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DOWELL & DOWELL, P.C.
2560 HUNTINGTON AVE, SUITE 203
ALEXANDRIA, VA 22303

EXAMINER

COOK, CHRISTOPHER L

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte ANDREW A. GOLDENBERG,
JOHN TRACHTENBERG, YI YANG, and LIANG MA

Appeal 2017-009843
Application 12/878,840¹
Technology Center 3700

Before DONALD E. ADAMS, ERIC B. GRIMES, and JOHN G. NEW,
Administrative Patent Judges.

ADAMS, *Administrative Patent Judge.*

DECISION ON APPEAL

This appeal under 35 U.S.C. § 134(a) involves claims 1–4, 7–11, 13, 14, 17–21, 34–37, and 39 (Final Act.² 1). Examiner entered rejections under 35 U.S.C. § 103(a). We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ Appellants identify the real party in interest as “ENGINEERING SERVICES INC.” (App. Br. 1.)

² Examiner’s June 8, 2016 Office Action.

STATEMENT OF THE CASE

Appellants' disclosure "relates to tools for use in surgery and in particular manual tools that may be used for Minimally Invasive Surgery (MIS) such as prostate-related interventions: focal ablation, brachytherapy, and biopsy" (Spec. 1: 10–12). Claim 1 is representative and reproduced below:

1. A medical device for use in association with a medical image of a gland/organ having a known reference point, the medical device comprising a probe having a probe positioning stepper and with a medical instrument assembly whereby the probe is positionable relative to the medical image reference point and into a definable position relative to the probe positioning stepper, the medical device further comprising;

a mechanical frame attachable to the probe positioning stepper, the mechanical frame defining a generally vertical plane, the mechanical frame being positioned at a frame predetermined location on the probe positioning stepper and thus in a definable position relative to the medical image reference point;

a first joint being a horizontal joint operably connected to a horizontal position sensor and operably connected to the frame;

a second joint different from the first joint, the second joint being a vertical joint operably connected to a vertical position sensor and operably connected to the frame;

a third joint different from the first and second joints, the third joint being a pan joint operably connected to a pan position sensor including a pan rotary potentiometer and a pan locking mechanism and the pan joint being operably connected to the frame;

a fourth joint different from the first, second and third joints, the fourth joint being a tilt joint operably connected a tilt position sensor including a tilt potentiometer and a tilt locking

mechanism and the tilt joint being operably connected to the frame;

the medical instrument assembly operably connectable to a medical instrument position sensor including a linear potentiometer for determining linear motion, and the medical instrument assembly being operably connectable to the horizontal joint, the vertical joint, the pan joint and the tilt joint such that the medical instrument assembly is spaced from the probe, the medical instrument assembly extending outwardly from and transversely to the generally vertical plane and positioned external to the horizontal joint, the vertical joint, the pan joint and the tilt joint; and

a control system operably connected to the horizontal position sensor, the vertical position sensor, the pan position sensor, the tilt position sensor, and the medical instrument position sensor whereby the control system includes a computer that is programmed to:

determine an actual position of a medical instrument assembly predetermined location relative to the frame and the probe positioning stepper and thus in a definable position relative to the medical image reference point;

determine an insertion path to the medical image reference point; and determine when the medical device is in a position for the insertion path.

(App. Br. 20–21 (emphasis added).)

The claims stand rejected as follows:

I. Claims 1, 2, 17, 19, 20, and 34–37³ stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Hogendijk,⁴ Burns,⁵ Tsonton,⁶ Quaid,⁷ Phee,⁸ and Ayati.⁹

II. Claims 3, 4, 7, 13, and 14 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Hogendijk, Burns, Tsonton, Quaid, Phee, Ayati, Allen,¹⁰ and Belson.¹¹

III. Claims 8–10 stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Hogendijk, Burns, Tsonton, Quaid, Phee, Ayati, Allen, Belson, and Bax.¹²

IV. Claim 11 stands rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Hogendijk, Burns, Tsonton, Quaid, Phee, Ayati, Allen, Belson, Bax, and Glossop.¹³

³ Examiner's statement of this rejection fails to identify Appellants' claims 34–37 (*see* Final Act. 2). The body of this rejection, however, makes reference to Appellants' claims 34–37 (*see id.* at 3). Therefore, we find Examiner's failure to identify Appellants' claims 34–37 in the statement of the rejection to represent a harmless typographical error and include Appellants' claims 34–37 in the statement of this rejection.

