
patent.group@intusurg.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte DAVID W. WEIR, KEVIN DURANT,
WILLIAM BURBANK, and PATRICK FLANAGAN

Appeal 2018-005829
Application 13/662,385
Technology Center 3700

Before WILLIAM A. CAPP, GEORGE R. HOSKINS, and
NATHAN A. ENGELS, *Administrative Patent Judges*.

HOSKINS, *Administrative Patent Judge*.

DECISION ON APPEAL

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1–6, 9, and 24–33 in this application.² The Board has jurisdiction over the appeal under 35 U.S.C. § 6(b).

We REVERSE.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies Intuitive Surgical Operations, Inc., as the real party in interest. Appeal Br. 3.

² Claims 7, 8, and 10–23 are canceled. See Appeal Br. 11 (Claims App.).

CLAIMED SUBJECT MATTER

Claim 1 illustrates the claimed subject matter on appeal, and it recites, with our emphases added:

1. A method of detecting whether a surgical instrument includes an unfired surgical cartridge mounted to the surgical instrument, the surgical instrument including *a drive member that is moved in a first direction to fire an unfired surgical cartridge* mounted to the surgical instrument, the method including:

generating an actuation input that is limited by a predetermined torque or force as part of an attempt to move the drive member a predetermined amount in a second direction, the second direction being opposite to the first direction;

terminating the actuation input in response to an exceedance of the predetermined torque or force;

measuring an actual movement of the drive member during the attempt to move the drive member by the predetermined amount;

detecting that the measured actual movement of the drive member is less than the predetermined amount; and

in response to detecting that the measured actual movement of the drive member is less than the predetermined amount, determining that the surgical instrument includes a surgical cartridge mounted to the surgical instrument, and that the surgical cartridge is an unfired surgical cartridge.

Appeal Br. 10 (Claims App.) (emphases added).

REJECTION ON APPEAL

Claims 1–6, 9, and 24–33 are rejected under 35 U.S.C. § 103(a) as unpatentable over Shelton³ (US 7,721,936 B2, iss. May 25, 2010) and

³ The face of this patent identifies the lead inventor’s last name as “Shalton.” However, a Certificate of Correction later changed the spelling to “Shelton.” We use the correct spelling, “Shelton.”

Whitman (US 6,849,071 B2, iss. Feb. 1, 2005). *See* Final Act. 2–9 (initially stating only claims 1, 2, 6, 24, 25, and 29 are rejected, but then analyzing all pending claims 1–6, 9, and 24–33); Appeal Br. 1, 3, 6 (acknowledging rejection applies to all pending claims).

OPINION

A. *Claims 1–6, 9, 32, and 33*

In rejecting claim 1 as having been obvious over Shelton and Whitman, the Examiner cites Shelton as disclosing, as is required by claim 1, a drive member “moved in a *first direction* to fire” a surgical cartridge, and generating an actuation input to determine that the surgical cartridge is unfired by “attempt[ing] to move the drive member . . . in a *second direction*” that is “*opposite to the first direction.*” Appeal Br. 10 (Claims App.) (emphases added); Final Act. 2–3; Ans. 3. The Examiner does not rely on Whitman as disclosing the indicated subject matter. *See* Final Act. 3–4 (citing Whitman only as disclosing “measuring an actual movement of the drive member,” as recited in claim 1).

Appellant argues Shelton does not disclose the indicated subject matter. Appeal Br. 7–8 (“In contrast to the distal movement employed in [Shelton], the method recited in claim 1 employs an attempt to retract the drive member in the proximal direction.”). As explained below, we agree with Appellant. First we summarize the Shelton disclosure at issue; second we summarize the Examiner’s findings comparing Shelton with the method of claim 1; and third we discuss why the Examiner’s findings are not supported by a preponderance of the evidence.

of the firing trigger rotates helical screw shaft 40 via main drive shaft 80 (shown in Figure 4). *Id.* at 6:60–66, 7:15–22. Cutting instrument 34 is threadedly engaged on helical screw shaft 40, so rotation of shaft 40 pushes cutting instrument 34 and sled 36 distally forward. *Id.* at 5:44–45, 7:7–15. Distal movement of sled 36 drives staples 62 upwardly out of cartridge 38 and into the clamped tissue, and distal movement of cutting instrument 34 severs the clamped tissue with cutting surface 56. *Id.* at Figs. 3A–3B, 5:67–6:9, 7:24–29.

