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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte EREZ SALI, TOMER YANIR,
ERAN GUENDELMAN, and AMIAD GURMAN

Appeal 2015-007856
Application 13/098,497
Technology Center 2600

Before ELENI MANTIS MERCADER, CARL W. WHITEHEAD JR., and
ADAM J. PYONIN, *Administrative Patent Judges*.

Per Curiam.

DECISION ON APPEAL

STATEMENT OF THE CASE

This is a decision on appeal under 35 U.S.C. § 134(a) from the Final Rejection of claims 1–30 and 43–48. Appeal Brief 1. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

Introduction

Appellants' invention relates to "receiving a depth map of a scene containing a body of a humanoid subject" in which "[t]he depth map is processed in a digital processor to extract a skeleton of at least a part of the body, the skeleton including multiple joints having respective coordinates." Abstract.

Representative Claim (Disputed limitations emphasized)

1. A method for processing data, comprising:
 - receiving a depth map of a scene containing a body of a humanoid subject, the depth map comprising a matrix of pixels, each pixel corresponding to a respective location in the scene and having a respective pixel depth value indicative of a distance from a reference plane to the respective location;
 - processing the depth map in a digital processor to extract a skeleton of at least a part of the body, the skeleton comprising multiple joints having respective coordinates; and
 - providing an application program interface (API) indicating at least the coordinates of the joints and giving event notifications in response to predefined changes in the extracted skeleton.*

Rejections on Appeal

Claims 1, 5, 10, 11, 15, 20, 21, 25, 30, and 43–48 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Craig (US Patent Number 8,295,546 B2; issued October 23, 2012) in view of Mattingly (US Patent Application Publication Number 2011/0197161 A1; published August 11, 2011). Final Rejection 3.

Claims 2, 3, 12, 13, 22, and 23 stand rejected under 35 U.S.C.

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§ 103(a) as being unpatentable over Craig, in view of Mattingly and Perez (US Patent Application Publication Number 2010/0306716 A1; published December 2, 2010). Final Rejection 7.

Claims 4, 6–9, 14, 16–19, 24, and 26–29 stand rejected under 35 U.S.C. § 103 as being unpatentable over Craig, in view of Mattingly and Katz (US Patent Application Publication Number 2011/0187819 A1; published August 4, 2011). Final Rejection 9.

ANALYSIS

Rather than reiterate the arguments of Appellants and the Examiner, we refer to the Final Rejection (mailed August 26, 2014), the Advisory Action (mailed October 28, 2014), the Appeal Brief (filed March 19, 2015), the Answer (mailed July 15, 2015), and the Reply Brief (filed August 27, 2015) for the respective details. We have considered in this decision only those arguments Appellants actually raised in the Briefs.

We have reviewed the Examiner’s rejections in light of Appellants’ arguments that the Examiner has erred. We adopt as our own (1) the findings and reasons set forth by the Examiner in the action from which this appeal is taken and (2) the reasons set forth by the Examiner in the Examiner’s Answer in response to Appellants’ Appeal Brief, except where noted.

Rejection of Claims 1, 11, and 21

Appellants argue Examiner error “because the cited references fail to teach or suggest any sort of event notifications, let alone the specific sort of event notifications that are recited in the independent claims.” Appeal Brief

5. Particularly, Appellants contend Mattingly’s system checks, regarding whether the user enters or leaves the field of view, “would not have given the person of ordinary skill any reason to think that a notification was called for” (Appeal Brief 6, citing Mattingly ¶ 93) and in Craig’s API, “[e]vent notifications are not needed in order to report changes.” Appeal Brief 6, citing Craig 13:43–45.

We are not persuaded by Appellants’ arguments. The Examiner correctly finds that Craig’s API “may be configured to communicate the joint positions” and that “[a] content receiver (e.g., a gaming application) may then use the reported information as desired.” Final Rejection 5, quoting Craig 13:38–47. The Examiner also correctly finds “Mattingly also teaches providing a skeletal model (¶ 38) and is responsive to a user’s entering or leaving a field of view (¶ 93).” Final Rejection 5. We agree with the Examiner’s finding that “[o]ne of ordinary skill in the art would consider use of notifications to inform applications that a user has entered or left the field of view of the depth camera” (Final Rejection 5) would be called for, because the event notification would (1) indicate the user desires to pause a computer program (*see* Mattingly Fig. 5) or (2) influence or dictate the outcome of a game such as boxing (*see* Craig Fig. 1A). Appellants’ arguments regarding impermissible hindsight (*see* Appeal Brief 6–7) are unpersuasive because the Examiner has taken “into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made.” *In re McLaughlin*, 443 F.2d 1392, 1395 (CCPA 1971).

Therefore, we sustain the Examiner's obviousness rejection of independent claim 1, as well as independent claims 11 and 21 commensurate in scope, and claims 2–10, 12–20, and 22–30 not separately argued.

Rejection of Claims 43–48

Dependent claims 43, 45, and 47 require “that that an event notification is generated when a hand, belonging to the body whose skeleton is extracted, newly appears in a given frame.” Appeal Brief 8, emphasis added. Dependent claims 44, 46, and 48 require “that that an event notification is generated when a hand, belonging to the body whose skeleton is extracted, disappears in a given frame.” Appeal Brief 10, emphasis added. For claims 43, 45, and 47, Appellants argue Examiner error because “[t]here is no hint in Mattingly, however, that there might be some significance to a hand newly appearing” (Appeal Brief 9) and “Craig makes no mention or suggestion at all of hands newly appearing in a given frame or of reporting such an appearance.” Appeal Brief 9. Appellants make a similar argument regarding the disappearance of a hand from the frame. *See* Appeal Brief 10.

We are not persuaded by Appellants' arguments. The Examiner correctly finds that “Mattingly discloses detecting when a user enters or exits a given frame (¶ 93) and further discloses determining when a user is engaging the system based on a user's hand (‘which hand is in the physical interaction zone (hand on the user's side facing the camera increases confidence)’ (¶ 61)).” Final Rejection 7. Mattingly thus clearly teaches the detection of both movement and position of body parts used to “determin[e] whether a user is engaging with the system 10.” Mattingly ¶ 61. Movement and position of hands has similar importance in Craig, in order to mimic a

boxing match. *See* Craig Fig. 1A. Appellants' arguments are thus unpersuasive, and we agree with the Examiner's finding that "[o]ne of ordinary skill would consider reporting when a user's hand enters or exists in order to notify applications that make use of user interaction, such as through gestures or hand movements." Final Rejection 7.

Therefore, we sustain the Examiner's obviousness rejection of dependent claims 43–48.

DECISION

We affirm the Examiner's rejections of claims 1–30 and 43–48.

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