⁴ Hogendijk et al., US 2003/0139642 A1, published July 24, 2003.

⁵ Burns, US 6,483,610 B1, issued Nov. 19, 2002.

⁶ Tsonton et al., US 7,438,692 B2, issued Oct. 21, 2008.

⁷ Quaid et al., US 2009/0012532 A1, published Jan. 8, 2009.

⁸ Louis Phee, et al., *Ultrasound Guided Robotic System for Transperineal Biopsy of the Prostate*, Proc. of the 2005 IEEE International Conference on Robotics and Automation 1315–1320 (2005).

⁹ Ayati et al., US 2009/0275823 A1, published Nov. 5, 2009.

¹⁰ Allen et al., US 5,142,930, issued Sept. 1, 1992.

¹¹ Belson et al., US 2003/0191367 A1, published Oct. 9, 2003.

¹² Bax et al., US 2008/0004481 A1, published Jan. 3, 2008.

¹³ Glossop et al., US 2007/0232882 A1, published Oct. 4, 2007.

V. Claim 18 stands rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Hogendijk, Burns, Tsonton, Quaid, Phee, Ayati, and Bax.

VI. Claims 21, and 35–37¹⁴ stand rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Hogendijk, Burns, Tsonton, Quaid, Phee, Ayati, and Glossop.

VII. Claim 39 stands rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Hogendijk, Burns, Tsonton, Quaid, Phee, Ayati, Glossop, and either of Appellants' Admitted Prior Art (AAPA) or Xie.¹⁵

ISSUE

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

FACTUAL FINDINGS (FF)

We adopt Examiner's findings concerning the scope and content of the prior art (Final Act. 2–19), and provide the following findings for emphasis.

FF 1. Hogendijk discloses an apparatus “for improved brachytherapy treatment of prostate disease” (Hogendijk, Abstract; *see* Final Act. 3; *cf.* Spec. 1: 10–12).

¹⁴ Examiner's statement of this rejection fails to identify Appellants' claim 35 (*see* Final Act. 16). The body of this rejection, however, makes reference to Appellants' claim 35 (*id.*). Therefore, we find Examiner's failure to identify Appellants' claim 35 in the statement of the rejection to represent a harmless typographical error and include Appellants' claim 35 in the statement of this rejection.

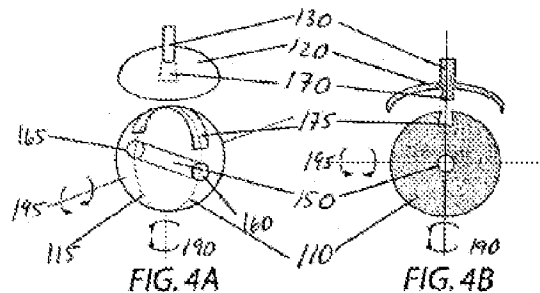
¹⁵ Yaoqin Xie, et al., *Feature-based rectal contour propagation from planning CT to cone beam CT*, 35 Med. Phys. 4450–4459 (2008).

FF 2. Hogendijk discloses that “[i]t is [an] . . . object of . . . [Hogendijk’s] invention to provide methods and apparatus for orienting a needle guide in a manner to access the broadest range of available orientations, thereby providing a more precise and accurate brachytherapy procedure” and that

[t]hese and other objects of . . . [Hogendijk’s] invention are accomplished by providing methods and apparatus for angular repositioning of the needle guide with respect to an ultrasound probe. When used in conjunction with previously-known apparatus for longitudinal, horizontal, and vertical orientation of the template, . . . [Hogendijk’s] invention provides enhanced control over needle template orientation, so that brachytherapy needles may be inserted in a manner that avoids skeletal structures.

