No. 676,686. Patented June 18, 1901.

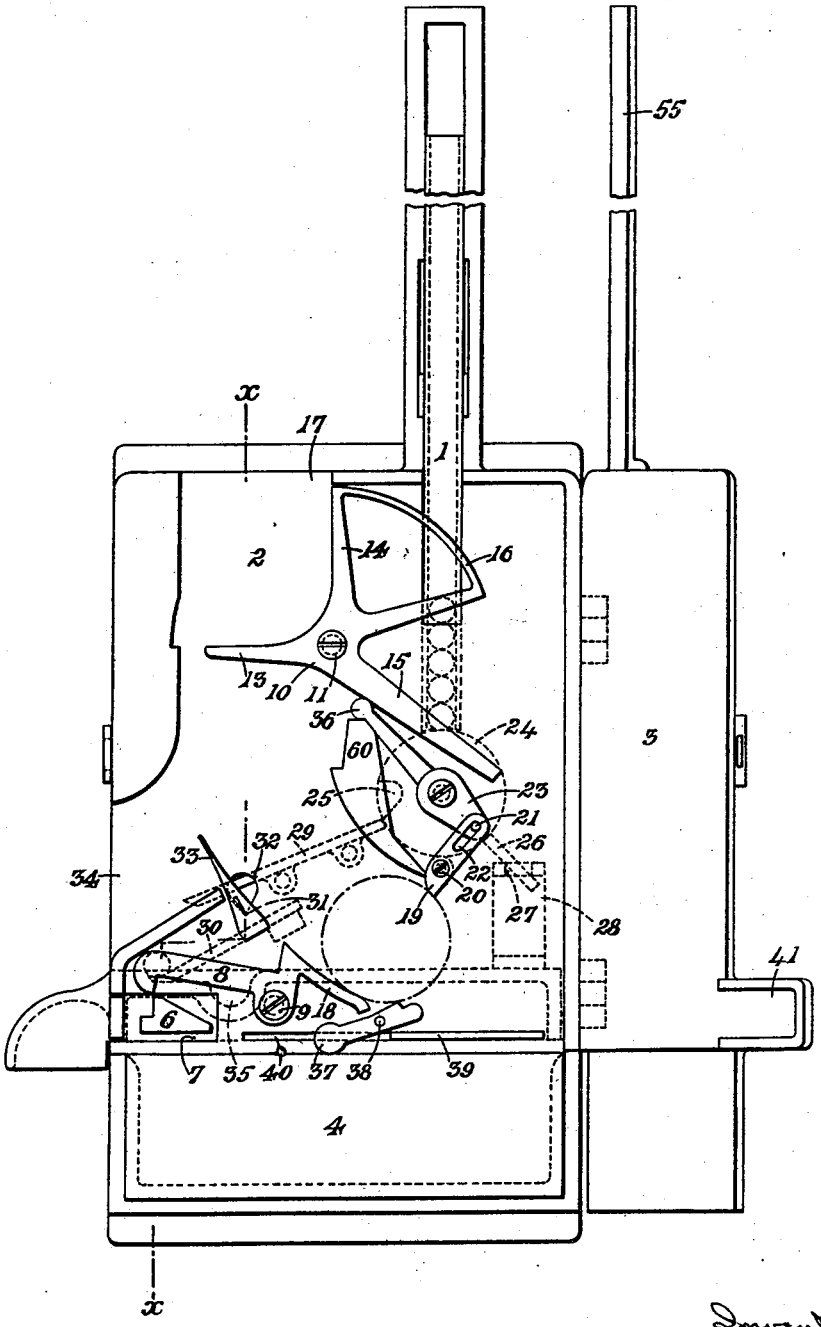
J. W. PEARSON.

COIN FREED AUTOMATIC MACHINE.

(Application filed Nov. 26, 1900.)

(No Model.) 6 Sheets—Sheet 1.

Fig. 1.



Witnesses
J. B. Kuhn
H. Lee Hellen.

