United States Patent [19]

Goulden et al.

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[45] Date of Patent: **Sep. 21, 1999**

[54] **REMOTE WITH 3D ORGANIZED GUI FOR A HOME ENTERTAINMENT SYSTEM**

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[73] Assignee: **Philips Electronics North America Corporation**, New York, N.Y.

[21] Appl. No.: **08/871,082**

[22] Filed: **Jun. 6, 1997**

[51] **Int. Cl.**[6] **G06F 3/00**

[52] **U.S. Cl.** **345/327**; 345/169; 345/353; 345/355; 345/357; 345/341; 345/970; 345/976; 364/188; 348/734

[58] **Field of Search** 345/326–358, 345/173–183, 169, 970, 976; 348/7, 12, 13, 734; 364/188

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Primary Examiner—John E. Breene
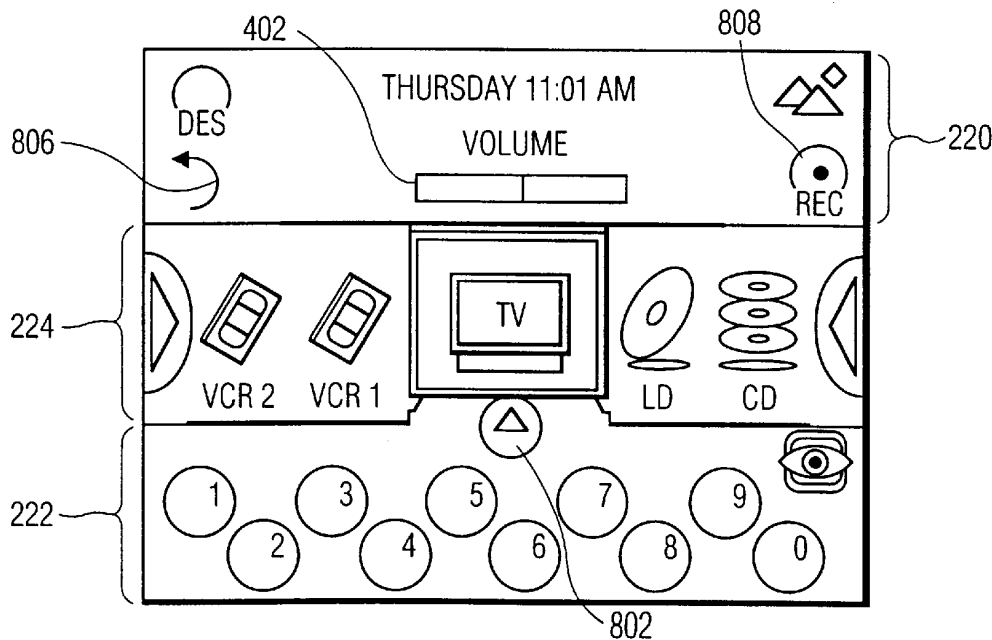*Attorney, Agent, or Firm*—Peter Verdonk