(Hogendijk ¶¶ 19 and 21; *see* Final Act. 3.)

FF 3. Hogendijk’s Figures 4A and 4B are reproduced below:



Hogendijk’s “FIGS. 4A and 4B are, respectively, an exploded isometric view and an exploded cross-sectional view of the guide body [110] and the socket [120] of . . . [Hogendijk’s] invention, illustrating axes of rotation [190, 195] and means for securing[, i.e., retaining knob 170 and slot 175,] the guide body [110] to the socket [120]” (Hogendijk ¶ 27 (emphasis omitted); *see also id.* ¶ 50; *see generally* Final Act. 3 (“Hogendijk provides a hanging ball joint mechanically coupled to the frame to facilitate pan and tilting motions” (emphasis omitted))).

FF 4. Hogendijk discloses, with reference to Hogendijk’s FIGS. 4A and 4B:

[A]n embodiment to enable rotation of guide body 110 within socket 120 Guide body 110 further comprises recessed slot 175 that is disposed along meridian 115, the meridian passing through both proximal and distal apertures. Socket 120 comprises retaining knob 170 that is centrally disposed on the interfacial surface of the socket.

(Hogendijk ¶ 50 (emphasis omitted); *see id.* ¶ 49 (“socket 120 . . . enabl[es] angular reorientation of guide body 110 and needle guide channel 150” (emphasis omitted)); *see generally* Final Act. 3.)

FF 5. Hogendijk’s FIG. 4C is reproduced below:

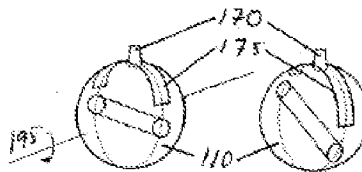


FIG. 4C

Hogendijk’s FIG. 4C is an “isometric view[] of the guide body [110] of . . . [Hogendijk’s] invention depicting means for rotation about . . . the horizontal axis [195]” (Hogendijk ¶ 28 (emphasis omitted); *see also id.* ¶¶ 50 and 51; *see generally* Final Act. 3).

FF 6. Hogendijk’s FIG. 4D is reproduced below:

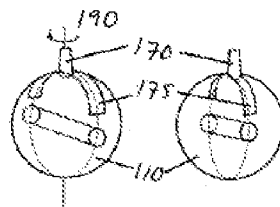


FIG. 4D

Hogendijk’s FIG. 4D is an “isometric view[] of the guide body [110] of . . . [Hogendijk’s] invention depicting means for rotation about . . . the vertical axis [190]” (Hogendijk ¶ 28 (emphasis omitted); *see also id.* ¶¶ 50 and 51; *see generally* Final Act. 3).

FF 7. Hogendijk discloses, with reference to Hogendijk’s FIGS. 4C and 4D:

[K]nob 170 and slot 175 are configured such that knob 170 is retained securely within slot 175, thereby attaching guide body 110 to socket 120. Knob 170 and slot 175 are further configured to allow the knob to slidably translate along the length of slot 175 while following meridian 115.

...

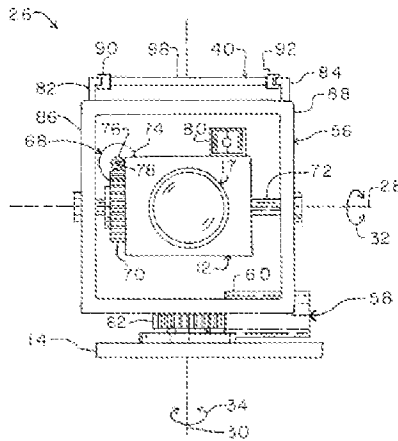
Rotating the guide body about horizontal axis 195 is accommodated by knob 170 following meridian 115 while slidably moving within slot 175. In this manner, the rotation may be accomplished while guide body 110 remains secured by the socket. . . . [K]nob 170 is further configured so as not to impede rotation of guide body 110 about vertical axis 190 while the guide body is retained within the socket. Rotation about both axes in the foregoing manner allows guide body 110 to access substantially all angular orientations bounded by the limits of each rotational means.

