EXHIBIT C

US008878949B2

(12) **United States Patent**
Pryor

(10) **Patent No.: US 8,878,949 B2**
(45) **Date of Patent: *Nov. 4, 2014**

(54) **CAMERA BASED INTERACTION AND INSTRUCTION**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **13/961,452**

(22) Filed: **Aug. 7, 2013**

(65) **Prior Publication Data**

US 2014/0028855 A1 Jan. 30, 2014

Related U.S. Application Data

(63) Continuation of application No. 13/459,670, filed on Apr. 30, 2012, now Pat. No. 8,654,198, which is a continuation of application No. 12/891,480, filed on Sep. 27, 2010, now Pat. No. 8,189,053, which is a continuation of application No. 11/376,158, filed on Mar. 16, 2006, now Pat. No. 7,804,530, which is a continuation of application No. 09/568,552, filed on May 11, 2000, now Pat. No. 7,015,950.

(60) Provisional application No. 60/133,671, filed on May 11, 1999.

(51) **Int. Cl.**

H04N 5/232	(2006.01)
G06F 3/01	(2006.01)
G06F 3/038	(2013.01)
H04N 5/222	(2006.01)

(52) **U.S. Cl.**

CPC ***H04N 5/23296*** (2013.01); ***G06F 3/017*** (2013.01); ***G06F 3/0386*** (2013.01); ***H04N 5/222*** (2013.01); ***H04N 5/232*** (2013.01); ***H04N 5/23219*** (2013.01)

USPC **348/211.99**; 348/211.4

(58) **Field of Classification Search**

CPC .. H04N 5/23238; H04N 5/247; H04N 5/3415

USPC 348/211.4, 211.5, 211.8, 211.9, 222.1, 348/239

See application file for complete search history.

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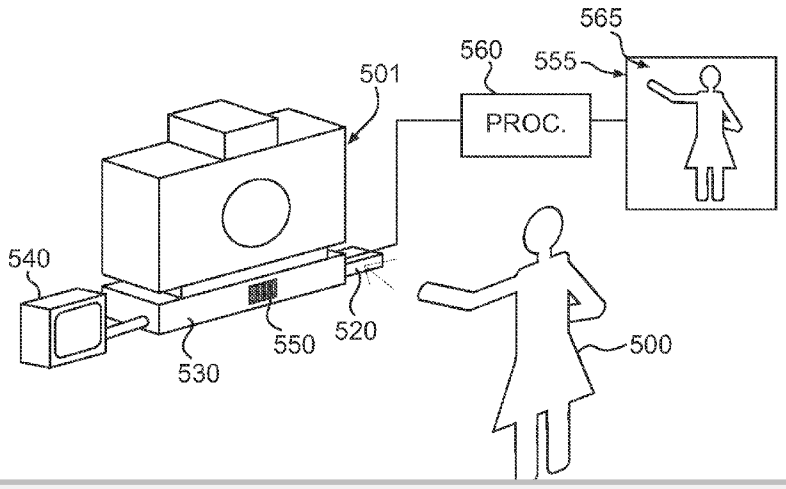
(57) **ABSTRACT**

Disclosed are methods and apparatus for instructing persons using computer based programs and/or remote instructors. One or more video cameras obtain images of the student or other participant. In addition images are analyzed by a computer to determine the locations or motions of one or more points on the student. This location data is fed to computer program which compares the motions to known desired movements, or alternatively provides such movement data to an instructor, typically located remotely, who can aid in analyzing student performance. The invention preferably is used with a substantially life-size display, such as a projection display can provide, in order to make the information displayed a realistic partner or instructor for the student. In addition, other applications are disclosed to sports training, dance, and remote dating.

