W. S. OVERLIN.

MONEY DELIVERER FOR STREET CARS.

APPLICATION FILED OCT. 31, 1912.

1,145,700.

Patented July 6, 1915.

2 SHEETS—SHEET 1.

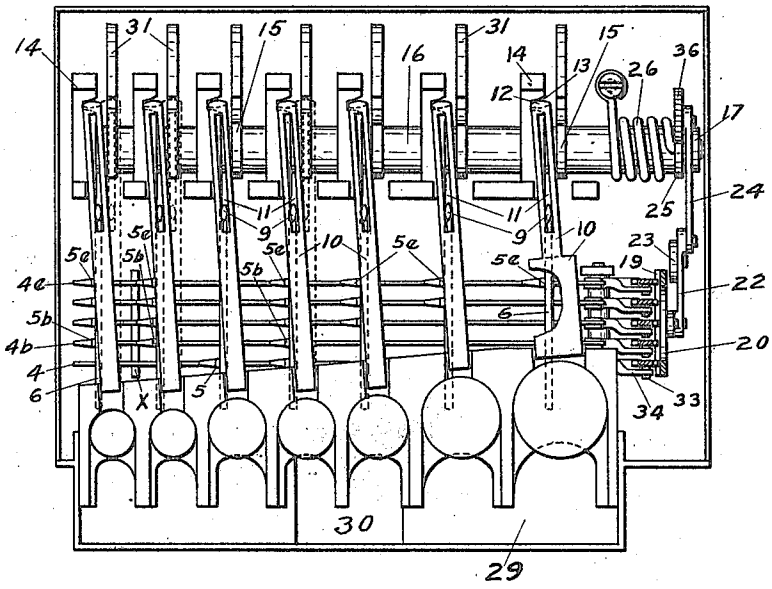


Fig. 1.

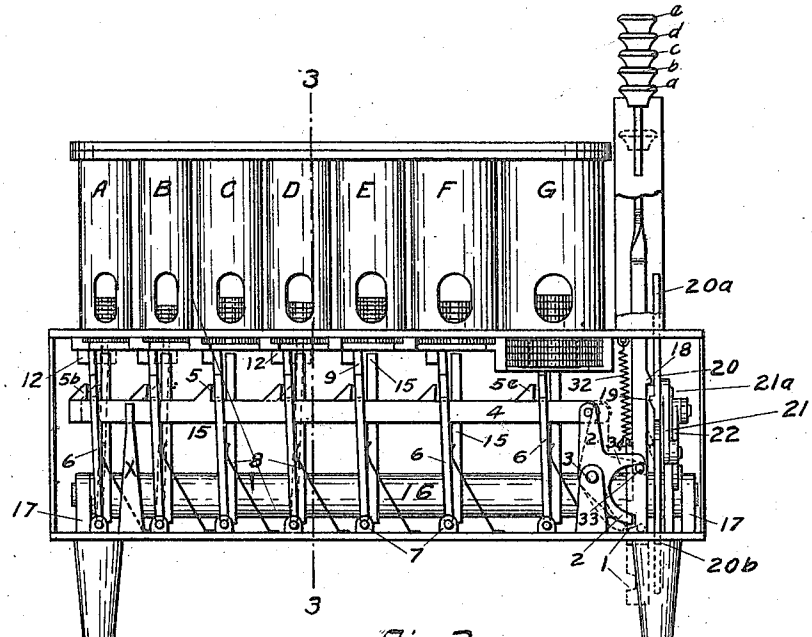


Fig. 2.

Witnesses
F. O. Bullington
R. L. Bailey

Inventor
W. S. Overlin

By

Attorney

W. S. OVERLIN.

MONEY DELIVERER FOR STREET CARS.

APPLICATION FILED OCT. 31, 1912.

1,145,700.

Patented July 6, 1915.