Inventor
James W. Pearson
by James L. Norris
Atty

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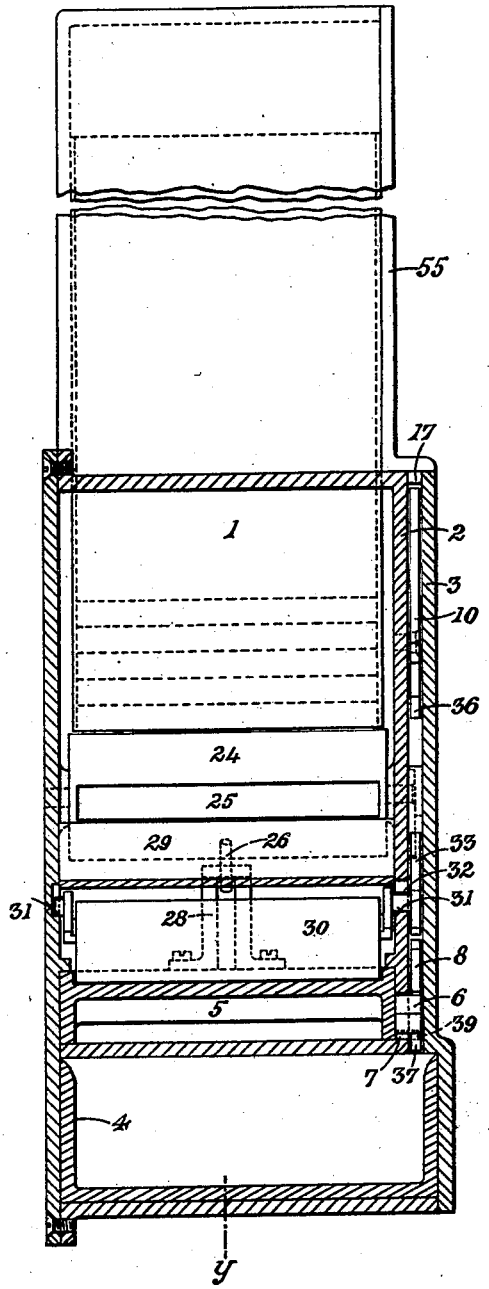
(No Model.) 6 Sheets—Sheet 2.

Fig. 2.



Witnesses
H. Lee Helms

Inventor
James W. Pearson
by James L. Norris
Atty

No. 676,686. Patented June 18, 1901.

J. W. PEARSON.

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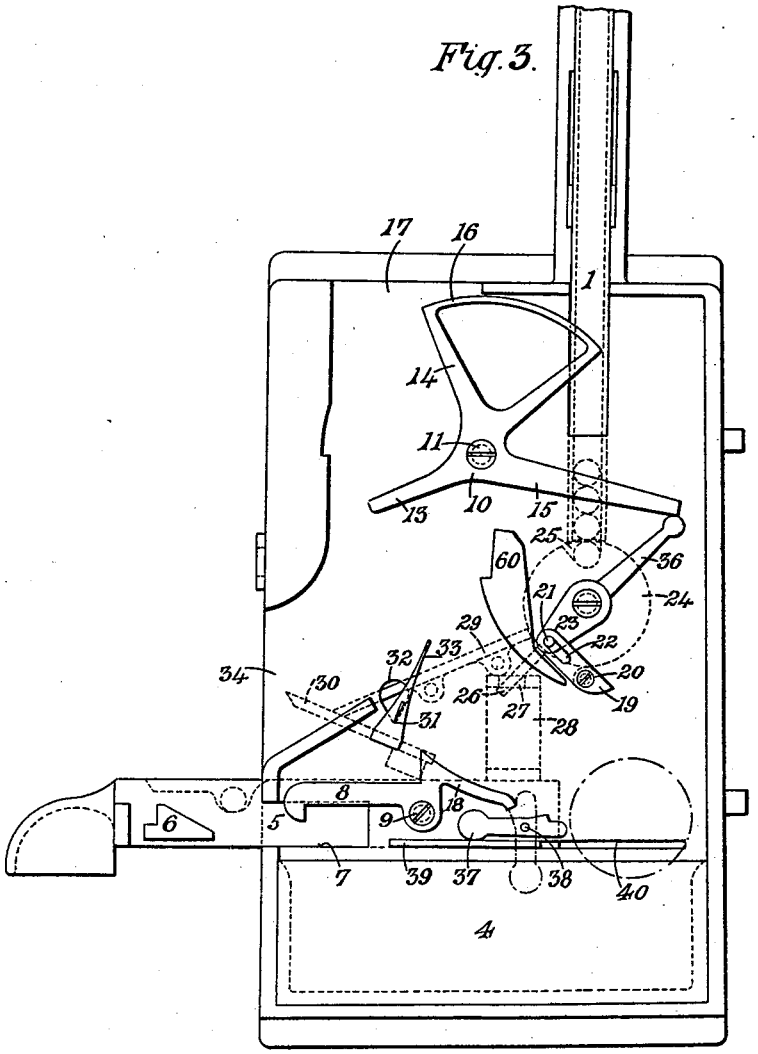
(No Model.) 6 Sheets—Sheet 3.

Fig. 3.



Witnesses
W. B. Treadwell
M. Lee Helms.

