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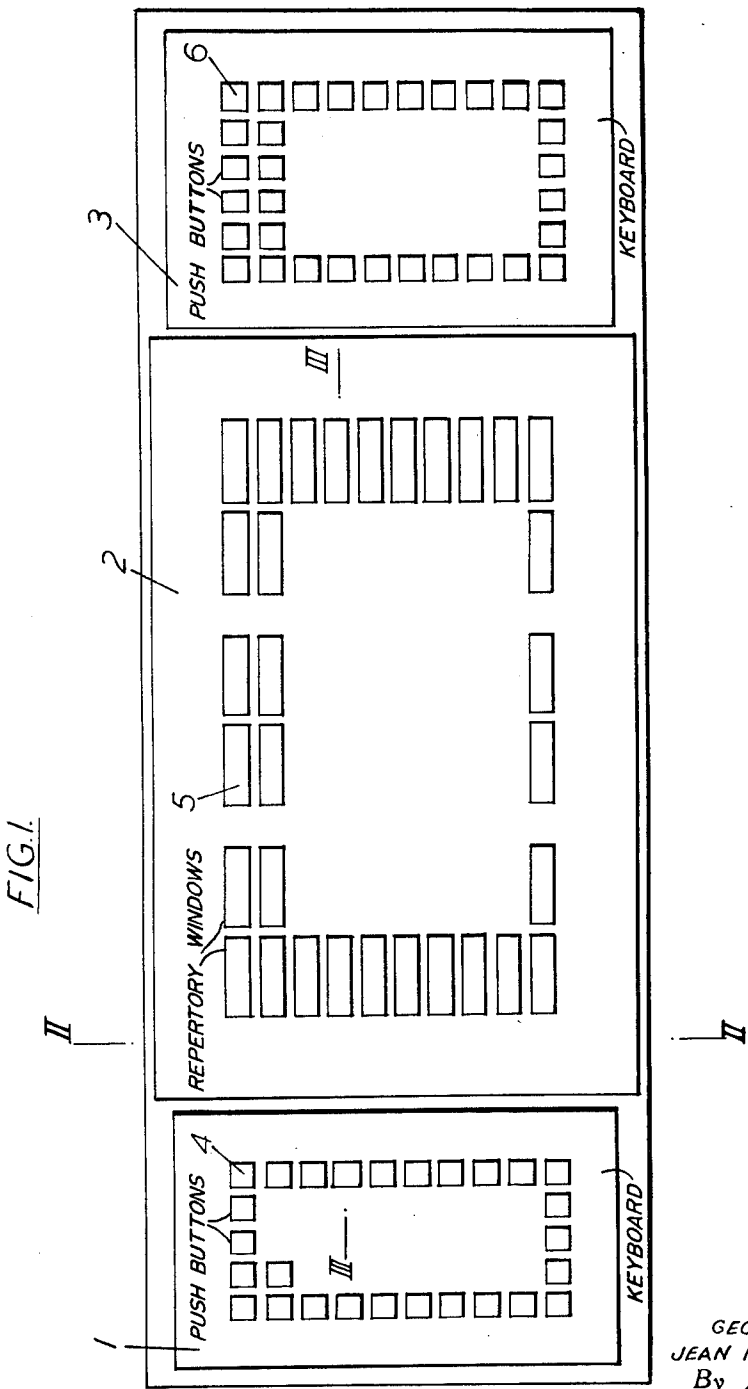
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MULTIPLE REPERTORY ENCODING KEYPANEL

