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Advertising Space Utilization System for Airport Buildings

The invention concerns a system for utilizing advertising space within airport buildings having a number of gates interconnected by corridors and passages, a number of more or less centrally-arranged check-in stations as well as a departure and arrival hall provided with shops and restaurants and similar service stations, and a signage system consisting of information boards. The airport building is further provided with information boards for the purpose of displaying written or pictorial advertising messages, whereby luggage trolleys for conveying their luggage within the airport building are made available to the passengers.

Due to the fact that the use of airplanes as a means for the conveyance of passengers is increasing, air traffic necessarily continues to increase as well. As a consequence, airport buildings nowadays are larger and more extensive, and thus their utilization as a means for conveying advertising messages becomes increasingly attractive. The airport management organisations are therefore eager to offer advertising space to different types of advertisers. However, even within very extensive airport buildings the space available for rent as advertising space is limited. As a result of the limited space within airport buildings that is suitable and available as advertising space, there is therefore a need to utilize the available space as intensively as possible. The usual utilization of an advertising space by only one advertiser prevents the increased or repeated rental and thus utilization of a given, limited advertising space.

It is therefore the task of the invention to generate an advertising space utilization system that is suitable for airport buildings, and that allows the repeated utilization of one or a number of advertising spaces, or the rental of these spaces to different advertisers, while at the same time providing a pricing system according to the probable frequency of display of a selected advertising message.

This task is essentially implemented according to the invention by providing, distributed across the floor space of the airport building, a number of information and/or advertising boards that are able to memorize at least one, preferably several, different advertising messages apart from one standard advertisement. The advertising messages memorized by these information/advertising boards can be interchanged at random, in such a way that one of the memorized advertising messages is displayed selectively, in any sequence with regard to the other messages. In conjunction with the airport building being thus equipped, the invention further provides, in association with the interchangeable advertising spaces distributed across the floor space of the airport building, a switch-on period that can be controlled depending on a parameter to be selected and on the distribution of the number of passengers. The parameter to be selected may consist of a number of luggage trolleys, whereby the advertiser rents any number of luggage trolleys at a certain rental fee. These luggage trolleys are each equipped with a device for activating a particular advertising message while being pushed past those advertising spaces that can be switched on and off. In this way, the desired repeated utilization of advertising spaces is obtained on one hand, while on the other hand the advertiser himself is able to determine, by paying the rental fee for a number of luggage trolleys, the price,

i.e. the probability of the advertising period, for utilizing the advertising space offered. Naturally, the probability of activating an advertising message rises with an increased number of rented luggage trolleys.

For the useful and advantageous repeated utilization of such advertising spaces, a preferred realization of the invention further provides a limited switch-on period for each advertising message. The advertising messages are switched on or changed via a wireless remote control, whereby the advertising messages to be switched on or off can be activated via mobile transmitters. In the simplest case, the luggage trolleys are equipped with a signal generator, such as a magnet, which serves to activate the switch-on device for an advertising message when the trolley is being pushed past the corresponding advertising space. Such simple designs, however, permit only a very small number of interchangeable advertising messages.

Therefore, the invention further suggests that the luggage trolleys made available to passengers within the airport building be equipped with means for emitting coded signals, especially transponders whose data can be retrieved, which are each associated with activating a particular advertising message. Complementing this equipment of the luggage trolleys, the invention further provides that the advertising spaces are located on information boards or advertising boards which are equipped with at least one device suitable for retrieving coded data from transponders, especially a transmitter/receiver device. In this way almost any given number of advertising messages that can be activated can be installed in the individual advertising boards.

However, optimum utilization of the advertising spaces is possible only when the advertising periods relating to a single advertising message are limited. Starting with an automatic time limit of the advertising periods for a single advertising message, the invention further provides that the transmitter/receiver devices are each equipped with a counter device, connected in succession, for the purpose of memorizing incoming activation signals, in case these signals succeed each other too fast to be carried out at the same speed.

In order to prevent a luggage trolley that was inadvertently left stationary within the range of a data retrieving station from activating the permanent display of a single advertising message, the advertising space utilization system is also available equipped with a special device: in addition to the counter device, the transmitter/receiver devices are also equipped with a cyclical timing device, connected in succession, for the purpose of limiting the repetition of a particular advertising message to pre-determined intervals, such as an interval of 30 minutes, on recognizing a static activation signal for that particular advertising message.

Moreover, according to the invention, a suitable and practical system for utilizing advertising space includes pre-programming the advertising spaces with a permanent advertising message that switches on automatically when there is no incoming activation signal for another advertising message to be activated.

Another variation of the realization of an advertising space utilization system may further provide that for a non-centrally-organized advertising space utilization system, the mobile transmitter/receiver units installed at the luggage trolleys are designed as active units equipped with their own power supply, interacting with a stationary transmitter/receiver unit. All stationary transmitter/receiver devices, installed at turn-offs or intersections of passages or corridors of the building, are each equipped with one transmitting and two receiving antennas, the latter being mounted at a reciprocal distance to each other and aligned in different directions. The stationary transmitter/receiver devices are mounted at the ceiling of a corridor or passage in such a way that each receiving antenna is associated with a direction of movement of a luggage trolley.

Within the scope of the invention, the display boards for advertising messages can be activated by means of a system of light emitters and receivers instead of using a wire-less activation system that operates via radio waves for activating these display boards.

Further, within the scope of the realization, designed in whichever manner, of the multiple utilization of advertising spaces within airport buildings by means of change-over devices that can be activated for advertising messages to be displayed within a time limit, it may be convenient to equip objects necessarily carried by the passengers, such as tickets as an extreme example, with means for actuating signals, such as transponders.

The invention is described in detail below by means of a design type represented in the drawing.

