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PHILIPS INTELLECTUAL PROPERTY & STANDARDS 465 Columbus Avenue Suite 340 Valhalla, NY 10595			LIANG, LEONARD S	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ROBERT MANZKE, RAYMOND CHAN,
CHRISTOPHER STEPHEN HALL, and BHARAT RAMACHANDRAN

Appeal 2018-009165
Application 13/980,056
Technology Center 2800

Before KAREN M. HASTINGS, MONTÉ T. SQUIRE, and
JANE E. INGLESE, *Administrative Patent Judges*.

INGLESE, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant¹ requests our review under 35 U.S.C. § 134(a) of the Examiner's decision to finally reject claims 1, 2, 4, 5, 8, 9, 13–16, 19, 20, 24, 26, and 28.² We have jurisdiction over this appeal under 35 U.S.C. § 6(b).

We AFFIRM.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42. Appellant identifies Koninklijke Philips N.V. as the real party in interest. Appeal Brief filed March 2, 2018 (“Appeal Br.”) at 2.

² Final Office Action entered October 5, 2017 (“Final Act.”) at 1.

STATEMENT OF THE CASE

Appellant's invention is generally directed to a medical instrument and a system and method for calibrating a medical instrument. Spec. 2–3. Claim 1 illustrates the subject matter on appeal and is reproduced below with contested subject matter italicized:

1. A medical instrument, comprising:
a body;
a shape sensing system coupled to the body to permit determination of a shape of the body of the medical instrument, the shape sensing system including one or more optical fibers;
and
a memory element integrated within or disposed on the body and configured to store data associated with fiber specific calibration of the body including calibration scatter patterns for each fiber, the data being readable from the memory element through a cable connected to the body so that the data permits calibration of the body.

Appeal Br. 16 (Claims Appendix) (emphasis added).

Independent claim 13 recites, in part, a system comprising a memory element integrated within or disposed on a body of a medical instrument, and independent claim 24 recites, in part, a method comprising providing a medical instrument having a body and a memory element integrated within or disposed on the body.

The Examiner maintains the following rejections in the Examiner's Answer entered July 27, 2018 ("Ans."):

- I. Claims 1, 2, 4, 9, 13–15, 20, 24, and 26 under 35 U.S.C. § 103(a) as unpatentable over Prisco (US 2011/0113852 A1, published May 19, 2011) in view of Hartog (US 2010/0014071 A1, published January 21, 2010); and

II. Claims 5, 8, 16, 19, and 28 under 35 U.S.C. § 103(a) as unpatentable over Prisco in view of Hartog and Larkin (US 2007/0156019 A1, published July 5, 2007).

DISCUSSION

Upon consideration of the evidence relied upon in this appeal and each of Appellant's contentions, we affirm the Examiner's rejections of claims 1, 2, 4, 5, 8, 9, 13–16, 19, 20, 24, 26, and 28 under 35 U.S.C. § 103(a), for the reasons set forth in the Final Action, the Answer, and below.

Appellant presents arguments for claim 1, and asserts that independent claims 13 and 24 are improperly rejected over Prisco and Hartog for the same reasons provided for claim 1. Appeal Br. 5–13. Appellant further “traverse[s] the rejections of claims 2, 4, 9, 14, 15, 20 and 26 at least because they depend from independent claims 1, 13 and 24.” *Id.* at 13. Appellant thus, in effect, argues claims 1, 2, 4, 5, 8, 9, 13–16, 19, 20, 24, 26, and 28 as a group on the basis of claim 1, to which we accordingly limit our discussion. 37 C.F.R. § 41.37(c)(1)(iv).

Appellant argues that Prisco does not teach or suggest a medical instrument having “a memory element integrated within or disposed on the body” and “configured to store data associated with fiber specific calibration of the body,” as recited in claim 1. Appeal Br. 7–10. Appellant argues that Prisco also does not teach or suggest “a cable connected to the body which permits the data to be read from the memory element,” as further recited in claim 1. *Id.* at 11.

Contrary to what Appellant argues, as discussed below, we determine that a preponderance of the evidence in record before us supports the Examiner's conclusion of obviousness.

