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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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*Ex parte* NELSON GEORGE PUBLICOVER,  
LEWIS JAMES, MARGGRAFF, ELIOT FRANCIS DRAKE and  
SPENCER JAMES CONNAUGHTON<sup>1</sup>

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Appeal 2018-008948  
Application 14/708,234  
Technology Center 2600

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Before ROBERT E. NAPPI, STACY B. MARGOLIES, and  
MICHAEL T. CYGAN, *Administrative Patent Judges*.

NAPPI, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

This is a decision on appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1, 2, 4 through 13, 15, 16, and 36 through 39, which constitute all the claims pending in this application. We have jurisdiction over the pending claims under 35 U.S.C. § 6(b).

We affirm-in-part.

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<sup>1</sup> According to Appellant, the real party in interest is Google LLC. App. Br. 1.

## INVENTION

The invention is directed to a method for discerning the intent of a device wearer primarily based on movements of the eyes. Abstract.

Claim 1 is illustrative of the invention and is reproduced below.

1. A method for providing a graphical user interface based at least in part on movement of a user's eye or eyes relative to an electronic display using a detector, the method comprising:
  - identifying, by a processing unit, when a gaze of at least one eye is directed at an object on the display;
  - identifying, by the processing unit, an initiation of a change in the gaze based on a saccadic movement of the at least one eye away from the object and towards a target location including a first icon on the display corresponding to an action;
  - confirming, by the processing unit, that the gaze of the at least one eye fixates at the target location at completion of the saccadic movement;
  - performing, by the processing unit, the action on the object; and
  - replacing, by the processing unit, the first icon with a second icon corresponding to the first icon and overlapping a portion of the display previously occupied by the first icon.

App. Br. 14 (Claims Appendix).

## REJECTIONS AT ISSUE<sup>2</sup>

The Examiner has rejected claims 1, 2, 4 through 8, 15, 16, and 36 through 39 under 35 U.S.C. § 103(a) as being unpatentable over Venable (US 2014/0380230 A1, published December 25, 2014) and Ambrus (US 2015/0212576 A1, published July 30, 2015). Final Act. 5–13.

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<sup>2</sup> Throughout this Decision, we refer to the Appeal Brief (“App. Br.”) filed April 27, 2018, Reply Brief (“Reply Br.”) filed September 13, 2018, the Final Office Action (“Final Act.”) mailed October 31, 2017, and the Examiner’s Answer (“Ans.”) mailed July 13, 2018.

The Examiner has rejected claims 9 through 11 under 35 U.S.C. § 103(a) as being unpatentable over Venable, Ambrus, and Pesaran (US 2006/0217816 A1, published September 28, 2006). Final Act. 13–14.

The Examiner has rejected claims 12 and 13 under 35 U.S.C. § 103(a) as being unpatentable over Venable, Ambrus, and Henderik (US 2014/0247210 A1, published September 4, 2014). Final Act. 14–15.

### ANALYSIS

We have reviewed Appellant’s arguments in the Briefs, the Examiner’s rejection, and the Examiner’s response to Appellant’s arguments. Appellant’s arguments have not persuaded us of error in the Examiner’s obviousness rejections of claims 1, 2, 4 through 10, 12, 13, 15, 16, and 36 through 39 but have persuaded us of error in the rejection of claim 11.

*Rejections of claims 1, 2, 4 through 10, 12, 13, 15, 16, and 36 through 39*

Appellant argues the Examiner’s obviousness rejection of independent claims 1, 15 and 36 is in error as the Examiner has failed to provide a proper rationale to combine the teachings of Venable and Ambrus and that the proposed combination would render one of the references unsuitable for its intended purpose. App. Br. 6–10. Specifically, Appellant points out the Examiner finds Venable does not teach the “replacing . . . the first icon” limitation and relies upon Ambrus to teach this limitation. App. Br. 7. Appellant argues that the Examiner’s statement “to provide the user more options in response to a selected virtual object” is insufficient rationale to combine the references. App. Br. 7–8. Further, Appellant argues that

Venable teaches inferring user's intent based upon eye movement and identifies using dwell time of a user's gaze as sub-optimal. App. Br. 9; Reply Br. 3 (citing Venable para. 13). Appellant asserts that combining Venable with Ambrus, which uses dwell time of the user gaze to infer user intent, is improper because it would not be obvious to combine Venable's teachings with the very approach it intends to avoid. App. Br. 9 (citing Ambrus paras. 3, 18).

The Examiner responds to Appellant's arguments explaining that Venable is relied upon to teach a user interface with virtual objects (that can be selected to launch a program) and that Ambrus is relied upon to teach an interface with a menu of options associated with a virtual object. Answer 2–3 (citing Venable paras. 23 and 37; Ambrus para. 85). The Examiner concludes:

Venable's "selecting one virtual object to launch a program" can be modified by Ambrus's "displaying a menu of options overlaying on the virtual object in response to detecting the selection of the virtual object" so as to replace the first virtual object (icon) with a second virtual object (a menu of options) by overlapping a portion of the display previously occupied by the first virtual object (icon). In this case, "the launching a menu operation" taught by Ambrus can be one non-limiting embodiment of "the launching program" of Venable. Thus, the combination of Venable and Ambrus teaches selecting a user interface element (virtual object) to launch a program so as to display a menu of options associated with the virtual object directly overlaying on the virtual object. Examiner doesn't find any conflicting teaching from this combination.