In the drawing,

- Fig. 1 shows the schematic plan view representation of an airport building;
- Fig. 2 shows a more or less schematic diagram representing the configuration of an information board provided with an advertising space as well as the associated transmitter/receiver unit;
- Fig. 3 shows the schematic representation of an activation device installed in a luggage trolley;
- Fig. 4 shows the schematic representation of the vertical range of a stationary transmitter/receiver device;
- Fig. 5 shows the schematic representation of the horizontal range of a stationary transmitter/receiver unit.

The airport building shown in Fig. 1 in a simplified and schematic manner includes, for example, a central area 1 whose departure hall 2 is provided with a number of check-in counters 3 as well as shops and restaurants 4. The airport building further includes a number of gates 7, arranged peripherally with regard to the central area 1 and interconnected by a number of corridors 5 and passages 6. Starting with the check-in counters 3 or their central area 1, all corridors 5 and passages 6 are provided with

advertising spaces, distributed across the floor space of the airport building. The advertising spaces consist of display boards 8, able to memorize apart from a standard display at least one, preferably several different advertising messages. The display boards 8 can be changed over at random, in such a way that one of the memorized advertising messages is displayed selectively, in any desired sequence.

In the design type shown, the memorized advertising messages are switched on or changed over by means of a wire-less remote control, whereby the luggage trolleys 10 made available to passengers within the airport building are equipped with transponders 11, whose data is retrievable, as a means for emitting coded signals, and whereby each transponder 11 can transmit only a single signal associated with activating only a particular advertising message. Complementing this equipment of the luggage trolleys 10, the advertising spaces are installed at information or advertising boards equipped with at least one device, especially a transmitter/receiver device 12, that is suitable for retrieving coded data from transponders. As shown schematically in Fig. 2, the transmitter/receiver devices 12, associated with the individual information or display boards 8 and connected to them via wires 19, are mounted at the ceiling 13 of the building or room. Each transmitter/receiver device 12 has a limited vertical and horizontal range, resulting in a club-shaped range limit.

As can be seen from Fig. 3 in particular, the stationary transmitter/receiver devices 12 are each equipped with one transmitting antenna 14 and two receiving antennas 15, 16 the latter being mounted at a reciprocal distance to each other and aligned in opposite directions. The transmitter/receiver devices 12 are mounted at the ceiling 13 of a corridor 5 or

passage 6 in such a way that each receiving antenna 15 or 16 is associated with a direction of movement of a luggage trolley 10. Accordingly, transponder 11 is equipped with two directed poles 17 and 18, and is mounted at the luggage trolley 10 parallel to the longitudinal axis of the trolley and in parallel alignment with regard to the transmitter/receiver device 12.



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CLAIMS

- 1) System for utilizing advertising space within air port buildings having a number of gates interconnected by corridors and passages, a number of more or less centrally-arranged check-in stations as well as a departure and arrival hall provided with shops and restaurants and similar service stations, and a signage system consisting of information boards, as well as additional equipment consisting of information carriers displaying written or pictorial advertising messages, whereby luggage trolleys for conveying their luggage within the airport building are made available to the passengers, characterised by the fact that the airport building is provided with a number of advertising boards, distributed across the floor space of the building, that are able to memorize, apart from a standard advertisement, at least one and preferably a number of different advertising messages that can be changed at random, in such a way that one of the memorized advertising messages is displayed selectively.
- 2) System for utilizing advertising space according to claim 1, characterised by the fact that the advertising spaces available within the floor space of the airport building and able to be switched on and off, are provided with a switch-on period that can be controlled depending on a parameter to be selected and the distribution of the number of passengers.





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- 3) System for utilizing advertising space according to claim 1 and 2, characterised by the fact that each advertising message is provided with a limited switch-on period.
- 4) System for utilizing advertising space according to claim 1 to 3, characterised by the fact that the advertising messages that are able to be switched on and off can be activated via mobile transmitter devices.
- 5) System for utilizing advertising space according to claim 1 to 4, characterised by the fact that the luggage trolleys made available to passengers within the airport building are equipped with means for emitting coded signals, especially transponders, which are each associated with activating a particular advertising message.
- 6) System for utilizing advertising space according to claim 1 to 5, characterised by the fact that the advertising spaces are located at information or advertising boards equipped with at least one device, especially a transmitter/receiver device, suitable for retrieving coded data from transponders.
- 7) System for utilizing advertising space according to claim 1 to 6, characterised by the fact that the transmitter/receiver devices are each equipped with a counter device, connected in succession, for the purpose of memorizing incoming activation signals in case these signals succeed each other too fast to be carried





out at the same speed.

- 8) System for utilizing advertising space according to claim 1 to 7, characterised by the fact that the transmitter/receiver devices are equipped, in addition to a counter device, with a cyclical timer device, connected in succession, for the purpose of limiting the repetition of a particular advertising message to pre-determined intervals on recognizing a static activation signal for that particular message.
- 9) System for utilizing advertising space according to claim 1 to 8, characterised by the fact that the advertising spaces are pre-programmed with a standard advertising message that is automatically switched on when there is no incoming activation signal for another advertising message to be activated.
- 10) System for utilizing advertising space according to claim 1 to 9, characterised by the fact that the advertising messages are changed over by means of a wire-less remote control.
- 11) System for utilizing advertising space according to one of the claims 1 to 10, characterised by the fact that for a centrally-organised advertising space utilization system, the mobile transmitter/receiver units mounted at the luggage trolleys are designed as active units equipped with their own energy supply and interact with a centrally-located transmitter/receiver unit.





- 12) System for utilizing advertising space according to one of the claims 1 to 10, characterised by the fact that for a non-centrally-organised advertising space utilization system, the stationary transmitter/receiver units, installed at all turn-offs or intersections of passages or corridors of the building, are each equipped with one transmitting antenna as well as two receiving antennas that are mounted at a reciprocal distance to each other and aligned in opposite directions, and are mounted at the ceiling of a corridor or passage in such a way that each receiving antenna is associated with the direction of movement of a luggage trolley.



