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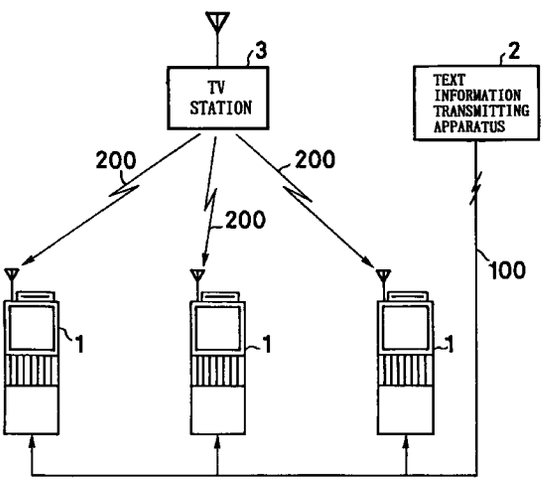
(54) Information displaying apparatus and information providing system using the same

(57) An information receiving and displaying apparatus 1 is installed at a place such as a lobby of a hotel or airport, a waiting room of a hospital, or the like where the public keep staying for a while. The apparatus comprises a signal receiving section and an information display section, and has a video display function as well. The signal receiving section receives both of text information such as commercial messages transmitted from a text information transmitting apparatus 2 disposed within a text information transmission control center via a public telephone line 100 and desirable text information (text news, weather reports, and the like) superposed on a public wave 200 from a TV station 3, and one kind of these data is selectively displayed on the information display section. The text information is displayed on an electric light display panel in a scrolling fashion, whereby viewers can see the information about commercial messages and the like as well as the information such as text news and weather reports.

Fig. 1



EP 0 951 006 A2

Description

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present invention relates to an apparatus for displaying various kinds of information, which is installed, for example, at a lobby of a hotel or airport, a waiting room of a hospital, or the like; and an information providing system using this information displaying apparatus.

Description of the Prior Art

[0002] Recently, teletext technology has rapidly been progressing. Teletext has actually started and is utilized for various purposes. As a mode of its utilization, when an image displaying apparatus having means for receiving and displaying teletext is installed at a place such as a lobby of a hotel or airport, a waiting room of a hospital, or the like, for example, where the public keep staying for a while, so as to display information such as news, weather reports, and the like, a large number of people can be provided with timely information in real time, which is favorable in terms of serviceability as well.

[0003] On the other hand, there has been a demand for displaying commercial messages, quizzes, and the like, for example, on the information displaying apparatus only for a desirable period of time at a desirable timing, in addition to the public broadcasting of news, weather reports, and the like. However, it is difficult for the above-mentioned information displaying apparatus to fully satisfy such a demand.

[0004] In view of such circumstances, it is an object of the present invention to provide an information displaying apparatus which can display not only the information obtained by teletext, such as news and weather reports, but also information such as commercial messages and quizzes easily and appropriately only for a desirable period of time at a desirable timing.

[0005] On the other hand, there have been known various kinds of ambient image displaying apparatus installed at the above-mentioned lobby of a hotel or airport, waiting room of a hospital, and the like, providing people staying there for a while with pleasure or relaxation. For example, there have been known an image displaying apparatus for displaying an image of a cascading waterfall on a monitor; and an image displaying apparatus in which a monitor displaying a recorded image of swimming fish or the like, a half mirror, and an aquarium are combined together, so as to look as if the fish is swimming within the aquarium (Japanese Utility Model Publication No. 4-49670).

[0006] If such an image displaying apparatus which attracts eyes of many people is combined with the above-mentioned information displaying apparatus for displaying news, weather reports, commercial messages, quizzes, and the like, then many people can be provided with not only pleasure or relaxation but also necessary information, whereby the serviceability of the apparatus can further be improved, and its function as an advertising medium can greatly be exhibited.

[0007] Therefore, in addition to the object mentioned above, it is another object of the present invention to provide an information displaying apparatus which can also provide many people with pleasure or relaxation at the same time.

[0008] Further, if kinds of information to be transmitted to information displaying apparatus are changed according to the places where the apparatus are installed, for example, such that, among various kinds of such information, a greater amount of information about travel goods and the like is transmitted to the information displaying apparatus installed at airport lobbies, a greater amount of health information and commercial message information concerning healthcare products is transmitted to the information displaying apparatus installed at waiting rooms of hospitals, and so forth, then the serviceability and the function as advertising media will improve greatly.

