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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte LAURENT VERARD, RAYMOND CHAN,
DANIEL SIMON ANNA RUIJTERS,
SANDER HANS DENISSEN, and SANDER SLEGT

Appeal 2018-000205
Application 14/352,409[1]
Technology Center 2100

Before BARBARA A. BENOIT, NABEEL U. KHAN, and
MICHAEL J. ENGLE, *Administrative Patent Judges*.

ENGLE, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from a final rejection of claims 1, 5, 9–11, 13–15, 21–23, 26, 27, 31, 35, and 37–39, which are all of the claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

Technology

The application relates to "holographic user interfaces for medical procedures." Spec. Title (capitalization omitted).

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[1] According to Appellants, the real party in interest is Koninklijke Philips N.V. App. Br. 3.

Illustrative Claim

Claim 1 is illustrative and reproduced below with the limitations at issue emphasized:

1. An interactive holographic display system, comprising:

a holographic generation module configured to display a holographically rendered anatomical image;

a localization system configured to define a monitored space on or around the holographically rendered anatomical image;

one or more monitored objects comprising an anatomical feature of a user or a virtual object having their position and orientation monitored by the localization system such that *coincidence of spatial points between the monitored space and the one or more monitored objects triggers a response in the holographically rendered anatomical image*; and

wherein the localization system includes one or more of a fiber optic shape sensing system, an electromagnetic tracking system, and a light sensor array *to determine the position and orientation of the monitored space and the one or more monitored object in a same coordinate system*.

Rejections

Claims 1, 5, 9, 10, 13–15, 21, 22, 26, 27, 31, and 35 stand rejected under 35 U.S.C. § 102(a) as anticipated by Rotschild et al. (US 2011/0128555 A1; June 2, 2011). Final Act. 6.

Claims 11 and 23 stand rejected under 35 U.S.C. § 103(a) as obvious over the combination of Rotschild and Salganicoff et al. (US 2009/0309874 A1; Dec. 17, 2009). Final Act. 10.

Claims 37–39 stand rejected under 35 U.S.C. § 103(a) as obvious over the combination of Rotschild and Prisco et al. (US 2009/0324161 A1; Dec. 31, 2009). Final Act. 11.

ISSUES

Did the Examiner err in finding Rotschild discloses "a localization system configured to define a monitored space on or around the holographically rendered anatomical image"; "to determine the position and orientation of the monitored space and the one or more monitored object in a same coordinate system"; and "coincidence of spatial points between the monitored space and the one or more monitored objects triggers a response in the holographically rendered anatomical image," as recited in claim 1?

ANALYSIS

Anticipation
(Claims 1, 5, 9, 10, 13, 14, 15, 21, 22, 26, 27, 31, and 35)

The prior art Rotschild discloses "displaying holograms" in which a viewer "touches a certain portion of the hologram." Rotschild ¶ 17. According to Appellants, "[i]n one embodiment, a dynamic 3D image of the heart may be displayed to physicians as a hologram" and "[t]he user may extend a finger to 'touch' the holographic image." App. Br. 10 (citing Rotschild ¶¶ 555–56). Appellants explain that Rotschild can use cameras to locate objects in three dimensions. *Id.* (citing Rotschild ¶ 587.) Appellants make three arguments against Rotschild anticipating claim 1.

First, claim 1 recites "a localization system configured to define a monitored space on or around the holographically rendered anatomical image."

The Examiner relies on paragraph 587 of Rotschild, which discloses "a unit for locating objects (e.g. the finger 1330) in three dimensions, such as . . . cameras mounted to pick up images along different directions, and triangulate a location in three dimensions, and/or distance measuring units

measuring distance to objects in the display space 1310." Rotschild ¶ 587; Ans. 2–3. The Examiner finds "the use of multiple cameras to locate a position in 3D space will consequently define a monitored 3D space" and "the intersection of the fields of view of cameras becomes the monitored 3D space." Ans. 3.

Appellants argue, "The cited portions of Rotschild only disclose that each of the cameras have a field of view. There is no teaching that a specific space in these fields of view or the entire field of view of the cameras may be defined and subsequently monitored." App. Br. 11; Reply Br. 5–6.