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ABSTRACT**ADVERTISING SPACE UTILIZATION SYSTEM FOR AIRPORT BUILDINGS**

A system for utilizing advertising space within an airport building in which advertising display boards (8) each store a number of different advertising messages. The display boards (8) are provided with transmitter/receiver devices (12) which respond to signals emitted by transponders (11) mounted on passenger luggage trolleys (10). As a trolley (10) approaches a display board (8), a selected advertising message is thereby displayed.

FIG. 2

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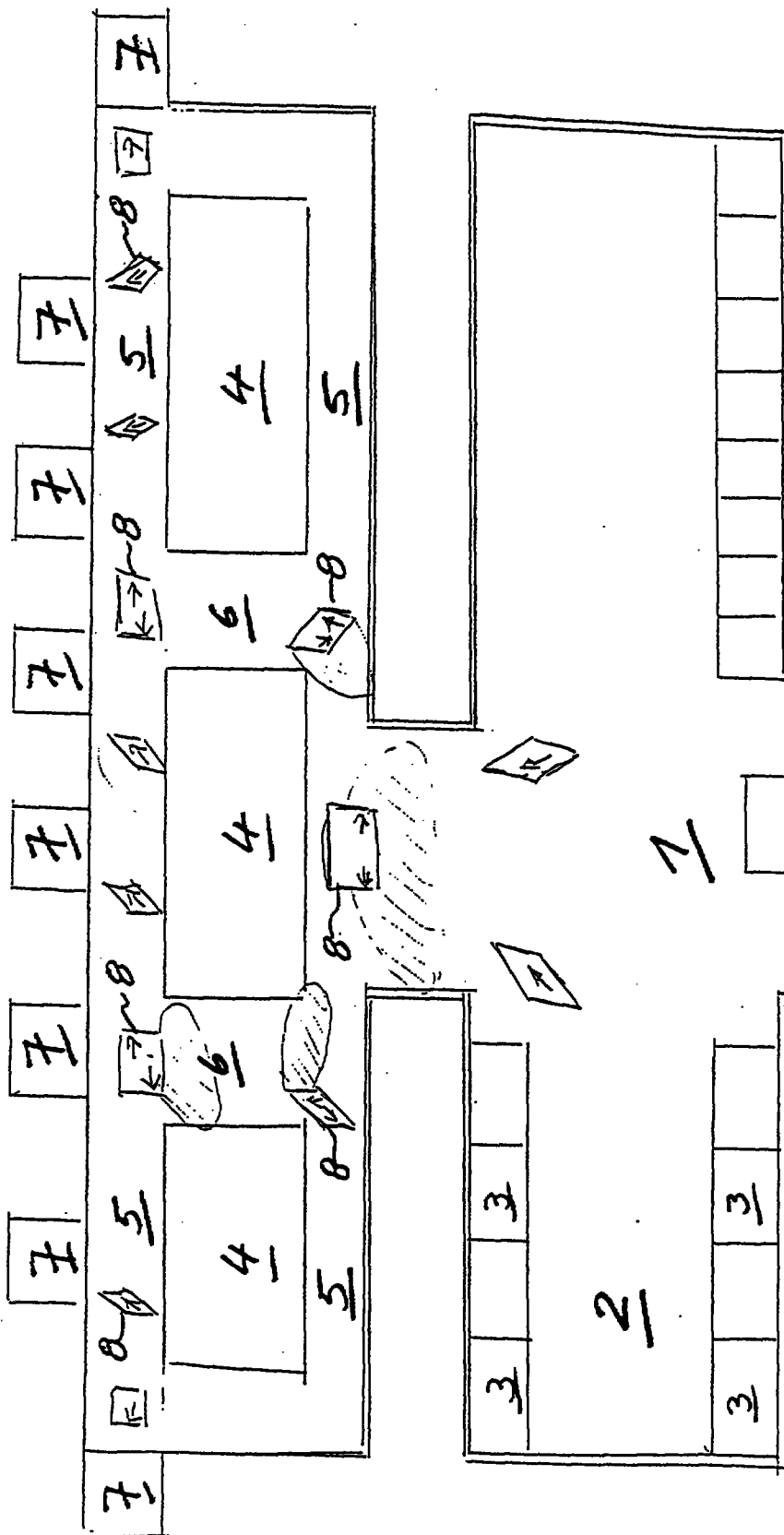
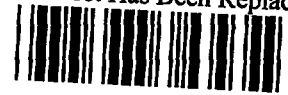