[0009] Therefore, it is a further object of the present invention to provide an information providing system using an information displaying apparatus, which can change the contents of information to be transmitted to a plurality of information displaying apparatus according to the places where they are installed.

SUMMARY OF THE INVENTION

[0010] A first information displaying apparatus in accordance with the present invention comprises:

a first information receiving section for receiving a first text information signal transmitted through a public telephone line;

a first memory section for storing the first text information signal received by the first information receiving section;

a second information receiving section for receiving a second text information signal transmitted from a broadcast station by teletext;

a second memory section for storing the second text information signal received by the second information receiving section;

an information display section for displaying, as a visible letter, symbol, or graphic form, the text information signals stored in the first and second memory sections; and

a signal switching section for selectively transmitting one of the text information signals stored in the first and second memory sections to the information display section.

[0011] A second information displaying apparatus in accordance with the present invention comprises:

a first information receiving section for receiving a first text information signal transmitted through a public telephone line;

a first memory section for storing the first text information signal received by the first information receiving section;

a second information receiving section for receiving a second text information signal transmitted from a broadcast station by teletext;

a second memory section for storing the second text information signal received by the second information receiving section;

an information display section for displaying, as a visible letter, symbol, or graphic form, the text information signals stored in the first and second memory sections; and

a signal display position indicating section for indicating which visible letter, symbol, or graphic form of the text information signals stored in the first and second memory sections is to be displayed at a predetermined position of the information display section.

[0012] The information display section may be constituted by an electric light display or liquid display panel. Also, the information display section may be constituted by a video display for displaying an image, while a superimposing section for superimposing the text information signals from the first and second memory sections onto a video signal fed into the video display may be provided. Further, the information display section may be constituted by one of regions of a divided display screen of a video display for displaying an image, while the image may be displayed on the remaining regions of the display screen.

[0013] The video signal fed into the video display may be the one reproduced from a video information storage medium. Also, this video signal may be a signal concerning an ambient image, so that the ambient image is displayed on the video display.

[0014] Preferably, the information display section is disposed adjacent to the video display for displaying an image.

[0015] The information providing system in accordance with the present invention is an information providing system using the above-mentioned information displaying apparatus, the system comprising:

an information signal generating section for generating the first text information signal;

a telephone number storage section storing a plurality of telephone numbers concerning information displaying apparatus to which the text information signal generated from the information signal generating section is to be transmitted;

a telephone number selecting section for selecting at least one of the plurality of telephone numbers stored in the telephone number storage section; and

an information signal transmitting section for sequentially connecting, via a telephone line, with the information displaying apparatus concerning the telephone numbers selected by the telephone number selecting section and transmitting to each of the information displaying apparatus concerning thus connected telephone numbers the text information signal generated from the information signal generating section.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016]

Fig. 1 is a schematic view showing an information providing system using information receiving and displaying apparatus in accordance with an embodiment of the present invention;

Figs. 2A and 2B are schematic views showing a specific configuration of the information receiving and displaying apparatus shown in Fig. 1, in which Fig. 2A is a front view, whereas Fig. 2B is a side view without a side panel;

Fig. 3 is a block diagram conceptually showing the inner configuration of the information providing system shown in Fig. 1; and

Fig. 4 is a schematic view showing an embodiment different from that of the information receiving and displaying apparatus shown in Figs. 2A and 2B.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0017] In the following, information displaying apparatus in accordance with embodiments of the present invention and an information providing system using the same will be explained.

[0018] Fig. 1 is a schematic view showing an information providing system in accordance with an embodiment of the present invention.

[0019] This information providing system comprises information receiving and displaying apparatus 1 each of which is constituted by a signal receiving section 1a and an information display section 1b; and a text information transmitting apparatus 2, disposed within a text information transmission control center, for transmitting text information such as commercial messages and quizzes to each information receiving and displaying apparatus 1 through a public telephone line 100. Each image information receiving and displaying apparatus 1 has a function of receiving a public wave 200, transmitted from a TV station 3, on which a teletext signal is superposed.