Prisco discloses that optical fiber shape sensing systems are conventionally used in the art to determine shape information, such as joint angles, for minimally invasive surgical instruments. Prisco ¶¶ 4, 5. Prisco discloses that calibrating the optical fiber's reference frame in such a sensing system to the surgical instrument's reference frame allows shape information determined by the sensing system to be used to accurately place the instrument in two or three dimensions. *Id.*

Prisco discloses that its invention relates to a calibration apparatus for a shape sensing optical fiber that senses strain in an optical fiber associated with a kinematic chain,³ and derives information from the sensed strain to determine a calibration relationship between the fiber and the kinematic chain. Prisco Abstract. Prisco discloses storing the calibration information in memory for later use during operation of the kinematic chain, so that shape information from the optical fiber can be used to accurately indicate the shape or pose of the kinematic chain. *Id.*

Prisco discloses that the optical fiber shape sensor calibration apparatus of Prisco's invention can be applied to a minimally invasive surgical instrument. Prisco ¶ 78. Prisco discloses that in such an application, a shape sensing optical fiber is embedded in the surgical

³ A kinematic chain is "a combination of several joints linking several limb segments together during a specific movement or posture." Medical Dictionary (accessed November 1, 2019), <https://medical-dictionary.thefreedictionary.com/kinematic+chain>. Prisco discloses a medical instrument including a kinematic chain. *See, e.g.*, ¶ 81, Figs. 9 and 9A (illustrating wrist mechanism 906 of surgical instrument 900).

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instrument, and “joint level calibration is done during manufacturing, or before insertion into a patient, and the calibration information is stored in *a memory in the instrument* to be read by the surgical system’s control system during operation.” Prisco ¶ 81 (emphasis added).

This explicit disclosure in Prisco of storing information (data) associated with fiber-specific calibration of a medical instrument “in a memory in the instrument” is consistent with how Appellant’s Specification describes “a memory element integrated within or disposed on the [medical instrument] body” as recited in claim 1. Spec. pg. 3 (“The present embodiments provide storage of fiber-optic shape sensing device specific data in memory elements integrated in the device (e.g., within a catheter or other instrument”); Spec. pg. 6 (“Memory 140 is preferably integrated in the device 102 (e.g., within a catheter or other instrument)”); Spec. pg. 9 (“The memory element may include a memory chip installed or integrated within the body or a memory stick or equivalent device which is insertable within the body.”).

Therefore, contrary to Appellant’s arguments, Prisco does disclose or would have reasonably suggested to one of ordinary skill a memory element integrated within or disposed on a medical instrument body and configured to store data associated with fiber specific calibration of the body, as recited in claim 1.

Prisco’s disclosure that calibration information stored in a memory in a medical instrument is “read by the surgical system’s control system during operation” implicitly indicates some that means—such as a cable—exists for transmitting information from the memory in the medical instrument to the surgical system’s control system. Contrary to Appellant’s arguments, Prisco, therefore, would have suggested that data is readable from the

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memory in the medical instrument through means such as a cable connected to the instrument, as recited in claim 1. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) ([A]n obviousness analysis “need not seek out precise teachings directed to the specific subject matter of the challenged claim, for [an examiner] can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.”; *see also In re Preda*, 401 F. 2d 825, 826 (CCPA 1968) (“[I]t is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom.”).

We, accordingly, sustain the Examiner’s rejections of claims 1, 2, 4, 5, 8, 9, 13–16, 19, 20, 24, 26, and 28 under 35 U.S.C. § 103(a).

CONCLUSION

Claims	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1, 2, 4, 9, 13–15, 20, 24, 26	103(a)	Prisco, Hartog	1, 2, 4, 9, 13–15, 20, 24, 26	
5, 8, 16, 19, 28	103(a)	Prisco, Hartog, Larkin	5, 8, 16, 19, 28	
Overall Outcome			1, 2, 4, 5, 8, 9, 13–16, 19, 20, 24, 26, 28	

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

AFFIRMED

Notice of References Cited	Application/Control No. 13/980,056	Applicant(s)/Patent Under Reexamination	
	Examiner	Art Unit	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number	Date	Name	Classification	
		Country Code-Number-Kind Code	MM-YYYY			
1	A	US-			1	1
	B	US-				
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	D	US-				
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		Country Code-Number-Kind Code	MM-YYYY				
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	Q						
	R						
	S						
	T						

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	Medical Dictionary (accessed November 1, 2019), https://medicaldictionary.thefreedictionary.com/kinematic+chain .
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.



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Related to kinematic chain: [Kinematic pair](#)

kin·e·mat·ic chain (kin'ě-mat'ik chān)

A combination of several joints linking several limb segments together during a specific movement or posture.

"CITE" Medical Dictionary for the Health Professions and Nursing
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kinematic chain , kinetic c.

A series of bones connected by joints. Movement of one segment influences other parts of the chain.

See also: [chain](#)

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