(Hogendijk ¶¶ 50 and 51 (emphasis omitted); *see generally* Final Act. 3.)

FF 8. Examiner finds that “Hogendijk does not expressly disclose or depict . . . [a] medical device [that] includes separate pan and tilt joints each comprising a potentiometer and locking mechanism as [required by Appellants’] claimed [invention]” (Final Act. 3–4 (emphasis omitted)).

FF 9. Burns discloses “[a] mounting system for a two-dimensional scanner [] compris[ing] a base and a platen mounted to the base,” which “allows the two-dimensional scanner to be moved between a first position . . . and a second position” (Burns, Abstract; *see generally* Final Act. 4).

FF 10. Burns' Figure 4 is reproduced below:



Burns' "FIG. 4 is an enlarged front view in elevation of [Burns'] multi-axis scanner support apparatus" (Burns 2: 58–59 (emphasis omitted); *see generally* Final Act. 4).

FF 11. Burns':

[M]ulti-axis scanner support apparatus 26 may comprise a generally rectangularly shaped support frame or gimbal 56 that is pivotally mounted to the base 14 so that the support frame or gimbal 56 may be rotated about pan axis 30. That is, the gimbal 56 may be rotated about the pan axis 30 generally in the directions indicated by arrows 34. The two-dimensional scanner 12 may be mounted within the frame or gimbal 56 by a support shaft 72 so that the two-dimensional scanner 12 may be rotated within the gimbal 56 about a tilt axis 28, i.e., generally in the directions indicated by arrows 32. Consequently, the multi-axis scanner support apparatus 26 allows the two-dimensional scanner to be tilted and panned as necessary about the tilt and pan axes 28 and 30, respectively, to capture an image of the desired object.

(Burns 7: 19–34 (emphasis omitted); *see* Final Act. 4.)

FF 12. Burns discloses that

the gimbal actuator 58 may be provided with a suitable position sensor . . . , such as an optical encoder or a potentiometer, to

allow the control system . . . associated with the multi-axis scanner support apparatus 26 to determine the rotational position of the gimbal 58 with respect to the base 14.

(Burns 7: 60–66 (emphasis omitted); *see* Final Act. 4.)

FF 13. Examiner finds that the combination of Hogendijk and Burns does not disclose “horizontal and vertical joints [that] include horizontal and vertical position sensors (e.g. encoders)” or “a linear potentiometer for determining linear motion” and relies on the combination of Tsonton and Quaid to make up for this deficiency in the combination of Hogendijk and Burns (Final Act. 5–6).

FF 14. Examiner finds that the combination of Hogendijk, Burns, Tsonton, and Quaid fails to disclose a pre-operative planning step to determine “the optimal needle path” and relies on the combination of Phee and Ayati to make up for this deficiency in the combination of Hogendijk, Burns, Tsonton, and Quaid (Final Act. 7–8).

FF 15. Examiner finds that the combination of Hogendijk, Burns, Tsonton, Quaid, Phee, and Ayati “does not specifically disclose [a] . . . joint sensor [that] is a ‘multi-turn’ potentiometer operably connected to an anti-backless spur gear” and relies on the combination of Allen and Belson to make up for this deficiency in the combination of Hogendijk, Burns, Tsonton, Quaid, Phee, and Ayati (Final Act. 9–11).

FF 16. Examiner finds that the combination of Hogendijk, Burns, Tsonton, Quaid, Phee, Ayati, Allen, and Belson “does not expressly disclose wherein the needle tool includes a slide block” and relies on Bax to make up for this deficiency in the combination of Hogendijk, Burns, Tsonton, Quaid, Phee, Ayati, Allen, and Belson (Final Act. 11–12).