[0020] Each information receiving and displaying apparatus 1 is installed, for example, at a lobby of a hotel or airport, a waiting room of a hospital, or the like where the public keep staying for a while. As shown in

Figs. 2A and 2B, each information receiving and displaying apparatus 1 comprises a rack housing 50, and the signal receiving section 1a and information display section 1b mounted therein. Specifically, the signal receiving section 1a comprises a receiving section 41 for receiving the text information transmitted through the public telephone line 100 and public wave 200, and a controller 42 for carrying out display-switching operations for the text information, driving operations for displaying the information, and the like. The information display section 1b comprises a video display section 32 having a DVD player 33, a color TV monitor 51 for displaying video information from the DVD player 33, a half mirror 52 for reflecting an image from the color TV monitor 51 and transmitting therethrough an image of a background 55 illuminated by a light source 54, and a glass panel 53 for causing the video information from the DVD player 33 and the image of the background 55 combined by the half mirror 52 to become visible to viewers. Also, the uppermost portion of the apparatus is provided with an electric light display panel 31 on which text information is displayed in a scrolling fashion.

[0021] With the information receiving and displaying apparatus 1, the viewers can feel relaxation by seeing, for example, fish swimming in water displayed on the video display section 32, while being able to obtain, in real time, timely information such as news, weather reports, corporate commercial messages, and the like displayed as letters or graphic forms on the electric light display panel 31.

[0022] With reference to Fig. 3, the inner configuration of the information providing system equipped with the above-mentioned information receiving and displaying apparatus 1 will now be explained.

[0023] As shown in Fig. 3, the text information transmitting apparatus 2 disposed within the transmission control center comprises a CPU 11, a keyboard 12 connected to the CPU 11, a display control section 13, a memory 15 constituted by a storage medium storing commercial message information or the like to be transmitted, a telephone number memory 16 storing the telephone number of each information receiving and displaying apparatus 1 to which information is transmitted, a modem 17 for transmitting the commercial message information or the like to the public telephone line 100, and a CRT display 14 connected to the display control section 13.

[0024] Thus constructed text information transmitting apparatus 2 is configured such that an operator can operate the keyboard 12 while observing the CRT display 14, so as to select the information to be transmitted from among various kinds of text information (various kinds of information such as quiz and announcement in addition to the commercial message information) and set the time at which it is to be transmitted. Also, conditions which have once been set are written into a table in a memory within the CPU 11, so that predetermined information can automatically be transmitted to the public telephone line 100 via the modem 17 at a predetermined time.

[0025] The telephone number memory 16 has a table in which the telephone number of each information receiving and displaying apparatus 1 is written in relation to the kind of place where it is installed. The information linking the information to be transmitted and the telephone number table in the telephone number memory 16 to each other is stored in the memory within the CPU 11, whereby predetermined commercial message information or the like is adapted to be transmitted only to the information receiving and displaying apparatus 1 installed at predetermined places. As a consequence, different kinds of information can be transmitted to different places or at predetermined times different from each other, for example, such that a greater amount of information concerning travel goods is transmitted to the information receiving and displaying apparatus 1 installed at airport lobbies, a greater amount of health information or commercial message information about healthcare products is transmitted to the information receiving and displaying apparatus 1 installed at the waiting rooms of hospitals, and so forth.

[0026] Each information receiving and displaying apparatus 1 will now be explained in detail. First, the signal receiving section 1a comprises a CPU 21; a modem 22, a first memory 23, a second memory 24, a display information switching section 25, a tuner 26, an information display drive section 27 for transmitting text information to the electric light display panel 31, each connected to the CPU 21; an antenna for receiving the public wave 200 from the TV station 3; and an antenna connector 29 for connecting the antenna 28 to the tuner 26.

[0027] Namely, the signal receiving section 1a receives, by way of the modem 22, the text information such as commercial messages transmitted via the public telephone line 100 from the text information transmitting apparatus 2 disposed within the text information transmission control center and transmits thus received information to the CPU 21 as data.

[0028] Thereafter, the CPU 21 stores the text information data of commercial messages or the like (hereinafter referred to as first text information data) into the first memory 23.

[0029] On the other hand, the signal receiving section 1a has the antenna 28 for receiving the public wave (the wave on which teletext is superposed) 200. The desirable text information data (text news, weather reports, and the like; hereinafter referred to as second text information data) superposed on the public wave 200 is selected by the tuner 26 and is transmitted to the CPU 21. Thereafter, the CPU 21 stores the second text information data into the second memory 24.

