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BY A. P. C.

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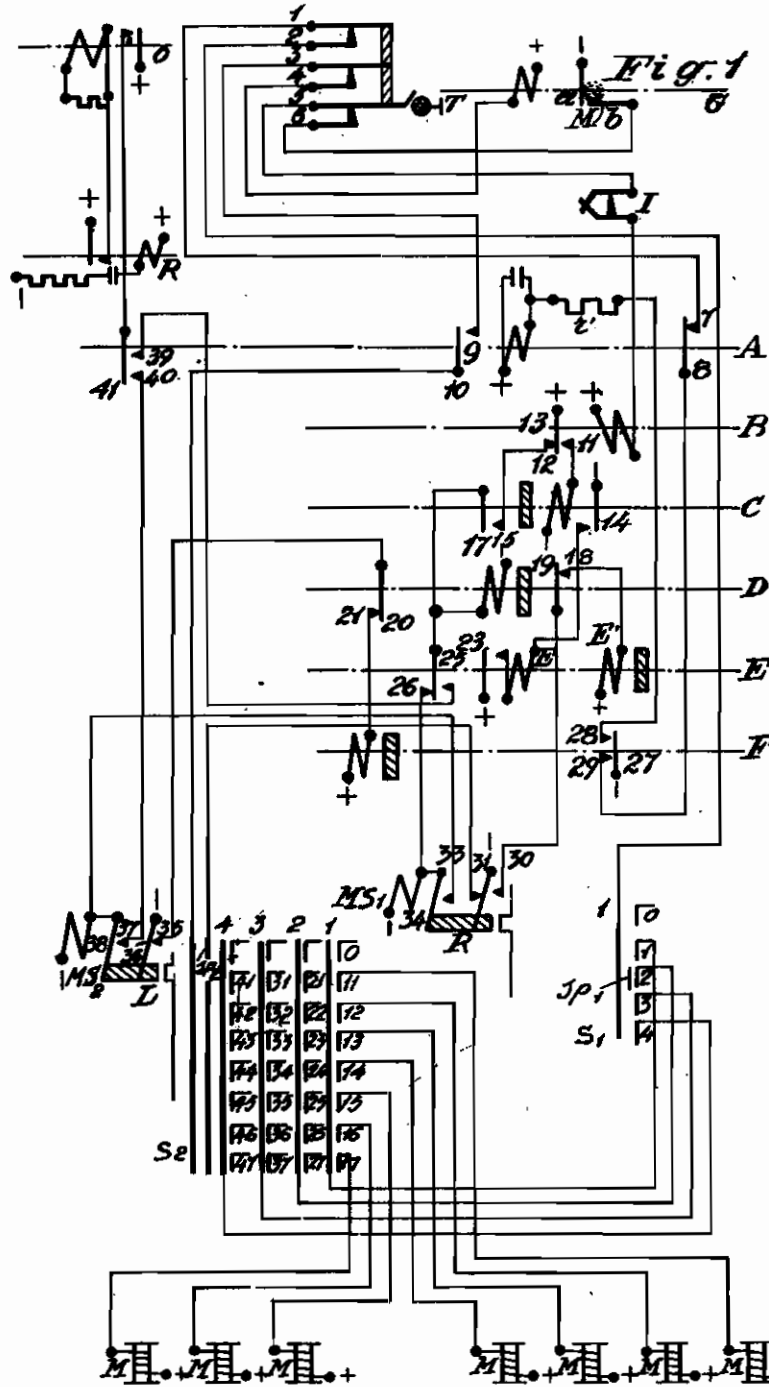
AUTOMATIC DISTRIBUTORS OF GOODS

Filed April 27, 1940

Serial No.