[57] **ABSTRACT**

A remote control device for a home entertainment system has a GUI with touch screen functionality. The visible part of the GUI is hierarchically organized in several control levels. All levels have consistent lay-outs with a first area for selectable items in a first location, a second area with controls for the selected one of the items in a second location and a third area for content data relating to the selected item in a third location. The spatial relationship between locations and areas is maintained throughout the levels. Such a GUI contributes significantly to the user-friendliness of the home entertainment system.
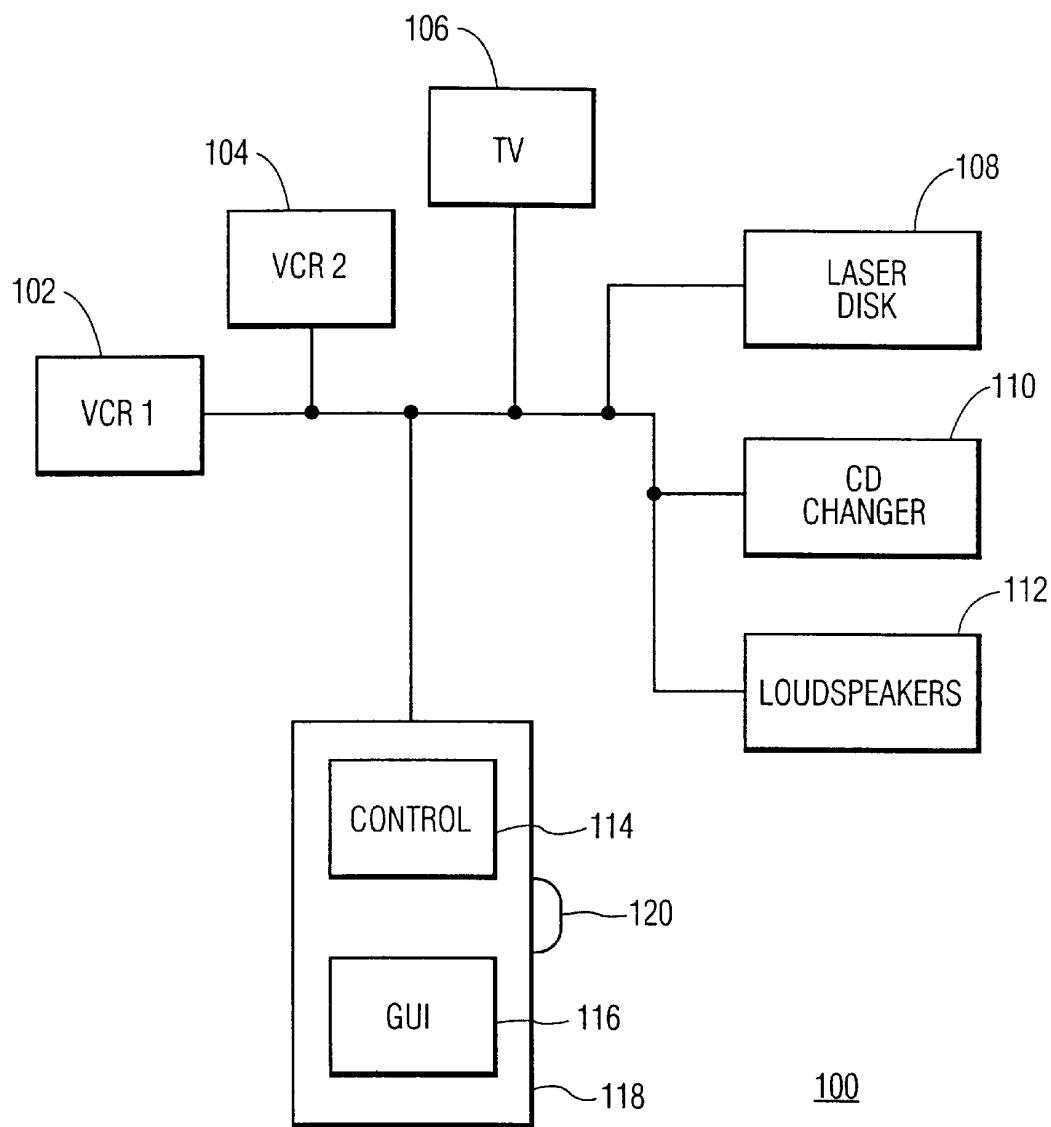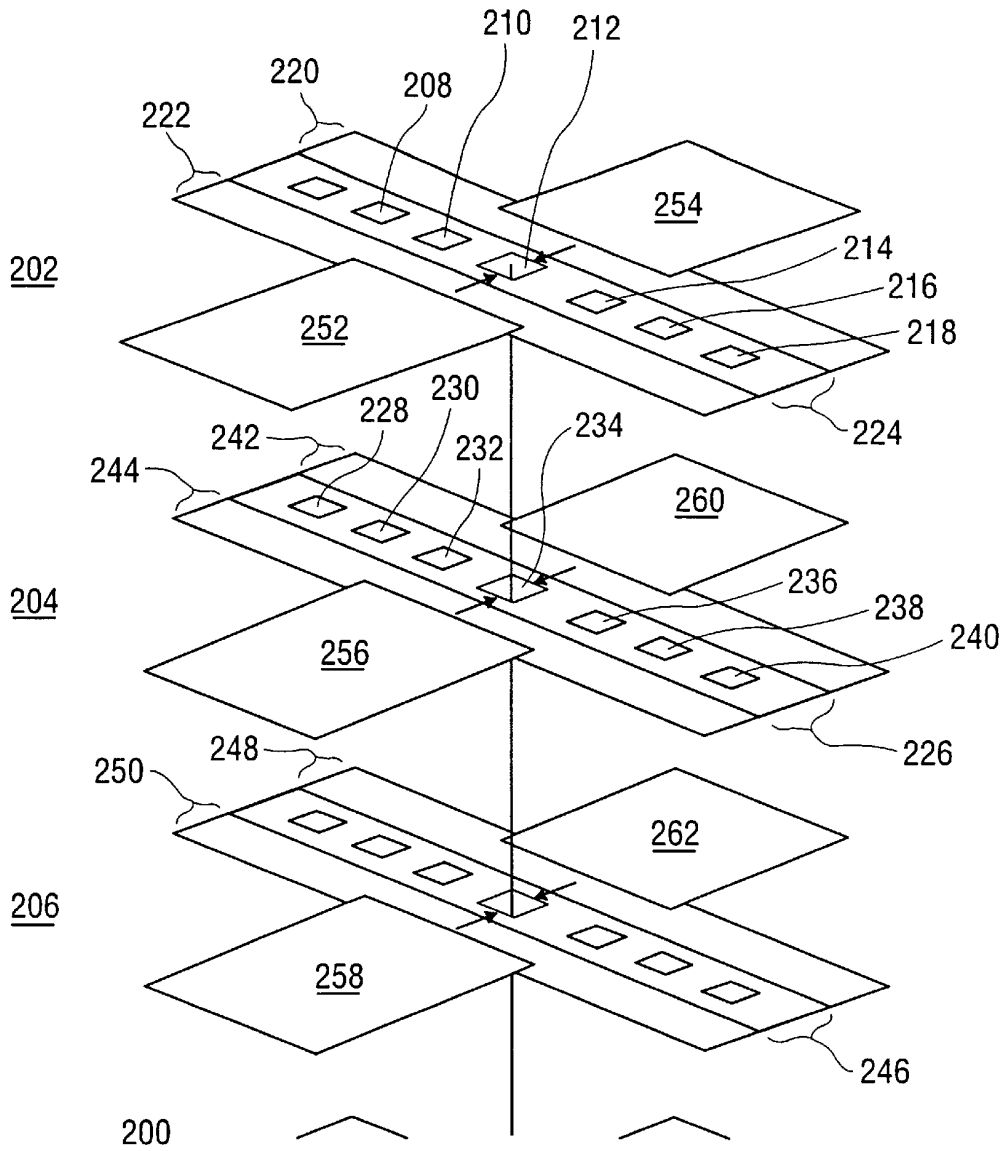
16 Claims, 6 Drawing Sheets

