

10 Documents

Publication numbers	Title	Current assignees
CA2047431 A1	Eye directed controller	BIOCONTROL SYSTEMS
US20120212400 A1	System and method for delivering content to a group of see-through near eye display eyepieces	MICROSOFT TECHNOLOGY LICENSING
US20170083086 A1	Human-computer interface	CHU TONY, ...
US20120229248 A1	Multipurpose controller for electronic devices, facial expressions management and drowsiness detection	PERCEPTIVE DEVICES
US20170259167 A1	Brainwave virtual reality apparatus and method	COOK DANIEL REED, ...
CA2975124 A1	Control of a computer via distortions of facial geometry	CHEN RIN
US20090217211 A1	Enhanced input using recognized gestures	QUALCOMM
US20110125063 A1	Systems and Methods for Monitoring and Modifying Behavior	SVIP 4
US20090315740 A1	Enhanced character input using recognized gestures	QUALCOMM
US20150301619 A1	Wearable wireless tongue controlled devices	AMRITA VISHWA VIDYAPEETHAM

Family 1/10 - FAMPAT - ©Questel

Title

(EP-468340)

Eye directed controller

Images

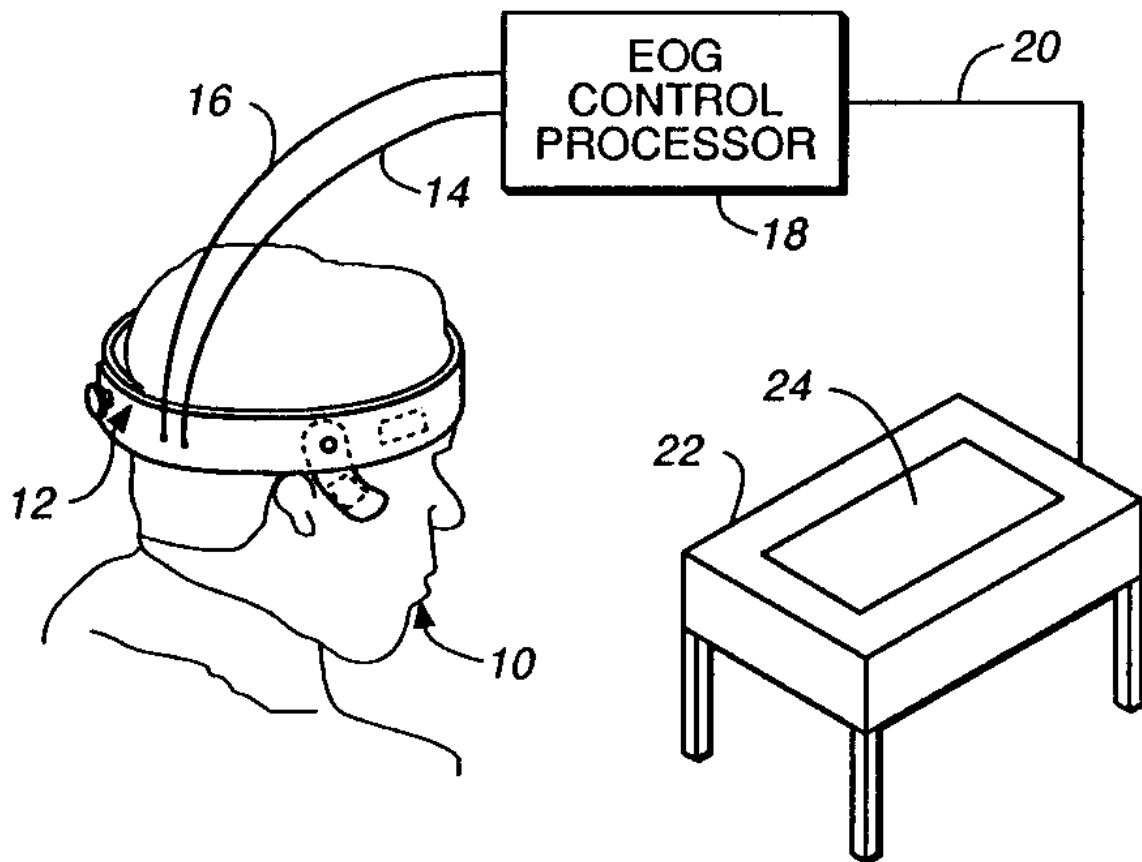


FIG. 1

Publication data including kind & date

CA2047431	A1	1992-01-25	CA2047431
EP0468340	A2	1992-01-29	EP-468340
CN1060940	A	1992-05-06	CN1060940
EP0468340	A3	1992-12-16	EP-468340
TW209283	B	1993-07-11	TW-209283
JPH0695797	A	1994-04-08	JP06095797



Abstract

(EP-468340)

A method and apparatus for operating a video game, controlling the **cursor** position on a computer display, and controlling the operation of equipment and devices using electro-oculogram and electro-myogram signals resulting from eye movement and muscle contractions in the human body. Operator (10) wears **sensor** assembly (12) which is connected to **control processor** (18). Movement of the eyes produces electro-oculogram signals which **control processor** (18) detects and converts into separate **control** signals representing upward movement, downward movement, movement to the left and movement to the right. Muscle contractions produce electro-myogram signals which **control processor** (18) detects and converts into **control** signals. The **control** signals are interfaced with equipment (22) which is a computer or video game having a display (24), or other apparatus to be controlled. The electro-oculogram **control** signals are used to **control cursor** position on a video game or a computer, while the electro-myogram signals are used to simulate the operation of a switch or "fire **control**" button. The functions of a "joystick", "mouse", "track ball" and the like are thereby replicated by the method

and apparatus disclosed herein. <IMAGE>

Inventors

KNAPP, BENJAMIN R.

