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TRUONG, NGUYEN H

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JANNE AIKIO and ANTTI KERANEN

Appeal 2015-004641
Application 13/125,450
Technology Center 2600

Before MATTHEW R. CLEMENTS, KAMRAN JIVANI, and
JOYCE CRAIG, *Administrative Patent Judges*.

JIVANI, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants¹ seek our review under 35 U.S.C. § 134(a) of the Examiner's final decisions rejecting claims 1–20, which are all the claims pending in the present application. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ Appellants identify Teknologian Tutkimuskeskus VTT as the real party in interest. App. Br. 1.

STATEMENT OF THE CASE

The present application relates to touchscreen arrangements using total internal reflection (TIR) phenomenon. Spec. 1:6–8.

Claim 1 is illustrative:

1. An arrangement for a touchscreen, comprising:

–a substrate, said substrate comprising support electronics;

–a plurality of emitters and detectors arranged on said substrate in contact with the support electronics, for emitting and detecting light, respectively; and

–a lightguide arranged onto the substrate such that said emitters and detectors, and optionally at least part of said support electronics, are substantially embedded in the lightguide material, properties of the lightguide including the refractive index of the lightguide material being selected and the emitters and detectors being configured so as to enable, when in use, total internal reflection propagation of light within the lightguide between the emitters and detectors and recognition of a touch on the basis of a drop in the total internal reflection performance as determined from the detected light,

wherein touch is detected based on a drop of captured light intensity at a detector such that the arrangement enables recognizing the touch from frustrated total internal reflection-induced drop in a light intensity level and/or distribution as captured by one or more detectors in contrast to an *adaptively determined basic reception level* during a total internal reflection condition.

The Rejections

Claims 1, 6, 7, 11, 12, 16, and 19 stand rejected under 35 U.S.C. § 103(a) over Crockett (US 2006/0114237 A1; published June 1, 2006), Eliasson (US 2008/0007541 A1; published Jan. 10, 2008), and Eikman (US 2006/0227120 A1; published Oct. 12, 2006). Final Act. 3–8.

Claims 2 and 13 stand rejected under 35 U.S.C. § 103(a) over Crockett, Eliasson, Eikman, and Joshi (US 2009/0032300 A1; published Feb. 5, 2009). Final Act. 8–9.

Claims 3 and 9 stand rejected under 35 U.S.C. § 103(a) over Crockett, Eliasson, Eikman, and Hong (US 2004/0095336 A1; published May 20, 2004). Final Act. 9–10.

Claim 4 stands rejected under 35 U.S.C. § 103(a) over Crockett, Eliasson, Eikman, and Chiu (US 2005/0162404 A1; published July 28, 2005). Final Act. 10–11.

Claim 5 stands rejected under 35 U.S.C. § 103(a) over Crockett, Eliasson, Eikman, and Izadi (US 2009/0128499 A1; published May 21, 2009). Final Act. 11–12.

Claim 8 stands rejected under 35 U.S.C. § 103(a) over Crockett, Eliasson, Eikman, and Cho (US 2008/0030484 A1; published Feb. 7, 2008). Final Act. 12–13.

Claim 10 stands rejected under 35 U.S.C. § 103(a) over Crockett, Eliasson, Eikman, and Fujioka (US 2002/0033805 A1; published Mar. 21, 2002). Final Act. 13–14.

Claim 14 stands rejected under 35 U.S.C. § 103(a) over Crockett, Eliasson, Eikman, Joshi, and Thelemann (US 2009/0218725 A1; published Sept. 3, 2009). Final Act. 14–15.

Claims 15, 17, and 20 stand rejected under 35 U.S.C. § 103(a) over Crockett, Eliasson, Eikman, and Gandhi (US 2009/0085894 A1; published Apr. 2, 2009). Final Act. 15–16.

Claim 18 stands rejected under 35 U.S.C. § 103(a) over Crockett, Eliasson, Eikman, Gandhi, and Izadi. Final Act. 16–17.

ANALYSIS

Appellants argue the Examiner errs in rejecting claim 1 because: (i) the applied art fails to teach or suggest the claimed adaptively determined basic reception level; (ii) Crockett is “ultimately silent on true FTIR induced drop detection;” (iii) Crockett and Eliasson “teach away from each other;” and (iv) the Examiner uses impermissible hindsight reconstruction. App. Br. 5–14, 16–17²; Reply Br. 3–7. We are not persuaded by Appellants’ arguments, and address each argument in turn below.

First, as a matter of claim construction, we find the Specification does not define the limitation “adaptively determined basic reception level.” We apply the broadest reasonable interpretation of claim terms, consistent with the Specification, as would be understood by one of ordinary skill in the art. *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004)

² Although this argument is listed under the heading “4.10 Tenth Ground,” we interpret Appellants’ argument that “a plethora of references were used to reject *all the aspects of the present invention*” (App. Br. 16) as applying to all of the claims rejected by the Examiner.

(citations omitted). Where, as here, the Specification does not explicitly define a term, the term should be given its ordinary meaning. *In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989).