Shelton discloses various “interlock” mechanisms, which prevent operation of the instrument “when the staple cartridge 38 is not installed in the channel 26, or when the staple cartridge 38 is installed in the channel 26 but spent.” *Id.* at 10:51–13:41. Specifically:

Operation of the interlock is twofold. First, in the absence of an unspent staple cartridge 38 within the channel 26, *the interlock operates to mechanically block distal advancement of the cutting instrument 34 through the channel 26* in response to actuation of the firing trigger 24. Using suitable electronics disposed within the handle 12, *the interlock next detects the increase in current through the motor 106 resulting from the immobilized cutting instrument 34* and consequently interrupts current to the motor 106.

Id. at 10:55–63. Shelton accordingly discloses various “blocking mechanism[s] to prevent actuation of the cutting instrument 34” (*id.* at 11:5–8), all of which operate to block *distal* movement of cutting instrument 34 when cartridge 38 is not installed in channel 26 or when an installed but spent cartridge 38 is installed in channel 26. *Id.* at 11:39–12:9 (spring fingers 198 block *distal* movement of cutting instrument 34), 12:10–51 (ramped ends 206 of hooks 204 block *distal* movement of cutting

instrument 34), 12:52–13:33 (blocking members 218 block *distal* movement of cutting instrument 34).

2. *The Examiner's Findings*

The Examiner cites Shelton as disclosing a method of detecting whether a surgical instrument includes an unfired staple cartridge, including “a drive member (80) that is moved in a first direction to fire” the staple cartridge. Final Act. 2–3. The Examiner finds Shelton discloses “an interlock to prevent firing when a [staple] cartridge is absent or spent using a blocking mechanism in cooperation with current and position sensors.” *Id.* (citing Shelton, col. 11). The Examiner also finds Shelton’s method includes “generating an actuation input . . . as part of an attempt to move the drive member . . . a predetermined amount in a second direction . . . being opposite to the first direction (retraction of the drive member 80).” *Id.* at 3 (citing Shelton, 14:24–41, 14:50–65). According to the Examiner, Shelton “teaches moving a drive member a second direction different than the first when the drive member is retracted due to the status of the cartridge whether or not the cartridge is unfired or spent.” Ans. 3.

3. *Analysis*

The Examiner cites Shelton’s drive shaft 80 as corresponding to the drive member of claim 1. Final Act. 2–3. As discussed in more detail above, Shelton fires staple cartridge 38 by rotating drive shaft 80 in the direction (clockwise or counterclockwise) that moves cutting instrument 34 in the distal direction of Shelton’s instrument (hereafter “distal rotation direction”). *See* Shelton, Fig. 3A, 5:67–6:9, 6:60–66, 7:7–29. Therefore, the

first direction of claim 1 corresponds to the distal rotation direction in Shelton.

The second direction of claim 1 is defined as being opposite to the first direction. Therefore, the second direction corresponds to the proximal rotation direction in Shelton — i.e., the rotational direction (clockwise or counterclockwise) of drive shaft 80 that moves cutting instrument 34 in the proximal direction of Shelton’s instrument.

Claim 1 requires generating an actuation input by attempting to move the drive member in the second, proximal rotation direction in Shelton. As discussed in more detail above, Shelton instead discloses generating an actuation input by attempting to move the drive member in the first, distal rotation direction. *See* Shelton, 10:51–13:41, 14:24–41, 14:50–65. Because the Examiner’s reliance on Shelton in this regard is therefore in error, we do not sustain the rejection of claim 1, or claims 2–6, 9, 32, and 33 depending from claim 1, as having been obvious over Shelton and Whitman.

B. Claims 24–31

Independent claim 24, similarly to claim 1 discussed above, recites a drive member “moved in a *first direction* to fire,” a surgical cartridge, and commanding an actuator “to generate a movement of the drive member in a *second direction*” that is “*opposite to the first direction*,” to determine that the surgical cartridge is unfired. Appeal Br. 11 (Claims App.) (emphases added). For the reasons provided above, we determine the Examiner errs in finding Shelton discloses this claimed subject matter. *See* Final Act. 6–7. We therefore do not sustain the rejection of claim 24, or claims 25–31

Appeal 2018-005829
Application 13/662,385

depending from claim 24, as having been obvious over Shelton and Whitman.

CONCLUSION

In summary:

Claims Rejected	35 U.S.C. §	References	Affirmed	Reversed
1-6, 9, 24-33	103	Shelton, Whitman		1-6, 9, 24-33

REVERSED