220: BAND WITH GRAPHICAL REPRESENTATIONS OF BASIC INFORMATION PANELS;
222: BAND WITH GRAPHICAL REPRESENTATIONS OF BASIC CONTROLS;
224: RACK WITH LINEAR ORGANIZATION OF GRAPHICAL REPRESENTATIONS OF SELECTABLE ITEMS IN LAYER 202;
802: ARROW ICON FOR ACTIVATING PANEL 252 IN FIG. 2;
806: RETURN SOFT-KEY FOR RETURNING TO HOME LEVEL.

106

TV

104

VCR 2

102

VCR 1

108

LASER
DISK

110

CD
CHANGER

112

LOUDSPEAKERS
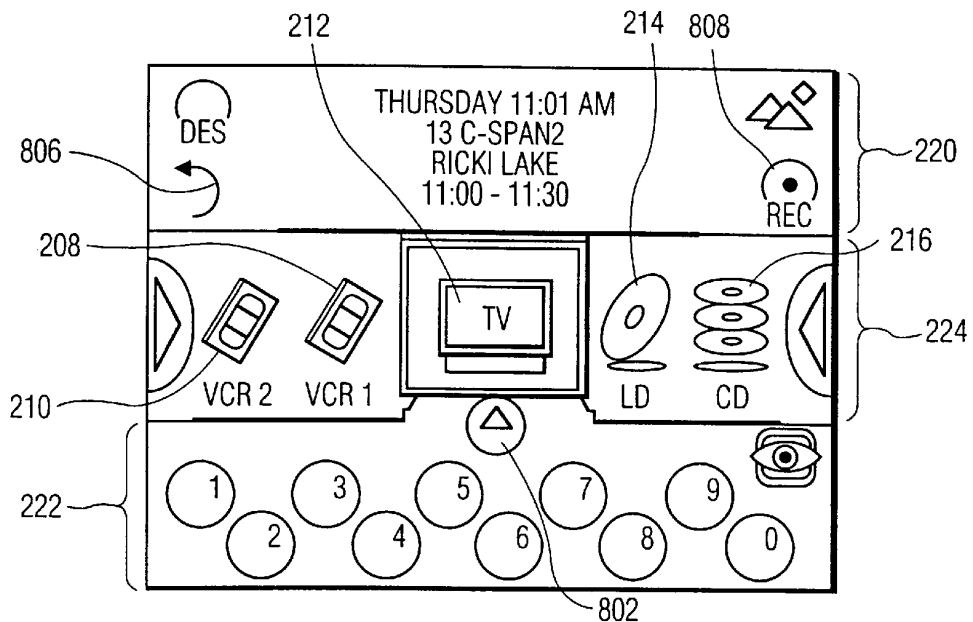
CONTROL — 114

— 120

GUI — 116

— 118

100

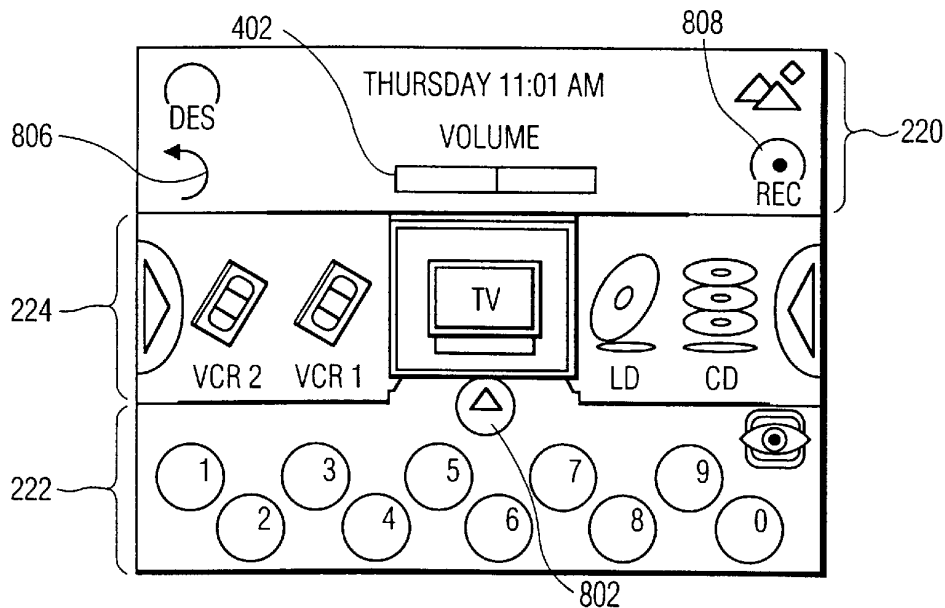120: HARD KEY;
118: CONTROL DEVICE

FIG. 1

202, 204, 206: LAYERS IN HIERARCHY;