332,117

2 Sheets-Sheet 1



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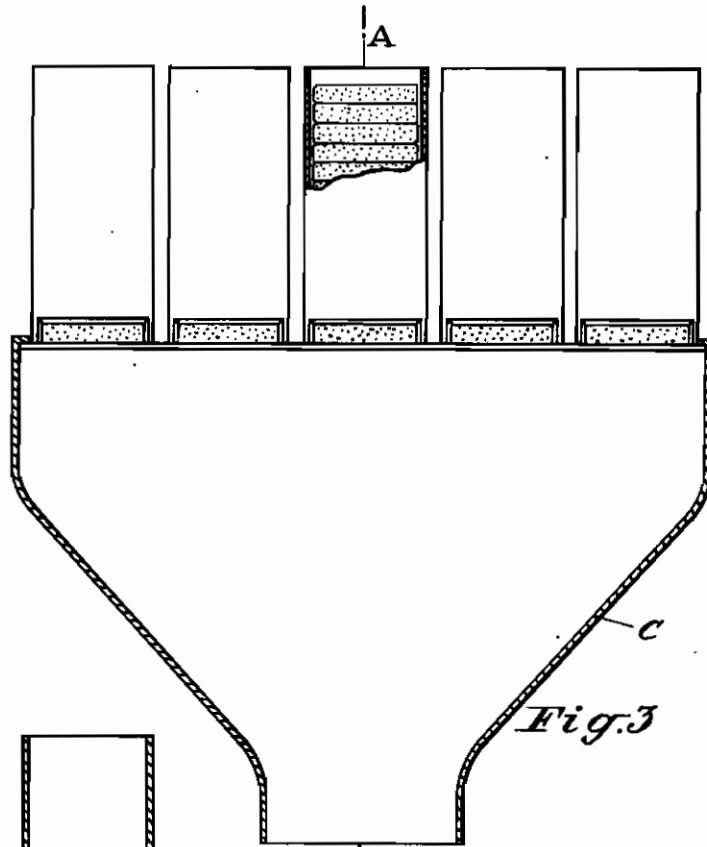


Fig. 3

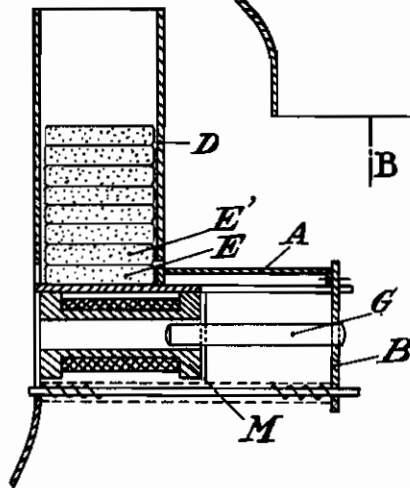


Fig. 2

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ALIEN PROPERTY CUSTODIAN

AUTOMATIC DISTRIBUTORS OF GOODS

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This invention relates to a device for the automatic distribution of goods.

The distributing device according to the invention comprises containers which are adapted to receive the different objects to be distributed and are each provided with an electrically driven expeller, adapted to put the single objects out of their container, an electric driving system for the said expellers including a dial combiner allowing to send on a line at will different series of impulses and a selector allowing the selection of the one or the other expeller driving means in relation with the combination established by means of the dial.

The accompanying drawings show by way of example a form of execution of the device:

Figure 1 shows a diagram of the electric circuits controlling the distribution;

Figure 2 is a cross section of the distributor along the line A—B of figure 3;

Figure 3 shows a partially sectioned front view of the same distributor.

The distributing device shown in the drawings has an electric driving system (fig. 1) comprising a push-button T acting on three contact springs 1, 3 and 5 and a dial combiner I of the kind used in telephony for the selection of different circuits. The distributing device comprises further containers (figs. 2 and 3) designed to receive the objects to be distributed and means to effect the distribution.

On the front side of the distributing device a slot is provided for the introduction of a counter or a money M (fig. 1), which on its introduction closes the following circuit: negative pole, springs, a, b, springs 6, 5, springs of the dial giving the impulses, winding of the relays B, positive pole. The relays B is therefore excited and by means of the spring 12 the following circuit is closed: positive pole, spring 12, contact 11 of the relays B, winding of the delayed relays C, negative pole. The delayed relays C in therefore excited and attracts his springs 14 and 17.

Turning now the dial and forming thus a determined number the relays B attracts the spring 12 and releases it at each impulse sent by the dial and as the relays C being delayed remains excited, the coupling magnet MS_1 of the selector S_1 is excited as many times as are the unities contained in the transmitted number.

The exciting circuit of the magnet MS_1 is as follows: positive pole, spring 12 and contact 13 of the relays B, contact 18 and spring 17 of the relays C, spring 25 and contact 26 of the relays E, winding of the magnet MS_1 , negative pole.

With the excitation of the magnet MS_1 the brush sp_1 of the selector S_1 is moved so as to rest on the contact corresponding to the transmitted number, for instance on the contact 2.

On the end of the rotation of the selector the switch H moves from its position signed on the drawing and reaches the position in which its spring 31 makes contact with 30 and the following circuit is closed:

Negative pole, spring 31 and contact 30 of the switch H, spring 19 and contact 18 of the relays D, winding of the relays E', positive pole. The relays E' attracts the spring 23, thus exciting the relays E which attracts the spring 25. If now the second number of the desired figure is formed by means of the dial, the impulses corresponding to the second number are transmitted in the described way not to the magnet MS_1 but to the magnet MS_2 of the selector S_2 and the brush sp_2 of this selector is brought on the contact corresponding to the second number transmitted, for instance on 4.

