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(54) **Pushbutton for lifts**

Drucktaster für Aufzüge

Bouton-poussoir pour ascenseurs

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Description

OBJECT OF THE INVENTION

[0001] The present invention relates to a pushbutton for lifts which can be used in the control panel located inside the car of the lift, or on the different landings beside the door of the lift, of the type of those which incorporate some fixed elements and a number of movable or pushable parts to order the lift to go up and down as well as other auxiliary functions such as the alarm.

[0002] The pushbutton object of the invention incorporates some pushable pieces fabricated from a same supporting piece which, with slight variants, can constitute a base intended to receive with pressure the different numbers, letters and symbols which the control panel has to incorporate with the object of reducing substantially production costs.

BACKGROUND OF THE INVENTION

[0003] The pushbuttons for lifts, both those that are located in the control panel inside the lift and in the panel near the doors on each of the landings, consist of a combination of fixed elements and others which are moveable or pushable which once pressed bear upon a microswitch which transmits the signal associated with the function which the lift will perform next.

[0004] The pushable pieces are usually constituted by a monobloc part on the external face of which the symbol stands out which corresponds to the action which will take place subsequently, be this calling the lift, opening doors, going up or going down to the landing which appears indicated on said pushable element, enabling of the alarm, etc.

[0005] These pushable elements are generally constituted in a monobloc part which incorporates the corresponding symbol, and they are usually obtained by the procedure of moulding.

[0006] This circumstance determines that, for the obtaining of each pushable element which incorporates a specific symbol, a different mould will be required, it therefore being necessary to have a very large number of moulds to cover all requirements for pushbutton.

[0007] German patent DE-4436050 describes a passenger lift modular floor-selection panel comprising a plate having a mounting surface receiving a pushable element and a film having a symbol.

DESCRIPTION OF THE INVENTION

[0008] The pushbutton for lifts object of this invention will resolve the previously explained problems by means of the incorporation of some pushable elements obtained from a supporting piece of universal geometry on which it is possible to fix all the numbers, letters or symbols required in the pushbutton panel.

[0009] The supporting piece incorporates some holes

drilled through intended for the introduction of some spindles foreseen on the back face of the different numbers, letters or symbols, and together with these, once conveniently fixed, constitutes the pushable element whose configuration and external appearance will coincide with that of the pushable elements obtained by moulding.

[0010] Only 8 different embodiments are necessary of the supporting piece, which will present a same external configuration, differing in the location and number of drill holes established for the reception and introduction of the rear spindles which project from the different symbols, numbers or letters.

[0011] In this way all the possible symbols are covered, including numbers, letters and graphic representations, each one them having its corresponding spindles conveniently distributed in accordance with the configuration of the symbol and so that they can be introduced in any of the embodiments of the supporting piece.

[0012] The symbol is positioned over the pushable element, introducing the spindles in the drill holes practiced in the contact face of the supporting piece by applying a small manual pressure.

[0013] Next the number, letter or symbol is pushed with the help of a small press which will apply a uniform pressure on the upper face thereof which will be translated into a same thrust force on the spindles, which will penetrate progressively into the corresponding drill holes, preventing the piece from tilting.

[0014] The spindles have a tronco-conical configuration to facilitate their penetration in the drill holes of the supporting piece, as well as some ribs which are deformed to adapt to the shape of the drill hole.

[0015] The spindle length is slightly greater than the thickness of the supporting piece, so that when introducing the spindle in the drill hole under pressure, a time will be reached when said spindle will surpass the length of the drill hole and will overshoot on its lower face becoming deformed and adapting to the shape of the tooling which has been mounted on the base of the piece.

[0016] Thus, the number, letter or symbol is riveted by means of the ends of its spindles to the supporting piece preventing the possible disassembly thereof.

[0017] The number, letter or symbol will usually come defined as an injection piece of zamak material, and the supporting piece will be likewise obtained by injection of zamak with a final treatment of nickel-plating.

DESCRIPTION OF THE DRAWINGS

[0018] To complete the description that is being made and with the object of assisting in a better understanding of the characteristics of the invention, in accordance with a preferred embodiment thereof, this description is accompanied as an integral part thereof, with a set of drawings which illustrate in a non-restrictive manner, the following:

Figure 1. - It shows a view in perspective of a push-

button which incorporates a pushable element according to the object of the invention.