[0030] Subsequently, based on the display information switching signal from the display information switching section 25, the CPU 21 determines which of the first and second text information data to be displayed. The

CPU 21 accesses the first memory 23 and second memory 24, respectively, when the first text information data and second text information data are to be displayed, thereby transmitting the text information data stored in thus selected memory 23, 24 to the information display drive section 27.

[0031] The information display drive section 27 causes the data transmitted from the CPU 21 to be displayed on the electric light display panel 31 in a scrolling manner, thereby enabling viewers to see information such as text news and weather reports and information such as commercial messages.

[0032] The above-mentioned first and second memories 23, 24 may be either memory devices such as RAM, or hard disks or removable disks (e.g., floppy disk, magneto-optical disc, and rewritable compact disc).

[0033] The information display switching section 25 may have any configuration as long as it can transmit a signal which is adapted to determine which of the two memories 23, 24 is to be accessed. The outputting of this signal may be carried out according to a preset program or in response to an operation of the operator.

[0034] Though the CPU 21 carries out data readout operations for the above-mentioned two memories 23, 24 in this embodiment, memory access means such as DMA (direct memory access) may be provided separately as a matter of course.

[0035] The information display section 1b will now be explained. The information display section 1b comprises the electric light display panel 31 for displaying the above-mentioned text information data, the DVD player 33, and the video display section 32 for displaying the video information from the DVD player 33.

[0036] The electric light display panel 31 is a rectangular display section which simultaneously displays, for example, about 11 letters, numbers, symbols, illustrations, or the like, in which VFDs (vacuum fluorescent displays) or LEDs emitting green, red, or orange light, for example, are arranged in 264 dots (W) $\times$ 24 dots (H) . As these letters and the like are scrolled, various kinds of information such as news, weather reports, and the like are displayed.

[0037] Specifically, the video display section 32 has a configuration such as that shown in Figs. 2A and 2B as mentioned above, and displays a fantastic space such as aquarium, undersea water, and outer space on the whole screen according to the video software reproduced by the DVD player 33.

[0038] The electric light display panel 31 is not restricted to the one in which LEDs are arranged. It may have any configuration as long as it can display a plurality of letters simultaneously and allow a scrolling function. For example, an LCD (liquid crystal display) panel can be used instead.

[0039] Also, the configuration of the video display section 32 is not limited to that mentioned above, as long as a desirable image can be displayed adjacent to the display of text information data. In place of the CRT display, a liquid crystal display or plasma display can be used as a matter of course. The video display section 32 may also be arranged such that the image displayed on the display screen can directly be seen without the aid of the half mirror.

[0040] Further, the video reproducing means for reproducing the video information data transmitted to the video display section 32 is not limited to the DVD player. When the video information recording medium is a video tape, laser disc, compact disc, and the like, the video reproducing means can be a VTR, laser disc player, compact disc player, and the like, respectively, as a matter of course.

[0041] The information displaying apparatus of the present invention and the information providing system using the same are not limited to those of the above-mentioned embodiment, and can be modified in various manners.

[0042] For example, though the text information and the like are displayed on the electric light display panel 31 while the video information is displayed on the video display section 32 in the above-mentioned embodiment, the text information and the like can be superimposed on the video information as shown in Fig. 4, whereby the apparatus can be made more compact. Further, the video display screen can be divided by a predetermined ratio, such that, for example, only the text information is displayed in one region (e.g., upper region), whereas only the video information is displayed in the other region (e.g., lower region).

[0043] In the text information transmitting apparatus 2 in the above-mentioned information providing system, the sorting table of the telephone number memory 16 is not limited to the one classified according to the places where the information receiving and displaying apparatus 1 are installed, as a matter of course. It can be a table classified according to any other elements.

[0044] Though one kind of text information signals is transmitted to the information display section 1b in the above-mentioned embodiment, the information displaying apparatus in accordance with the present invention is not limited thereto. Both kinds of text information signals may be transmitted to the information display section 1b, so that one kind of text information is displayed on the main screen, while the other kind of text information is displayed on the sub-screen, and the position at which each kind of text information is displayed can be specified from the signal receiving section 1a, e.g., by the CPU 11, so as to change the text information displayed on the main screen from one kind to the other and the text information displayed on the sub-screen conversely.

