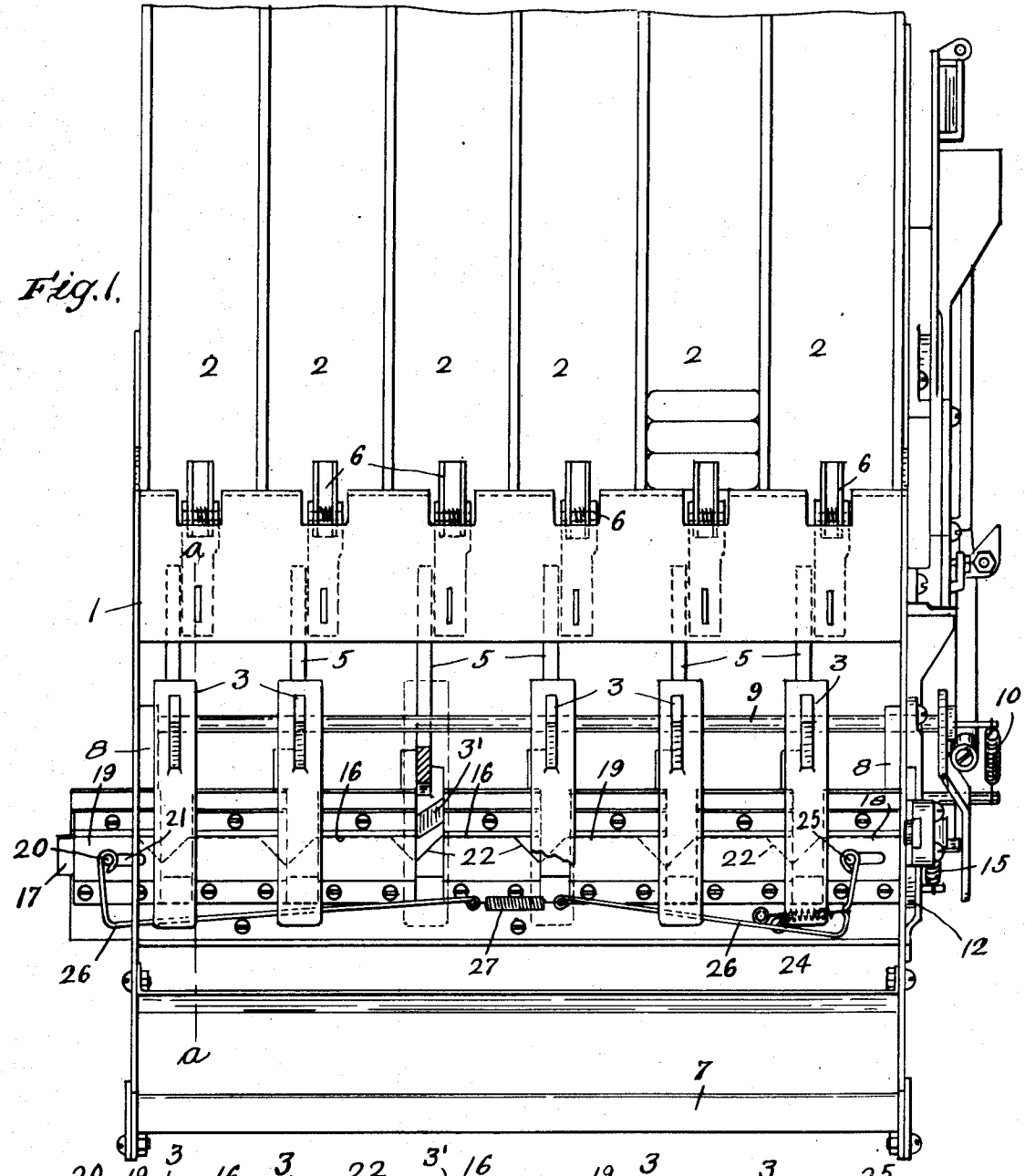
Feb. 27, 1934. F. C. DU GRENIER 1,948,650

COIN CONTROLLED DISPENSING MACHINE

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Fig. 1.