FIGURE 1

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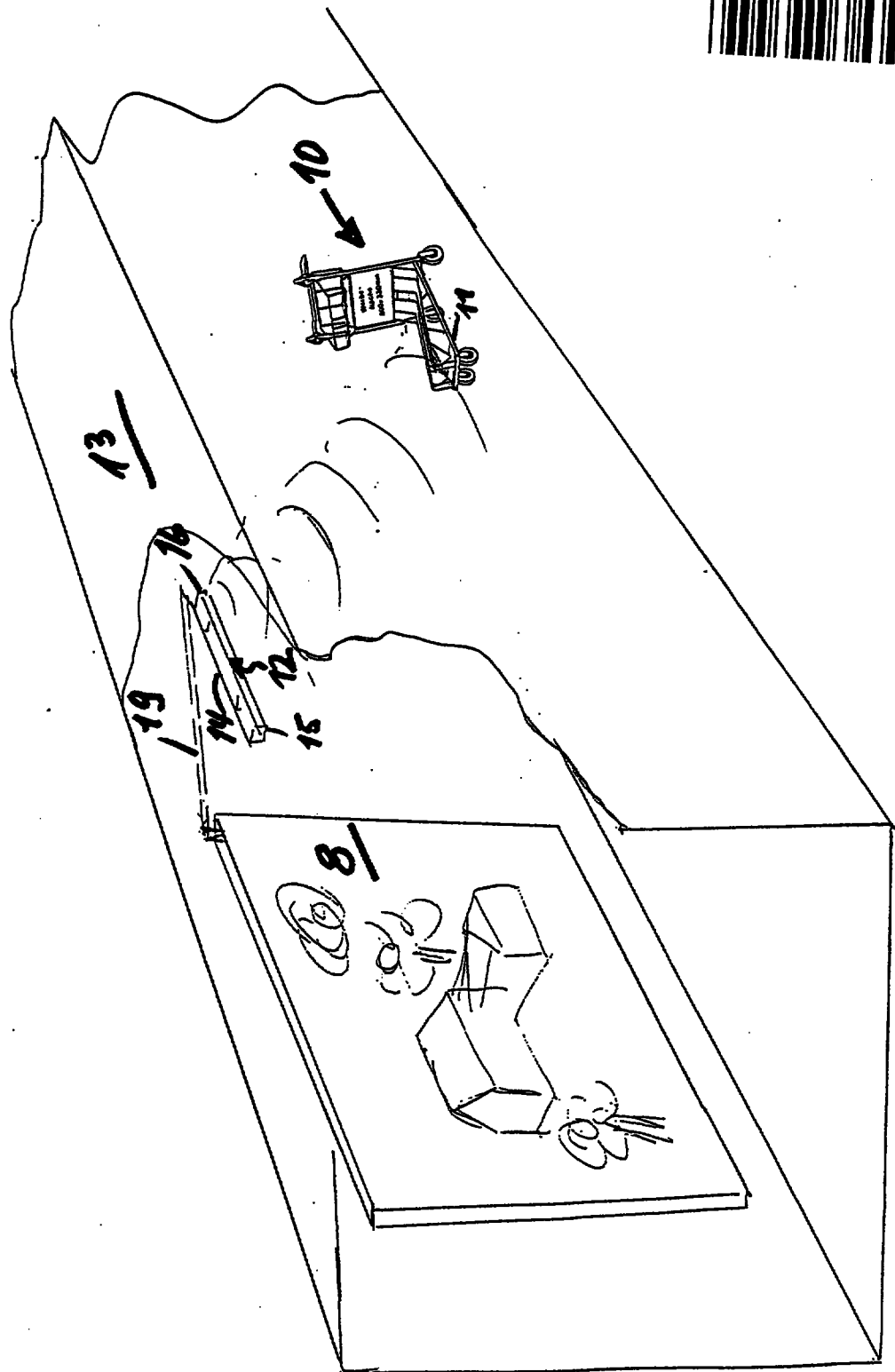
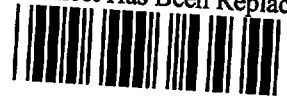


FIGURE 2

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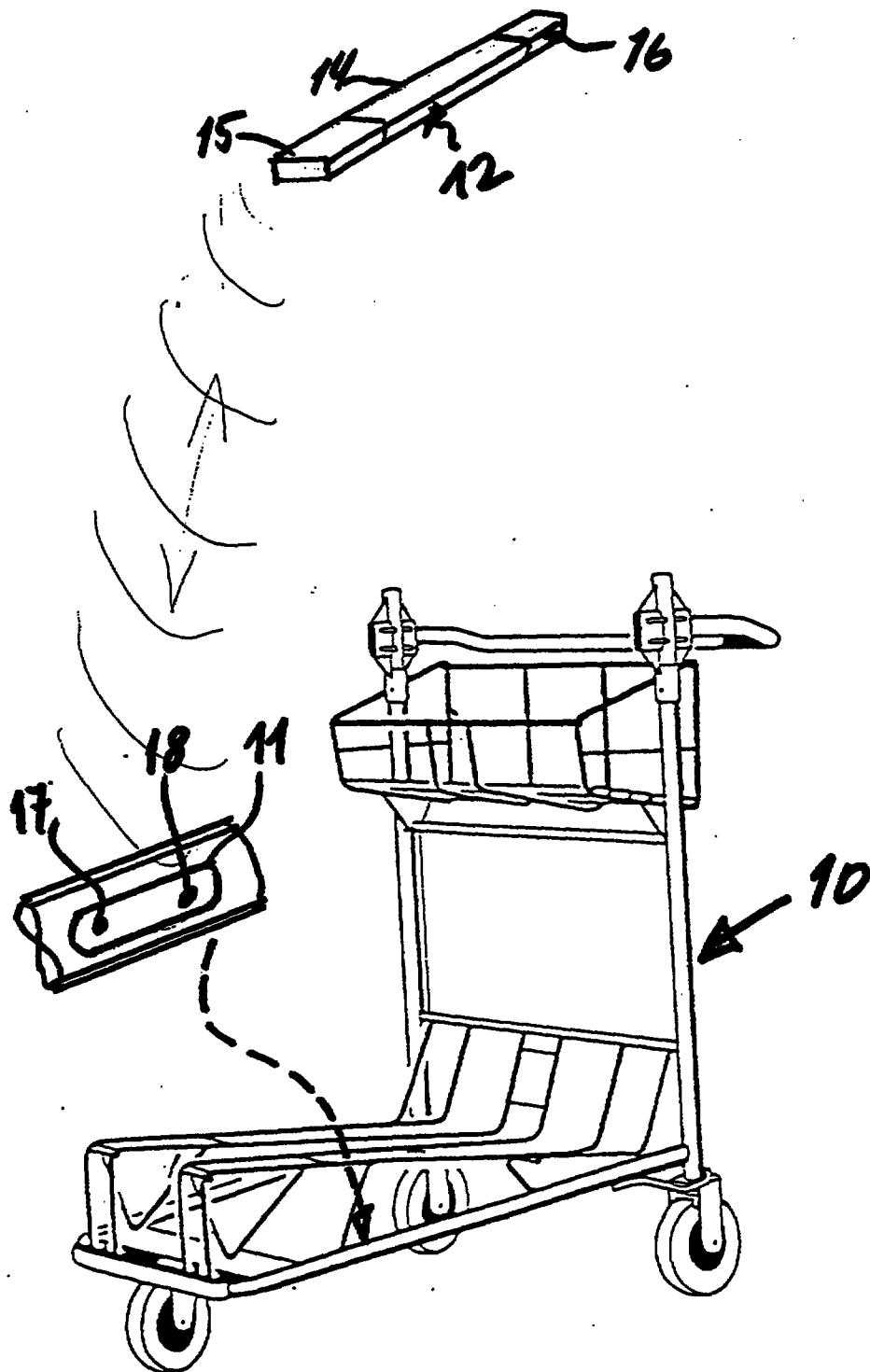