LUSTED, HUGH S.

Latest standardized assignees - inventors removed

BIOCONTROL SYSTEMS

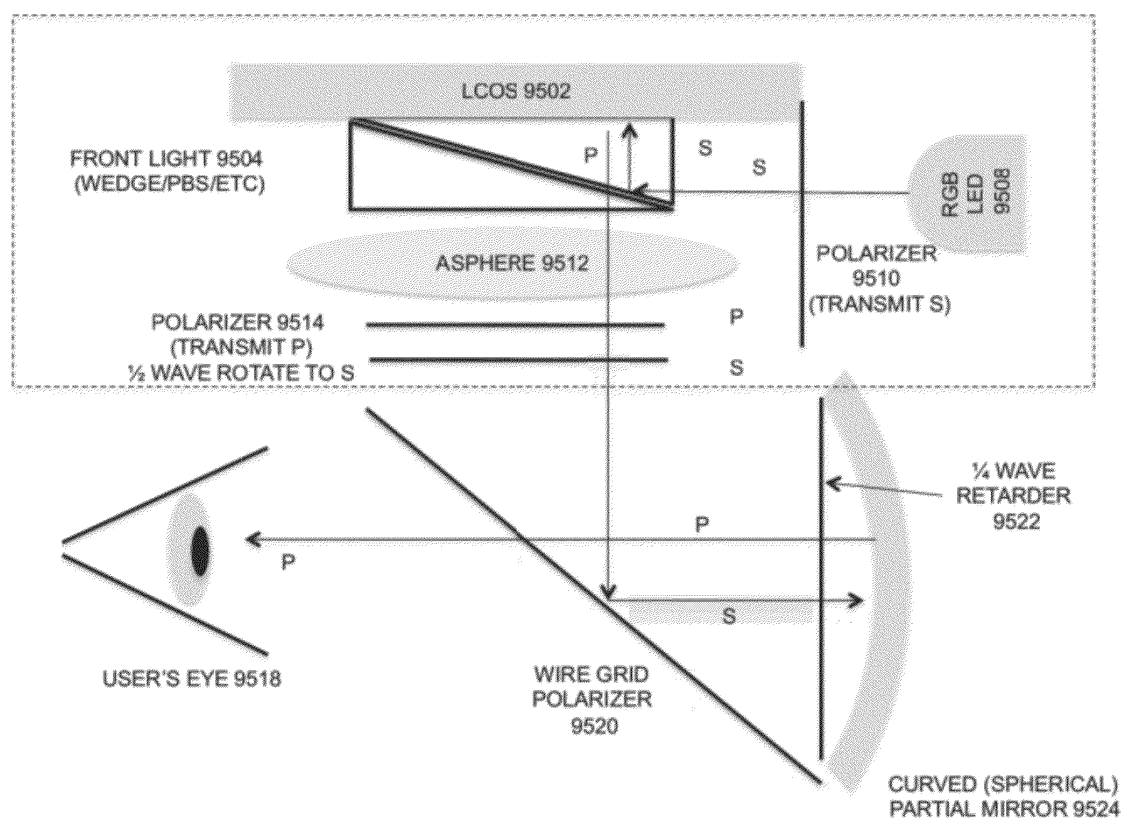
Family 2/10 - FAMPAT - ©Questel

Title

(US9366862)

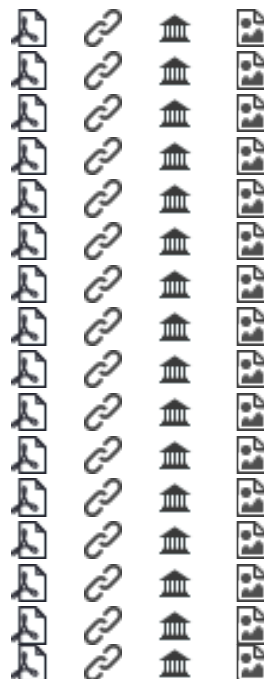
System and method for delivering content to a group of see-through near eye display eyepieces

