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(54) Title of the Invention:

System for providing nonstandard information to large indefinite number of people in transportation equipment

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SPECIFICATION**1. Title of the Invention**

System for providing nonstandard information to large indefinite number of people in transportation equipment

2. Patent Claims

1. A system for providing nonstandard information to a large indefinite number of people in transportation equipment, characterized by comprising: a display device for providing nonstandard information wherein the display content can change at any time, to a large indefinite number of people in transportation equipment that provides a limited space as a transportation means; a means for transmitting the provided information to this display device from inside the transportation equipment; and a means for receiving transmitted information from outside the transportation equipment and providing the same to said transmission means in the transportation equipment.

**3. Detailed Description of the Invention
(Field of Industrial Application)**

The present invention relates to the opportunity of making use of time in transportation equipment, by installing a display device, which provides nonstandard information to a large indefinite number of people who are using a limited space such as an airplane, train, or bus as a transportation means, and to a system that provides various information

Conventionally, in transportation means used by a large indefinite number of people, such as a train or a bus, information such as advertisements and notifications normally hang down as printed material, or are posted on the walls in the equipment. These are normally displayed for a limited time period, and in the case of advertisements, the provider of the transportation means obtains income from advertising contracts over a fixed period.

Note that a related known example of this sort is the "New Video Service System in Vehicles with Liquid Crystal Displays," which appeared in *Dempa Shinbun* on February 14, 1989.

(Problems to Be Solved by the Invention)

When the prior art described above is viewed from the perspective of providing information, because printed material is posted as described above, the provided information is displayed for a fixed time period, and in order to change the posted information, the printed material posted in the equipment must be replaced on each occasion. Furthermore, this posted information is commonly posted in many places, on the order of several locations to dozens of locations in a unit of equipment, but when used in dozens of connected cars, such as in a train,

that number reaches several hundred locations. Consequently, in situations such as when postings are periodically changed, there are problems in so much as management is difficult and it is not possible to increase the utilization rate of the locations at which information is provided.

Meanwhile, when viewed from the perspective of receiving information, there are disadvantages in so much as, because the information provided is the same for a fixed time period, once new information has been seen, it will subsequently cease to garner attention, and even if new information is posted, because, for the most part, the posted information is viewed by [people] who are in its presence for on the order of a few tens of minutes, the amount of information [provided] is low, considering the [duration] of the presence of [people] at the location of the posting. Information provision means using light-emitting diodes exist, but are limited to providing standard information, wherein the information is fixed, such as the name of the station stop or the type of transportation vehicle. Furthermore, there are examples of video and text information being provided in vehicles, but this is limited to providing information that has been set up in the vehicles, and timely information is not provided.

An object of the present invention is to provide a system which solves the problems described above.

(Means for Solving the Problems)

For the problems described above, this is achieved by installing: a display device for providing nonstandard information wherein the display content can change at any time, to a large indefinite number of people in transportation equipment that provides limited space as a transportation means, such as an airplane, train, or bus; and means for transmitting the provided information to the display device from inside and outside the transportation equipment.

(Operation)

This can be achieved by displaying the information to be provided, which had been transmitted from a transmission device, on a plurality of display devices set up at locations used by the passengers, from a device having a function for setting and transmitting the indefinite information to be provided and a function for receiving and transmitting information transmitted from outside the transportation equipment, which is provided in a location in the transportation equipment that is not used by the passengers, for example, the cockpit in an airplane, the conductor's cab in a train, or the driver's seat on a bus.

(Embodiments)

Embodiments of the present invention are described with reference to the following figures.

FIG. 1 represents the overall system of the present invention. [Reference number] 1 is transportation equipment; 2 is an antenna installed on the transportation equipment; 3 is an antenna primarily for transmitting the provided information; 4 is a device for receiving transmissions of region-specific information and signals from the transportation equipment; 5 is a

region-specific information controller, which controls the transmission of region-specific information and manages the signals received from the transportation equipment; and 6 is an information signal transmission path between the region-specific information controller and the region-specific transmitter.

