

Description

The present invention relates to an apparatus designed for utilizing terminals and overcoming architectural barriers, that is to say, for facilitating the utilization of terminals by users on wheel-chairs or similar locomotion aids.

The invention can be suitably although not solely applied in the sector of night safes and terminals to which access is enabled by a personal identification code, for example, on electronic keys or magnetic cards.

A typical example of the said terminals is the so-called cash dispenser, that is to say, the electronic bank teller machines that allow the drawing of cash from any teller machine connected to a bank consortium network.

Another example includes the electronic dispensing machines of companies or public bodies that provide certificates, tickets, booking services, etc.

Lately there has been a progressive increase in the number of this type of automatic dispensers. Other functions have been added to the functions for which the said automatic dispensers had initially been designed, that is to say, the drawing of cash. The additional functions include, for example, providing statements of account, paying utility bills, depositing cash and/or cheques, etc.

Another example is represented by offices located in controlled-access rooms such as, for example, banks and similar locations.

As the functional potential of these automatic dispensers increased, a similar development did not occur with regard to services offered to special groups of users such as, for example, disabled persons who are unable to walk, that is to say, for users of wheel-chairs or similar locomotion aids.

In fact, access to the said terminals is difficult for people on wheel-chairs, mainly due to the average height at which the components of the dispenser or teller, such as the keyboard and the screen, are placed.

Moreover, especially in the case of dispensers located on public areas such as, for example, sidewalks, the operations at the automatic teller machine are disturbed by people walking by, in particular when the wheel-chair is in a busy area where people bustle about.

The aim of the present invention is to overcome the aforementioned disadvantages with an apparatus designed for utilizing terminals which facilitates the utilization of terminals by users on wheel-chairs or similar locomotion aids. The apparatus disclosed envisages means that recognize an identification code of a user on a wheel-chair, a mobile platform designed to lift the user up to a level that is suitable for carrying out operations with the terminal and one or more mobile barriers designed to delimit the terminal access area.

The technical features of the present invention, in accordance with the said aims, are clearly described in the claims herein and the advantages of the invention are more clearly shown in the detailed description below, with reference to the accompanying drawings which

illustrate preferred embodiments, and in which:

- figures 1, 2, 3 schematically illustrate a front view with an enlarged detail, a side view and a top plan view respectively, of an embodiment of the present invention;
- figure 4 is a schematic top plan view, of another embodiment of the present invention;
- figure 5 is a top plan view, of a possible application of the present invention.

With reference to the accompanying drawings, the aim of an apparatus designed for utilizing terminals, labelled 1 as a whole, is to facilitate the utilization of terminals by users on wheel-chairs or similar locomotion aids.

In the figures the said locomotion aids are represented by a schematic illustration of a wheel-chair 2.

With special reference to figures 1 to 4, the apparatus 1 includes means which recognize a user on a wheel-chair; the said means are directly connected to the terminal 5 to which this apparatus facilitates access, and consist of a reader 3, a relative identification code entered by the user, designed to give a go-ahead signal once the user has been recognized. In practice the same magnetic medium that can be utilized, for example, for automatic teller transactions, may contain an identification code of a user on a wheel-chair.

Alternatively, a "badge" type medium may be envisaged in recognizing a user on a wheel-chair.

A moving platform 4 is envisaged, located at an access area 7 to the terminal 5, designed to lift the wheel-chair 2 up to a level that is suitable for the utilization of the terminal 5.

One or more mobile barriers 6 are also envisaged around the access area 7, to delimit the boundary of the access area 7.

Control means 8 are also available (schematically represented by block 8 in the figures), connected at least to the recognition means 3, to the moving platform 4, and to the one or more mobile barriers 6 envisaged, designed to allow the activation of the one or more mobile barriers 6 and the moving platform 4 when the go-ahead signal is received from the recognition means 3.

In practice, the apparatus envisages a platform or board that lifts the user on a wheel-chair and a series of mobile barriers conveniently arranged to delimit the terminal access area; the activation of the board and the mobile barriers depends at least on the recognition of an identification code of a person on a wheel-chair.