We are not persuaded by Appellants' argument. "The prior inventor does not need to . . . conceive of its invention using the same words as the patentee would later use to claim it." *Teva Pharm. Indus. Ltd. v. AstraZeneca Pharms. LP*, 661 F.3d 1378, 1384 (Fed. Cir. 2011); *see also In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009) ("the reference need not satisfy an *ipsissimis verbis* test"). Here, Rotschild discloses using "cameras mounted to pick up images along different directions" in order to "triangulate a location in three dimensions" and "measur[e] distance" in "the display space." Rotschild ¶ 587; *see also id.* ¶¶ 567, 570, 581 (explaining the "display space"). We agree with the Examiner that these cameras (and their fields of view) monitoring the display space thus disclose "a localization system configured to define a monitored space on or around the holographically rendered anatomical image," as recited in claim 1.

Second, claim 1 recites "to determine the position and orientation of the monitored space and the one or more monitored object in a same coordinate system."

Appellants argue "Rotschild solely discloses triangulation of images to determine the location of an object without any determination of the positions and orientations of the fields of view of the cameras." App. Br. 12.

We are not persuaded by Appellants' argument for reasons similar to that discussed above. We agree with the Examiner that Rotschild discloses "the viewer can interact with the hologram" such as "moving the hologram in space"; "rotating the hologram around [an] ad hoc axis"; or "perform[ing] any other manipulation on the orientation and/or the position of the hologram in space." Rotschild ¶ 539; Ans. 3. Appellants fail to sufficiently explain how Rotschild's monitoring "the orientation and/or the position of the hologram in space" does not disclose "to determine the position and orientation of the monitored space," as recited in claim 1.

Third, claim 1 recites "coincidence of spatial points between the monitored space and the one or more monitored objects triggers a response in the holographically rendered anatomical image."

Appellants argue that although "Rotschild discloses that embodiments of the invention permit the viewer to interact with the hologram," nevertheless "none of these interactions are specifically based on coincidence of spatial points between a monitored space and a monitored object." App. Br. 12, 13.

We are not persuaded by Appellants' argument. We agree with the Examiner that Rotschild expressly discloses "the viewer can move his hand . . . or any object the viewer is holding . . . to touch the hologram." Rotschild ¶ 536. "In one example, a viewer touching a bell results in a ringing of the output device." *Id.* In another example, "a viewer touching a car-hologram at the engine cover can cause the hologram to change to a

hologram of the inside of the car engine." *Id.* ¶ 537. In yet another example, "a viewer watching the globe facing Switzerland can touch the globe at Spain, and the globe will rotate to bring Spain to the front of the viewer." *Id.* ¶ 538. All of these examples entail the coincidence of spatial points between a monitored object (e.g., the user's finger) and the monitored space (e.g., the display space monitored by the cameras).[2]

Accordingly, we sustain the rejection of claim 1, and claims 5, 9, 10, 13, 14, 15, 21, 22, 26, 27, 31, and 35, which Appellants argue are patentable for similar reasons. *See* App. Br. 13–15; 37 C.F.R. § 41.37(c)(1)(iv).

Obviousness
(Claims 11, 23, and 37–39)

Appellants argue Salganicoff (for claims 11 and 23) and Prisco (for claims 37–39) fail to cure the deficiencies of Rotschild. App. Br. 16–20. However, we are not persuaded Rotschild is deficient, as discussed above.

Accordingly, we sustain the rejections of claims 11, 23, and 37–39.

DECISION

For the reasons above, we affirm the Examiner's decision rejecting claims 1, 5, 9–11, 13–15, 21–23, 26, 27, 31, 35, and 37–39.

No time for taking subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 41.50(f).

AFFIRMED

[2] In the event of further prosecution, the Examiner may wish to consider whether the touched locations (e.g., the bell, car engine cover, or Spain) also constitute a "monitored space" within the scope of claim 1. *See also* Rotschild ¶¶ 555–57 (describing medical applications allowing users to "mark specific areas" in a "3D image of the heart" or enable a stent to "be fitted to the holographic image before the operation starts").