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.
11/053,531	02/08/2005	Nathan Jon Schara	02580-P0260B	9310

24126 7590 02/04/2013
ST. ONGE STEWARD JOHNSTON & REENS, LLC
986 BEDFORD STREET
STAMFORD, CT 06905-5619

EXAMINER
NIA, ALIREZA

ART UNIT	PAPER NUMBER
3779	

NOTIFICATION DATE	DELIVERY MODE
02/04/2013	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):

patentpto@ssjr.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte NATHAN JON SCHARA,
HANS DAVID HOEG, and ERIC LAWRENCE HALE

Appeal 2011-002308
Application 11/053,531
Technology Center 3700

Before GAY ANN SPAHN, WILLIAM V. SAINDON, and
REMY J. VANOPHEM, *Administrative Patent Judges*.

SPAHN, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Nathan Jon Schara et al. (Appellants) seek our review under 35 U.S.C. § 134 of the Examiner's rejection of claims 1-15 and 17-25. Appellants cancelled claim 16. An oral hearing was held on January 24, 2013. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

The Claimed Subject Matter

The claimed subject matter relates to "endoscopes (including devices such as borescopes, fiberscopes, etc.) in which the rotational orientation of the endoscopic image is presented in its actual relationship to the viewer's reference frame." Spec. 1, para. [04]. Claims 1, 8, 17, and 25 are independent and claim 1, reproduced below, with emphasis added, is illustrative of the subject matter on appeal.

> 1. A system for orienting an endoscopic image, comprising an endoscope having a longitudinal axis, a view vector angularly offset from said longitudinal axis, a rotation pick-up device, and an image rotator responsive to said rotation pick-up device, *wherein said rotation pick-up device is arranged for measuring rotations about an axis which is generally parallel to said view vector*.

Similar to claim 1, each of independent claims 8, 17, and 25 is also directed to a system for orienting an endoscopic image. Claim 8 includes, *inter alia*, a rotation pick-up device that "is arranged for measuring rotations about an axis which remains generally parallel to said view vector as the angle at which the view vector is angularly offset from said longitudinal axis changes." Claim 17 includes, *inter alia*, "a rotation pick-up device that measures rotations about a measurement axis angularly offset from said longitudinal axis at the same angle as said view vector . . . , wherein said measurement axis remains generally parallel to said view vector as the angle of said view vector relative to said longitudinal axis varies." Claim 25 includes, *inter alia*, a rotation pick-up device and recites the same claim language as emphasized in the quotation of claim 1 *supra*.

The Rejections

The following Examiner's rejections are before us for review:

I. claims 1-15 and 17-25 under 35 U.S.C. § 103(a) as unpatentable over Green (US 6,471,637 B1, issued Oct. 29, 2002) and Cho (US 4,802,461, issued Feb. 7, 1989); and

II. claims 1-15 and 17-25 under 35 U.S.C. § 103(a) as unpatentable over Hale (US 2002/0099263 A1, published Jul. 25, 2002) and Green.

OPINION

Rejection I – Obviousness based on Green and Cho

The Examiner finds that Green substantially discloses the subject matter of independent claims 1, 8, 17, and 25, but fails to disclose "a view vector angularly offset from said longitudinal axis." Ans. 3. To cure the deficiency of Green, the Examiner turns to Cho to teach an endoscope "having a longitudinal axis 23 and a distal tip 29 containing [a] lens assembly producing a view vector angularly offset (90 degrees) from the longitudinal axis," and wherein the distal tip 29 is a flexible distal tip "that is deflectable 180 degrees to one side of the longitudinal axis and which can be flexed through 360 degrees and provide any necessary angle of view, facilitating a wider view angle while allowing the endoscope to readily follow curves of body canals." Ans. 3-4 (citing Cho, col. 2, ll. 39-45, col. 3, ll. 30-36, and col. 5, ll. 7-15). The Examiner concludes that it would have been obvious to one of ordinary skill in the art to modify Green to include a flexible distal tip as taught by Cho in order to provide an improved endoscope system (i.e., ureteroscope) "which is rigid enough to provide both

axial and rotational translation along its length to be easily maneuvered into a ureter and has a user deflectable tip which enables a wider view angle and readily follows curves of body canals to provide atraumatic operation." Ans. 4.