Figure 2. - It shows a view in exploded perspective in which a supporting piece appears represented and a number with its rear spindles facing the drill holes practiced in said supporting piece over which it is introduced.

Figure 3. - It shows a side view in section wherein one observes a symbol introduced in the supporting piece.

Figure 4. - It shows a total of 8 different configurations of the supporting piece, among which one can observe in figure 4A a blank supporting piece, in figure 4B another piece prepared for the fastening of a number, in figure 4C another piece used for two numbers or symbols, in figure 4D a supporting piece for negative numbers, in figure 4E another piece to fasten an arrow, in 4F another supporting piece to fasten a letter with type form of the letter A, in figure 4G another supporting piece appears for another type of letters with the type form of the letter M, and in figure 4H another supporting piece is shown for fastening two letters.

Figure 5. - It shows a series of symbols with their fastening spindles projecting through the rear face thereof.

PREFERRED EMBODIMENT OF THE INVENTION

[0019] In the light of the previous figures a preferred method of embodiment is described below of the pushbutton for lifts of the type of those which are employed for their location on the control panels of lifts or on the control panels located on each of the landings for calling the lift, which is essentially based on the incorporation of a structure of fixed elements (1) associated with some mobile or pushable elements (2) the actuation of which determines a function of the lift.

[0020] Based on these premises the pushbutton for lifts is distinguished fundamentally because the pushable elements (2) are configured from a supporting piece (3) which has a basic configuration intended to receive by pressure some symbols (4) which represent numbers, letters and other forms and geometries which are indicative of the function of the lift in connection with the actuation of said pushable element.

[0021] With this objective the supporting piece (3) has a number of drill holes passing through (5), practiced in its contact face, distributed in number and in position according to the spindles (6) foreseen in the rear face of said symbols (4).

[0022] It has been foreseen that the spindles (6) of the different symbols have a tronco-conical configuration to facilitate their introduction into the drill holes (5) and which

have a length slightly greater than the thickness of the supporting piece (3), which spindle (6) has some ribs (7) which are deformed and adapt to the shape of the drill hole (5) and which, once introduced under pressure into the drill hole (5) passing through the supporting piece (3), it will have its lower end riveted on the rear face of the supporting piece (3).

[0023] With this structuring it is possible, with a reduced number of supporting pieces, different as to the number and location of their drill holes (5), to incorporate any number; letter or symbol required for the operation of the lift. The differences regarding the number and position of the drill holes correspond logically with the spindles foreseen in the rear part of the symbols to be represented, taking into account that the form of each symbol requires the incorporation of some docking spindles in some specific positions.

[0024] In figures 4A to 4H, the eight supporting pieces (3) are shown which are necessary for the assembly of any number, letter or symbol required for the operation of the lift, showing a same surface configuration with different embodiments in terms of the number and arrangement of the drill holes (5) passing through for the reception of different symbols (4).

[0025] Each of the embodiments of the supporting piece (3), serves for the coupling of several symbols (4), depending on the number and position of the drill holes (5).

[0026] It can be observed in figure 5 how different symbols (4) appear, the spindles (6) of which are distributed in number and position in the best way possible according to the geometry of the symbol (4) and bearing in mind that the symbol (4) has to be fastened after the introduction of its spindles in the drill holes (5) of its corresponding supporting piece (3), selected from among those shown in the figure 4.

Claims

1. Pushbutton for lifts which are employed for its location in the control panel of lifts or in the control panel located on each of the landings for calling the lift, the pushbutton comprising a structure of fixed elements (1) associated with moveable or pushable elements (2) the actuation of which determines the actuation of the lift, and wherein said pushable elements (2) are formed by a supporting piece (3) on which is mounted, by pressure, a symbol (4) having a geometry indicative of a lift function **characterised in that** the supporting piece (3) is provided on its external face with drill holes (5) passing through, in which are housed spindles (6) arranged in certain positions of the rear face of the symbols (4), the drill holes (5) being distributed, in number and position, to permit a same supporting piece (3) to receive, alternatively, different symbols (4).