FF 17. Examiner finds that the combination of Hogendijk, Burns, Tsonton, Quaid, Phee, Ayati, Allen, Belson, and Bax “does not expressly disclose obtaining a pre-operative MR image and fusing or blending a real time ultrasound image” and relies on Glossop to make up for this deficiency in the combination of Hogendijk, Burns, Tsonton, Quaid, Phee, Ayati, Allen, Belson, and Bax (Final Act. 13–14).

FF 18. Examiner finds that the combination of Hogendijk, Burns, Tsonton, Quaid, Phee, Ayati, Allen, and Belson “does not expressly disclose wherein the needle tool includes a slide block” and relies on Bax to make up for this deficiency in the combination of Hogendijk, Burns, Tsonton, Quaid, Phee, Ayati, Allen, and Belson (Final Act. 14–15).

FF 19. Examiner finds that the combination of Hogendijk, Burns, Tsonton, Quaid, Phee, and Ayati “does not expressly disclose obtaining a pre-operative MR image and fusing or blending a real time ultrasound image” and relies on Glossop to make up for this deficiency in the combination of Hogendijk, Burns, Tsonton, Quaid, Phee, and Ayati (Final Act. 16–17).

FF 20. Examiner finds that the combination of Hogendijk, Burns, Tsonton, Quaid, Phee, Ayati, and Glossop “does not expressly disclose obtaining a pre-operative MR image and fusing or blending (e.g. registering) a real time ultrasound image in order to define contours and points of an anatomical feature” and relies on either AAPA or Xie to make up for this deficiency in the combination of Hogendijk, Burns, Tsonton, Quaid, Phee, Ayati, and Glossop (Final Act. 17–19).

ANALYSIS

Rejection I:

Appellants' claim 1 is representative and reproduced above. Separate arguments are not provided with respect to Appellants' claims 2, 17, 19, and 20, which, therefore, stand or fall with claim 1.

Based on the combination of Hogendijk, Burns, Tsonton, Quaid, Phee, and Ayati, Examiner concludes that, at the time Appellants' invention was made, it would have been prima facie obvious to, *inter alia*, modify Hogendijk's medical device by replacing Hogendijk's "tilt/pan means (e.g., ball joint)" with Burns' separate tilt and pan joints "in order to allow more precise control of the angular orientation of the needle" (Final Act. 4). In this regard, "Examiner notes that such a modification merely involves a simple substitution of one tilt/pan means for another to yield predictable results" (*id.*). We find no error in Examiner's conclusion of obviousness. "[W]hen a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007) (discussing *United States v. Adams*, 383 U.S. 39 (1966)). See *In re Mayne*, 104 F.3d 1339, 1340 (Fed. Cir. 1997) ("Because the applicants merely substituted one element known in the art for a known equivalent, this court affirms [the rejection for obviousness]").

We recognize "that when the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious." *KSR*, 550 U.S. at 416 (discussing *United*

States v. Adams, 383 U.S. 39 (1966)). This is, however, notwithstanding Appellants' contentions to the contrary, not the situation in this Appeal.

As Appellants explain, “the guide body [110] and socket joint [120] is a key feature of the Hogendijk device” (App. Br. 7; *see also id.* at 10; *see, e.g.*, FF 3). An objective of Hogendijk's disclosure is to provide an “apparatus for orienting a needle guide in a manner to access the broadest range of available orientations, thereby providing a more precise and accurate brachytherapy procedure” (FF 2). To accomplish this objective, Hogendijk provides “for angular repositioning of the needle guide with respect to an ultrasound probe,” which “[w]hen used in conjunction with *previously-known* apparatus for longitudinal, horizontal, and vertical orientation of the template . . . provides enhanced control over needle template orientation” (*id.* (emphasis added)). Hogendijk's “socket 120 . . . enabl[es] angular reorientation of guide body 110 and needle guide channel 150” (FF 4).