Answer 3.

We concur with the Examiner's rationale to combine the teachings of Venable and Ambrus. The Examiner's combination is merely adding an additional type of virtual object, a single object (Venable) versus a menu of

objects (Ambrus), to the user interface. Appellant has not contested and we concur with the Examiner's finding that Ambrus suggests replacing a first virtual object with another virtual object representing a menu of options (*see* Ambrus para. 85). Thus, adding this feature is merely the combination of known elements to perform their known function (of displaying a menu associated with the first virtual object). "The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007). We also agree with the Examiner that one of ordinary skill in the art would have been motivated to combine Venable's teaching of selecting a virtual object (icon) with Ambrus's teaching of displaying a menu of options upon selection of an object to provide the user with more options in response to selecting a virtual object.

Further, Appellant's arguments directed to the combination being improper because Venable teaches that using dwell time of a user's gaze is sub-optimal is not persuasive, as we disagree with the premise of Appellant's argument. Despite the teachings in paragraph 13 of Venable that "dwell-based selection may mechanism may feel slow or otherwise awkward to users," Venable does teach using the dwell time of users gaze to determine user intention (*see* paras. 31 and 39). Further, the determination of intent of the user based upon dwell time is not related to whether a menu of virtual objects is displayed, the feature of Ambrus upon which the Examiner relies. Thus, we disagree with the Appellant's assertion that the Examiner's obviousness rejection of independent claims 1, 15 and 36 is in error as the Examiner has failed to provide a proper rationale to combine the teachings of Venable and Ambrus and that the proposed combination would

render one of the references unsuitable for its intended purpose.

Accordingly, we sustain the Examiner's obviousness rejection of claims 1, 2, 4 through 8, 15, 16, and 36 through 39 based upon Venable and Ambrus.

Appellant has not submitted separate arguments directed to the Examiner's obviousness rejection of claims 9 through 10 based upon Venable, Ambrus and Pesaran, or claims 12 and 13 based upon Venable, Ambrus, and Henderek. Accordingly, we similarly sustain the Examiner's rejections of these claims.

*Rejection of claim 11*

Appellant argues the Examiner's rejection of claim 11 is in error as the combination of the references does not teach "predicting that the destination for the eye movement is the first target location" as recited in claim 11. App. Br. 10–12; Reply Br. 4–5. Appellant argues that paragraph 44 of Pesaran, which the Examiner relies upon in the Final Office Action to teach this limitation, teaches measuring eye movement to identify the beginning and end of a saccade and not a prediction of the destination as claimed. App Br. 12.

The Examiner, in response to Appellant's arguments, cites to Figures 4A–C and paragraphs 38, 8, 100, 131, and 44 of Pesaran as teaching predicting motion. Answer 4. The Examiner finds that Pesaran teaches that "eye positions can predict reach choices [the destination of eye movement] in advance of movement" and that "a saccadic event [object selection by saccade] is determined." Answer 4–5.

We disagree with the Examiner that Pesaran teaches predicting that the destination for eye motion is a first target location. We concur with

Appellant’s argument in the Reply Brief that Pesaran discloses using measured eye movement to predict the position of where a user wants to place (position) a prosthetic. Reply Br. 4 (citing Pesaran para. 131). Thus, Pesaran discloses measuring eye movement and then moving a prosthetic to where the eye has already looked. *See* Pesaran paras. 12 (disclosing a need to incorporate measurements of eye movement in the mechanisms that control neural prosthetics), 16 (disclosing identifying a “matching predetermined behavioral pattern” and “positioning the prosthetic device in a spatial position associated with the matching predetermined behavioral pattern”), 100 (disclosing that “eye position alone can predict reach choices in advance of movement”), 131 (disclosing that “before the first reach, eye position is predictive of reach choices”). Claim 11, on the other hand, is directed to predicting where the eye will move to—the destination of eye movement. Stated another way, Pesaran discloses predicting a user’s intent from measured eye movement, which is different from predicting the destination of eye movement, as recited in claim 11. Thus, we do not find that the Examiner has demonstrated the combination of Venable, Ambrus, and Pesaran teaches the limitations of claim 11 and we do not sustain the Examiner’s rejection of this claim.

#### DECISION

The Examiner’s decision rejecting claims 1, 2, 4 through 13, 15, 16, and 36 through 39 is affirmed-in-part.

<b>Claims Rejected</b>	<b>Basis</b>	<b>Affirmed</b>	<b>Reversed</b>
1, 2, 4–8, 15, 16, 36–39	§ 103 Venable, Ambrus	1, 2, 4–8, 15, 16, 36–39	
9–11	§ 103 Venable, Ambrus, Pesaran	9, 10	11
12, 13	§ 103 Venable, Ambrus, Henderek	12, 13	
<b>Outcome</b>		1, 2, 4–10, 12, 13, 15, 16, and 36–39	11

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-IN-PART