FIGURE 3



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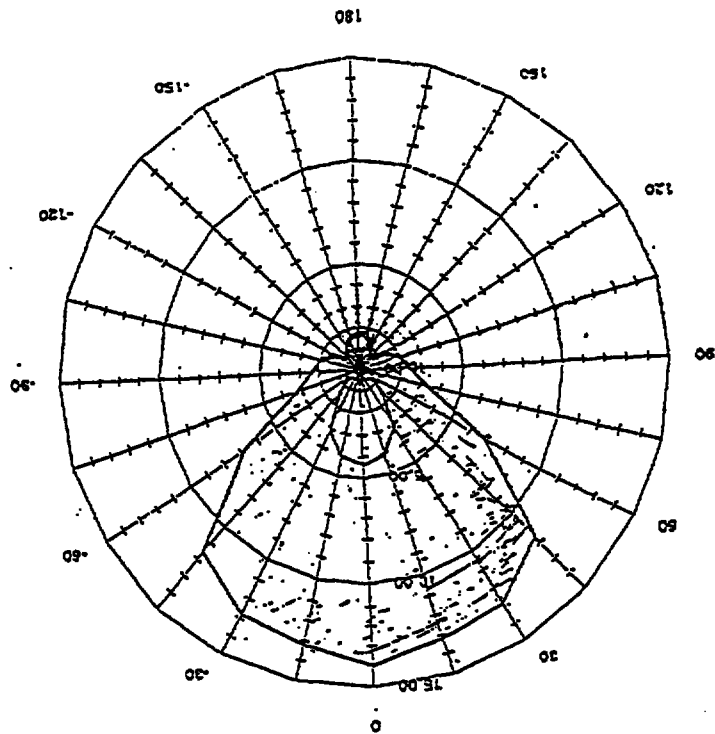