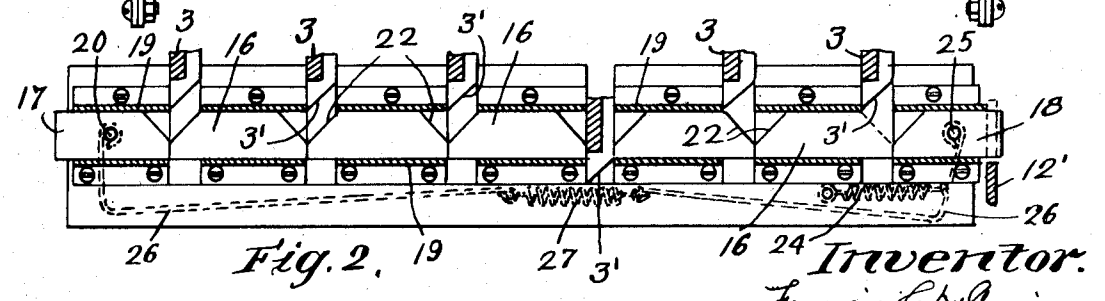


Fig. 2.

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COIN CONTROLLED DISPENSING MACHINE

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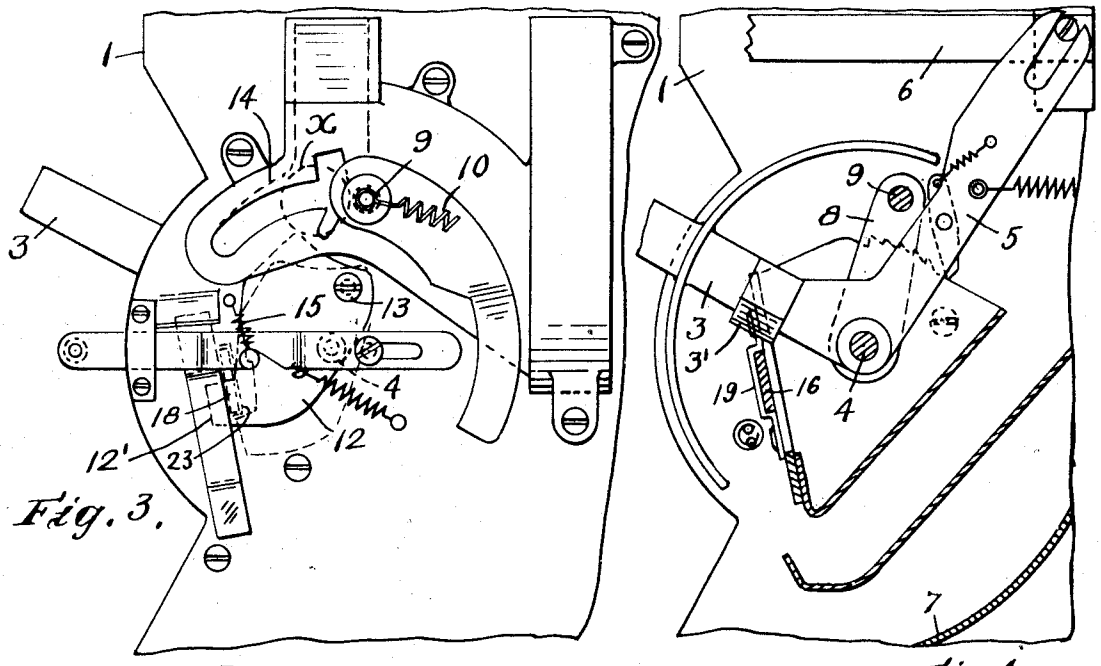


Fig. 3.

Fig. 4.

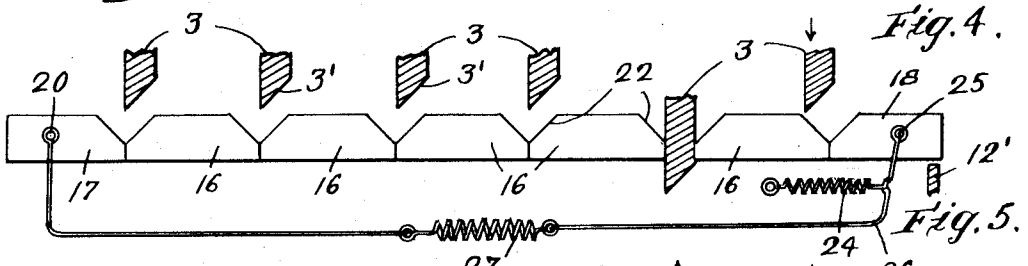


Fig. 5.