In addition to the above, and as illustrated in the drawings, the apparatus can also include detection means 9 arranged and operating around the access area 7, designed to detect the passage and/or the presence of obstacles on the boundaries and to give a go-ahead signal if no obstacles are detected.

In this case the control means 8 will activate the series of mobile barriers and the moving platform 4 when

the go-ahead signal is received either from the detection means 9 or the recognition means 3.

There may be a frame or fixed barrier 10 or 10' designed to delimit the boundary of the access area 7 on at least one side, so that, together with one or more mobile barriers 6, it completely encloses the area 7.

In figures 1, 2 and 3, the frame or fixed barrier 10 is parallel to the terminal 5 and at a distance L10 which is greater than the width L2 of a wheel-chair to enable a wheel-chair that is parallel to the terminal, that is to say, providing side access to the terminal, to stop on the access area 7.

In figure 4, the frame or fixed barrier consists of a pair of fixed barriers 10' arranged at right angles with the terminal and the distance between one and the other is greater than the width L2 of a wheel-chair to enable a wheel-chair that is at right angles with the terminal, that is to say, providing front access to the terminal, to stop on the access area 7.

Locking means for the wheel-chair 2 may be envisaged on the moving platform 4, designed to block the wheel-chair at least when it is lifted.

In particular, as shown in figure 1, the locking means may consist of at least one portion 41 of the moving platform 4, pivoted freely about a horizontal axis X, and of a stop element 42 located at the bottom of the portion itself so that once the platform 4 has been lifted, the pivoted portion stops rotating about its axis in order to define a groove 43 that securely holds the wheels 22 of the wheel-chair 2.

At the bottom of the platform 4 there is a counter-block 48, designed to stabilize the pivoted board 41 (in the illustration there are two boards 41 and 41') in a horizontal position, that is to say, to coincide with the surface of the platform.

The detection means 9 can consist of photocell devices.

In particular, as shown in the accompanying drawings, the photocell devices include an emitter 90 and a receiver 92 between which there is a set of prisms 91 designed to reflect the rays emitted by emitter 90 so as to delimit the boundary of access area 7.

The moving platform can be driven in different ways; for example, it can be supported, as shown in the examples, by at least one pair of levers 45 pivoted to each other and interlocked to extensible cylinder type drive means 46.

Moreover, in order to increase the safety of the apparatus, the moving platform 4 can be fitted, on at least one of its sides 49 opened during lifting, with at least one rolling shutter 11 designed to close the open side 49.

In figure 5, where the same numbers are used for similar components, the apparatus 1 is located at the access to a room 67 set at a level that is higher than that of the sidewalk 68.

In this case the apparatus 1, after recognition through the reader 3, together with any go-ahead pro-

vided to the control means 8 by the detection means 9, lifts the wheel-chair 2 up to the level that is suitable for accessing the room 67.

Even the door 66 of the room 67, if it is an automatic door, can be connected to the control means 8, so that this mobile structure may also be controlled by the control means 8.

The present invention, thus designed for the said objects, may be subject to numerous modifications and variations, all encompassed by the original design concept. Moreover, all components may be replaced with technically equivalent parts.

15 Claims

1. An apparatus designed for utilizing terminals and overcoming architectural barriers, that is to say, for facilitating the utilization of terminals by users on wheel-chairs or similar locomotion aids and moving them, characterized in that it includes:

- recognition means of a user on a wheel-chair consisting of a reader (3) of a corresponding identification code given by the user, designed to give a go-ahead signal once the code is recognized;
- a moving platform (4), located at an access area (7), designed to lift the said wheel-chair (2) up to a level that is suitable for the utilization of a terminal (5), that is to say, suitable for entering a room located at a higher level with respect to the said access area (7);
- one or more mobile barriers (6) that operate around one or more boundaries of the said access area (7), to delimit the perimeter of the said access area;
- control means (8), connected at least to the said recognition means (3), to the said moving platform (4), and to the said one or more mobile barriers (6), designed to enable the said one or more mobile barriers (6) and of the said moving platform (4) when the go-ahead signal is received from the said recognition means (3).