[0045] As explained in the foregoing, the information displaying apparatus of the present invention can provide the public who happen to be near each information display apparatus with not only the timely text information such as news, weather reports, and the like transmitted by teletext, but also, for a desirable time at a

desirable timing, information concerning commercial messages, quizzes, and the like which corporations and the like wish to broadcast, thereby being able to satisfy both of the service function for the public and the advertising function demanded by corporations at the same time.

[0046] Also, when the display of text information is combined with the video display of ambient images or the like, while the public can be provided with relaxation or pleasure, attention can be called to text information about commercial messages and the like, whereby the advertising function can further be fortified.

[0047] Further, in the information providing system using this information displaying apparatus, as the contents of text information transmitted to the individual information displaying apparatus are made changeable according to the place where it is installed, the abovementioned service function and advertising function can further be exhibited.

[0048] An information receiving and displaying apparatus 1 is installed at a place such as a lobby of a hotel or airport, a waiting room of a hospital, or the like where the public keep staying for a while. The apparatus comprises a signal receiving section and an information display section, and has a video display function as well. The signal receiving section receives both of text information such as commercial messages transmitted from a text information transmitting apparatus 2 disposed within a text information transmission control center via a public telephone line 100 and desirable text information (text news, weather reports, and the like) superposed on a public wave 200 from a TV station 3, and one kind of these data is selectively displayed on the information display section. The text information is displayed on an electric light display panel in a scrolling fashion, whereby viewers can see the information about commercial messages and the like as well as the information such as text news and weather reports.

Claims

1. An information displaying apparatus comprising:

   a first information receiving section for receiving a first text information signal transmitted through a public telephone line;
   a first memory section for storing said first text information signal received by said first information receiving section;
   a second information receiving section for receiving a second text information signal transmitted from a broadcast station by teletext;
   a second memory section for storing said second text information signal received by said second information receiving section;
   an information display section for displaying, as a visible letter, symbol, or graphic form, said text information signals stored in said first and second memory sections; and
   a signal switching section for selectively transmitting one of said text information signals stored in said first and second memory sections to said information display section.

2. An information displaying apparatus according to claim 1, wherein said information display section comprises an electric light display.

3. An information displaying apparatus according to claim 1, wherein said information display section comprises a liquid crystal display panel.

4. An information displaying apparatus according to claim 1, wherein said information display section is disposed adjacent to a video display for displaying an image.

5. An information displaying apparatus according to claim 1, wherein said information display section comprises a video display for displaying an image, said apparatus further comprising a superimposing section for superimposing said text information signals from said first and second memory sections onto a video signal fed into said video display.

6. An information displaying apparatus according to claim 5, wherein said video signal fed into said video display is a signal reproduced from a video information storage medium.

7. An information displaying apparatus according to claim 5, wherein said image is an ambient image.

8. An information displaying apparatus according to claim 1, wherein said information display section is constituted by one of regions of a divided display screen of a video display for displaying an image, said image being displayed on a remaining region of said display screen.

9. An information displaying apparatus according to claim 8, wherein a video signal fed into said video display is a signal reproduced from a video information storage medium.

10. An information displaying apparatus according to claim 8, wherein said image is an ambient image.

11. An information providing system using the information displaying apparatus of claim 1, said system comprising:

    an information signal generating section for generating said first text information signal;
    a telephone number storage section storing a

plurality of telephone numbers concerning information displaying apparatus to which said text information signal generated from said information signal generating section is to be transmitted;

a telephone number selecting section for selecting at least one of said plurality of telephone numbers stored in said telephone number storage section; and

an information signal transmitting section for sequentially connecting, via a telephone line, with said information displaying apparatus concerning said telephone numbers selected by said telephone number selecting section and transmitting to each of said information displaying apparatus concerning thus connected telephone numbers said text information signal generated from said information signal generating section.