208, 210, 212, 214, 216, 218: GRAPHICAL REPRESENTATIONS OF SELECTABLE ITEMS IN LAYER 202;

228, 230, 232, 234, 236, 238, 240: GRAPHICAL REPRESENTATIONS OF SELECTABLE ITEMS IN LAYER 204;

220, 242, 248: BANDS WITH GRAPHICAL REPRESENTATIONS OF BASIC INFORMATION PANELS;

222, 244, 250: BANDS WITH GRAPHICAL REPRESENTATIONS OF BASIC CONTROLS;

224, 226, 246: RACKS WITH LINEAR ORGANIZATION OF GRAPHICAL REPRESENTATIONS OF SELECTABLE ITEMS IN LAYER 202, 204 AND 206, RESPECTIVELY;

252, 256, 258: SUPPLEMENTARY PANELS FOR SUPPLEMENTARY CONTROLS;

254, 260, 262: SUPPLEMENTARY PANELS FOR SUPPLEMENTARY INFORMATION;

FIG. 2

212   214   808

806

THURSDAY 11:01 AM
13 C-SPAN2
RICKI LAKE
11:00 - 11:30

DES

REC

220

208

216

TV

224

VCR 2   VCR 1

LD   CD

210
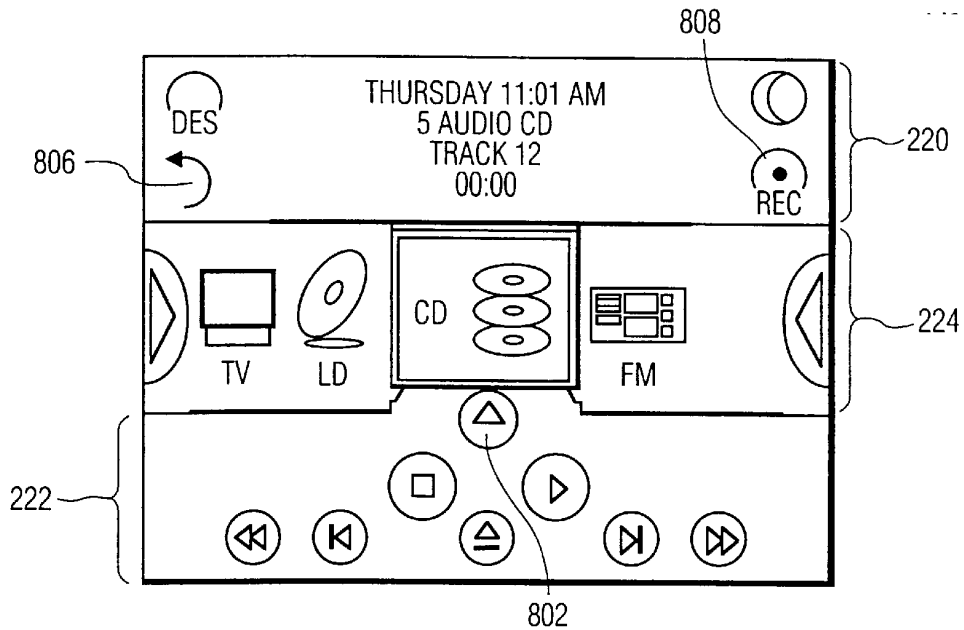
222

1   3   5   7   9

2   4   6   8   0

802

220: BAND WITH GRAPHICAL REPRESENTATIONS OF BASIC INFORMATION PANELS;
222: BAND WITH GRAPHICAL REPRESENTATIONS OF BASIC CONTROLS;
224: RACK WITH LINEAR ORGANIZATION OF GRAPHICAL REPRESENTATIONS OF SELECTABLE ITEMS IN LAYER 202;
802: ARROW ICON FOR ACTIVATING PANEL 252 IN FIG. 2;
806: RETURN SOFT-KEY FOR RETURNING TO HOME LEVEL.