Filed June 14, 1962

3 Sheets-Sheet 1



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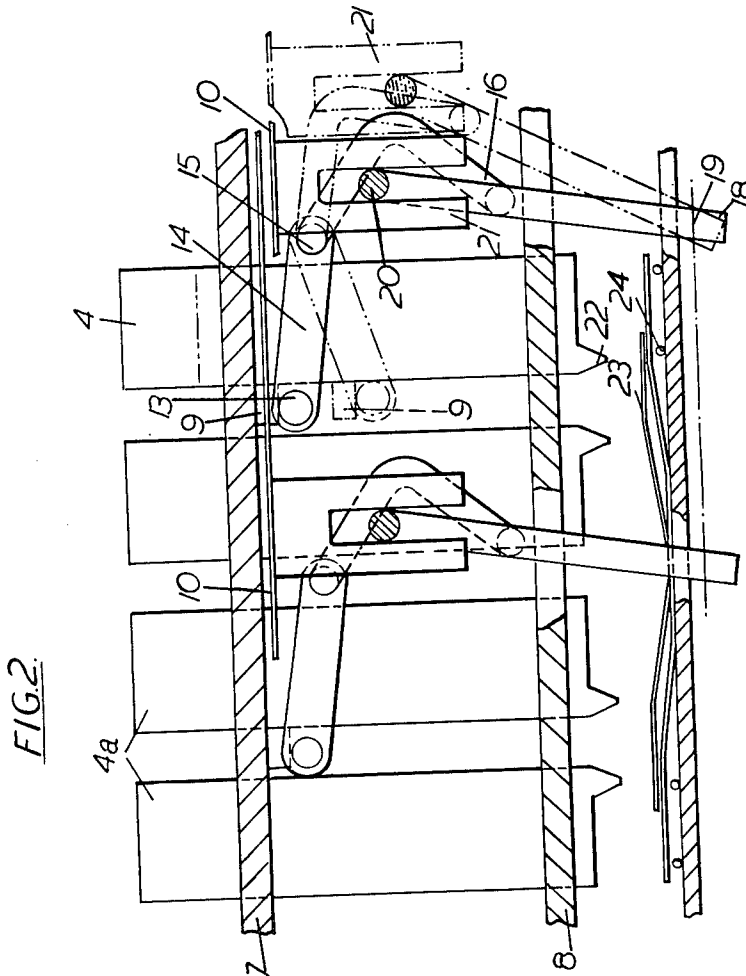
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MULTIPLE REPERTORY ENCODING KEYBOARD

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MULTIPLE REPERTORY ENCODING KEYPANEL