18 Claims, 7 Drawing Sheets



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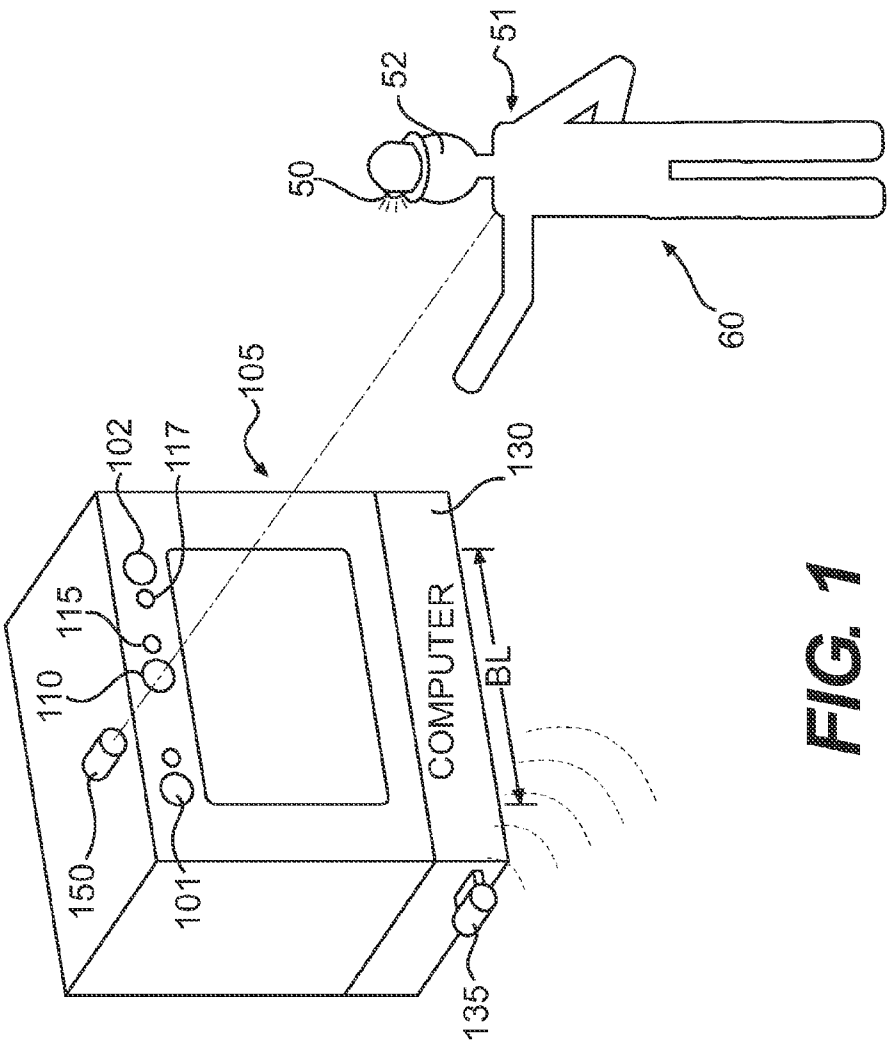

FIG. 1

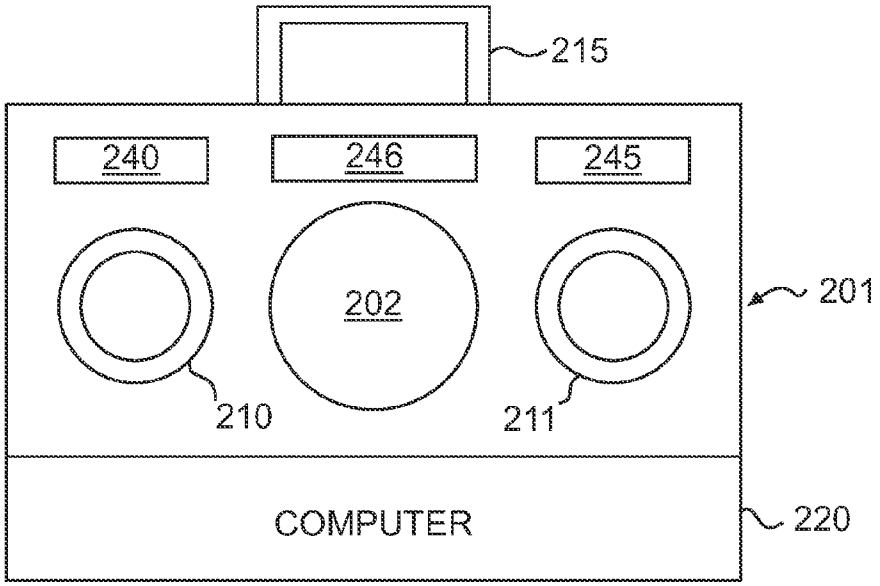

FIG. 2A

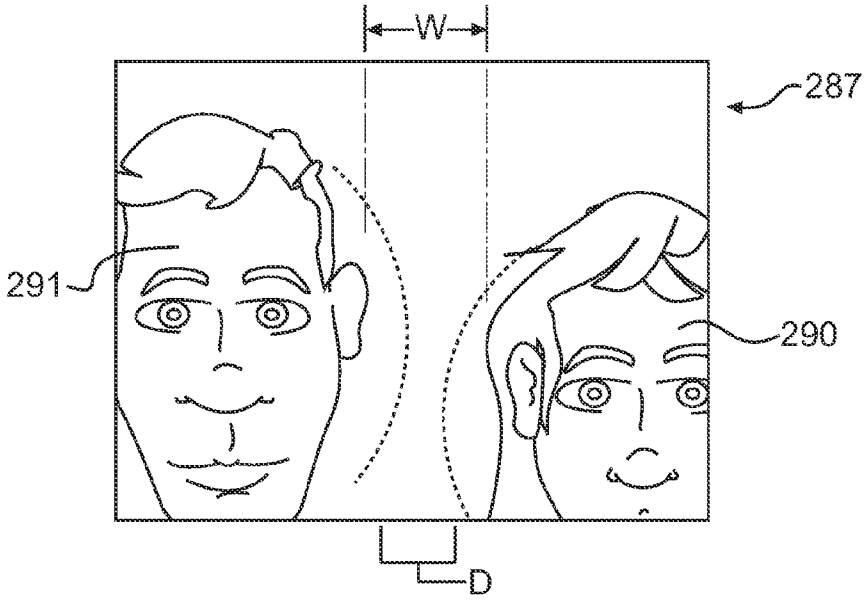

FIG. 2D

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