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(54) **Pushbutton for lifts**

(57) Pushbutton for lifts which can be used in the control panel located inside the car or beside the door of the lift on the different landings, and which is constituted by a structure of fixed elements associated with some moveable pushable elements whereby the latter are formed by a supporting piece on which the symbol

is mounted corresponding to the function of the lift for which it has on its external face drill holes passing through distributed in number and position such that they allow the insertion of some spindles of tronco-conical configuration and of length slightly greater than the thickness of said supporting piece which said symbols have on the rear face thereof.

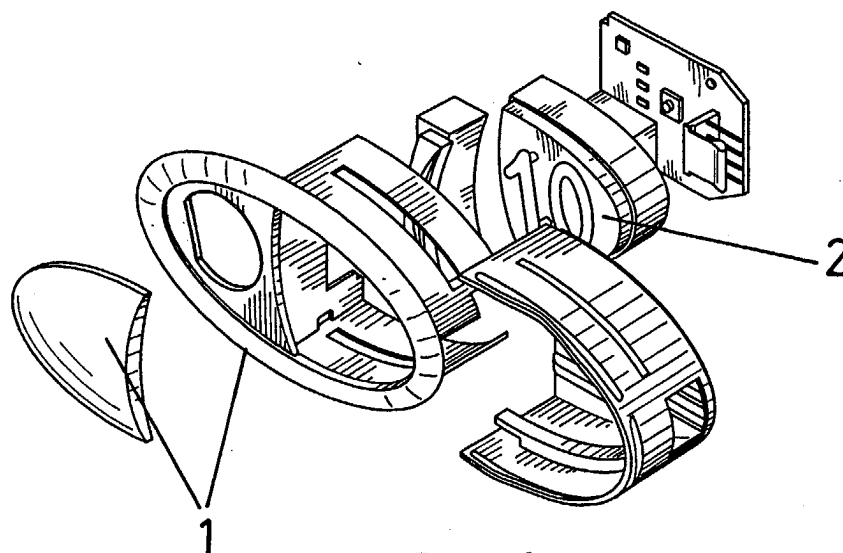


FIG. 1

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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 movable 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.

DESCRIPTION OF THE INVENTION

[0007] 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.

[0008] 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.

[0009] 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.

[0010] 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.

[0011] 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.

[0012] 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.

[0013] 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.

[0014] 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.

[0015] 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.

[0016] 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

[0017] 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 pushbutton 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

[0018] 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.

[0019] 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.

[0020] 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).

[0021] 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).

[0022] 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.

[0023] 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).

[0024] 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).

[0025] 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 of the type of those 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, which is fundamentally based on the incorporation of a structure of fixed elements (1) associated with some moveable or pushable elements (2) the actuation of which determines the actuation of the lift, essentially **characterised in that** the pushable elements (2) are obtained from a supporting piece (3) on which is mounted, by pressure, the corresponding symbol (4) which can represent numbers, letters and other forms and geometries which indicate the lift function associated with the actuation of said pushable element, the supporting piece (3) having a number of drill holes (5) passing through, practiced in its external face, in which are housed some spindles (6) foreseen 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 to receive, alternatively, different symbols, in such a way

that it is possible to cover all the functions associated with the pushbutton with a reduced number of supporting pieces.

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), which spindle (6) comes with some ribs (7) which are deformed and adapt to the form of the drill hole (5) and which once introduced under pressure into the drill hole (5) passing through the supporting piece (3), will have its projecting end riveted on the rear face of the supporting piece (3).