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3 Sheets-Sheet 3

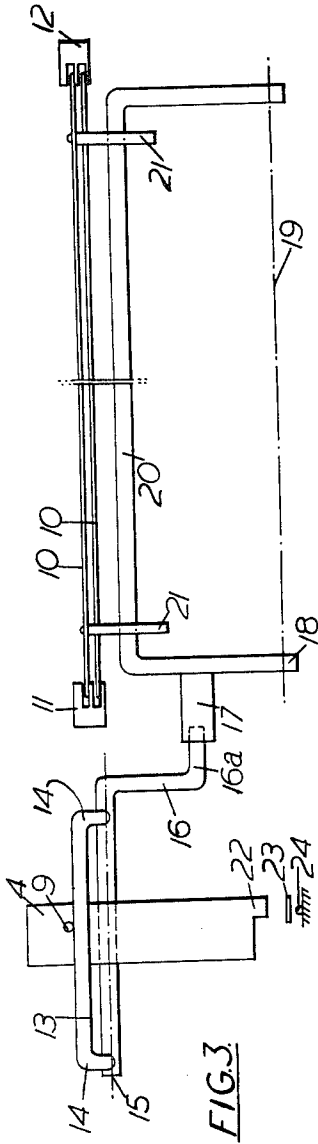


FIG. 3

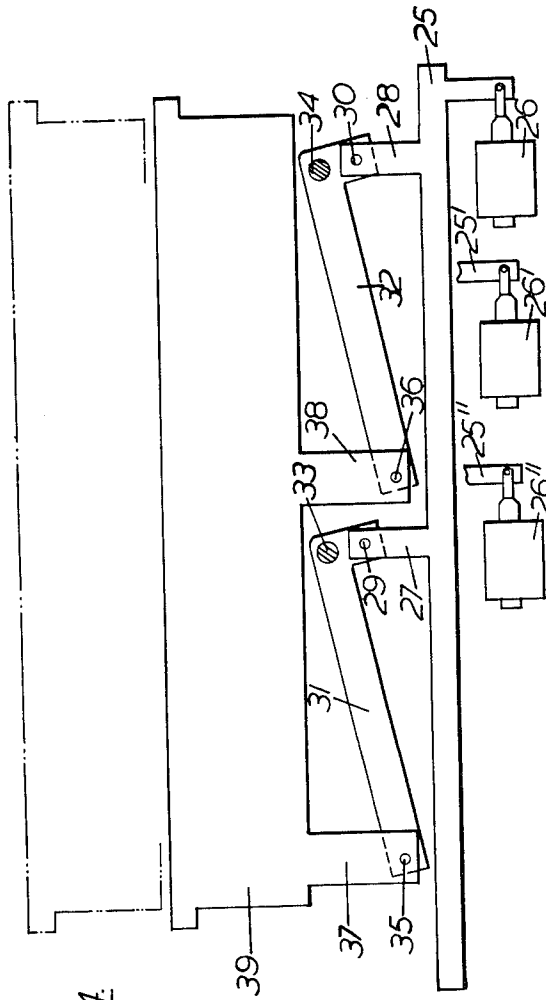


FIG. 4

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MULTIPLE REPERTORY ENCODING KEYPANEL
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266,190

6 Claims. (Cl. 340—365)

This invention relates to mutiple repertory encoding keypanels and more particularly to a multiple repertory keypanel for use in letter sorting systems.

Such an encoding device is already known from the patent of addition No. 54,400 to the French Patent No. 950,247. In this known device the base of the selection is only modified at distinct moments, and this device is further not adapted for encoding in a simple manner a large number of items of information.

The main object of this invention is to provide an encoding keypanel of the above type by means of which even a large number of items of information may be encoded in a very simple manner and in a minimum of time.

Another object of the invention is to provide an encoding keypanel of the above type which is of a very simple construction.

One feature of an encoding keypanel in accordance with my invention is the fact that each selection of a distinct code is performed in at least two successive steps, that during the first step a part of said repertory is made visible and that during the last step a corresponding push-button is depressed in a keyboard which is arranged in the same manner as each part of said repertory in order to facilitate the selection of said corresponding push-button after having read the part of the repertory which has been made visible.

The above mentioned and other objects and features of the invention will become more apparent by reference to the following description taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a plan view of an encoding keypanel in accordance with my invention;

FIG. 2 is an enlarged cross-section taken along line II—II of FIG. 1;

FIG. 3 is a cross-section taken along line III—III of FIG. 1; and

FIG. 4 represents another embodiment of an encoding keypanel in accordance with my invention.

The encoding keypanel according to the invention will be described as applied in a letter sorting device wherein each letter processed has to be transferred to a distinct output position depending upon its destination. To this end an operator has to translate the destination, as read on the letter, into a corresponding code indicating the said output position, by means of the encoding keypanel.

FIGS. 1 to 4 show an encoding keypanel which has a first keyboard 1 with push-buttons 4, a central panel 2 provided with a number of rectangular windows 5, and a second keyboard 3 with push-buttons 6.

Each of the push-buttons 4 is marked at its upper side 4a with a character or group of characters which is the first character(s) of a plurality of destinations, i.e. a push-button is marked with the character A, another with the character B, etc. These push-buttons 4 are slidably arranged in openings made in the parallel plates 7 and 8 of the frame of the encoding keypanel, and each of these push-buttons is provided with a pin 9.

The push-buttons 6 of the keyboard 3 are arranged in the same manner as the windows 5 in the central panel

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2 and hence the number of push-buttons 6 is equal to that of the windows 5.

Behind the central panel 2 is disposed a so-called repertory which is constituted by a number of plates 10, all parallel to each other and all slidably arranged for motion in an upward direction in the guides 11 and 12. A repertory consists of a library of many items of specific information which is stored in separate groupings according to a plan of classification. When looking for a specific item of information, the grouping under which it is classified is called up, and the specific information is then selected from this grouping. The number of these plates 10 is equal to the number of push-buttons 4, although only a limited number of such plates 10 is represented in FIGS. 2 and 3.

Each of these plates is provided with a number of items of information which, in the present case, are constituted by the various destinations which may appear on the letters to be encoded. For instance the destinations beginning with the character A appear on a plate, while those beginning with the character B appear on another plate etc. Each of these plates is provided with a number of windows which are arranged in the same manner as the windows 5 in the central panel 2. The above destinations are inscribed immediately below the windows 5 and they are normally not visible from the outside through these windows since they are located behind the full parts of the central panel.