12. An information displaying apparatus comprising:

a first information receiving section for receiving a first text information signal transmitted through a public telephone line;

a first memory section for storing said first text information signal received by said first information receiving section;

a second information receiving section for receiving a second text information signal transmitted from a broadcast station by teletext;

a second memory section for storing said second text information signal received by said second information receiving section;

an information display section for displaying, as a visible letter, symbol, or graphic form, said text information signals stored in said first and second memory sections; and

a signal display position indicating section for indicating which visible letter, symbol, or graphic form of said text information signals stored in said first and second memory sections is to be displayed at a predetermined position of said information display section.

13. An information displaying apparatus according to claim 12, wherein said information display section comprises an electric light display.

14. An information displaying apparatus according to claim 12, wherein said information display section comprises a liquid crystal display panel.

15. An information displaying apparatus according to claim 12, wherein said information display section is disposed adjacent to a video display for displaying an image.

16. An information displaying apparatus according to claim 12, wherein said information display section comprises a video display for displaying an image, said apparatus further comprising a superimposing section for superimposing said text information signals from said first and second memory sections onto a video signal fed into said video display.

17. An information displaying apparatus according to claim 16, wherein said video signal fed into said video display is a signal reproduced from a video information storage medium.

18. An information displaying apparatus according to claim 16, wherein said image is an ambient image.

19. An information displaying apparatus according to claim 12, wherein said information display section is constituted by one of regions of a divided display screen of a video display for displaying an image, said image being displayed on a remaining region of said display screen.

20. An information displaying apparatus according to claim 19, wherein a video signal fed into said video display is a signal reproduced from a video information storage medium.

21. An information displaying apparatus according to claim 19, wherein said image is an ambient image.

22. An information providing system using the information displaying apparatus of claim 12, said system comprising:

an information signal generating section for generating said first text information signal;

a telephone number storage section storing a plurality of telephone numbers concerning information displaying apparatus to which said text information signal generated from said information signal generating section is to be transmitted;

a telephone number selecting section for selecting at least one of said plurality of telephone numbers stored in said telephone number storage section; and

an information signal transmitting section for sequentially connecting, via a telephone line, with said information displaying apparatus concerning said telephone numbers selected by said telephone number selecting section and transmitting to each of said information displaying apparatus concerning thus connected telephone numbers said text information signal generated from said information signal generating section.