Hogendijk, thus, discloses the use of a socket joint 120 in combination “with previously-known apparatus for,” *inter alia*, “horizontal[] and vertical orientation” (FF 2–4 and 7). Although Hogendijk discloses mechanisms that provide horizontal and vertical orientations, as Burns makes clear, Hogendijk's mechanisms are not the only “previously-known” means to obtain these orientations (*see* FF 5–6; *cf.* FF 9–12). Therefore, we find no error in Examiner's conclusion that a person of ordinary skill in this art would have found it *prima facie* obvious, at the time of Appellants' claimed invention, to construct Hogendijk's device, which comprises a socket joint, and substitute Burns' pan and tilt mechanisms for those “previously-known” mechanisms exemplified by Hogendijk. Because Hogendijk discloses the

use of “previously-known” pan and tilt mechanisms in conjunction with Hogendijk’s socket joint, we are not persuaded by Appellants’ contention that “someone skilled in the art would not be lead to substitute other types of joints for its guide body and socket joint” (App. Br. 7; *see* Reply Br. 1–2).

Appellants fail to explain how, or otherwise provide persuasive argument or evidence to support a conclusion that, the foregoing modification of Hogendijk to use Burns’ pan and tilt mechanisms in combination with Hogendijk’s socket joint will “eliminate one of the degrees of freedom that is offered with a ball joint and, in effect, constrain [Hogendijk’s] device” (App. Br. 7–8). For the foregoing reasons, we are not persuaded by Appellants’ contention that by modifying the pan and tilt mechanism of Hogendijk’s device with the mechanism disclosed by Burns the resulting device will “fail[] to provide substantially all angular orientations required for Hogendijk” (App. Br. 10; *see also id.* at 11–13). For these reasons, we are not persuaded by Appellants’ contention that the modification of Hogendijk’s device with Burns will “frustrate the purpose of [Hogendijk’s] system” (*id.*; *see also id.* at 9 (“the ball and socket type joint of the primary reference cannot simply be combined with the pan and tilt means of Burns with a reasonable expectation that a functional product would be achieved”); *see* Reply Br. 1–2).

Notwithstanding Appellants’ contention to the contrary, the “direction or motivation” to make the modification comes directly from Hogendijk’s disclosure of the use of “previously-known” mechanisms to provide “horizontal[] and vertical orientation” (FF 2; *cf.* App. Br. 8). Nevertheless, “[e]xpress suggestion to substitute one equivalent for another need not be present to render such substitution obvious.” *In re Fout*, 675 F.2d 297, 301

(CCPA 1982). Therefore, we are not persuaded by Appellants' contention that Examiner articulates "[n]o rational underpinning . . . for combining the numerous references" (App. Br. 16–17 (emphasis omitted)).

We are not persuaded by Appellants' contention "that even if someone skilled in the art was looking to replace the ball joint of Hogendijk they would not look to Burns because it is in a completely different art" (App. Br. 8; *see id.* ("if someone was interested in substituting a device for the ball joint of Hogendijk . . . it would not look to a device in the scanning art, as the latter is an art that is very different from that of the medical surgical devices"); *id.* at 9 ("Burns is . . . not analogous to Hogendijk"); *see* Reply Br. 2). As discussed above, Hogendijk directs those of ordinary skill in this art to "previously-known" pan and tilt mechanisms (FF 2). Thus, pan and tilt mechanisms were reasonably pertinent to the particular problem with which both Appellants and Hogendijk were involved. *See In re Clay*, 966 F.2d 656, 659 (Fed. Cir. 1992). Thus, notwithstanding Appellants' contention to the contrary, Burns, which relates to pan and tilt mechanisms, is analogous prior art and properly combinable with Hogendijk. *See id.* Therefore, we are not persuaded by Appellants' contentions that Burns is nonanalogous art and Examiner relied upon improper hindsight to combine Burns with Hogendijk (App. Br. 14–16).