At the end of the movement of the selector S_2 , the switch L moves so as to close over the contact 35 and its spring 36 the following circuit:

Negative pole, spring 36 and contact 35 of the switch L, spring 20 and contact 21 of the relays D, winding of the relays F, positive pole. The delayed relays F is excited and closes through its spring 27 and the contacts 29 and 29 the following two circuits:

(a) Positive pole, winding of the relays A, resistance r_1 contact 26 and spring 27 of the relays F, negative pole;

(b) Negative pole, spring 27 and contact 29 of the relays F, spring 8 and contact 7 of the relays A, spring 1 and contact 2 of the push-button T, sector 1 of the selector S_1 , brush sp_1 of the selector S_1 (in fig. 1 supposed arrested in position 2), sector 2 of the selector S_2 (in fig. 1 supposed arrested in position 4), contact of 2—4 corresponding to the position of the brush sp_2 of the selector S_2 , winding of the electromagnet 2—4 corresponding to this contact but not shown on the drawing. The electromagnet 2—4 operates the distributing device.

In this way by forming a determined figure with the dial the electromagnet corresponding to the desired distributor is choosen and an exciting current is sent in his winding.

It is obvious that the number of distributors which may be actuated depends on the number of the lines of the selector used.

By exciting the relays A through the spring

10 and the contact 9 of this relays the following three circuits are closed:

(a) Positive pole, winding of the relays R (group of selectors moved), spring 41 and contact 39 of the relays A, contact 33 and spring 34 of the switch H, winding of the magnet MS₁, negative pole; the magnet MS₁ is excited and the selector S₁ . . . returns . . . to rest position;

(b) Positive pole, winding of the relays R, spring 41 and contact 40 of the relays A, contact 37 and spring 38 of switch L, winding of the magnet MS₂, negative pole; the magnet MS₂ is excited and the selector S₂ returns to rest position;

(c) Positive pole, winding of the relays G, spring 3 and contact 4 of the push-button T, contact 9 and spring 10 of the relays A, bank of contacts 5 of the selector S₂, brush sp₂ and sector 0 of the same selector (rest position of the selector), contact 32 and spring 31 of the switch H, negative pole. Then the relays G is excited, so attracting the spring a and thus the money or counter first arrested by the springs a and b leaves its position because the spring a has been lowered. A box receives the counters introduced in the slot and which have operated the device.

In these conditions all the organs employed are returned in the rest position and are ready to nowly begin the cycle of their movements if a new counter or money is introduced in the slot.

The proper distributor for the objects, shown in the Figures 2 and 3, has a serie of containers D in which the goods or objects E, E₁ to be distributed are introduced. Each container has a piston A on the bottom and an aperture F on the front wall through which the objects may be pushed out the one after the other by means of the piston. Each piston is connected by means of a traversal plate B with the core G of an electromagnet M. These magnets M correspond to those shown schematically on the lower end of Fig. 1.

By exciting the one or the other of the electromagnets in the aforesaid manner, the corresponding piston A is pushed forwards, so producing the expulsion of the object E.

In going out of the container, the object is

guided in a vertical channel to the delivery aperture in the housing of the device. At the end of the core excitation of the magnet M the piston is returned in its rest position by a return spring C. The free room produced by the returning piston A causes the lowering of the pile of goods by gravity and a new object E₁ is ready to be pushed out by the piston.

The device in its preferred form comprises, as shown and explained, a member transmitting current impulses, selectors adapted to move their contact brushes on determined contacts and containers suitably operated.

The transmitter of current impulses is for instance a normal dial of the type used in automatic telephony systems and the selector may be of the kind used in automatic telephone central stations for selecting the numbers.

The dial is electrically connected by means of suitable relays with the magnets, so that by forming a number on the dial current impulses are sent to the selectors which reach the position corresponding to the number formed on the dial.

After having reached this position the selectors are stopped and through their contact brushes and the selected contact bank a current is sent to the mechanism operating the desired distributor.

The dial is free to turn around its shaft but transmits impulses to the selectors only if a contact spring closing its circuit has been closed by means of a metallic counter or a money.

The whole device is fed by a storage battery charged by a rectifier inserted in the low current mains of a public network.

It is to be understood that the invention is not limited to the form of execution described, but comprises also variations and simplifications concerning for instance the operation of the dial, which may be also without combination effect, or concerning the driving and selecting means which may be also mechanical means or which may be multiplied and independent the one from the others.

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