2. Pushbutton for lifts, according to claim 1, **characterised in that** the spindles (6) have a tronco-conical configuration to facilitate their introduction in the drill holes (5), as well as a length slightly greater than the thickness of the supporting piece (3).
3. Pushbutton for lifts, according to claim 2, **characterised in that** the spindles (6) are provided with ribs (7) which are deformed and adapt to the form of the drill hole (5).
4. Pushbutton for lifts, according to claims 2 or 3, **characterised in that** the spindles (6) once introduced under pressure into the drill hole (5) passing through the supporting piece (3), have its projecting end riveted on the rear face of the supporting piece (3).

Patentansprüche

1. Drucktaster für Aufzüge, die für das Anbringen in dem Bedienfeld von Aufzügen oder in dem Bedienfeld zum Anfordern des Lifts auf den jeweiligen Treppenabsätzen vorgesehen sind, wobei der Drucktaster einen Aufbau aus festen Elementen (1), verbunden mit beweglichen oder drückbaren Elementen (2) umfasst, wobei die Betätigung letzterer die Betätigung des Aufzugs auslöst und wobei die besagten drückbaren Elemente (2) aus einem Halteteil (3) bestehen, auf dem durch Druck ein Symbol (4) befestigt ist, das mit einer geometrischen Anzeige einer Aufzugsfunktion versehen ist, **dadurch gekennzeichnet, dass** das Halteteil (3) auf seiner äußeren Seite mit durchgehenden Bohrlöchern (5) ausgestattet ist, in denen Wellen (6) aufgenommen sind, die in bestimmten Positionen auf der Rückseite der Symbole (4) angeordnet sind, wobei die Bohrlöcher (5) hinsichtlich ihrer Anzahl und Position so verteilt sind, dass das gleiche Halteteil (3) abwechselnd verschiedene Symbole (4) aufnehmen kann.
2. Drucktaster für Aufzüge nach Anspruch 1, **dadurch gekennzeichnet, dass** die Wellen (6) kegelstumpfförmig ausgeführt sind, um ihre Einführung in die Bohrlöcher (5) zu erleichtern, wobei weiterhin ihre Länge etwas größer bemessen ist als die Breite des Halteteils (3).
3. Drucktaster für Aufzüge nach Anspruch 2, **dadurch gekennzeichnet, dass** die Wellen (6) mit Rippen (7) ausgestattet sind, die verformt werden und sich der Form der Bohrlöcher anpassen (5).
4. Drucktaster für Aufzüge nach dem Anspruch 2 oder 3, **dadurch gekennzeichnet, dass** das vorstehende Ende der Wellen (6), nach deren Einführung unter Druck in das das Halteteil (3) durchsetzende Bohrloch (5) auf der Rückseite des Halteteils (3) festge-

nietet wird.

Revendications

1. Bouton-poussoir pour ascenseurs qui est employé pour sa mise en place dans le panneau de commande des ascenseurs ou dans le panneau de commande situé sur chacun des paliers pour appeler l'ascenseur, le bouton-poussoir comprenant une structure d'éléments fixes (1) associés à des éléments (2) mobiles ou susceptibles d'être pressés, dont la commande détermine l'action de l'ascenseur, et dans lequel lesdits éléments (2) susceptibles d'être pressés sont formés par une pièce (3) de support sur laquelle est monté, à pression, un symbole (4) ayant une géométrie indicative d'une fonction d'ascenseur, **caractérisé en ce que** la pièce (3) de support est pourvue sur sa face externe de trous (5) perforés traversants, dans lesquels sont logés des broches (6) disposées dans certaines positions de la face postérieure des symboles (4), les trous perforés (5) étant distribués, en nombre et en position, pour permettre qu'une même pièce (3) de support reçoive, alternativement, différents symboles (4).
2. Bouton-poussoir pour ascenseur, selon la revendication 1, **caractérisé en ce que** les broches (6) ont une configuration tronconique pour faciliter leur introduction dans les trous perforés (5), ainsi qu'une longueur légèrement supérieure à l'épaisseur de la pièce (3) de support.
3. Bouton-poussoir pour ascenseur, selon la revendication 2, **caractérisé en ce que** les broches (6) sont pourvues de nervures (7) qui sont déformées et s'adaptent à la forme des trous perforés (5).
4. Bouton-poussoir pour ascenseur, selon les revendications 2 ou 3, **caractérisé en ce que** les broches (6) une fois introduites à pression dans le trou (5) perforé passant à travers la pièce (3) de support, ont leur extrémité saillante rivée sur la face postérieure de la pièce (3) de support.