FIGURE 5

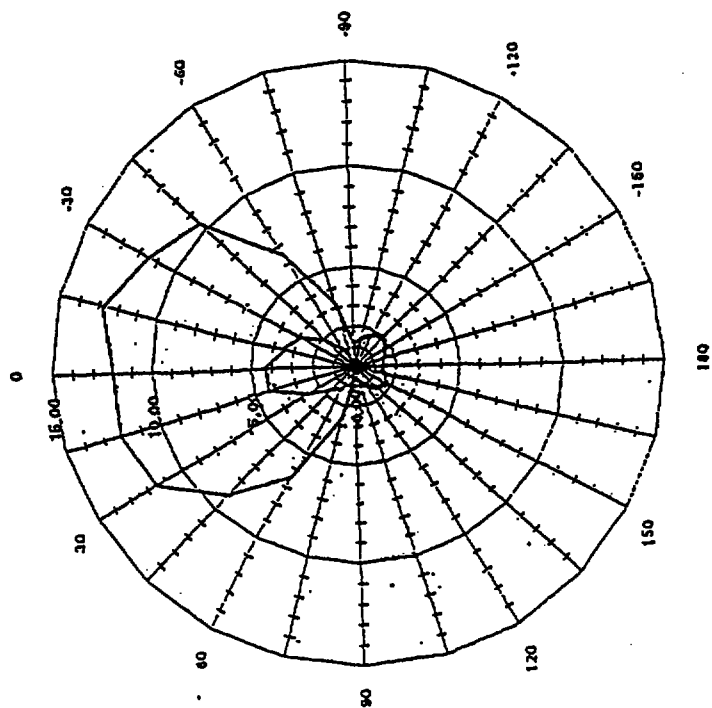


FIGURE 4

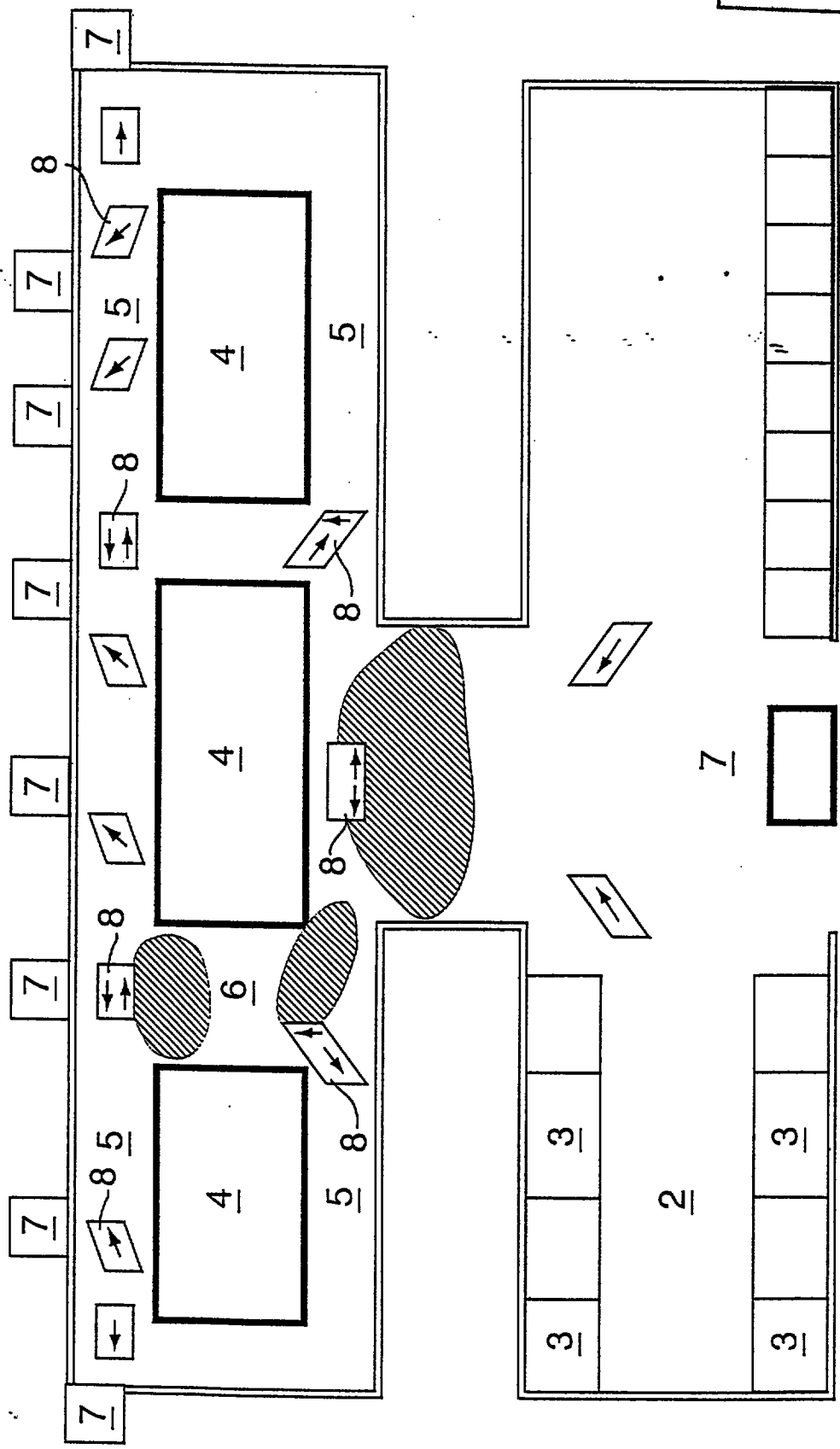


FIG. 1

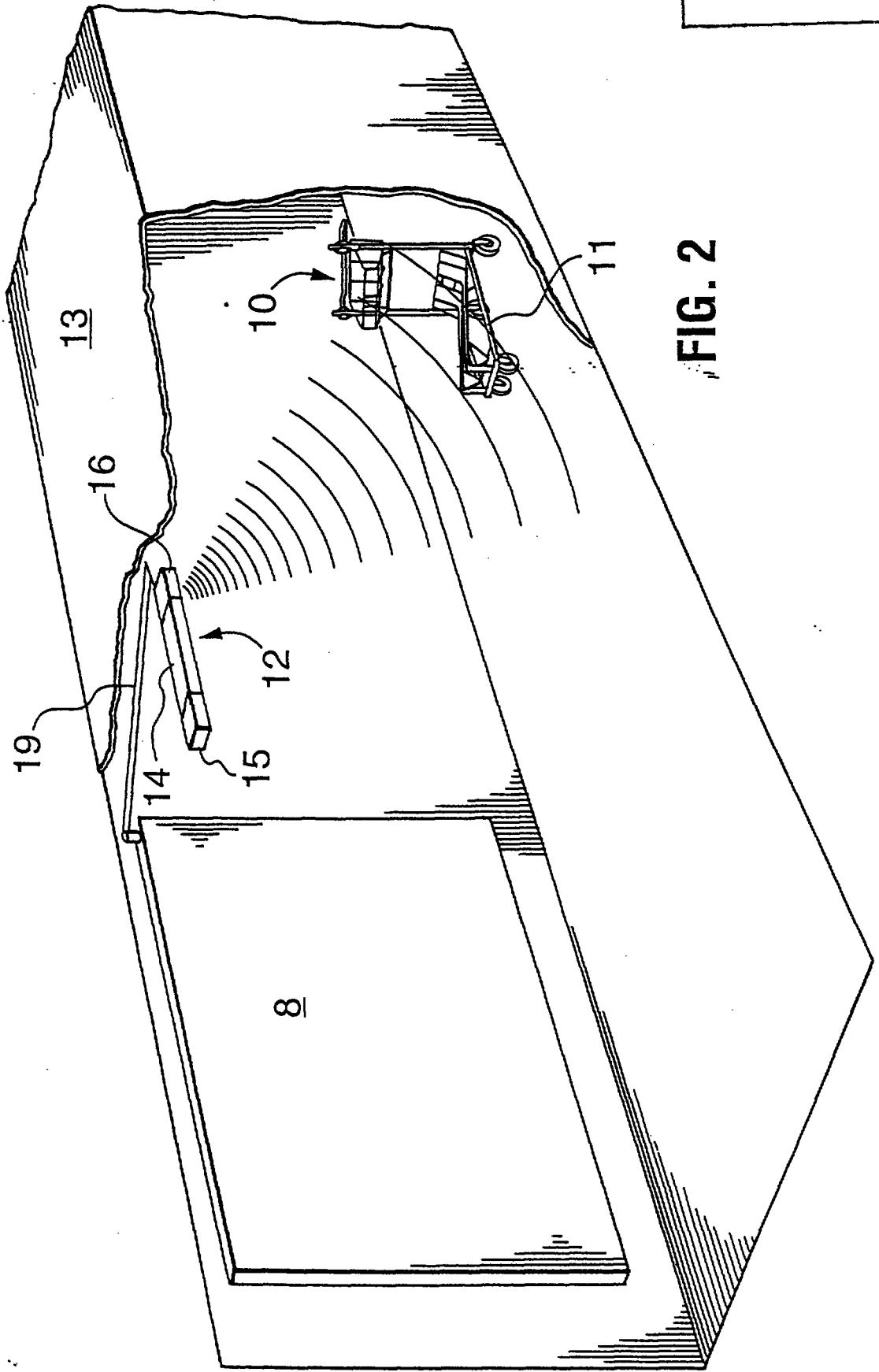


FIG. 2

