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marianne.fox@philips.com
debbie.henn@philips.com
patti.demichele@Philips.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte NEIL DAVID GLOSSOP

Appeal 2015-000326
Application 11/508,835
Technology Center 3700

Before DONALD E. ADAMS, JEFFREY N. FREDMAN, and
TIMOTHY G. MAJORS, *Administrative Patent Judges*.

PER CURIAM

DECISION ON APPEAL¹

This is an appeal under 35 U.S.C. § 134 involving claims 1 and 3–22 (App. Br. 9). Examiner entered rejections under 35 U.S.C. § 103(a). We have jurisdiction under 35 U.S.C. § 6(b).

We REVERSE.

STATEMENT OF THE CASE

Appellant’s “invention relates to methods and apparatus for assisting navigated flexible endoscopy” (Spec. ¶ 2), in which “rather than a calculated centerline, the ‘most likely path’ of the passage of a flexible endoscope or

¹ Appellant identifies the Real Party in Interest as Koninklijke Philips N.V. (App. Br. 2).

other flexible instrument is calculated using the one or more pre-operative images” (Spec. ¶ 17). Independent claim 1 is representative and reproduced in the Claims Appendix of Appellant’s Appeal Brief.

Claims 1, 3–6, 9–12, 14, 17–19, and 22 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Ferre,² Shahidi,³ and Wan.⁴

Claims 7 and 8 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Ferre, Shahidi, Wan, and Kaufman.⁵

Claim 13 stands rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Ferre, Shahidi, Wan, and Galloway.⁶

Claims 15 and 16 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Ferre, Shahidi, Wan, and Gronningsaeter.⁷

Claims 20 and 21 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Ferre, Gronningsaeter, and Wan.

ISSUE

Does the preponderance of evidence relied upon by Examiner support a conclusion of obviousness?

² Ferre et al., US 5,800,352, issued Sept. 1, 1998.

³ Shahidi, US 6,529,758 B2, issued Mar. 4, 2003.

⁴ Wan et al., *Automatic Centerline Extraction for Virtual Colonoscopy*, 21 IEEE TRANSACTIONS ON MEDICAL IMAGING 12:1450–1460 (2002).

⁵ Kaufman et al., US 2001/0031920 A1, published Oct. 18, 2001.

⁶ Galloway, Jr. et al., US 6,584,339 B2, issued June 24, 2003.

⁷ Gronningsaeter et al., US 6,019,724, issued Feb. 1, 2000.

FACTUAL FINDINGS (FF)

FF 1. Appellant's Specification discloses

In some instances, the most likely path of an endoscope may include points that intersect the walls of any conduit-like anatomy in the anatomical region (e.g., the endoscope may collide with the walls of the colon), rather than points that follow a centerline path through the anatomy. Using mathematical predictive techniques, this “most likely path” of an endoscope/instrument can be calculated. In some embodiments, determination of the most likely path uses a predictive collision detection system that predicts the endoscope locations touching the walls of channel-like anatomy such as, for example, at locations with sharp curvature (e.g., the junction between the ascending-transverse and transverse-descending colon).

(Spec. ¶ 17.)

FF 2. Appellant's Figure 3 is reproduced below:

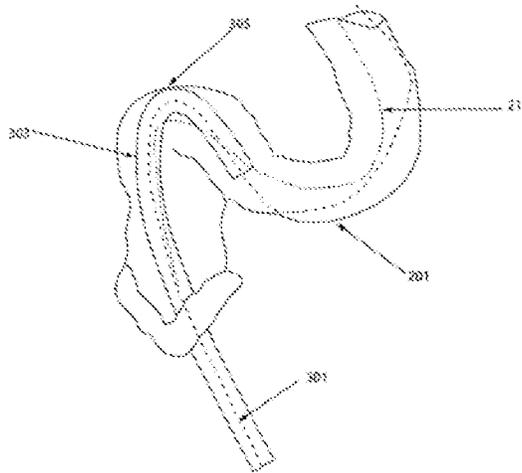


Fig. 3

Figure 3 shows

a portion of colon 201, wherein a predicted “most likely path” of an endoscope is indicated as path 301. An endoscope 303 is

shown along part of most likely path 301. Endoscope 303, as illustrated, collides with the wall of colon 201 at location 305. Rather than follow the path of centerline 211, endoscope 303 is most likely to follow path 301.

(Spec. ¶ 60.)

FF 3. Wan suggests

The centerline should stay away from the colon wall as much as possible. This requirement guarantees that the centerline is not only an accurately centered object shape descriptor, but also a safe navigation guide that prevents the navigator from penetrating the colon wall (i.e., always stays inside the colon lumen) and hugging the corners at sharp turns.

(Wan 1451, left col.; *see also* Ans. 4, 13.)

ANALYSIS

The combination of Ferre, Shahidi, and Wan:

Each of Appellant's independent claims 1 and 22 requires, *inter alia*, calculating "coordinates of a predicted path in a first preoperative frame of reference corresponding to the one or more preoperative images based on predicted collisions with interior walls of a conduit within the anatomy of the patient in the first preoperative frame of reference" (*see* Appellant's claims 1 and 22).