Images



Publication data including kind & date

US2012212400	A1	2012-08-23	US20120212400
US2012212399	A1	2012-08-23	US20120212399
US2012212398	A1	2012-08-23	US20120212398
US2012218172	A1	2012-08-30	US20120218172
US2012236031	A1	2012-09-20	US20120236031
US2012236030	A1	2012-09-20	US20120236030
US2012235900	A1	2012-09-20	US20120235900
US2012235887	A1	2012-09-20	US20120235887
US2012235886	A1	2012-09-20	US20120235886
US2012235885	A1	2012-09-20	US20120235885
US2012235884	A1	2012-09-20	US20120235884
US2012235883	A1	2012-09-20	US20120235883
US2012242697	A1	2012-09-27	US20120242697
US2012242698	A1	2012-09-27	US20120242698
US2012242678	A1	2012-09-27	US20120242678



US2012249797	A1	2012-10-04	US20120249797				
US8472120	B2	2013-06-25	US8472120				
US8477425	B2	2013-07-02	US8477425				
US8482859	B2	2013-07-09	US8482859				
US8488246	B2	2013-07-16	US8488246				
US9097891	B2	2015-08-04	US9097891				
US9097890	B2	2015-08-04	US9097890				
US9129295	B2	2015-09-08	US9129295				
US9134534	B2	2015-09-15	US9134534				
US2015309316	A1	2015-10-29	US20150309316				
US9182596	B2	2015-11-10	US9182596				
US9223134	B2	2015-12-29	US9223134				
US9229227	B2	2016-01-05	US9229227				
US9341843	B2	2016-05-17	US9341843				
US9366862	B2	2016-06-14	US9366862				
US2017168566	A1	2017-06-15	US20170168566				
US2017344114	A1	2017-11-30	US20170344114				

Abstract

(US9366862)

This disclosure concerns an interactive head-mounted eyepiece with an integrated **processor** for handling content for display and an integrated image source for introducing the content to an optical assembly through which the user views a surrounding environment and the displayed content. The optical assembly includes absorptive polarizers or anti-reflective coatings to reduce stray light.

Inventors

HADDICK JOHN D

OSTERHOUT RALPH F

Latest standardized assignees - inventors removed

MICROSOFT TECHNOLOGY LICENSING

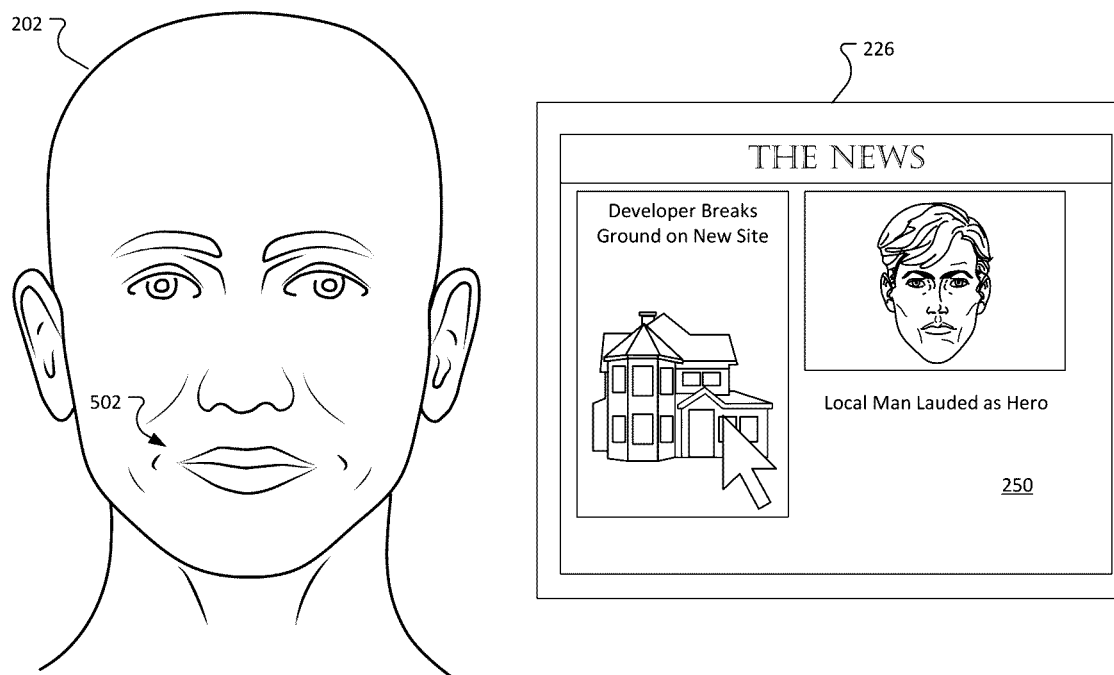
Family 3/10 - FAMPAT - ©Questel

Title

(WO201748898)

Human-computer interface

Images



Publication data including kind & date

US2017083086	A1	2017-03-23	US20170083086
WO2017048898	A1	2017-03-23	WO201748898



Abstract

(WO201748898)

Methods, systems, and apparatus, including computer programs encoded on computer storage media, for a human computer interface. One of the methods includes receiving, from a capture **sensor**, information indicative of the state of the face of the user. The method includes determining that the user is performing one of a predetermined set of facial **movements** based on the information. The method includes determining an input command based the determined facial movement. The method also includes providing the input command to a computing device.