The Examiner construes the phrase “adaptively determined basic reception level” as “comparing the detected light intensity at light detectors with an adaptive value (i.e., not a fixed value) so as to determine whether a touch occurs on an optical touch panel.” Ans. 2. Appellants do not dispute this construction, but instead want us to recognize that “[t]here is a determination step involved.” Reply Br. 3. We agree with Appellants that the claim language requires the level must be “adaptively determined,” but we disagree that a determination step is recited in claim 1, which we observe recites an arrangement (i.e. a system), not a method. In light of these determinations, we construe the phrase “adaptively determined basic reception level” as encompassing a level, used as a basis for comparison of other levels, that is selected and can be altered.

The Examiner finds Eikman’s disclosure of setting a threshold to which a candidate signal is compared, and alternatively of detecting an ambient light level to which a candidate signal is compared, meets the claimed “adaptively determined basic reception level.” *See* Final Act. 6; Ans. 2–3. Applying the construction set forth herein, we agree with the Examiner. At least detecting an ambient light value teaches or, at minimum, suggests, an “adaptively determined basic reception level,” because, as the Examiner recognizes, the ambient light level may change over time and thus the detected level of ambient light would necessarily be adaptively determined. *See* Ans. 2–3.

Second, Appellants contend Crockett is “ultimately silent on true FTIR induced drop detection” because its “examples only seem to concern a change in the light reflection direction caused by the touch.” App. Br. 8. We are not persuaded by this argument because it is neither responsive to the Examiner’s rejection nor commensurate with the claim language. Claim 1 does not recite “true FTIR” nor does the Specification describe “true FTIR.” Rather, claim 1 recites “recognizing the touch from frustrated total internal reflection-induced drop in a light intensity level.” Appellants’ own argument recognizes that Crockett teaches recognizing “a change in light reflection caused by a touch.” *Id.* (citing Crocket, Fig. 3B, 154’). One need look no further than Crockett’s title for confirmation that Crocket teaches FTIR induced drop detection: Method and System for Providing Frustrated Total Internal Reflection Touch Interface. Crocket, Title; *see also* Ans. 4 (citing Crocket ¶ 7).

Third, Appellants contend Crockett and Eliasson teach away from each other because a touch in Crockett “reduces the amount of light reaching the detectors” whereas a touch in Eliasson “increases the amount of light at the detectors.” App. Br. 8–9; Reply Br. 4–5. Relatedly, Appellants contend, adapting Eliasson “to the present invention, which increases light reaching the detector, to the present invention, which has a drop in light intensity of the detector, changes the principle of operation of the reference and makes is unsuitable for its intended purpose.” App. Br. 12.

Appellants’ argument is misguided. Eliasson and Crockett both teach recognizing changes in the amount of light reaching the detectors. “The test for obviousness is not whether the features of a secondary reference may be

bodily incorporated into the structure of the primary reference Rather, the test is what the combined teachings of those references would have suggested to those of ordinary skill in the art.” *In re Keller*, 642 F. 2d 413, 425 (CCPA 1981); *accord In re Sneed*, 710 F.2d 1544, 1550 (Fed. Cir. 1983) (“[I]t is not necessary that the inventions of the references be physically combinable to render obvious the invention under review.”) Contrary to Appellants’ argument, the Examiner does not seek either to adapt Eliasson “to the present invention” or to bodily incorporate Eliasson into Crockett. Instead, with regard to claim 1, the Examiner’s combination proposes taking specific teachings from Eliasson and combining them with particular teachings from Crockett and Eikman. Final. Act. 3–6. The Examiner specifically relies on Eliasson for its teachings of a substrate and lightguide, not for the claimed drop detection. *Id.* Moreover, we note Appellants do not proffer persuasive evidence that the Examiner’s combination would have been “uniquely challenging or difficult for one of ordinary skill in the art.” *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007).

Fourth, we are not persuaded by Appellants’ assertion that “a plethora of references” necessarily evinces the impermissible use of hindsight. App. Br. 16–17. Citing a large number of references does not negate the obviousness of the combination when the prior art uses the various elements for the same purposes as they are used by appellants, making the claimed invention as a whole obvious in terms of 35 U.S.C. § 103. *In re Gorman*, 933 F.2d 982, 987 (Fed. Cir. 1991). A *prima facie* case of obviousness requires “some articulated reasoning with some rational underpinning to

support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). For each rejection, the Examiner makes explicit findings with respect to why it would have been obvious to combine the references relied upon. *See, e.g.*, Final Act. 18–19 (explicitly finding reasons why the combination of Crocket, Eliasson, Eikman, Gandhi, and Izadi would have been obvious to one of ordinary skill in the art at the time). We are persuaded by the Examiner’s reasoning and, therefore, find the Examiner’s proposed combinations are proper because the resulting systems are not “more than the predictable use of prior art elements according to their established functions.” *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 417 (2007).

Accordingly, we sustain the Examiner’s 35 U.S.C. § 103(a) rejection of claim 1. Appellants advance no further arguments regarding claims 2–20. App. Br. 14–18. Accordingly, we also sustain the Examiner’s 35 U.S.C. § 103(a) rejections of claims 2–20.

DECISION

We affirm the Examiner’s decisions rejecting claims 1–20 as obvious.

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