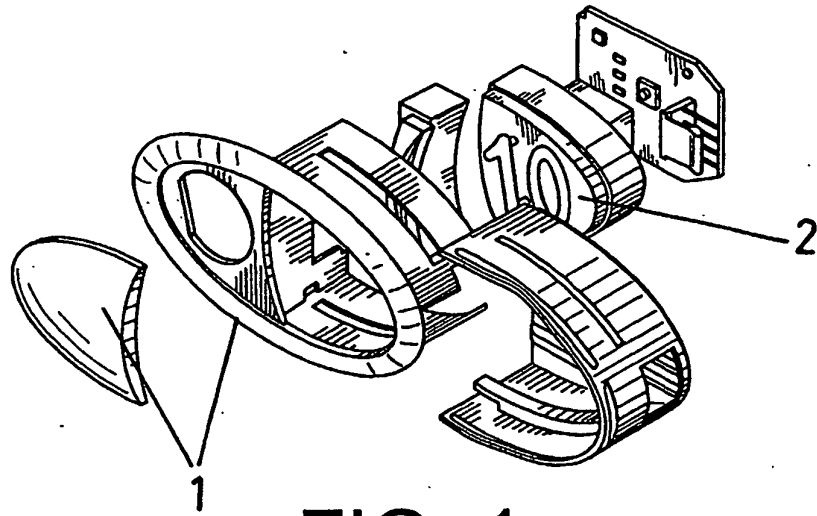


FIG. 1

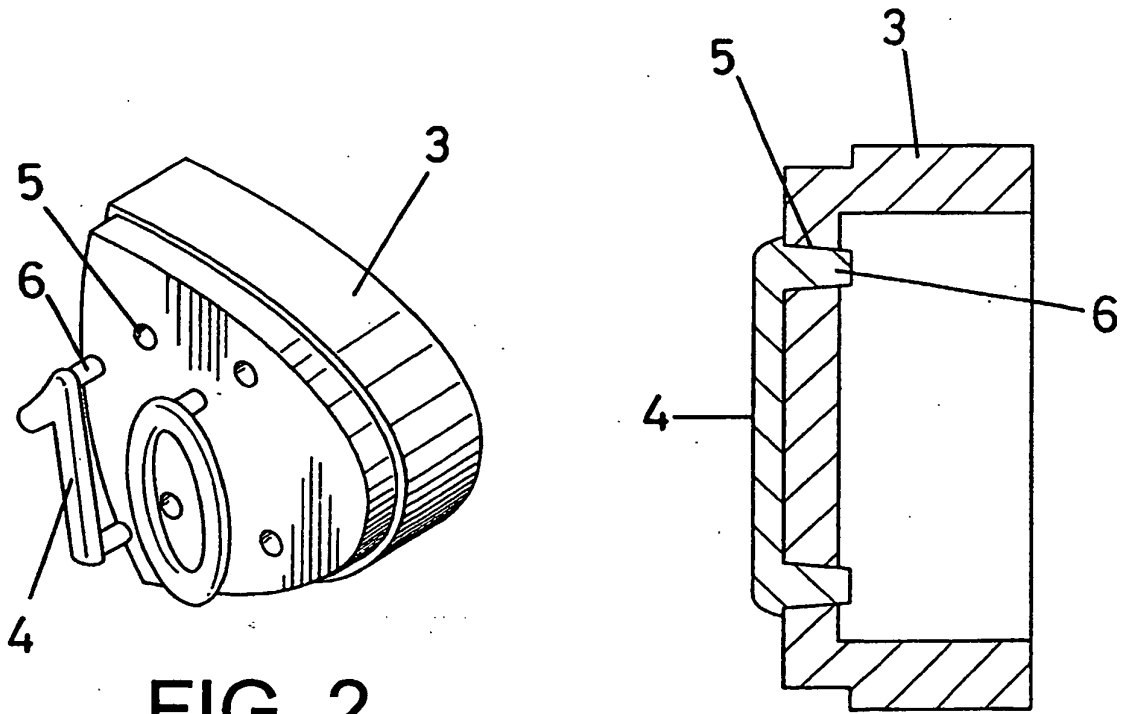