Inventors

MAZUR KAI
CHU TONY

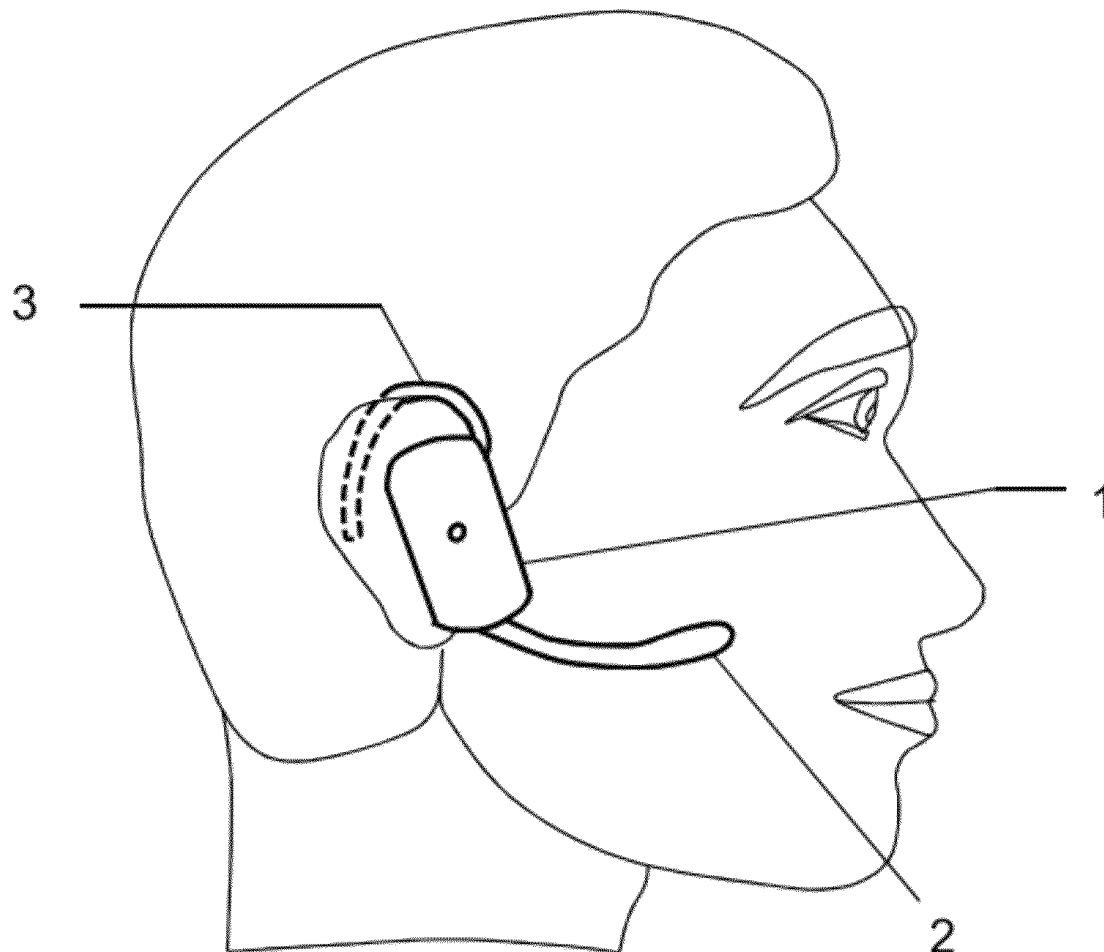
Family 4/10 - FAMPAT - ©Questel

Title

(WO2012125596)

Multipurpose controller for electronic devices, facial expressions management and drowsiness detection

Images

**Publication data including kind & date**

US2012229248	A1	2012-09-13	US20120229248
WO2012125596	A2	2012-09-20	WO2012125596
WO2012125596	A3	2012-11-08	WO2012125596
US9013264	B2	2015-04-21	US9013264

**Abstract**

(WO2012125596)

A hands-free controller, a facial expression management system, a drowsiness detection system and methods for using them are disclosed. The controller monitors facial expressions of the user, monitors motions of the user's body, generates commands for an electronic device based on the monitored facial expressions and body motions, and communicates the commands to the electronic device. Monitoring facial expressions can include sensing facial muscle motions using facial expression sensors. Monitoring user body motions can include sensing user head motions. Facial expression management can include monitoring user facial expressions, storing monitored expressions, and communicating monitored expressions to an electronic device. Drowsiness detection can include monitoring eye opening of the user, generating an alert when drowsiness is detected, monitoring proper usage of the device, and generating a warning when improper usage is detected.