Fig. 1

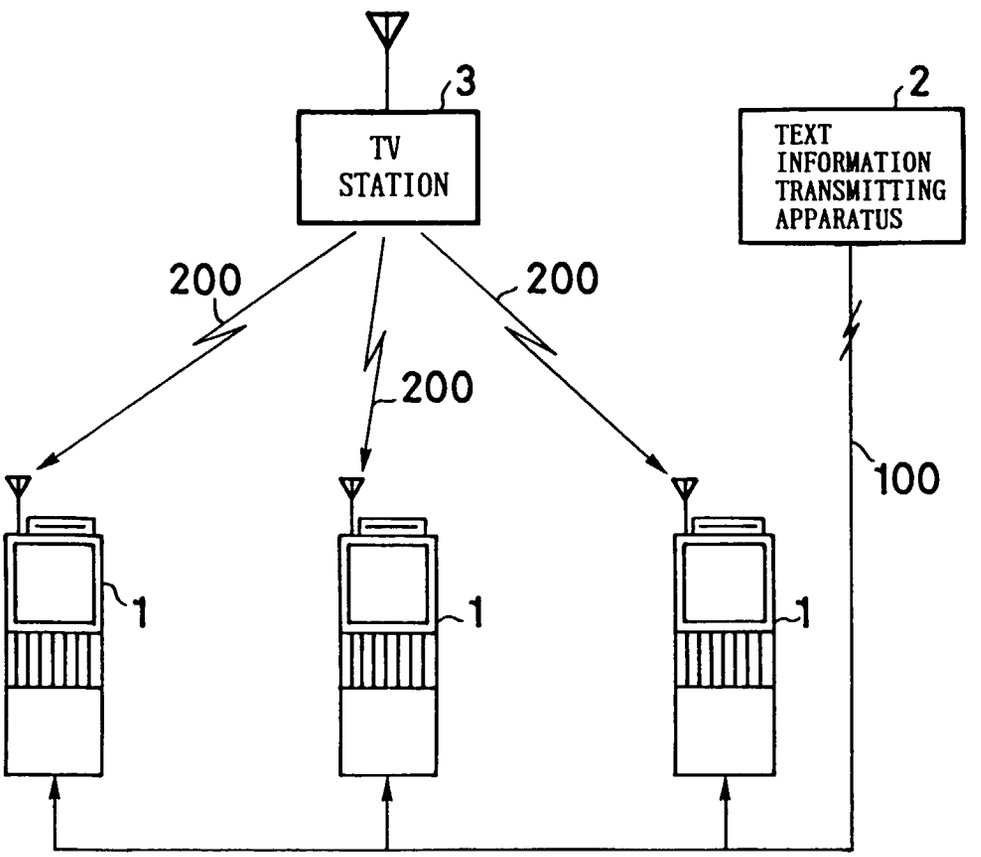

3
TV
STATION
2
TEXT
INFORMATION
TRANSMITTING
APPARATUS
200
200
200
100
1
1
1

Fig. 2A

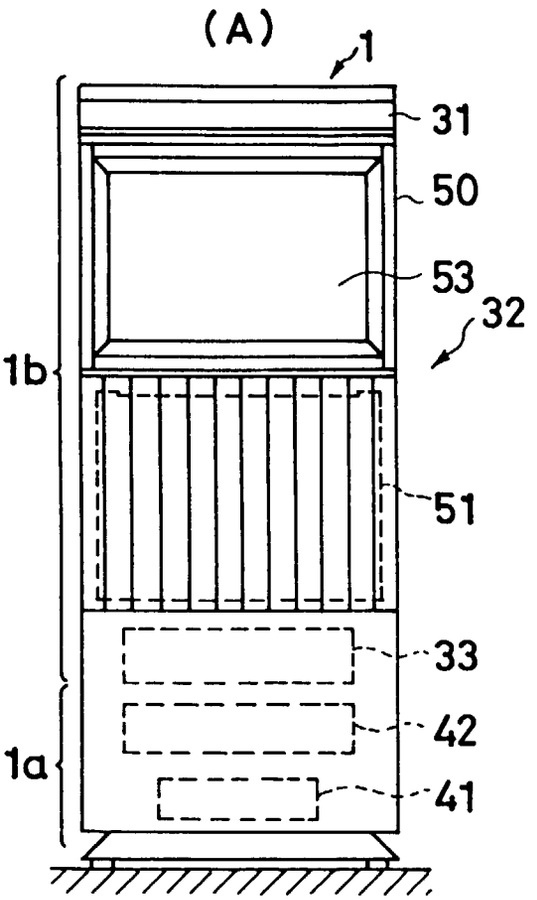


Fig. 2B

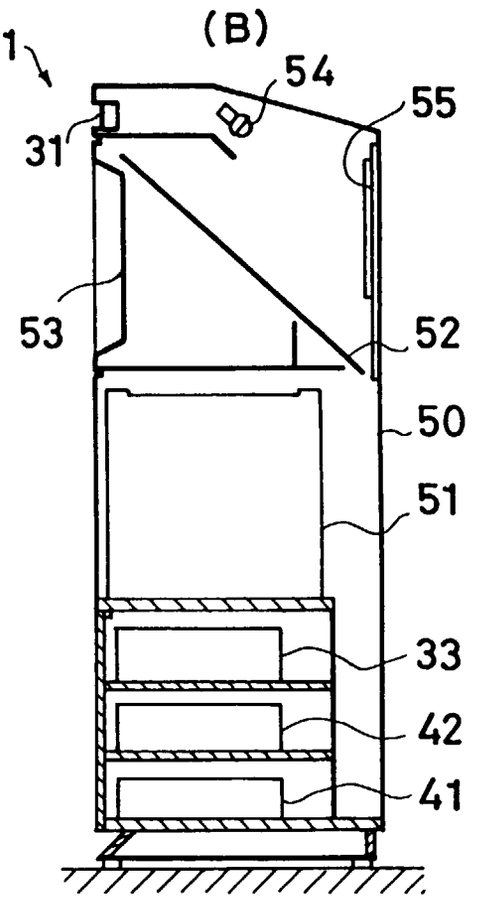


Fig. 3

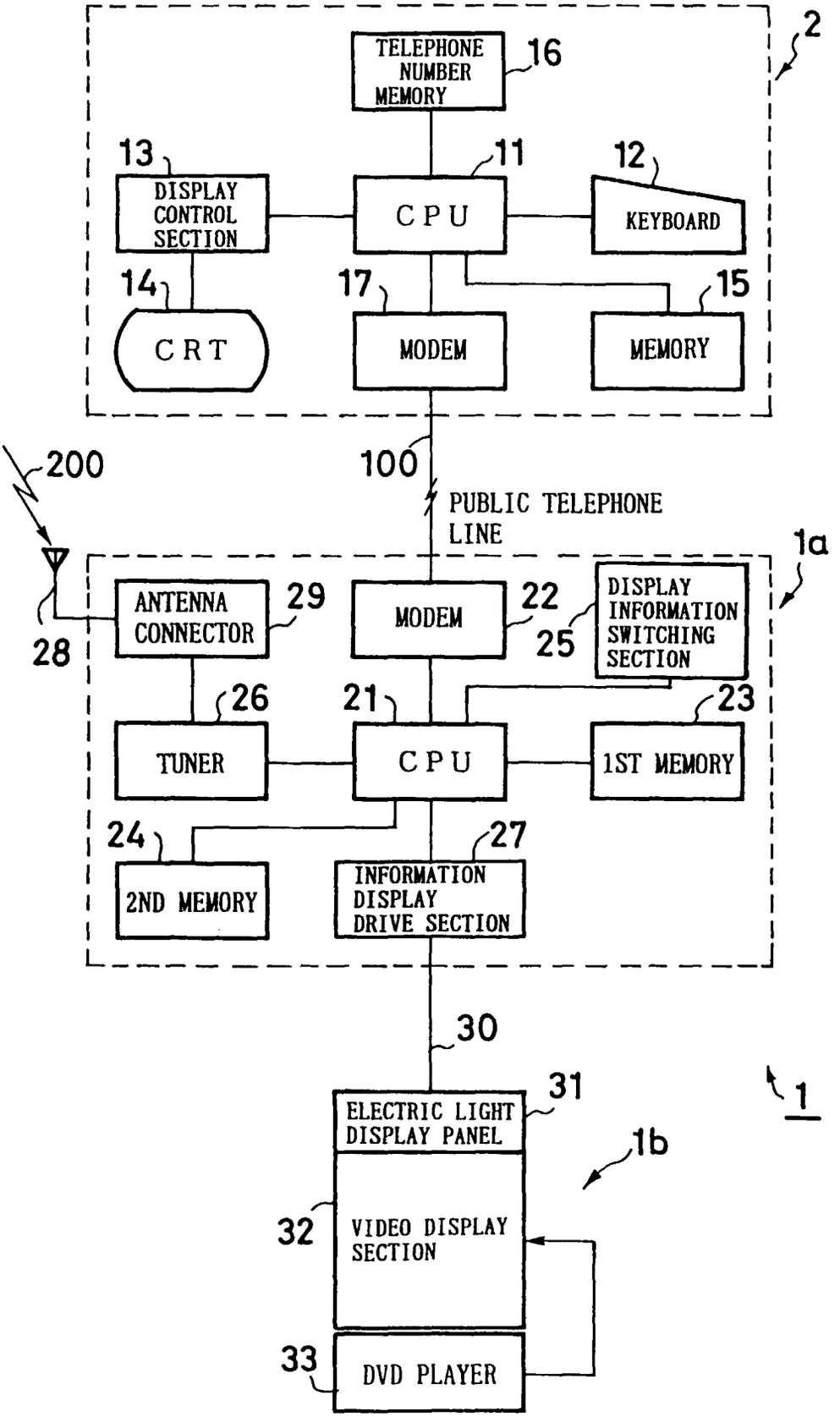

2
TELEPHONE NUMBER MEMORY
16
13
DISPLAY CONTROL SECTION
11
CPU
12
KEYBOARD
14
CRT
17
MODEM
15
MEMORY
200
100
PUBLIC TELEPHONE LINE
1a
28
ANTENNA CONNECTOR
29
MODEM
22
25
DISPLAY INFORMATION SWITCHING SECTION
26
TUNER
21
CPU
23
1ST MEMORY
24
2ND MEMORY
27
INFORMATION DISPLAY DRIVE SECTION
30
31
ELECTRIC LIGHT DISPLAY PANEL
1
1b
32
VIDEO DISPLAY SECTION
33
DVD PLAYER

Fig. 4