2. An apparatus designed for utilizing terminals as described in claim 1, characterized in that it includes:

- recognition means of a user on a wheel-chair consisting of a reader (3) of a relative identification code given by the user, designed to give a go-ahead signal once the code is recognized;
- a moving platform (4), located at an access area (7) to terminal (5), designed to lift the said wheel-chair (2) up to a level that is suitable for the utilization of the terminal (5);
- one or more mobile barriers (6) that operate around the boundaries of the said access area

- (7), designed to delimit the perimeter of the said access area;
- control means (8), connected at least to the said recognition means (3), to the said moving platform (4), and to the said one or more mobile barriers (6), designed to enable the said one or more mobile barriers (6) and the said moving platform (4) when the go-ahead signal is received from said recognition means (3).
3. An apparatus as described in claim 1, characterized in that it also includes detection means (9) located and operating at the said boundaries of the access area (7), designed to check the passage and/or the presence of obstacles on the said boundaries and to give, once the check has been performed, a go-ahead signal if no obstacles are detected, the said control means (8) are connected to the said detection means (9) so as to activate the said one or more mobile barriers and the said moving platform when the go-ahead signal is received from the said detection means (9) and from the said recognition means (3).
 4. An apparatus as described in claim 1, characterized in that a frame or fixed barrier (10; 10') is envisaged, designed to delimit the boundary of the said access area (7) on at least one side, so that, together with one or more mobile barriers (6), it completely encloses the area (7).
 5. An apparatus as described in claim 4, characterized in that the said frame or fixed barrier (10) is parallel to the terminal (5) and at a distance which is greater than the width of a wheel-chair to enable a wheel-chair that is parallel to the terminal, that is to say, providing side access to the terminal, to stop on the said access area (7).
 6. An apparatus as described in claim 4, characterized in that the said frame or fixed barrier consists of a pair of fixed barriers (10') arranged at right angles with the said terminal and the distance between one and the other is greater than the width of a wheel-chair to enable a wheel-chair that is at right angles with the terminal, that is to say, providing front access to the terminal, to stop on the said access area (7).
 7. An apparatus as described in claim 1, characterized in that on the said moving platform (4) some locking means are envisaged for the said wheel-chair (2), designed to block the wheel-chair at least when it is lifted.
 8. An apparatus as described in claim 7, characterized in that the said locking means consist of at least one portion (41) of the moving platform (4), pivoted freely about a horizontal axis (X), and of a stop element (42) located at the bottom of the portion itself so that once the platform (4) has been lifted, the pivoted portion stops rotating about its axis in order to define a groove (43) that securely holds the wheels (22) of the said wheel-chair (2).
 9. An apparatus as described in claim 1, characterized in that the said detection means (9) consist of photocell devices.
 10. An apparatus as described in claim 9, characterized in that the said photocell devices include an emitter (90) and a receiver (92) between which there is a set of prisms (91), designed to reflect the rays emitted by emitter (90) so as to delimit the boundary of the said access area (7).
 11. An apparatus as described in claim 1, characterized in that the said moving platform (4) is supported by at least one pair of levers (45) pivoted to each other and are interlocked to extensible cylinder type drive means (46).
 12. An apparatus as described in claim 1, characterized in that the said moving platform (4) is fitted, at least on one of its sides (49) opened during the lifting, with at least one rolling shutter (11) designed to close the said open side (49).
 13. An apparatus as described in claim 1, where the apparatus is arranged in a room set at a level that is higher than the said access area and is fitted with an automatic door, characterized in that the said automatic door (66) is connected to the said control means (8) so that it can be controlled when the said go-ahead signal is received from the said recognition means (3).