Inventors

PARSHIONIKAR UDAY

PARSHIONIKAR MIHIR

Latest standardized assignees - inventors removed

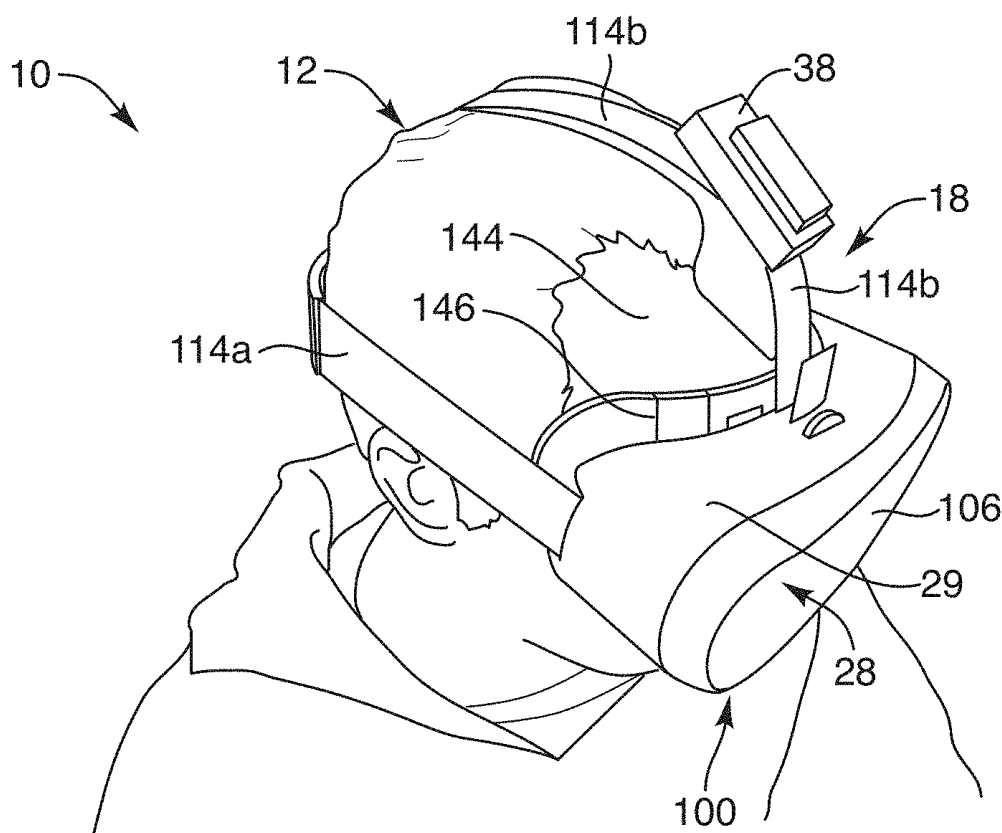
PERCEPTIVE DEVICES

Family 5/10 - FAMPAT - ©Questel

Title

(WO2017160828)

Brainwave virtual reality apparatus and method

Images**Publication data including kind & date**[US2017259167](#)

A1 2017-09-14

US20170259167

[WO2017160828](#)

A1 2017-09-21

WO2017160828

**Abstract**

(WO2017160828)

New human bio-sensors (14) in a virtual reality headset (18) comfortable for extended periods, detect brain, nerve, ocular, muscle or other bio-signals (204).Recording (126) raw data (125), amplification (128), digital conversion (132), and filtering support subsequent manipulation (146, 160) by a signal interpretation engine (146/150/150) iteratively creating (144) multiple interpretation maps (152, 158), selecting the best correlated one minimizing false positives to reduce data processing and transmission for real time remote **control** of devices (138) by events (122a) in a wearer (12) using minimal data to distinguish each event from any other.After training (134, 154) and verification (136, 140b), operation in real time (136) processes live, continuous data (140c) to **control** a remote device (138) based on the events (122a) detected by the sensors (14) in a headset, arm bands, leg bands, gloves, or boots.