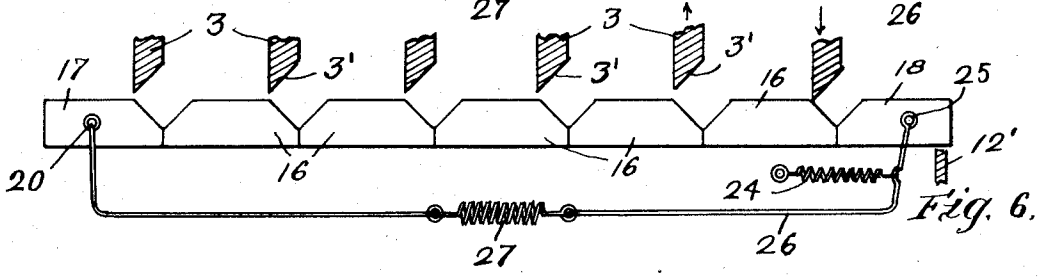


Fig. 6.

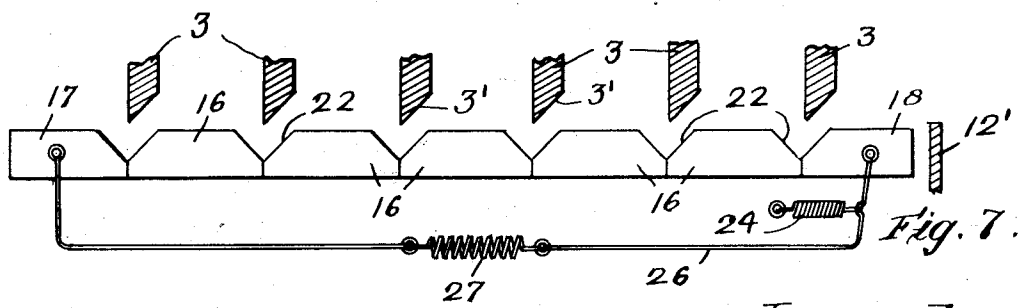


Fig. 7.

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Patented Feb. 27, 1934 1,948,650

UNITED STATES PATENT OFFICE

1,948,650

COIN CONTROLLED DISPENSING MACHINE

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Application November 25, 1932
Serial No. 644,233

4 Claims. (Cl. 194—63)

This invention relates to that type of dispensing machines in which the articles to be dispensed are contained in a series of compartments and a separate operating device, usually a lever, or its equivalent (and hereafter referred to as a "lever" for convenience), is provided for each compartment, so that an article may be dispensed from any particular compartment by operating the corresponding lever, all of the operating levers being normally locked and the locking means therefor being controlled by a coin released mechanism, so that when a predetermined coin is placed in the machine any one of the levers may be operated to perform a dispensing operation from the corresponding compartment.

In machines of this character it is necessary to provide means whereby operation of more than one of these levers will be prevented after a coin has been inserted and before all the parts have been returned to normal position, and to this end means have been provided whereby operative movement of any one of the levers will move an intercepting device into the path of operative movement of all the other levers, so that operation thereof will be prevented until all the parts have been returned to the initial position and another coin has been inserted.

Various forms of such devices have been produced, but with many of these devices it is possible so to manipulate some one of the levers that, when a lever has been operated and is returned to initial position, the intercepting device therefor will be prevented from moving into intercepting position, so that the lever can be operated repeatedly without inserting another coin, and in some instances it is also possible to operate several of the other levers either repeatedly, or successively, while the action is thus obstructed.

The objects of my invention are to provide in connection with a dispensing machine of the above described character, a coin releasable locking means of simple and durable construction in which none of the operating levers can be moved operatively unless the coin which is inserted is accepted by the coin testing mechanism and is delivered to the coin receiver of the machine and in connection with which means shall be provided for making it impossible to obstruct the operation of the lever intercepting devices, so that any one of the levers may be operated more than once, for each coin which is inserted.

I accomplish these objects by means of the construction and arrangement hereinafter described and illustrated in the accompanying drawings, in which:—

Fig. 1 is a view in front elevation of the operating mechanism of a dispensing machine provided with an embodiment of my invention.

Fig. 2 is a detail view of the lever intercepting mechanism which I employ.

Fig. 3 is a view of the coin released locking mechanism at the right hand side of the machine.

Fig. 4 is a detail sectional view at line *a—a* of Fig. 1.

Figs. 5, 6 and 7 are detailed views illustrating different positions of the lever intercepting means.