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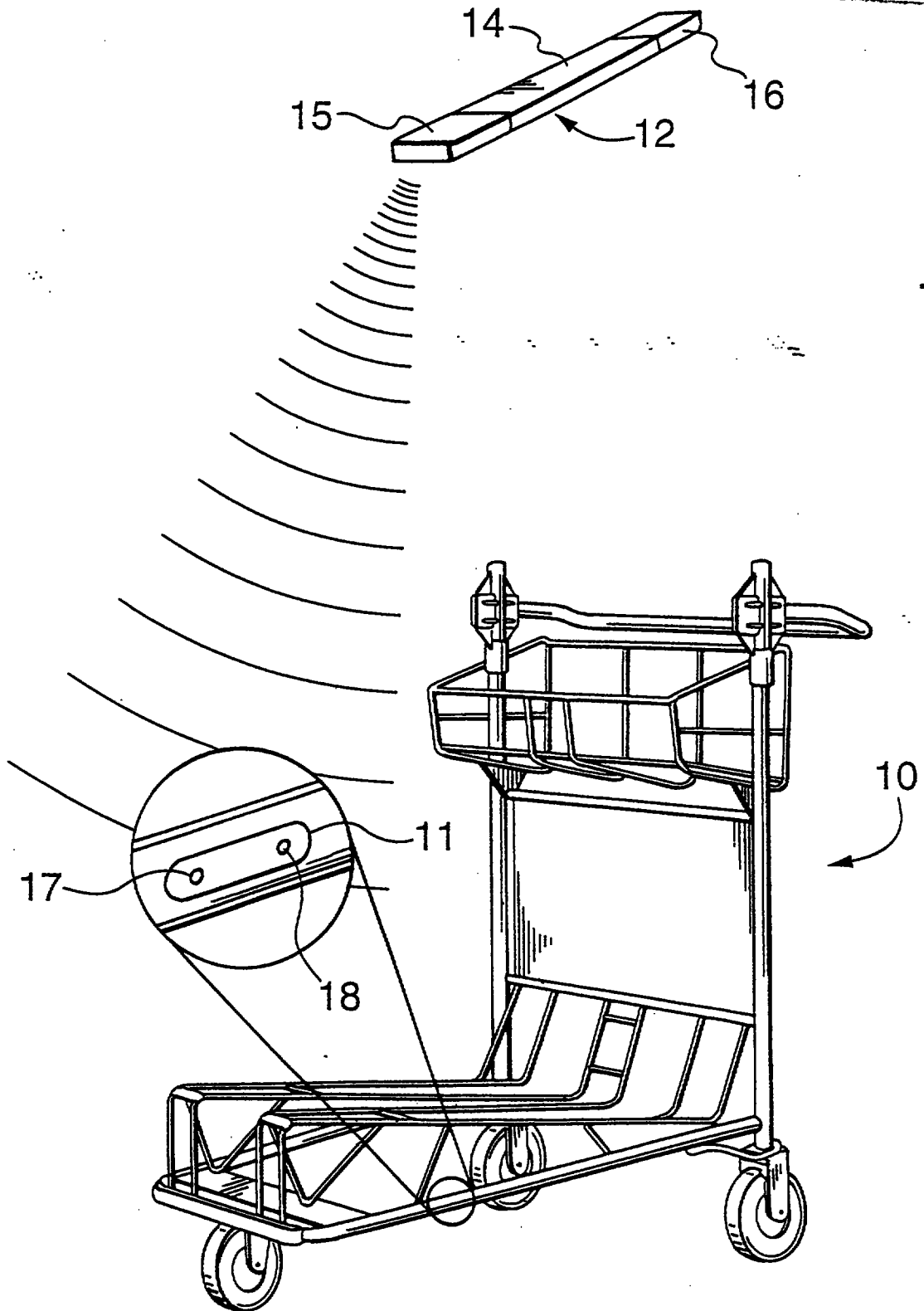
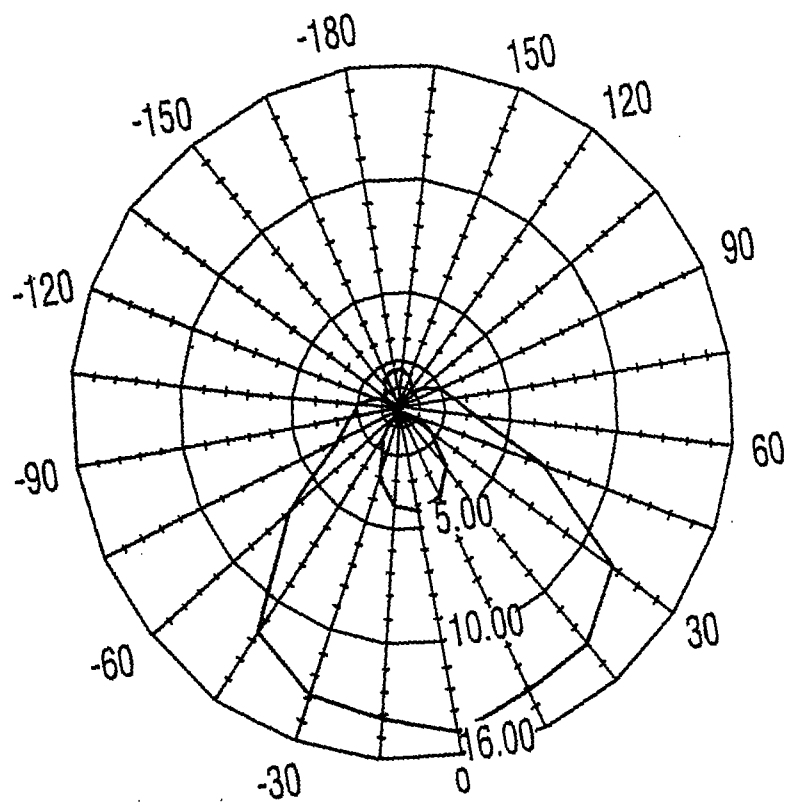
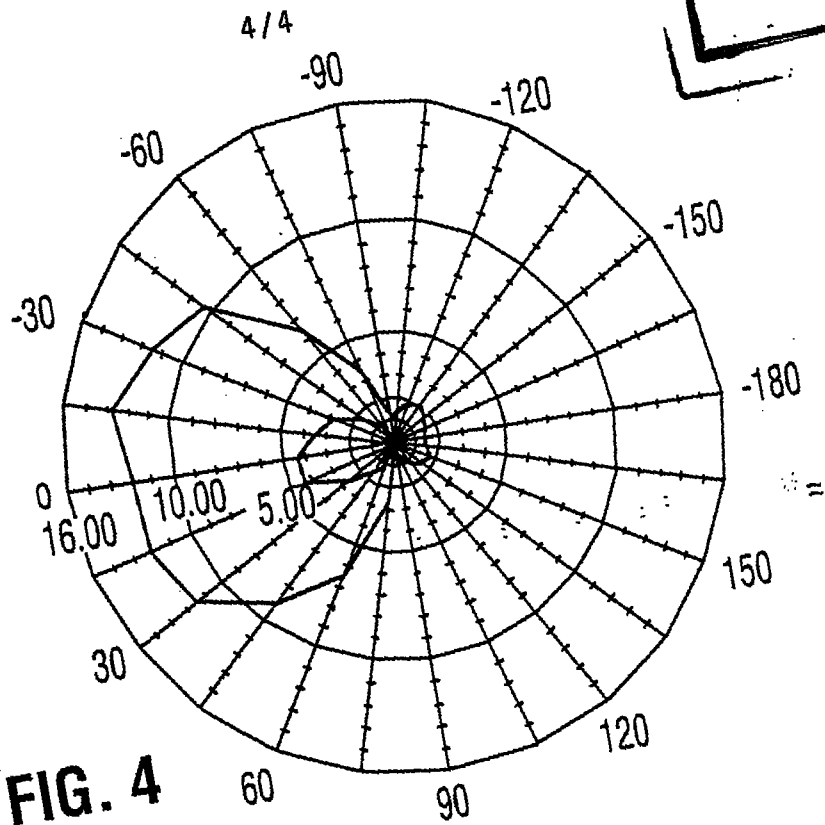
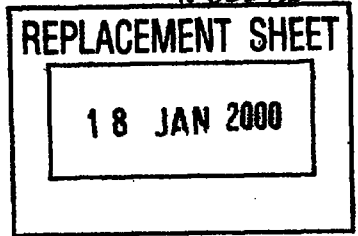