Inventors

NATHAN STERLING COOK

DANIEL REED COOK DANIEL

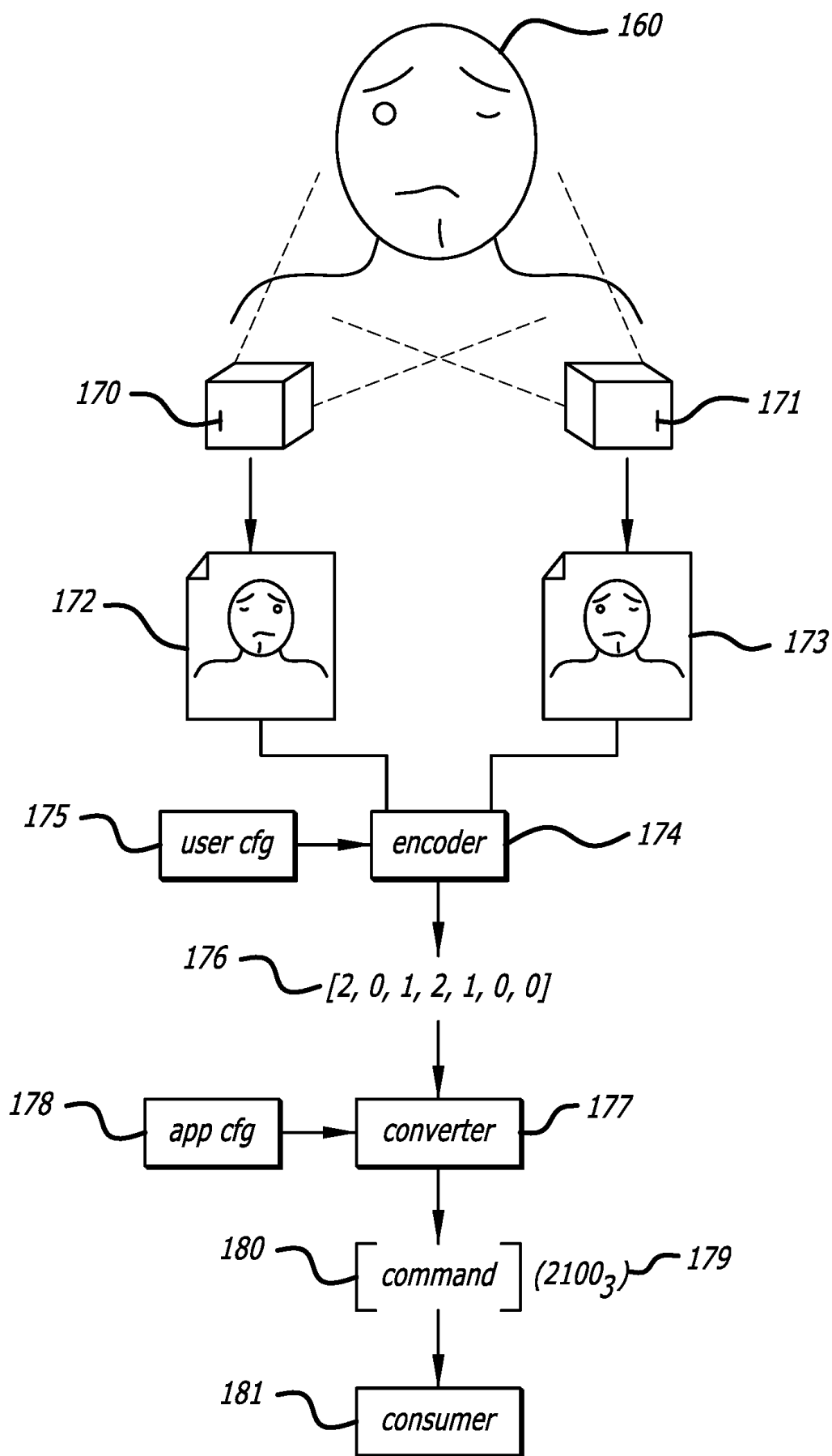
Family 6/10 - FAMPAT - ©Questel

Title

(EP3251057)

Control of a computer via distortions of facial geometry

Images

**FIG. 1**

Publication data including kind & date

CA2975124	A1	2016-08-04	CA2975124
WO2016123635	A1	2016-08-04	WO2016123635
EP3251057	A1	2017-12-06	EP3251057
JP2018505505	A	2018-02-22	JP2018505505

**Abstract**

(EP3251057)

A system which, with data provided by one or more sensors, detects a user's alteration of the geometries of parts of his face, head, neck, and/or shoulders. It determines the extent of each alteration and normalizes it with respect to the maximum possible range of each alteration so as to assign to each part-specific alteration a numeric score indicative of its extent. The normalized part-specific scores are combined so as to produce a composite numeric code representative of the complete set of simultaneously-executed geometric alterations. Each composite code is translated, or interpreted, relative to an appropriate context defined by an embodiment, an application executing on an embodiment, or by the user. For example, each composite code might be interpreted as, or assigned to, a specific alphanumeric letter, a color, a musical note, etc.

Inventors

MOFFAT BRIAN LEE

CHEN RIN IN

Latest standardized assignees - inventors removed

CHEN RIN

Family 7/10 - FAMPAT - ©Questel

Title

(WO2009108894)

Enhanced input using recognized gestures

Images

[US2016077594](#)

A1 2016-03-17 US20160077594

[US9507432](#)

B2 2016-11-29 US9507432

[US2017038852](#)

A1 2017-02-09 US20170038852

Abstract

(WO2009108894)

Enhanced input using recognized gestures, in which a user's gesture is recognized from first and second images, and a representation of the user is displayed in a central region of a **control** that further includes interaction elements disposed radially in relation to the central region. The enhanced input also includes interacting with the **control** based on the recognized user's gesture, and controlling an application based on interacting with the **control**.