Appellants argue that the combination of Green and Cho "does not disclose or suggest a system with a rotation pick-up device that measures rotations about *an axis generally parallel to the view vector that is angularly offset from the longitudinal axis*." App. Br. 5. With respect to Green's Figure 3 embodiment which appears to disclose physical rotation of the image sensor (Green, col. 3, ll. 16-17), Appellants argue that Green's accelerometers 40, 42 measure rotation about the longitudinal axis 32 which is parallel to the laterally offset optical axis and thus, even if Cho's flexible distal tip 29 were incorporated in Green's endoscope 28, the resulting endoscope "would still not have a rotation pick-up device 'measuring rotations about an axis which is generally parallel to said view vector.'" App. Br. 8.

We are persuaded by Appellants' arguments. Green relates to video displays of images obtained from an endoscope, wherein "[i]nertial sensors, such as accelerometers . . ., are employed to provide a signal proportional to the angular rotation of the endoscope" and a "compensating rotational signal is used to re-orient the received image" so that the video display image is displayed correctly for the surgeon's frame of reference. Green, col. 1, ll. 12-13, col. 3, ll. 9-14, and col. 4, ll. 42-48. In the Figure 3 embodiment, Green discloses an endoscope having a y-sensor 40 and a z-sensor 42 each of which is an accelerometer and the "two accelerometers are used to determine angular rotation of image sensor **30** about its optical z-axis **32**."

Green, col. 5, ll. 27-41 and Figs. 2A, 2B, and 3. However, as stated by Appellants in the Specification, Green's solution to correcting image orientation "compensate[s] only for roll about the longitudinal axis and provide[s] a rotationally corrected image for axial viewing endoscopes." Spec. 3, para. [13]; *see also* Green, col. 4, l. 41 – col. 5, l. 38.

With respect to Green's Figure 3 embodiment, Green discloses that "[a] first inertial sensor **40** [is] for sensing rotation of the camera around the y-axis" and "a second inertial sensor **42** [is] for sensing rotation of the camera around the z-axis **32**." Green, col. 6, ll. 22-25. The "sensors **40** and **42** are in a fixed spatial relationship and rotate with image sensor **30**." Green, col. 6, ll. 26-27. Thus, if the distal tip of Green's endoscope were modified to be flexible by the teaching of Cho in order to change the angularity of the view vector, we agree with Appellants that Green's rotation pick-up device (accelerometers 40, 42) would not be arranged to be capable of measuring rotations about an axis which is generally parallel to the view vector because Green's accelerometers 40, 42 measure rotations around the y-axis and the z-axis, respectively, but not at an angle with respect to the z-axis. With respect to Green's Figure 5 embodiment, if the distal tip of Green's endoscope were modified to be flexible by the teaching of Cho in order to change the angularity of the view vector, we agree with Appellants that Green's rotation pick-up device would not be arranged to be capable of measuring rotations about an axis which is generally parallel to the view vector because Green discloses that "the optical image is rotated before reaching the image sensor **304**," and "the optical image is rotated rather than the image sensor, to accommodate angular rotation of the endoscope about its optical axis." Green, col. 7, ll.50-53.

Accordingly, we do not sustain the Examiner's rejection of claims 1-15 and 17-25 under 35 U.S.C. § 103(a) as unpatentable over Green and Cho.

Rejection II – Obviousness based on Hale and Green

Although Appellants provide separate subheadings for independent claim 1 (App. Br. 12), dependent claims 2-7 (App. Br. 19), independent claim 8 (App. Br. 19), dependent claims 9-15 (App. Br. 20), independent claim 17 (App. Br. 20), dependent claims 18-24 (App. Br. 21), and independent claim 25 (App. Br. 21), Appellants rely on the arguments set forth for claim 1 for claims 2-25. Thus, Appellants in essence argue claims 1-15 and 17-25 as a group and we select independent claim 1 as the representative claim, with claims 2-15 and 17-25 falling with claim 1. *See* 37 C.F.R. § 41.37(c)(1)(vii) (2011).