2 SHEETS—SHEET 2.

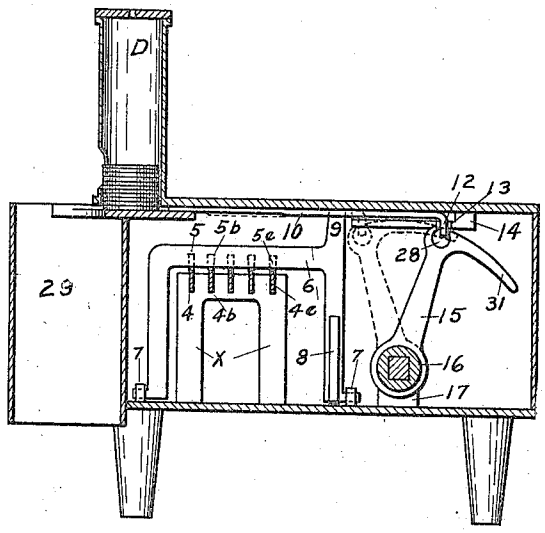


Fig. 3.

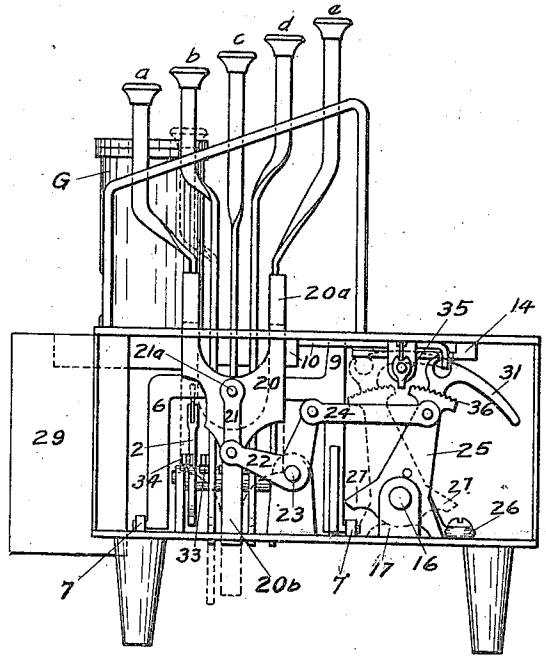


Fig. 4.

Witnesses
F. A. Bullington
R. L. Bailey

Inventor
W. S. Overlin
By
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM S. OVERLIN, OF PORTLAND, OREGON, ASSIGNOR, BY MESNE ASSIGNMENTS, TO INTERNATIONAL MONEY MACHINE COMPANY, OF TERRE HAUTE, INDIANA, A CORPORATION OF INDIANA.

MONEY-DELIVERER FOR STREET-CARS.

1,145,700. Specification of Letters Patent. Patented July 6, 1915.

Application filed October 31, 1912. Serial No. 728,853.

To all whom it may concern:

Be it known that I, WILLIAM S. OVERLIN, a citizen of the United States, residing at Portland, in the county of Multnomah and State of Oregon, have invented certain new and useful Improvements in Money-Deliverers for Street-Cars, of which the following is a specification.

This invention embodies improvements in money handling machines of the general type disclosed in United States Letters Patent No. 985,136, issued to Thomas Bilyeu and William S. Overlin, and designed particularly for change making purposes. The machine of the above patent comprises change ejecting means and manipulative selecting means, the same being independently operable by the actuating means therefor, in order to first select the coin or change and then deliver the latter.

The change making machine or the present invention has been designed with a special view of handling small change for use primarily on street cars, in ticket offices, or the like and adapted to select and deliver change with great rapidity and accuracy. While, in the machine of the patent above referred to, the change selector mechanism and the ejector means are operated independently, in the present machine, these mechanisms have been so combined that the operation of the manipulative or actuating means for the selector mechanism will cause not only a proper selection of change of different denominations but will deliver said change as well.

This invention involves broadly the above principle of action for, though I am aware that it has been proposed heretofore, in change making machines, to utilize an actuator capable of directly delivering change of a predetermined amount, I do not know of any mechanical device by which the operation of a single main actuator causes a proper selection of coin or change of different denominations, and then ejects said change.

The invention involves also the above instrumentalities characterized in that the selection and delivery of the change is performed by a single continuous movement of the actuator.