Inventors

HILDRETH EVAN

MACDOUGALL FRANCIS

Latest standardized assignees - inventors removed

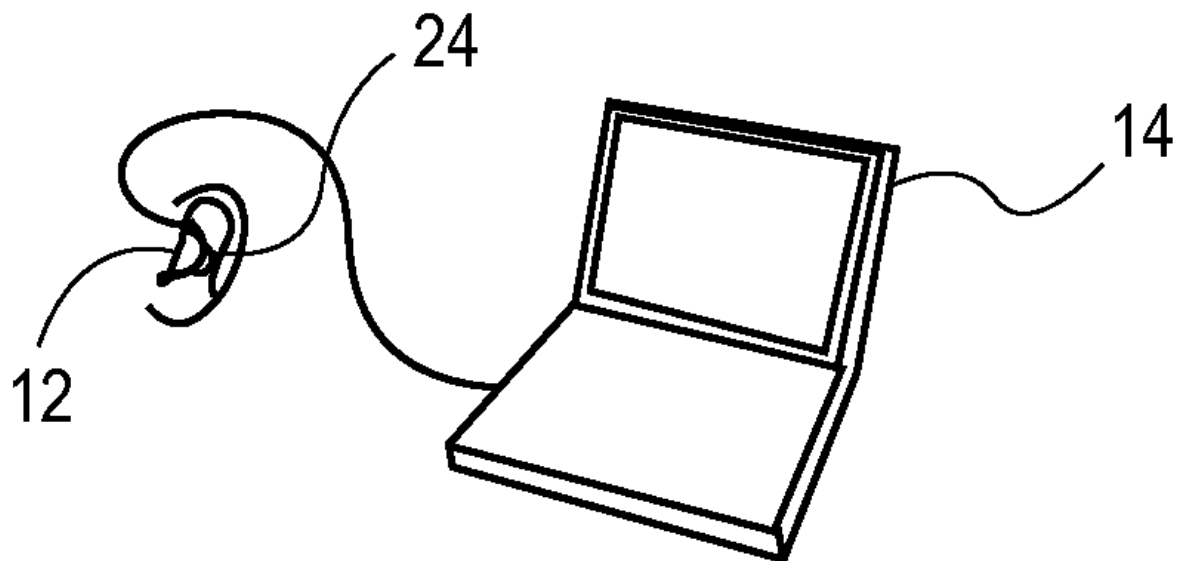
QUALCOMM

Family 8/10 - FAMPAT - ©Questel

Title

(US20110125063)

Systems and Methods for Monitoring and Modifying Behavior

Images**Publication data including kind & date**[US2011125063](#)

A1 2011-05-26 US20110125063

**Abstract**

(US20110125063)

A system for detecting non-verbal acoustic energy generated by a subject is provided. The system includes a **sensor** mountable on or in a body region of the subject, the **sensor** being capable of sensing the non-verbal acoustic energy; and a processing unit being capable of processing the non-verbal acoustic energy sensed by the **sensor** and deriving an activity related signature therefrom, thereby enabling identification of a specific activity associated with the non-verbal acoustic energy.