FIG. 1

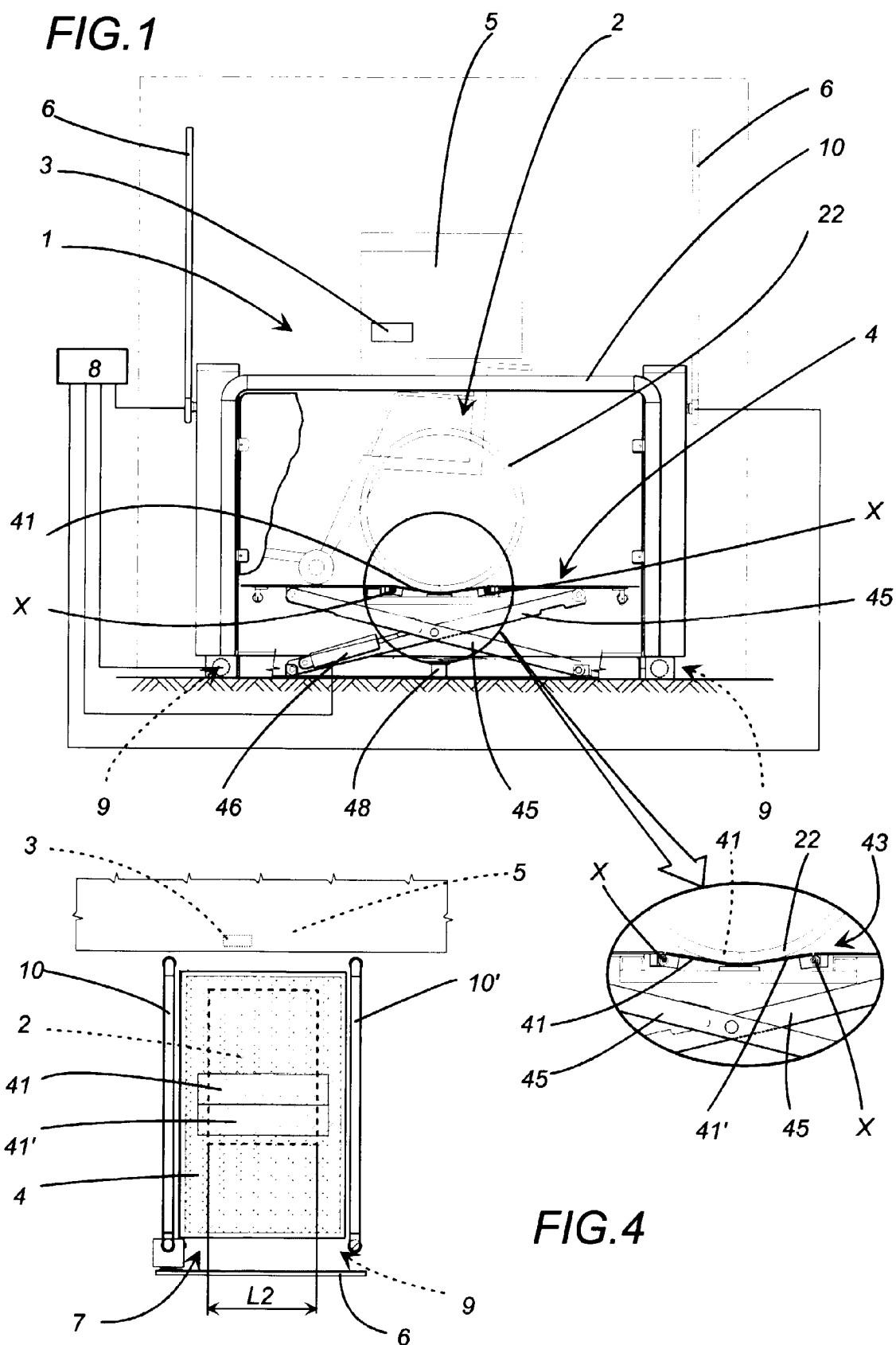


FIG.4