As shown in the drawings, the main casing 1 is provided with a series of article holding compartments 2 adapted to hold the articles to be dispensed in stacks and a corresponding series of dispensing levers 3 are pivotally mounted to swing vertically on a horizontal fixed shaft 4, and each lever is provided with an arm 5 which is arranged to operate a horizontally, reciprocally mounted ejector 6, so that when a lever is depressed from the normal position of Fig. 1 and is then released, the corresponding ejector will be drawn forwardly beneath the stack of articles and on the return movement, which will be produced by the return spring which is attached thereto, it will eject the bottom package from its stack and deliver it to a passage at the rear, which conducts it to the shell 7 at the front side of the machine.

A pair of arms 8 are pivotally mounted on the shaft 4 and are rigidly connected by a rod 9 which extends in close proximity to, and in front of the arms 5, so that, when any one of the levers 3 is depressed, its arm 5 will immediately engage the rod 9, and, when operative movement of the lever is permitted, will cause the rod 9 and the parts connected thereto to be swung forward therewith against the action of a spring 10, which is connected thereto, said rod 9 being extended through a curved slot in the right hand side of the casing, and the spring 10 being connected to an extension thereof, to permit the swinging movement thereof. A locking device in the form of a flat plate 12 is mounted on a pivot 13 directly beneath the rod 9 and on the right hand side of the casing, the arrangement being such that when a coin has been inserted and has passed the various coin testing devices, with which machines of this character are provided, it will come to rest on the top edge of the plate 12, in the position indicated at *x* in Fig. 3, in which posi-

tion it is held in engagement with the extended portion of rod 9, so that, when the latter is swung forwardly, on depression of any lever 3, the coin will be pushed thereby between a fixed abutment 14 and the plate 12 and will cause the latter to be swung downwardly to the dotted line position shown in Fig. 3, against the action of a returning spring 15, continued movement of the parts causing the coin to be forced out of engagement with the plate 12 so that it will be delivered to a coin receptacle within the machine.

A series of intercepting, or locking members are provided, comprising a plurality of intermediate members 16 and end members 17 and 18, each of said members consisting of a flat strip of metal having parallel longitudinal sides, and said members being arranged in alignment with their adjacent ends normally in abutment and being mounted to slide longitudinally in a guideway 19 formed on the front side of the casing, and in a line which intersects the planes of the paths of movement of the levers 4 at right angles. The left hand member 17 has a post 20 therein, which projects through a slot 21 in the side of tht guideway 19 and acts as a stop, by engaging the ends of said slot, to limit the movement of the member 17. The right hand member 18 is of square formation at its right hand end and the abutting ends of all the members are provide with inclined faces 22 which extend from points adjacent the middle of each end to the top edge of the member. A spring 24 is connected at one end to the casing, and at the opposite end to a post 25 in the member 18, through a wire 26, and the latter is connected to the post 20 in the left hand member 17, through an intermediate spring 27. In the normal position of Figs. 1 and 7, the spring 24 acts to hold all the members in abutment and to hold the post 20 against the left hand end of the slot 21.

Each lever 3 has an inclined face 3' on its underside, which in said normal position of the parts, is directly over the inclined face 22 of its corresponding locking member, so that, when any one of the levers 3 is depressed, its face 3' will engage the face 22 of the member and, if the movement is not obstructed, will push all the members at the right of the lever which is operated to the right, so that movement of the lever to its extreme position will be permitted. In this connection it is to be noted that the left side of the lever then passes in close proximity to the end of the member at the left thereof.

An aperture 23 is formed in the right hand side of the casing in line with the members 16, so that when any one on the levers is depressed the member 18 at the extreme right will be forced through said aperture and its end will protrude beyond the outer side of the casing as shown in Fig. 2. In the normal position of the plate 12 a projection 12' thereon extends over the aperture 23, so that, if under these conditions a lever 3 is depressed, the right hand member 18 will be forced against the plate 12 and will prevent any substantial movement of any of the members, thereby preventing operative movement of any lever which it is attempted to depress.

When, however, a coin x of the denomination which the machine is designed to receive, has been placed in the machine, and a lever is then depressed, the plate 12 will be immediately swung down to the dotted line position of Fig. 3, in which position projection 12' will be held at one side of aperture 23, and out of its obstructing position, so that the member 18 may be moved past the plate 12, as shown in Fig. 2, thereby permitting complete operative movement of the lever which is depressed. When the lever is permitted to return to normal position the spring 24 will return all the members which have been moved to the right to normal position. As soon as the member 18 is withdrawn from in front of projection 12', the spring 15 will return the plate 12 to normal position, thereby locking the members 16, 18 against movement by the operating levers.