FIG. 3



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CLAIMS

- 1) System for utilizing advertising space within air port buildings having a number of gates interconnected by corridors and passages, a number of more or less centrally-arranged check-in stations as well as a departure and arrival hall provided with shops and restaurants and similar service stations, and a signage system consisting of information boards, as well as additional equipment consisting of information carriers displaying written or pictorial advertising messages, whereby luggage trolleys for conveying their luggage within the airport building are made available to the passengers, characterised by the fact
that the airport building is provided with a number of advertising boards, distributed across the floor space of the building, that are able to memorize, apart from a standard advertisement, at least one and preferably a number of different advertising messages that can be changed at random, in such a way that one of the memorized advertising messages is displayed selectively, and that the advertising messages that are able to be switched on and off can be activated via mobile transmitter devices.
- 2) System for utilizing advertising space according to claim 1, characterised by the fact that the advertising spaces available within the floor space of the airport building and able to be switched on and off, are provided with a switch-on period that can be controlled depending on a parameter to be selected and the distribution of the number of passengers.
- 3) System for utilizing advertising space according to claim 1 and 2, characterised by the fact that each advertising message is provided with a limited switch-on period.
- 4) System for utilizing advertising space according to claim 1 to 3, characterised by the fact that the luggage trolleys made available to passengers within the airport building are equipped with means for emitting coded signals, especially transponders, which are each associated with activating a particular advertising message.



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- 5) System for utilizing advertising space according to claim 1 to 4, characterised by the fact that the advertising spaces are located at information or advertising boards equipped with at least one device, especially a transmitter/receiver device, suitable for retrieving coded data from transponders.
- 6) System for utilizing advertising space according to claim 1 to 5, characterised by the fact that the transmitter/receiver devices are each equipped with a counter device, connected in succession, for the purpose of memorizing incoming activation signals in case these signals succeed each other too fast to be carried out at the same speed.
- 7) System for utilizing advertising space according to claim 1 to 6, characterised by the fact that the transmitter/receiver devices are equipped, in addition to a counter device, with a cyclical timer device, connected in succession, for the purpose of limiting the repetition of a particular advertising message to pre-determined intervals on recognizing a static activation signal for that particular message.
- 8) System for utilizing advertising space according to claim 1 to 7, characterised by the fact that the advertising spaces are pre-programmed with a standard advertising message that is automatically switched on when there is no incoming activation signal for another advertising message to be activated.
- 9) System for utilizing advertising space according to claim 1 to 8, characterised by the fact that the advertising messages are changed over by means of a wire-less remote control.
- 10) System for utilizing advertising space according to one of the claims 1 to 9, characterised by the fact that for a centrally-organised advertising space utilization system, the mobile transmitter/receiver units mounted at the luggage trolleys are designed as active units equipped with their own energy supply and interact with a centrally-located transmitter/receiver unit.



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- 11) System for utilizing advertising space according to one of the claims 1 to 9, characterised by the fact that for a non-centrally-organised advertising space utilization system, the stationary transmitter/receiver units, installed at all turn-offs or intersections of passages or corridors of the building, are each equipped with one transmitting antenna as well as two receiving antennas that are mounted at a reciprocal distance to each other and aligned in opposite directions, and are mounted at the ceiling of a corridor or passage in such a way that each receiving antenna is associated with the direction of movement of a luggage trolley.



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