FIG. 2

FIG. 3

FIG. 4

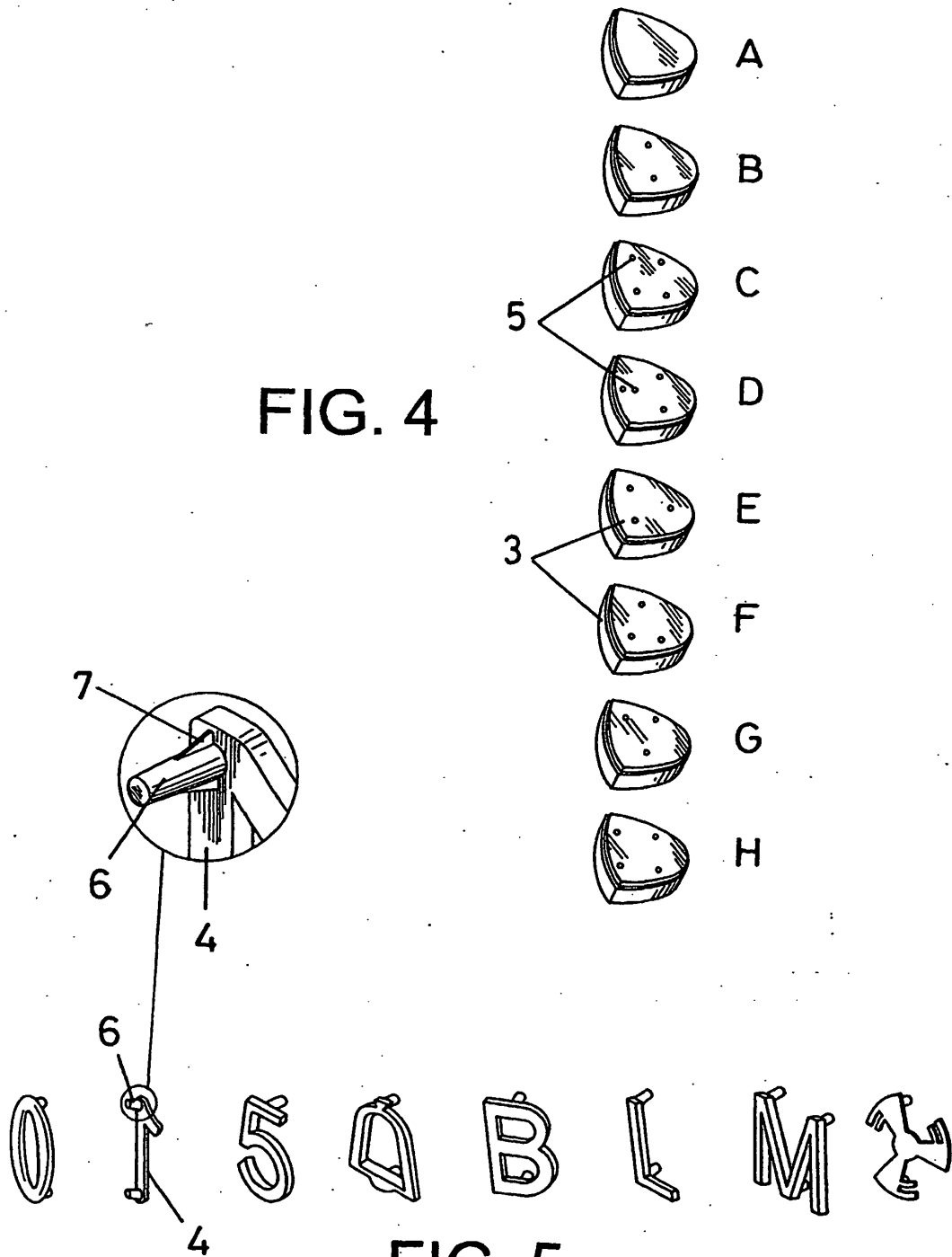


FIG. 5