Each of the push-buttons 4 of the keyboard 1 is mechanically coupled with a distinct plate 10 of the above repertory in such a manner that when depressing a push-button 4, the plate 10 coupled therewith is displaced upwardly over a small distance which is sufficient to make visible in the windows of the central panel the destinations inscribed on this plate. Due to the fact that the destinations are inscribed immediately below these windows, the height of displacement need only be equal to the height taken by the destinations. Due to this small height of displacement, the information inscribed on a plate may be rendered visible in a minimum of time, thus enabling a high encoding speed.

Suppose that an operator has to process a letter which carries the destination "Anderlecht." By depressing the push-button 4 marked with the character A, the destinations beginning with this character and appearing on the plate coupled with this push-button are made visible through the windows 5 in the central panel. In this manner the operator may find in one of these windows, for instance in the middle window of the upper row of the central panel, the above destination. In order to transfer the letter to the suitable output position, it is then sufficient to depress the push-button 6 in the corresponding position of the keyboard 3, i.e. the middle push-button of the upper row since a code will thus be given corresponding with this output position. To this end a number of electrical contacts are arranged below the keyboard 3, said contacts being controlled by the push-buttons of this keyboard.

The mechanical interconnection of the push-buttons 4 and the plates 10, which enables the above upward displacement, is executed as follows:

The pin 9 of each push-button 4 is located above a rod 13 to which are secured two arms 14. This rod 13 extends over the width of the keyboard 1, and a number of arms 14 and push-buttons 4 are secured thereto. As may be seen from FIG. 2 a plurality of such rods 13 has been provided. Each pair of arms 14 is further connected to an axle 15 which has at its end a V-shaped transverse part 16 having a bent arm, the end 16a of which is parallel to the axle 15. The latter end projects in a slit of a transverse piece 17 which is secured to a U-shaped part 18

having a width which is substantially equal to that of the plates 10 and which is hingedly connected to an axis 19. As may be seen on FIG. 2 a number of such U-shaped parts 18 is arranged at the under side of the repertory. The horizontal arm 20 of the U-shaped part 18 is located between the arms of the two fork-shaped pieces 21 which are secured to the plate 10.

When a push-button 4 is depressed, the pin 9 depresses the rod 13 so that the arms 14 are brought into the position indicated in broken lines in FIG. 2. Due to this also the axle 15 is rotated so that the part 16, the fork-shaped pieces 21 and the plate 10 secured thereto are transferred to the position represented in broken lines in FIG. 2. In this manner the plate 10 is displaced upwardly over a certain distance so that the destinations inscribed thereon are made visible in the windows 5 of the central panel 2.

The push-buttons 4 of the keyboard 1 are also used for delivering electrical information concerning the push-button which has been depressed. To this end each of these push-buttons is provided at its underside with a projecting part 22, and below these push-buttons are arranged contact blades 23 and contact points 24. Hence, a contact blade 23 is brought into contact with a contact point 24 when a push-button 4 is depressed.

When the number of plates 10 of the repertory is high and the destinations appearing on the rearmost plate of this repertory have to be made visible, the operator has to read these destinations through holes the depth of which is equal to the depth of the repertory. This is not the case in another embodiment of the encoding keypanel represented in FIG. 4. Therein only the control elements of the plates of the repertory are shown.

This repertory is provided with a number of control bars 25, 25', 25'' which are hingedly connected to the armatures of the associated electro-magnets 26, 26' and 26'' respectively which may be controlled, in any suitable manner, by the push-buttons 4 of a keyboard. Each bar 25 is provided with two upstanding parts 27, 28 which are hingedly connected at 29, 30 with an L-shaped piece 31, 32 itself hinged to an axis 33, 34. At its other end each L-shaped piece 31, 32 is hingedly connected to 35, 36 with the extensions 37, 38 of a plate 39 forming part of the repertory.

From this figure it is obvious that, when energizing the electromagnet 26, the armature of the latter is displaced to the left (FIG. 4) thus displacing the plate 39 upwardly.

Normally the ends of the plates 39 are in their rest position, on supports (not shown) made of a resilient material to absorb the shocks occurring when the plates are displaced from their operative position to their rest position.