FIG. 1 is described, taking an example where the transportation equipment is a bus. A region-specific information transmitter/receiver 4 is installed at each bus stop, which stores the provided information transmitted from the region-specific information controller 5, and transmits the provided information through the antenna 3 to the transportation equipment 1. The transportation equipment 1 receives the information provided through the antenna 2, and provides the information to passengers via the display information signal transmitter and the information signal display devices provided in the bus. Transportation equipment 1a provides information stored in region-specific information transmitter 4b, through antennas 3b and 2a, to the interior of the vehicle; and transportation equipment 1b provides information stored in region-specific information transmitter 4n, through antennas 3n and 2b, to the interior of the vehicle. The region-specific information controller 5 controls which information is transmitted to the region-specific information transmitter 4. Accordingly, the information transmission content from region-specific information transmitters 4a to 4n may differ from each other or be identical. In addition, the transmitted information can be changed every certain number of regions.

This system is bidirectional; when the transportation equipment 1 arrives at a stop, the provided information is received from the region-specific information transmitter/receiver described above, together with which a signal making it known that the transportation equipment 1 has arrived at the stop is transmitted to antenna 3 from antenna 2. That signal is received by the region-specific information transmitter/receiver 4, and transmitted to the region-specific information controller 5 via the transmission path 6, such that the navigation status of the transportation equipment 1 can be determined, together with which this status can be transmitted as information to the next stop to notify waiting passengers.

In this drawing, the transmission paths 6 are indicated by wires to facilitate the representation, but wireless transmission paths based on communication satellites can, of course, also be used. This scenario can be realized by installing antennas for transmission and reception, such as parabolic antennas, for the region-specific information controller 5 and the region-specific information transmitter/receiver 4.

FIG. 2 shows a display information signal transmitter and an information signal display device installed in the transportation equipment. [Reference number] 7 is a

display information signal transmitter, which comprises: a video information playback function 7b, which primarily plays back motion pictures stored on a video disk or a videotape; a text and image information input function 7e, which primarily reads out text and image information from a storage medium such as a magnetic disk or a memory card, and performs information input by way of associated input keys; a text and image information control function 7d, which performs control so as to allow the input information to be displayed; a video, text and image information combining function 7c, which combines and/or selects the motion picture information played back by the video information playback function 7b and information from the text and image information control function 7d; a region-specific information reception function 7f, which primarily receives and stores region-specific information from outside the transportation equipment; an information transmission function 7g, which finally transmits the information provided to the passengers to the information display devices; and an operation control function 7a, which operates these functions. [Reference numbers] 2 and 3 are antennas; 4 is a region-specific information transmission function, which primarily transmits region-specific information; 8 is an information display device for displaying the provided information transmitted from the display information display device [sic] 7; and 9 is a transmission path between these devices. [Reference number] 10 is an input signal, which represents travel information concerning the travelling state or the stopped state of the transportation equipment.

Normally the provided information is such that or text and image information or motion pictures stored on a video disk or a videotape are provided individually or in combination, but when the region-specific information is transmitted through the antenna 3 by way of the region-specific information transmission function 4, this is received by the antenna 2 and the transmitted data is stored by the region-specific information input function 7f and displayed on the information signal display device 8, via the text and image information control function 7d, the text and image information combining function 7c and the information transmission function 7g. This provided information can provide timely information, which is not covered by the motion picture information and text and image information that has been provided in the transportation equipment in advance. For example, emergency news can be released and information limited to things happening in that region can be provided. If region-specific information transmission functions 4 are installed along the travel route of the transportation equipment, this information can be such that the content of the provided information is changed in corresponding interval units.

FIG. 3 shows a configuration assuming that the transportation equipment is a train. This is an example in which the information signal display device 8 is provided with cultural information 11 in a section 1, with event information 12 in a section 2, and with amusement

park information 13 in a section 3. In this example, information is provided over the entire screen of the information signal display device 8, but the motion picture information or text and image information described above can be provided in combination, or a portion [of the screen] can be used to provide these.

FIGS. 4 to 7 are examples in which the information signal display devices 8, for the interior of the transportation equipment, are installed in a train.

(Effects of the Invention)

According to the present invention, locations providing information in a transportation equipment can be put to good use, while in comparison with cases in which printed materials are posted, as was conventional, not only is the management time reduced, but there is an effect of strengthening the power of the information provided to passengers because timeliness and freshness are brought out.