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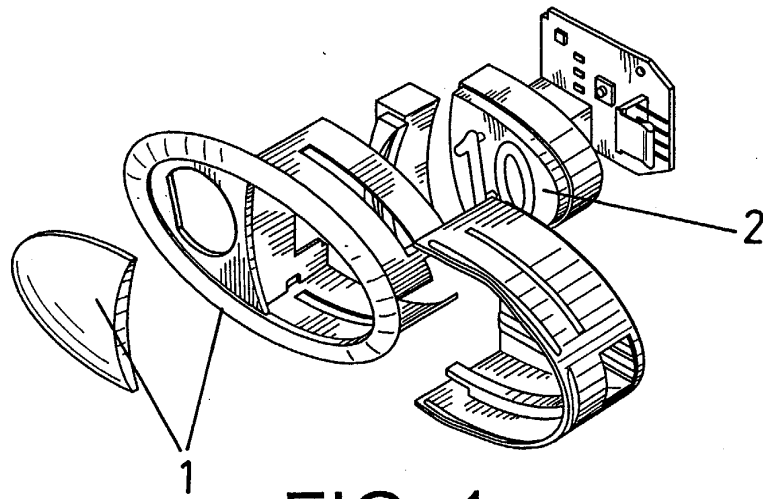


FIG. 1

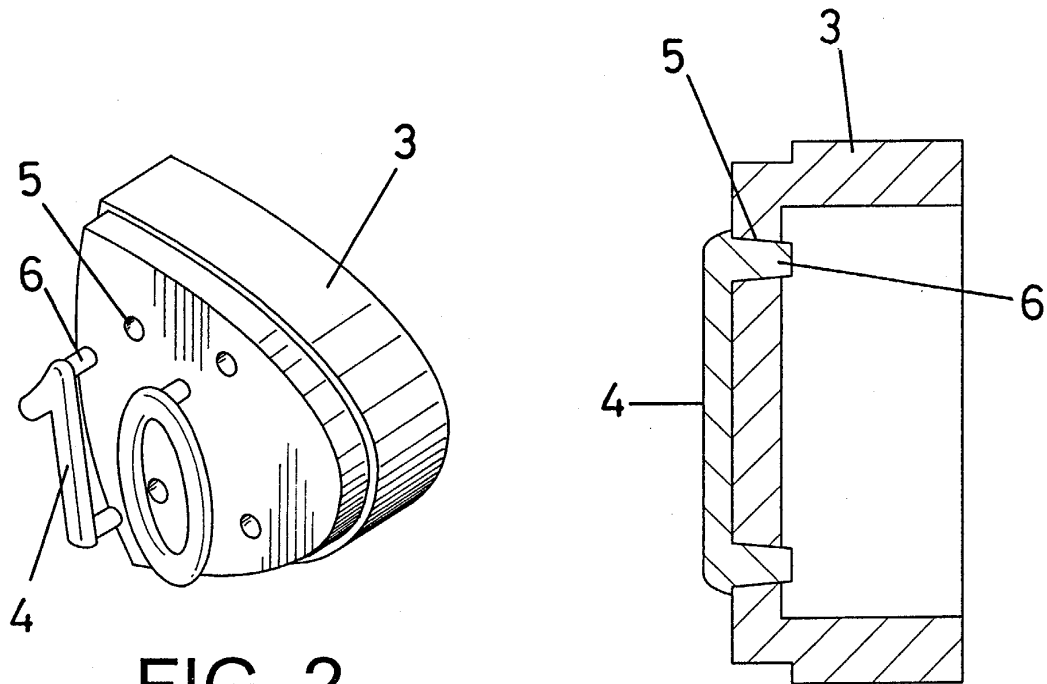


FIG. 2

FIG. 3

FIG. 4

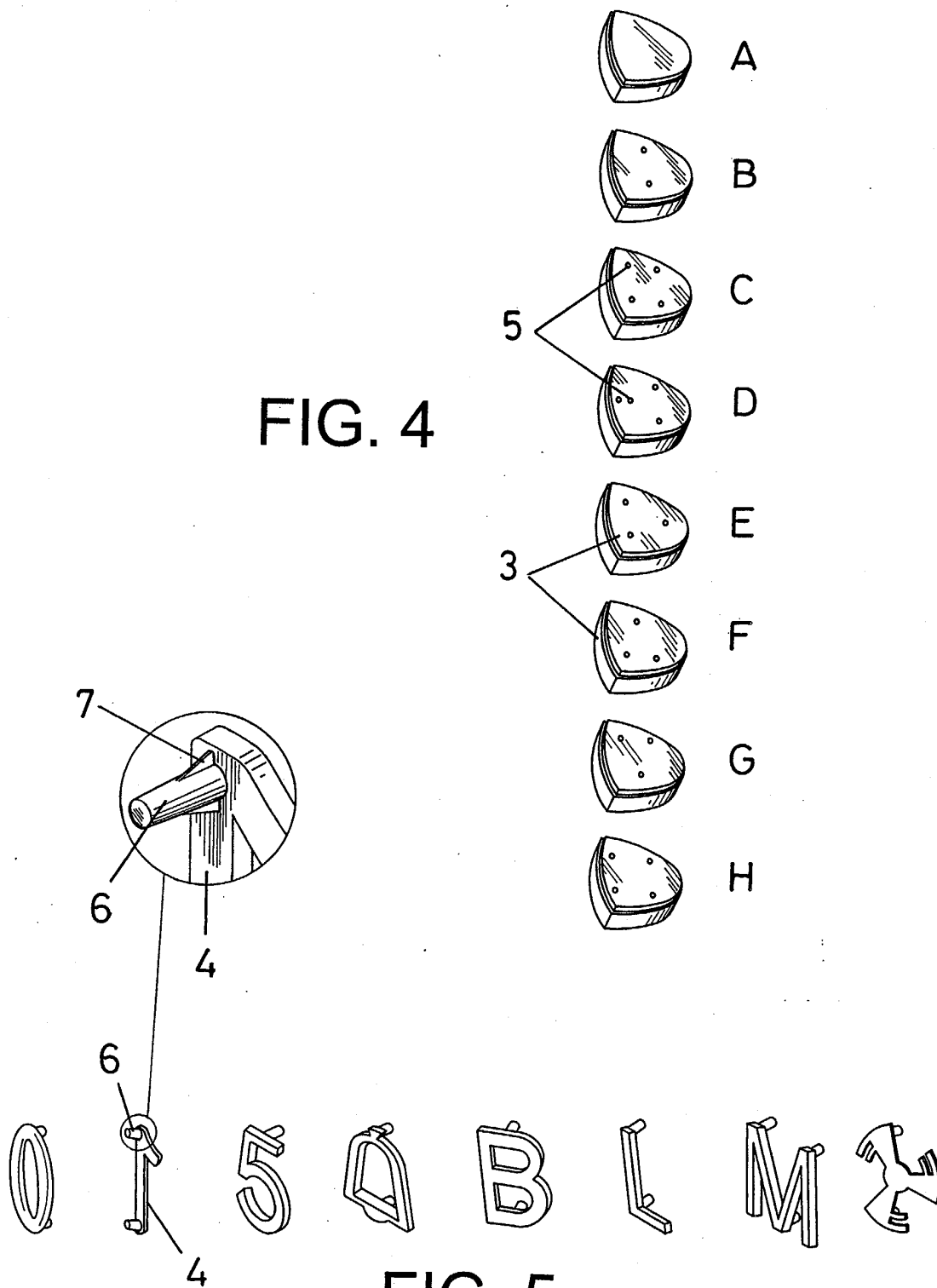


FIG. 5



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EUROPEAN SEARCH REPORT

Application Number
EP 04 38 0011

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A	US 2003/095048 A1 (JIN YOUNG-KYU ET AL) 22 May 2003 (2003-05-22) * paragraph [0030] - paragraph [0056]; figures 2,6-10 *	1,2			
A	GB 364 992 A (JOSEPH JOHN PROFFITT) 14 January 1932 (1932-01-14) * the whole document *	1,2	<table border="1"> <thead> <tr> <th>TECHNICAL FIELDS SEARCHED (Int.Cl.7)</th> </tr> </thead> <tbody> <tr> <td>B66B H01H G06F G09F</td> </tr> </tbody> </table>	TECHNICAL FIELDS SEARCHED (Int.Cl.7)	B66B H01H G06F G09F
TECHNICAL FIELDS SEARCHED (Int.Cl.7)					
B66B H01H G06F G09F					
The present search report has been drawn up for all claims					
Place of search MUNICH		Date of completion of the search 30 April 2004	Examiner Nieto, J.M.		
<table border="0"> <tr> <td> CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document </td> <td> T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document </td> </tr> </table>				CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document	T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document	T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document				

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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