Inventors

SHALON TADMOR

SHALON TIDHAR

Latest standardized assignees - inventors removed

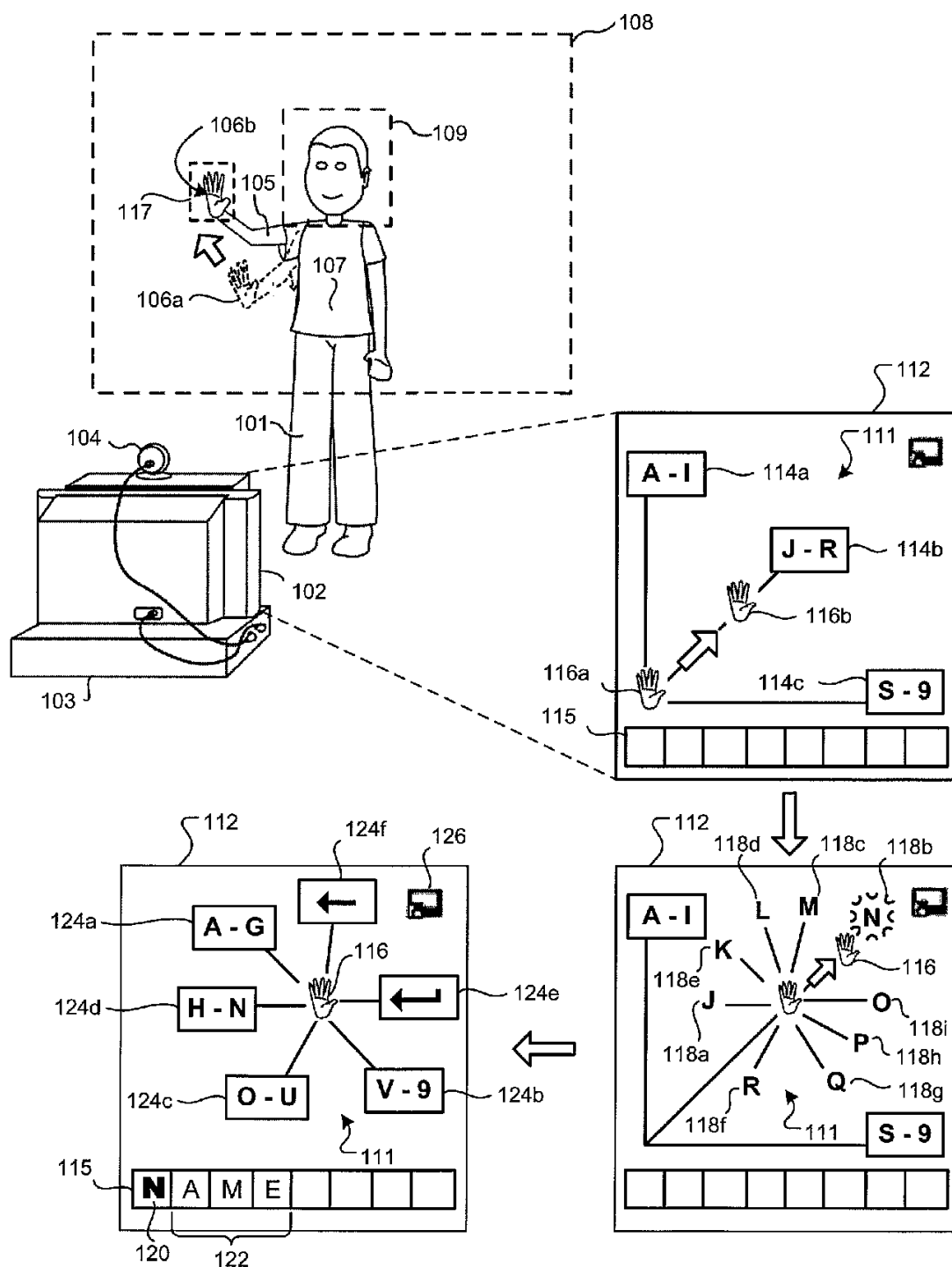
SVIP 4

Family 9/10 - FAMPAT - ©Questel

Title

(WO201008835)

Enhanced character input using recognized gestures

Images**Publication data including kind & date**

US2009315740	A1	2009-12-24	US20090315740
WO2010008835	A1	2010-01-21	WO201008835
US8514251	B2	2013-08-20	US8514251

**Abstract**

(WO201008835)

Enhanced character input using recognized gestures, in which a user's first and second gestures are recognized, and a

control including radially disposed interaction elements is output. At least a portion of the interaction elements are associated with clusters of characters. When an interaction element is selected, the characters associated with the selected interaction element are disposed radially in relation to the selected interaction element. Using the **control**, the interaction element and a character associated with the selected interaction element are selected based on the user's recognized first and second gestures, respectively, and the selected character is output.

Inventors

HILDRETH EVAN

MACDOUGALL FRANCIS

Latest standardized assignees - inventors removed

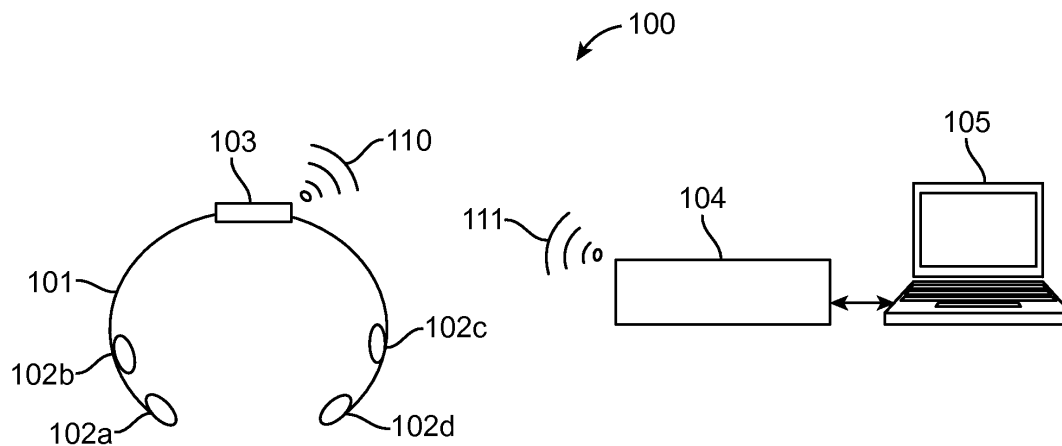
QUALCOMM

Family 10/10 - FAMPAT - ©Questel

Title

(US20150301619)

Wearable wireless tongue controlled devices

Images**Publication data including kind & date**

US2015301619	A1	2015-10-22	US20150301619
IN1990/CHE/2014	A	2016-01-01	IN2014CH01990

**Abstract**

(US20150301619)

A wearable device and a system to provide an input for a computing device are disclosed. The device comprises a sensing unit to deliver infrared signals to the facial region of a user and to receive transmitted or reflected signals therefrom, and a processing unit to determine the position or movement of the tongue of the user based on the received infrared signals. The processing unit is configured to provide an input to a computing device based on the determined position or movement of the tongue. The system further comprises a transmitter for wirelessly transmitting the input from the processing unit to the computing device.

Inventors

MENON K A UNNIKRISHNAN

JAYARAM REVATHY

PULLARKATT DIVYA

RAMESH MANEESHA VINODINI

Latest standardized assignees - inventors removed

AMRITA VISHWA VIDYAPEETHAM