The function of the yieldable connection 26, 27 between the end members 17, 18 is to prevent successive operation of one of the operating levers without inserting additional coins. With the construction shown this might be done in the following manner:

After inserting a coin the second lever, for example, from the right might be depressed and held down and then the lever 3 at the extreme right might be pressed firmly down so that it would engage the top edge of the right hand member 16, so that when the lever which was first depressed was permitted to return to normal, the frictional engagement with the member would be so strong that it would not be overcome by the spring 24 and would thus be held in its extreme right hand position, as shown in Fig. 5. Consequently, while the members 16 and 17 were thus held it would be possible not only to depress the lever again which had just been raised, but it would be possible to do this repeatedly with this lever and all the other levers at the left of it, as many times as desired, so that all the compartments except the one at the extreme right could be emptied without inserting another coin.

As soon, however, as the lever which has been depressed has been raised, the spring 27, which will have been stretched by the movement of the right hand member 18 to the right, will act to move the other members to the right, so as to close up the space between the members which were separated by the lever 3 which was depressed, thereby moving a member into position to prevent operative movement of all these levers, as indicated in Fig. 6. When the pressure of the right hand lever is relieved the spring 24 will return the members to normal position as shown in Fig. 7.

By forming an inclined face on the upper edge at the right hand end of the members 16, an attempt to prevent return movement of the end member 18 is made difficult, if it does not prevent it, as the downward pressure on any one of these inclined faces tends to push the members back to normal position.

The above described arrangement for locking all the levers against operative movement by having a coin operated device arranged to prevent movement of the locking members from their locking positions, is not only perfectly effective, but also tends greatly to simplify the machine, and the arrangement shown makes it practically impossible to secure more than a single delivery of the articles vended for each coin inserted.

I claim:

1. In a coin-controlled dispensing machine having a plurality of axially aligned operating levers, a corresponding plurality of locking members arranged in abutment successively and slidable in a line parallel to the axis of the levers, said levers and members having co-acting faces whereby operative movement of any one of said levers will move all of the members at one side the lever in one direction to permit operative movement of the

lever, an abutment normally located in an operative position to prevent such movement of the members and movable to an inoperative position to permit such movement, means normally operative to return the displaced members to operative position when the lever is returned to normal position, and auxiliary means for moving the members to an operative position when said normally operative means fails to return them to normal position.

2. In a coin controlled dispensing machine having a plurality of operating devices movable in parallel paths, a corresponding plurality of elongated locking members arranged in end to end abutment and longitudinally movable transversely of said paths, said operating devices and members having coacting faces whereby operative movement of any one of said devices may move all of said members at one side of its path in one direction to permit complete operative movement thereof, an abutment normally located in an operative position to prevent such movement and movable to an inoperative position to permit the same, a spring engaged with the member next said abutment arranged to return the displaced members to their normal positions and an auxiliary spring engaged with the member most remote from said abutment for moving the members which have not been displaced into position to prevent operative movement of the devices adjacent thereto when the return movement of the displaced members is obstructed.

3. In a coin controlled dispensing machine having a plurality of operating devices movable in parallel paths a corresponding plurality of elongated locking members arranged in end to end abutment and longitudinally movable transversely of said paths, said operating devices and members having coacting faces whereby operative movement of any one of said devices may move all of said members at one side of its path in one direction to permit complete operative movement thereof, an abutment normally located in an operative position to prevent such movement and movable to an inoperative position to permit the same, a spring engaged with the member next said abutment arranged to return the displaced members to their normal positions and an auxiliary spring engaged with the end members of said normally abutting members for moving the members into positions in which they will all be in abutment when the return movement of the displaced members is prevented.

4. In a coin controlled dispensing machine having a plurality of operating devices movable in parallel paths, a corresponding plurality of locking members arranged in a line extending transversely of said paths and normally disposed in abutment and in positions to prevent operative movement of said devices, said members and said operating devices having coacting faces whereby operative movement of any one of said devices will move all of the members at one side of its path in one direction in said line to permit complete operative movement thereof, an abutment normally located in an operative position to prevent such movement and movable to an inoperative position to permit the same, a spring engaged with the end member next said abutment for returning the members thus displaced to normal position and an auxiliary spring engaged with the other end member for moving the members which have not been displaced into abutment with the displaced members when the return movement of the latter is obstructed.

FRANCIS C. DU GRENIER.