In this rest position, the plates 39 are located behind a full panel and hence the informations inscribed on these plates are invisible. The height over which plates have to be displaced by means to their control mechanism is so chosen that these plates are completely displaced above this full panel. Hence, the operator may read without difficulty the informations inscribed on these plates whatever the number of plates may be.

Although the above described preferred embodiments of the encoding keypanel of our invention are substantially completely mechanical and may be executed in a simple manner, it is clear that other means may be applied for realizing the invention. The repertory may for instance also be constituted of a screen, replacing the central panel of the above embodiments, and of a number of negatives each with an associated lamp and lens system replacing the number of plates used in the above embodiments. Each of these lamps has then to be connected with a push-button of a keyboard in such a manner that, by depressing this push-button, the associated lamp is lighted thus projecting the negative on the screen.

It is also possible to provide a screen with an associated lamp and a lens system as well as a number of negatives each of which is brought in front of the lamp upon the corresponding push-button being depressed. In both cases the plates are replaced by negatives which may have very small dimensions.

While the principles of the invention have been described in connection with specific apparatus, it is to be clearly understood that this description is made only by way of example and not as a limitation on the scope of our invention.

What is claimed is:

1. A multiple repertory keypanel comprising:

A repertory of a plurality of groups of codes, means for displaying one of said groups of codes, first selecting means for selectively causing the group containing a desired code to be displayed so that each code of said selected group is in a fixed position relative to said keypanel, second selecting means for selecting the fixed position of said desired code, and first, second, and third sub-panels, said first sub-panel comprehending a plurality of said first selecting means from which one is to be selected according to the particular repertory code group desired to be seen, said display means comprising said second sub-panel having a plurality of openings in which the codes of said selected code group are disposed, and said third sub-panel comprehending a plurality of said second selecting means, one of which corresponds in relative position to each of said openings in said second sub-panel.

2. A multiple repertory keypanel, as claimed in claim 1 wherein said repertory comprises a plurality of parallel plates which are movable with respect to one another and a plurality of moving means responsive to said first selecting means whereby a desired plate can be made visible in said second sub-panel.

3. A multiple repertory keypanel as claimed in claim 2 wherein each of said plates carries a group of codes inscribed thereon and said plates are disposed in parallel behind said second sub-panel so that upon movement of a desired plate the codes inscribed thereon will each appear in one of the windows of said second sub-panel.

4. A multiple repertory keypanel as claimed in claim 2 wherein said first selecting means on said first sub-panel comprises a first plurality of push-buttons, each said push-button corresponding to a group of codes in said repertory, and said second selecting means on said third sub-panel comprises a second plurality of push-buttons, each said push-button thereof corresponding to a desired code.

5. A multiple repertory keypanel as claimed in claim 4 wherein each of said moving means comprises: a plurality of electromagnets, one being electrically coupled to each of said second plurality of push-buttons on said third sub-panel so that when a push-button is selected the electromagnet associated with that push-button will be energized and its armature will move, a plurality of connecting means connecting said armatures with said respective plates so that one plate is associated with one armature whereby when an electromagnet having a particular armature is energized the plate associated with that armature will be moved.

6. A multiple repertory keypanel as claimed in claim 4 wherein each of said moving means comprises:

- (a) a rod with one end offset;
- (b) means slidably mounting said rod behind said first sub-panel so that the longitudinal axis of said rod is perpendicular to the longitudinal axis of the push-buttons in said first sub-panel;
- (c) a U-shaped member rotatably mounted behind said second sub-panel so that the part forming the base of the U is disposed parallel to the longitudinal axis of said rod whereby said part is movable upwards and downwards;

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- (d) means connecting said U-shaped member to the offset end of said rod whereby movement of said rod will cause said U-shaped member to move upwards and downwards;
- (e) a fork-shaped member rigidly attached to one of 5
said parallel plates having the part forming the base of the U-shaped member disposed in the slot formed by the forks of the fork-shaped member whereby said plate is movable upwards and downwards by the U-shaped member;
- (f) and a pin connected to a push-button in said first 10
sub-panel in contact with said rod whereby move-

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ment of said pin is responsive to movement of the associated push-button whereby movement of said rod is caused.

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