4. Brief Description of the Drawings

FIG. 1 is a view representing an example of the overall system of the present invention; FIG. 2 is a schematic view of an example of the device functions in the transportation equipment; FIG. 3 shows an example of the provision of region-specific information; FIG. 4, FIG. 5, FIG. 6, and FIG. 7 are views showing examples of the information signal display devices installed in the transportation equipment.

Explanation of the Reference Numbers

1... transportation equipment; 2... antenna installed in the transportation equipment; 3... antenna installed in a region-specific information transmission function; 4... region-specific information transmission function; 5... region-specific information controller; 6...transmission path; 7...display information signal transmitter; 8 ...information signal display device; 9...transmission path; 10... traveling state information input; 11, 12, 13 ... examples of region-specific information provision; 14... example of information provided by way of printed material

Agent Patent Attorney: OGAWA, Katsuo

Clean copies of the drawings (no changes to the content)

FIG. 1

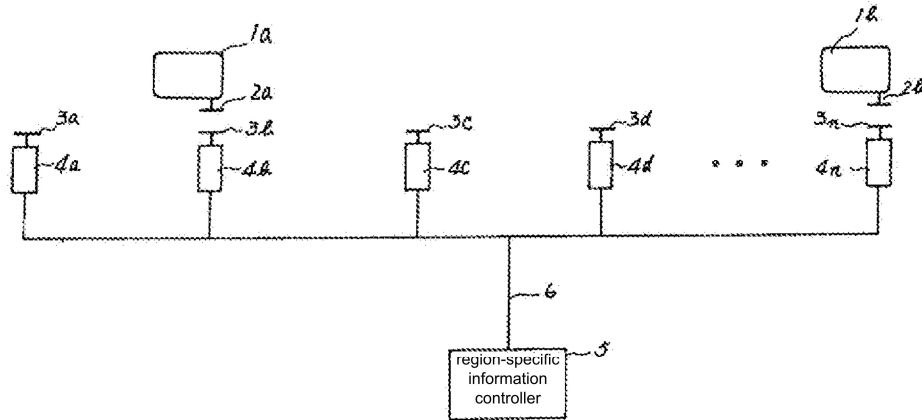


FIG. 2

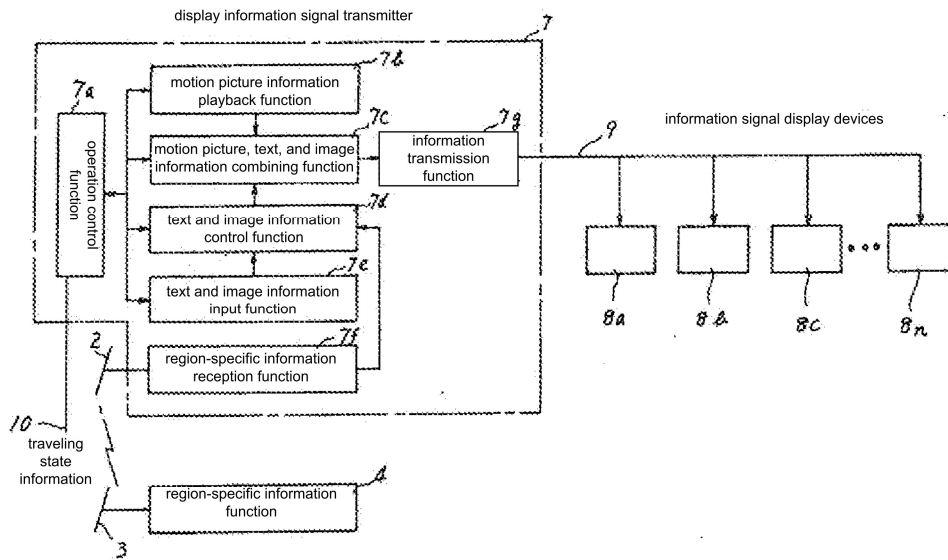


FIG. 3

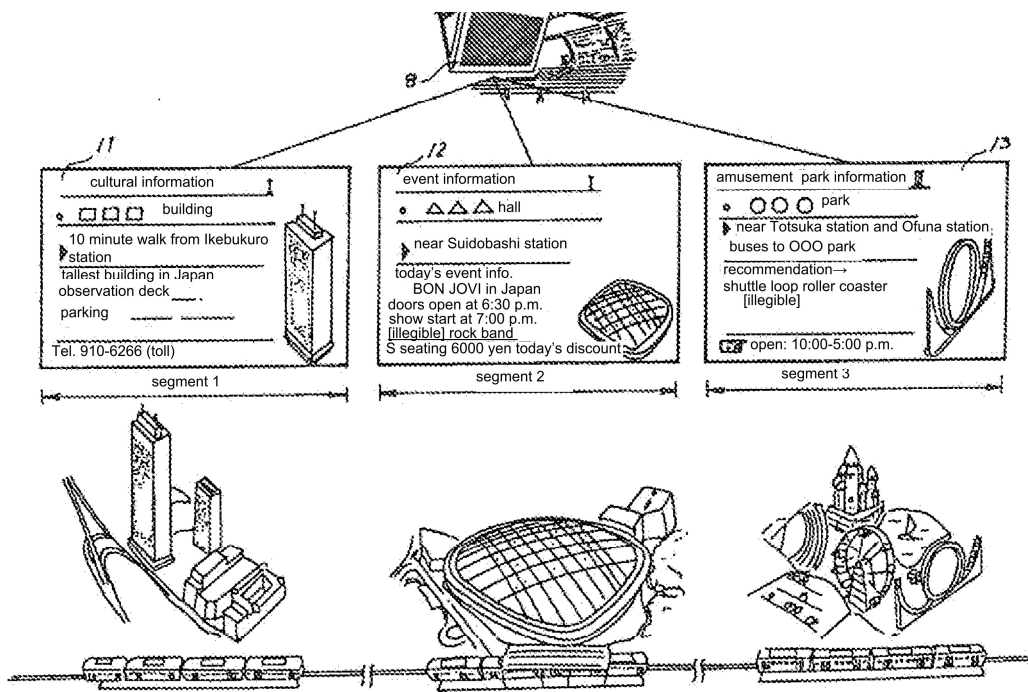
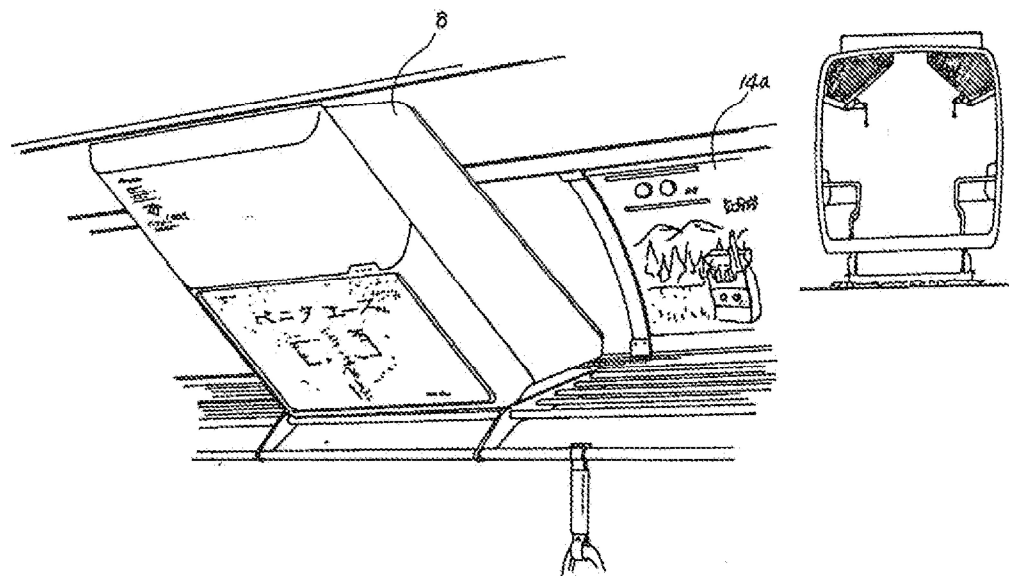


FIG. 4



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