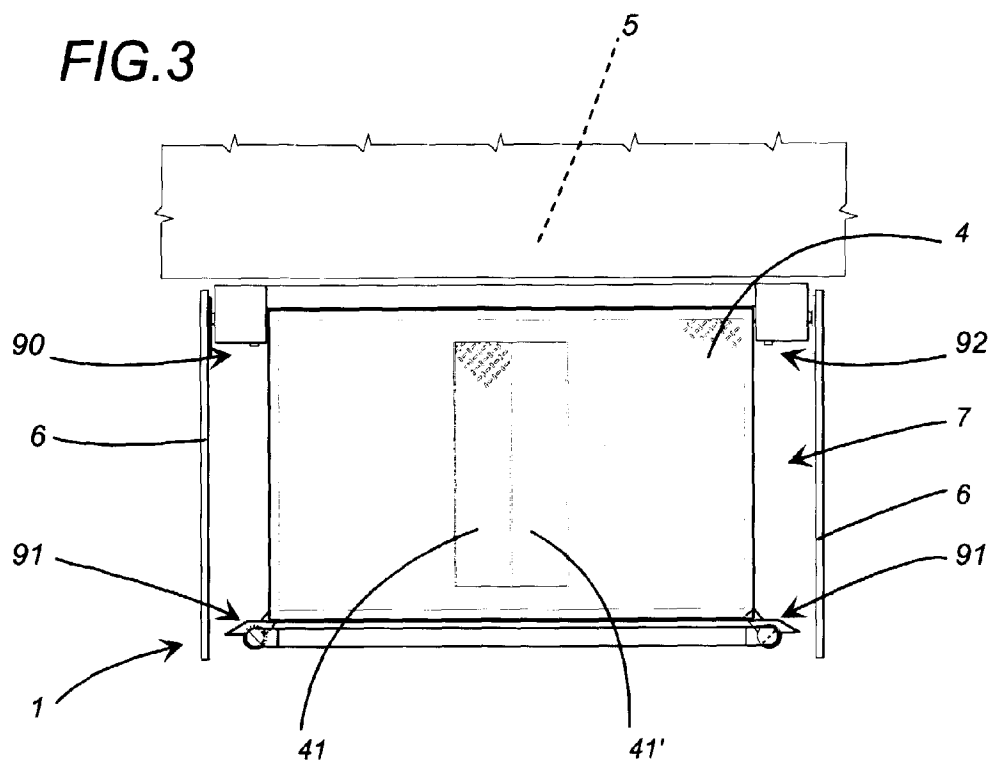
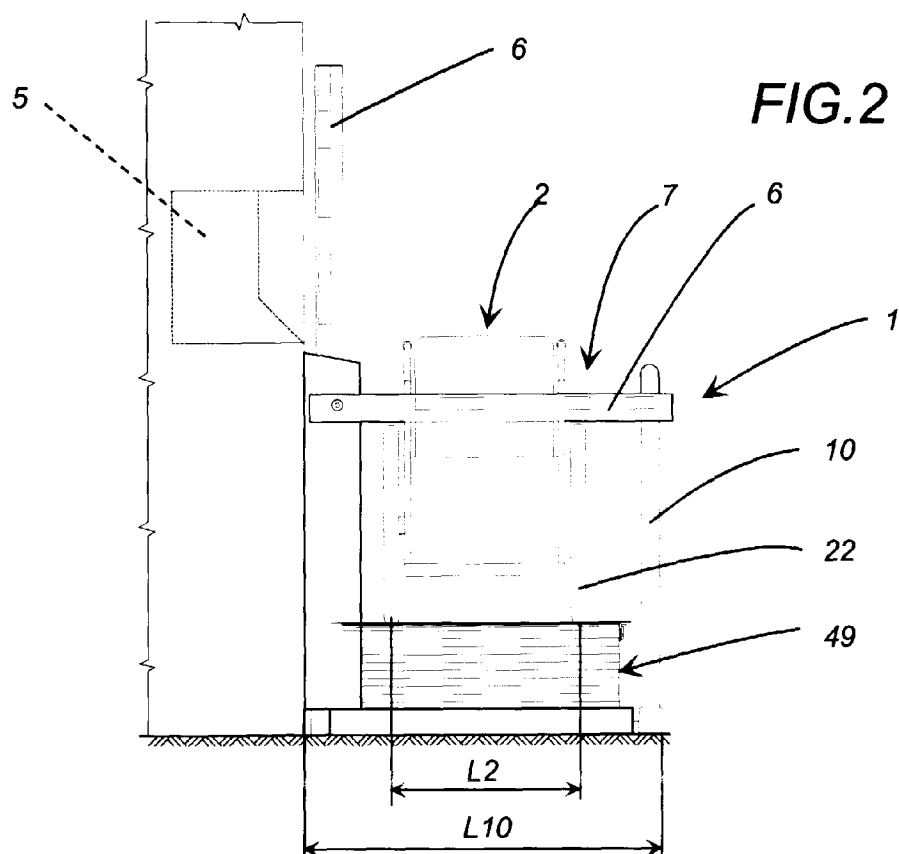


FIG.5