For the reasons set forth above, we are not persuaded by Appellants' contention that the combination of Hogendijk, Burns, Tsonton, Quaid, Phee, and Ayati "do not disclose or suggest 'a third joint . . .'" and "a fourth joint" as required by Appellants' claim 1.

Appellants fail to explain, or otherwise provide persuasive reasoning or evidence regarding, what a person of ordinary skill in this art would find

missing in Burns' disclosure to support Appellants' contention that the "pan rotary potentiometer" and "tilt potentiometer" are not actually taught or suggested by Burns, and at the very least are not disclosed in such a way to sufficiently enable one of ordinary skill in the art to modify Hogendijk with Burns to arrive at the claimed invention" (App. Br. 9 (citing Burns 7: 60 – 8: 51); *see also id.* ("Burns is unworkable"); *see* Reply Br. 3–4; *cf.* FF 9–12). As discussed above, Hogendijk discloses that such mechanisms are "previously-known" in this art (FF 2). *In re Jacoby*, 309 F.2d 513, 516 (CCPA 1962) (obviousness "cannot be approached on the basis that workers in the art would know only what they could read in the references. Those skilled in the . . . art must be presumed to know something about [the art] apart from what the references disclose"). *See also KSR*, 550 U.S. at 421 ("A person of ordinary skill is also a person of ordinary creativity, not an automaton.").

Notwithstanding Appellants' contention to the contrary, Appellants' did not present an argument in their Appeal Brief "that Burns does not supply the claim limitations 'a pan position sensor including a pan rotary potentiometer and a pan locking mechanism' and 'a tilt position sensor including a tilt potentiometer and a tilt locking mechanism'" (Reply Br. 3). Thus, Appellants' contention, presented in their Reply Brief, is not timely filed. *See* 37 C.F.R. § 41.41(b)(2); *see also Ex parte Borden*, 93 USPQ2d 1473, 1474 (BPAI 2010) (informative) (Appellant fails to "explain what 'good cause' there might be to consider the new argument. On this record, Appellant's new argument is belated.").

Having found no deficiency in the combination of Hogendijk and Burns, we are not persuaded by Appellants' contention that Tsonton, Quaid,

Phee, and Ayati fail to make up for Appellants' alleged deficiencies in the combination of Hogendijk and Burns (App. Br. 9; *see generally id.* at 16–17).

We recognize Appellants' discussion of “U.S. Patent Publication 2004/0065792 to Yost et al. (‘Yost’)” (App. Br. 13–16). Examiner, however, does not rely upon Yost in support of the rejection, but instead appears to cite Yost, at best, in rebuttal to Appellants' contentions (*see* Final Act. 19–20). Therefore, we are not persuaded by Appellants' contentions regarding Yost.

For the foregoing reasons, the rejection of Appellants' claim 1 under 35 U.S.C. § 103(a) as unpatentable over the combination of Hogendijk, Burns, Tsonton, Quaid, Phee, and Ayati is affirmed. Claims 2, 17, 19, and 20 are not separately argued and fall with claim 1.

Rejections II–VI:

Appellants do not provide separate arguments relating to rejections II–VI. Instead, Appellants, at best, rely upon their arguments with respect to rejection I, which, for the reasons set forth above, we found unpersuasive. Thus, we affirm rejections II–VI.

Rejection VII:

Appellants' contentions with respect to their independent claim 39 are the same as those presented with respect to Appellants' claim 1, which, for the reasons set forth above, we found unpersuasive (*see* App. Br. 6–17; *see also* Reply Br. 1–4). For the same reasons, we are not persuaded by Appellants' contentions with respect to their claim 39.

Appeal 2017-009843
Application 12/878,840

CONCLUSION OF LAW

The preponderance of evidence relied upon by Examiner supports a conclusion of obviousness.

All rejections of record are affirmed.

TIME PERIOD FOR RESPONSE

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

AFFIRMED