FIG. 3

402   808

806

THURSDAY 11:01 AM

VOLUME

DES

REC

220

224

TV

VCR 2   VCR 1

LD   CD

222

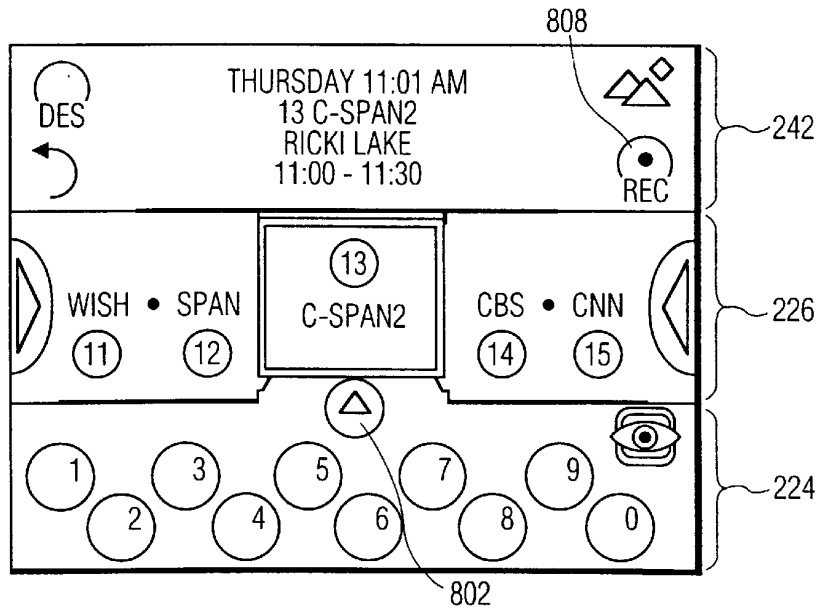1   3   5   7   9

2   4   6   8   0

802

220: BAND WITH GRAPHICAL REPRESENTATIONS OF BASIC INFORMATION PANELS;
222: BAND WITH GRAPHICAL REPRESENTATIONS OF BASIC CONTROLS;
224: RACK WITH LINEAR ORGANIZATION OF GRAPHICAL REPRESENTATIONS OF SELECTABLE ITEMS IN LAYER 202;
802: ARROW ICON FOR ACTIVATING PANEL 252 IN FIG. 2;
806: RETURN SOFT-KEY FOR RETURNING TO HOME LEVEL.

FIG. 4

220: BAND WITH GRAPHICAL REPRESENTATIONS OF BASIC INFORMATION PANELS;
222: BAND WITH GRAPHICAL REPRESENTATIONS OF BASIC CONTROLS;
224: RACK WITH LINEAR ORGANIZATION OF GRAPHICAL REPRESENTATIONS OF SELECTABLE ITEMS IN LAYER 202;
802: ARROW ICON FOR ACTIVATING PANEL 252 IN FIG. 2;
806: RETURN SOFT-KEY FOR RETURNING TO HOME LEVEL.

FIG. 5

226: RACK WITH LINEAR ORGANIZATION OF GRAPHICAL REPRESENTATIONS OF SELECTABLE ITEMS IN LAYER 204 OF FIG. 2;
242: BAND WITH GRAPHICAL REPRESENTATIONS OF BASIC INFORMATION PANELS;
244: BAND WITH GRAPHICAL REPRESENTATIONS OF BASIC CONTROLS;
802: ARROW ICON FOR ACTIVATING PANEL 256 IN FIG. 2;
806: RETURN SOFT-KEY FOR RETURNING TO HOME LEVEL.

FIG. 6

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