A further object of this invention is to provide special locking means adapted particularly for machines employing an actuator having separate members, into operative connection with which the ejectors may be placed, the said members having locking devices for preventing operation of any ejector, other than the one first actuated, during the change delivery action of the machine.

For a full understanding of the present invention, reference is to be had to the following description and to the accompanying drawings, in which—

Figure 1 is a plan view of a machine embodying the invention with the top cover plate and superstructure removed to illustrate the interior mechanism, the keys being shown in section. Fig. 2 is a front elevation of the machine with the front plate and change delivery chute detached. Fig. 3 is a sectional view taken about on the line 3—3 of Fig. 2. Fig. 4 is an end view of the machine with the end plate detached.

Throughout the following detail description and on the several figures of the drawings, similar parts are referred to by like reference characters.

The machine illustrated in the drawings is adapted for making change in even amounts from 10¢ to $5.00, inclusive, but the principle of operation of said machine may be readily used in delivering not only coins but change in the form of paper currency, in so far as the peculiar selector and ejector mechanism is concerned, and for any desired denominations.

The coin receptacles are denoted A, B, C, D, E, F and G, and are adapted to contain respectively: A—10¢ pieces, B—10¢ pieces, C—5¢ pieces, D—5¢ pieces, E—25¢ pieces and F—50¢ pieces. From the above receptacles the coins are delivered one at a time during any transaction but, from the receptacle G, $1.00 pieces are adapted to be delivered four at a time.

Manipulative devices in the form of keys *a*, *b*, *c*, *d* and *e* are utilized for actuating the selector and ejector means hereinafter fully described and said keys, in the order named, will be provided with designations, as follows; 10¢, 25¢, 50¢, $1.00, and $5.00. Each key is provided at its lower end with a notch 1 receiving an arm of a bell crank lever 2 pivoted at 3, said lever being operatively connected with a selector 4 mounted

for horizontal movement in the casing of the machine and supported upon guides X. Each selector 4 has one or more vertically extending lugs 5 to engage and operate one or more of a series of yoke members 6, the latter being pivoted in brackets 7 on the base of the machine and having springs 8 coöperating therewith to normally hold them in the positions shown in the drawings. The yoke members 6 are interlocked with sliding ejectors 10 by the interlocking lugs 9 which enter slots 11 in the ejectors. At their rear ends, the ejectors 10 are provided with downwardly projecting lugs 12 movable into and out of engagement with notches in the upper ends of ejector arms 15, the latter being carried by a shaft 16. The above selector and ejector means are practically the same as set forth in the patent hereinbefore referred to.

At spaced intervals in the casing of the machine are arranged lock members 14 having recesses therein, in which the lugs 12 of the ejectors 10 are adapted to be normally seated and thus locked from movement, the selecting action of the machine being to move the ejector or ejectors from a position wherein their lugs 12 engage in the recesses of the lock members 14 to a position wherein said lugs engage with the arms 15.

As hereinbefore premised, it is contemplated that the selector mechanism comprising the selectors 10 shall not only be adapted to be operated by a single actuator which, in the present case will consist of any one of the keys *a* to *e* inclusive, but said actuator shall be arranged and constructed to operate the ejectors 10 also, the complete selecting and ejecting operation therefore being performed by such actuator and the selection and delivery of the change being facilitated as compared with those machines wherein the selector and ejector mechanisms must be separately operated.

The rock shaft 16 is journaled at its ends in bearings 17 and is adapted to have a forward rotative movement upon downward movement of any one of the keys *a* to *e*, inclusive. For the above purpose, each key aforesaid is formed with a lug 18 adapted on depression of the key to engage a lug 19 of an ejector actuator 20, the latter comprising a vertical slide provided at its upper end with extensions 20^a, passing through openings in the top of the casing of the machine, and having at its lower end an extension 20^b passing through an opening in the bottom of the casing, said extensions insuring proper vertical movement of said actuator. A link 21 is connected at 21^a to the actuator 20 and is also connected with a bell crank lever 22 pivoted at 23. The lever 22 is connected by a link 24 with a rocker arm 25 on the shaft 16.