The Examiner finds that Hale substantially discloses the subject matter of independent claim 1, except that Hale fails to disclose "an image rotator responsive to said rotation pick-up device." Ans. 9. To cure the deficiency of Hale, the Examiner turns to Green to teach an image rotator 30, 504 responsive to a rotation pick-up device 40, 42, 505. *Id* (citing Green, col. 4, ll. 64-67, col. 5, ll. 1-15 and 32-35, col. 6, ll. 11-46, col. 8, ll. 60-67, and col. 9, ll. 1-9). The Examiner concludes that it would have been obvious to one of ordinary skill in the art to modify the endoscope system of Hale by including an image rotator which is responsive to a rotation pick-up device as taught by Green "in order to have provided an improved endoscope system which is capable of compensating for the rotation of the endoscope view vector, producing a displayed image that does not rotate as the surgeon rotations the endoscope view vector during surgery." Ans. 10.

Appellants argue that "Hale does not disclose a system for orienting an endoscope image." App. Br. 13. However, the Examiner finds that Green discloses an image rotator 30, 504 responsive to rotation pick-up devices 40, 42, 505 in a system for orienting an endoscope image of a similar endoscope. Ans. 9. Thus, it appears that the Examiner is relying upon Green, not Hale, to teach this aspect of the invention.

Appellants also argue that Hale does not disclose "a 'rotation pick-up device 84, 108, wherein said rotation pick-up device 84, 108 is arranged for measuring rotations about an axis 14 which is generally parallel to said vector 22.'" App. Br. 14. We are not persuaded by Appellants' argument because Appellants are merely arguing the claim language and have not explained why the first sensor 84 and the first encoder 108 cannot be considered to constitute a rotation pick-up device. *See In re Lovin*, 652 F.3d 1349 (Fed. Cir. 2011) (Statements baldly submitting that the limitations are not present in the prior art are not persuasive as to error on the part of the Examiner when the Examiner has specified portions of the prior art to describe those limitations). Nor have Appellants explained why the Examiner's finding that Hale is capable of performing the recited intended use of being arranged "for measuring rotations about an axis which is generally parallel to said view vector" is in error.

Appellants also argue that "Hale's working vector 22, which rotates about its axis 14, teaches away from the use of an image rotator," because "[i]f a user of Hale rotates the working vector 22 by rotating handle 12, there would be no reason for Green's image rotator to further rotate the image," and "it must be presumed that the purposeful rotation of the view vector is the image that the user wants to see." App. Br. 18. This argument is not

persuasive because in order to "teach away" a reference must "criticize, discredit, or otherwise discourage the solution claimed …." *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004). As Hale does not criticize, discredit, or otherwise discourage the use of an image rotator, we are not convinced that the Examiner erred. Indeed, we do not agree with Appellants' presumption that because the user has rotated the view vector, the user would have no use for an image rotator.

Finally, Appellants also argue the "[e]ven if combined, the combination would render Green's image rotator inoperable for its intended purpose 'of compensating for the rotation of the endoscope view vector.'" App. Br. 18. We are not persuaded that modifying Hale to include the image rotator 30, 504 responsive to the rotation pick-up devices 40, 42, 505 of Green would render Green's image rotator inoperable for its intended purpose. To the contrary, as it is Hale being modified, not Green, we are not apprised of Examiner error by Appellants' argument.

Accordingly, we sustain the Examiner's rejection of claims 1-15 and 17-25 under 35 U.S.C. § 103(a) as unpatentable over Hale and Green.

DECISION

We reverse the Examiner's rejection of claims 1-15 and 17-25 under 35 U.S.C. § 103(a) as unpatentable over Green and Cho.

We affirm the Examiner's rejection of claims 1-15 and 17-25 under 35 U.S.C. § 103(a) as unpatentable over Hale and Green.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

mls