Examiner finds that "Ferre et al[.] disclose a method utilizing a computing device in an image-guided medical procedure for indicating on a display controlled by the computing device relative locations of a medical

instrument and one or more items of interest within an anatomy of a patient”
(Ans. 3; *see also* Ans. 8). Examiner acknowledges that

Ferre et al[.] do not explicitly disclose calculating coordinates of a predicted path in a first preoperative frame of reference corresponding to the one or more preoperative images based on predicted collisions with interior walls of a conduit within the anatomy of the patient in the first preoperative frame of reference.

(*Id.* at 4; *see also id.* at 8.)

Examiner turns to Wan and asserts that “Wan et al[.] teach that a predicted path is determined by calculating coordinates of a predicted path based on the premise of establishing a centerline within a lumen which avoids collision with lumen walls (p.[]1451, ‘Centricity’)” (*Id.* at 4, *see also id.* at 8–9).

We are not persuaded. “[C]laims in an application are to be given their broadest reasonable interpretation consistent with the specification and that claim language should be read in light of the specification as it would be interpreted by one of ordinary skill in the art.” *In re Sneed*, 710 F.2d 1544, 1548 (Fed. Cir. 1983). “The protocol of giving claims their broadest reasonable interpretation during examination does not include giving claims a legally incorrect interpretation.” *In re Skvorecz*, 580 F.3d 1262, 1267 (Fed. Cir. 2009).

Appellant’s Specification differentiates between a centerline path and a “most likely path” or a predicted path in which an instrument collides with the walls of a conduit (FF 1–2). Accordingly, we agree with Appellant that

[i]n Wan on page 1451 in a section titled “Centricity” cited by the Final Office Action, Wan makes clear that (emphasis added) “Centricity. The centerline should stay away from the colon wall as much as possible” which is in sharp contrast from the claims recitation that this section is cited for showing.

(App. Br. 11; *see also* FF 3, Reply Br. 4–5.) As Appellant explains,

the centerline approach of Wan does not teach, disclose or suggest, (illustrative emphasis added) “calculating coordinates of a predicted path in a first preoperative frame of reference corresponding to the one or more preoperative images based on predicted collisions with interior walls of a conduit within the anatomy of the patient in the first preoperative frame of reference[.]”

(App. Br. 11; *see also* Reply Br. 4–5.)

The combination of Ferre, Shahidi, Wan, and Kaufman:

Based on the combination of Ferre, Shahidi, Wan, and Kaufman, Examiner concludes that, at the time Appellant’s invention was made, it would have been obvious to “apply the colonoscope of Kaufman et al[.] to the procedure of Ferre et al[.] in conjunction with Shahidi and Wan et al[.], as to provide a means for colonoscopic examination” (Ans. 9). Examiner, however, failed to establish that Kaufman makes up for the deficiency in the combination of Ferre, Shahidi, and Wan as discussed above.

The combination of Ferre, Shahidi, Wan, and Galloway:

Based on the combination of Ferre, Shahidi, Wan, and Galloway, Examiner concludes that, at the time Appellant's invention was made, it would have been obvious to "apply the algorithm of Galloway, Jr. to the procedure of Ferre et al[.] in conjunction with Shahidi and Wan et al[.], as to provide an algorithm for registering images" (*id.* at 10). Examiner, however, failed to establish that Galloway makes up for the deficiency in the combination of Ferre, Shahidi, and Wan as discussed above.

The combination of Ferre, Shahidi, Wan, and Gronningsaeter:

Based on the combination of Ferre, Shahidi, Wan, and Gronningsaeter, Examiner concludes that, at the time Appellant's invention was made, it would have been obvious to "apply the tracking and registration of Gronningsaeter et al[.] to the procedure of Ferre et al[.] in conjunction with Shahidi and Wan et al[.], as to provide registration techniques between coincident spaces and/or systems" (*id.* at 11). Examiner, however, failed to establish that Gronningsaeter makes up for the deficiency in the combination of Ferre, Shahidi, and Wan as discussed above.

The combination of Ferre, Gronningsaeter, and Wan:

Based on the combination of Ferre, Gronningsaeter, and Wan, Examiner similarly asserts that "Wan et al[.] teach that a predicted path is determined by calculating coordinates of a predicted path based on the premise of establishing a centerline within a lumen which avoids collision

with lumen walls (p.11451, ‘Centricity’)” (*id.* at 13). We thus reverse this rejection for the reasons discussed above.

CONCLUSION OF LAW

The preponderance of the evidence relied upon by Examiner fails to support a conclusion of obviousness.

The rejection of claims 1, 3–6, 9–12, 14, 17–19, and 22 under 35 U.S.C. § 103(a) as unpatentable over the combination of Ferre, Shahidi, and Wan is reversed.

The rejection of claims 7 and 8 under 35 U.S.C. § 103(a) as unpatentable over the combination of Ferre, Shahidi, Wan, and Kaufman is reversed.

The rejection of claim 13 under 35 U.S.C. § 103(a) as unpatentable over the combination of Ferre, Shahidi, Wan, and Galloway is reversed.

The rejection of claims 15 and 16 under 35 U.S.C. § 103(a) as unpatentable over the combination of Ferre, Shahidi, Wan, and Gronningsaeter is reversed.

The rejection of claims 20 and 21 under 35 U.S.C. § 103(a) as unpatentable over the combination of Ferre, Gronningsaeter, and Wan is reversed.

REVERSED