In the operation of the machine, when a key of the series *a* to *e*, inclusive, is depressed, by reason of the connection of said key to a predetermined selector 4, the latter is operated and the yoke members 6 coacting with the selector are moved so as to throw the connected ejectors into their operative positions. All of the above movements of the parts are effected during initial movement of the key which is operated, and after the completion of the change selective action, the lug 18 of said key, by engagement with the actuator 20, forces the latter downwardly, thereby imparting through the intermediate connections, a rocking movement to the shaft 16, causing those ejectors 10 which have been thrown into engagement with arms 15 of said shaft, to be operated to deliver the requisite change. A spring 26 encircles the shaft 16 and is so arranged as to normally hold the shaft in a position such that the arms 15 are at the rear limit of their movement. The limit of the movement of said arms 15 in opposite directions is controlled by stops 27 projecting downwardly from the rocker arm 25 and adapted to engage the base of the machine. On the upper end of the arm 25 are a series of teeth 36 arranged to cooperate with a pivoted dog 35 and so shaped that, by coöperation with the latter, it is necessary that a full movement be imparted to any key or equivalent actuating device after the operation of the same has been started.

An especially important feature of the invention resides in the provision on each arm 15 of a tail 31, the purpose of which is to lock the adjacent ejector 10 from operative movement when another ejector is being actuated. Thus, referring to Fig. 1, should the right-hand ejector 10 be interlocked with its coöperating arm 15 by initial selecting movement of a key, subsequent ejecting movement of the key will bring all of the tails 31 of the other arms 15 forward into engagement with the un-operated ejectors and thus prevent the operator of the machine from depressing any keys after having started operation of another.

It is not believed necessary to describe the change selecting action of the machine since this action is practically the same as in respect to the machine of the patent before referred to, except as modified by reason of the additional features forming the present improvements. The chute 29 receives the ejector coins, as will readily be obvious, and by the peculiar arrangements hereinbefore set forth, the ejector mechanism being normally inoperative, it is possible to readily effect a selection of change of different denominations, a prerequisite to a machine of this class for commercial purposes. Furthermore, the manipulative

keys considered collectively and separately form differential selecting means in the sense that each key is adapted to select money of different denominations. The keys collectively or singly, constitute a single main actuator which controls the complete operation of the selecting and ejecting mechanisms.

Having thus described the invention, what is claimed as new is:

1. In a money changing machine, the combination of change receptacles adapted to contain money of different denominations, ejectors therefor normally occupying positions in which they cannot be actuated, selector means for setting in operative positions determinate ones of the ejectors, and a single actuator for operating the selector means and subsequently effecting ejecting movement of selected ejectors.

2. In a money changing machine the combination of money holders, money engaging ejectors therefor normally occupying positions in which ejecting movement cannot be imparted thereto, and an instrumentality for initially moving the ejectors to a position for ejecting action and actuating them for delivering money from said holders during a single continuous movement of said instrumentality.

3. In a money changing machine, the combination of change receptacles, ejectors therefor, an actuator comprising a slide, a shaft connected with said slide to be rocked thereby, ejector arms on said shaft, selectors for moving the ejectors, manipulative devices connected to the selectors, and means whereby, on operation of the manipulative devices the selectors will be initially actuated and the ejector slide subsequently operated.

4. In a money changing machine, the combination of change receptacles adapted to hold money of different denominations, normally inoperative money engaging ejectors therefor, and a main actuator for setting said ejectors in an operative position and then causing ejecting movement of the same.

5. In a money changing machine, the combination of change receptacles, ejectors therefor, an actuator comprising a slide, a shaft connected with said slide to be rocked thereby, ejector arms on said shaft, selectors, manipulative devices connected to the selectors, and means whereby, on operation of the manipulative devices, the selectors will be initially actuated and the ejector slide subsequently operated, and spring means cooperating with the ejector slide to restore the same to its normal position.

6. In a money changing machine, the combination of ejector mechanism comprising ejectors, selector mechanism consisting of selectors adapted to shift the ejectors into an operative position, locking members for preventing movement of the ejectors when arranged in inoperative positions, and means for causing delivery movement of the ejectors.

7. In a money changing machine, the combination of ejector mechanism comprising ejectors, selector mechanism consisting of selectors adapted to shift the ejectors into an operative position, locking members for preventing ejecting movement of the ejectors when arranged in inoperative positions, and means for causing delivery movement of each of the ejectors and adapted to prevent the other ejectors from being thrown into operative positions after one of said ejectors is given its delivery movement.

8. In a money changing machine, the combination of change receptacles, ejectors therefor, selector means for shifting the ejectors into operative positions, actuating means for causing delivery movement of a selected ejector and including locking devices for preventing unselected ejectors from being moved into operative position after a selected ejector starts its delivery movement.

9. In a money handling machine, the combination of money holders, ejectors therefor, and actuating means for the ejectors comprising a rock shaft, a rocker arm carried by said shaft, and stops projecting from said arm and adapted to limit the movement of the ejectors in opposite directions under the actuation of the rock shaft.

10. In a money handling machine, the combination of money holders, ejectors therefor, and actuating means for the ejectors comprising a rock shaft, a rocker arm carried by said shaft, stops projecting from said arm and adapted to limit the movement of the ejectors in opposite directions under the actuation of the rock shaft, and full stroke compelling means coacting with said rocker arm.

11. In a money handling machine, the combination of money holders, ejectors therefor, and operating means for said ejectors comprising a rock shaft, a plurality of keys, a slide mounted adjacent to said keys, means on the keys to operate said slide on movement of any key, a rocker arm on said rock shaft, connections between the slide and said rocker arm, and full stroke compelling means coacting with the rocker arm.

12. In a money handling machine, the combination of a casing, money holders mounted thereon, ejectors for said holders, means for operating the ejectors consisting of keys mounted in the casing, a slide common to said keys for operation on depression of any one of the keys, a rock shaft adapted to operate the ejectors, an arm on said shaft, lever and link connections between said slide and said arm, and stop means carried by

said arm to engage the casing and thereby limit the movement of the ejectors when actuated by the rock shaft.

13. In a money handling machine, the combination of money holders, ejector mechanism therefor comprising ejectors, means for operating the ejectors consisting of a rock shaft, arms on said shaft provided with tails extending therefrom, and means for engaging a predetermined ejector with an associated arm of the shaft, the tails of the said arms being adapted to coöperate with those ejectors not engaged with the arms to prevent movement of the latter under certain conditions.

14. In a money handling machine, in combination, money receptacles, ejectors associated with the receptacles, an ejector shaft, arms on said shaft for actuating the ejectors, manipulative keys, sliding means intermediate the keys and the ejectors controlling the action of the latter by the ejector arms, said means including a vertically movable slide, an arm on the ejector shaft provided with a series of teeth, link and lever connections whereby the sliding movement of said slide may be imparted to the arm aforesaid, and a full stroke compelling pawl coöperating with the teeth of said arm.

15. In a money handling machine, the combination of a plurality of money receptacles, ejectors for said receptacles, selectors coöperating with the ejectors, a lever connected with each selector, manipulative keys each of which is associated with a selector and its connected lever and provided with means for actuating the same, an ejector shaft having means to operate the ejectors, a slide common to the several keys and movable thereby after operation of the selector levers coöperative with said keys, and means for communicating movement of said slide to said ejector shaft.

16. In a money handling machine, the combination of a plurality of money receptacles, ejectors for said receptacles, selectors coöperating with the ejectors, a lever connected with each selector, manipulative keys each of which is associated with a selector and its connected lever and provided with means for actuating the same, an ejector shaft having means to operate the ejectors, a slide common to the several keys and movable thereby after operation of the selector levers coöperative with said keys, and means for communicating movement of said slide to said ejector shaft comprising an arm on the ejector shaft formed with a series of teeth, link and lever connection intermediate said slide and said arm, a full stroke compelling pawl capable of engaging the teeth aforesaid, and a spring normally adapted to hold the ejector shaft in a predetermined position, and to normalize the same.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM S. OVERLIN.

Witnesses:
J. T. ROBB,
H. C. ROBB.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."