Inventor
James W. Pearson
by James L. Norris
atty

No. 676,686. Patented June 18, 1901.

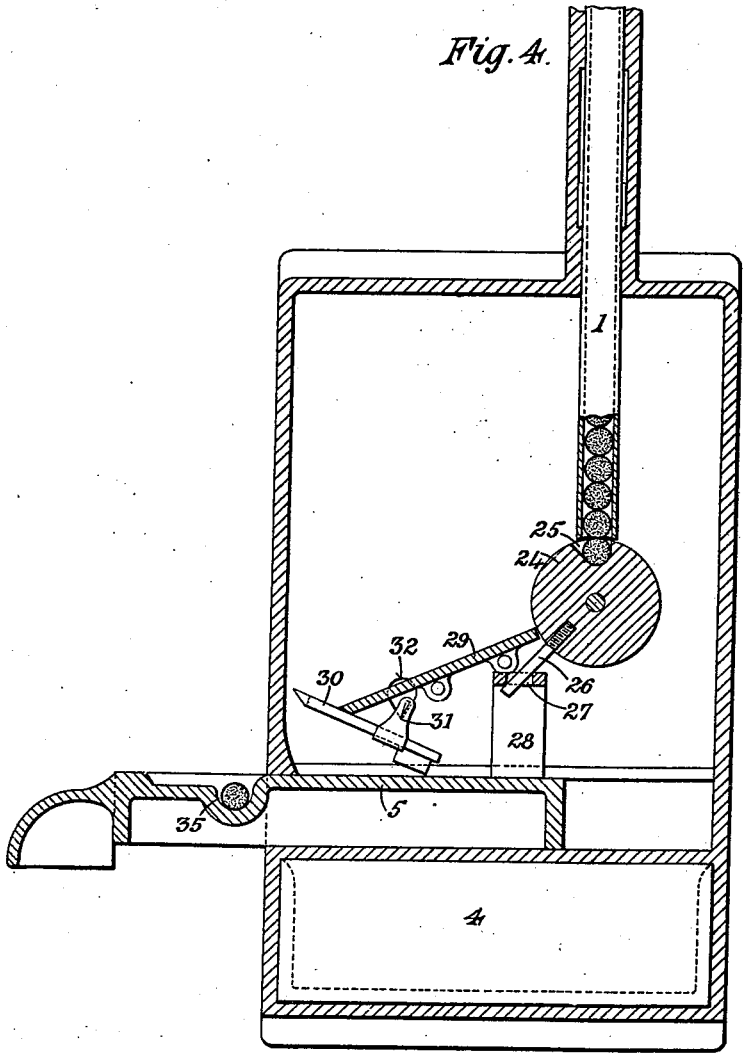
J. W. PEARSON.

COIN FREED AUTOMATIC MACHINE.

(Application filed Nov. 26, 1900.)

(No Model.) 6 Sheets—Sheet 4.

Fig. 4.



Witnesses
W. B. Keeler
H. Lee Helms

Inventor
James W. Pearson
by James L. Norris.
Atty

No. 676,686. Patented June 18, 1901.

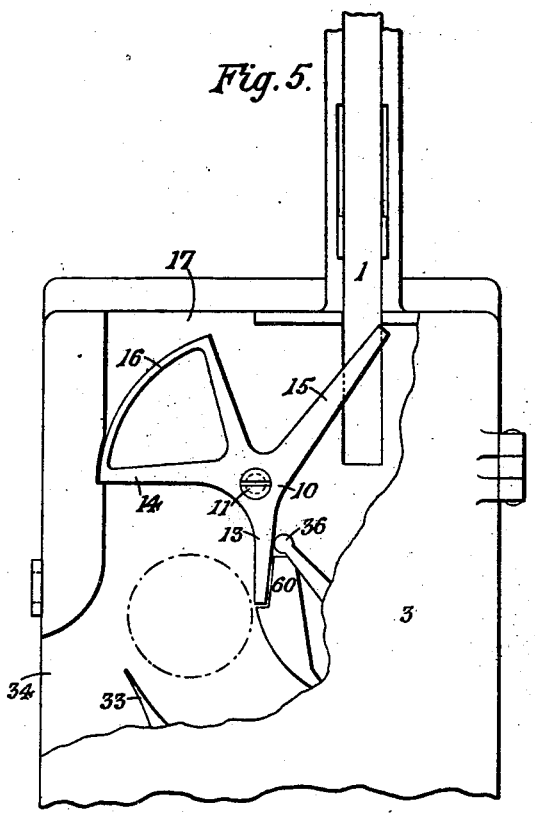
J. W. PEARSON.

COIN FREED AUTOMATIC MACHINE.

(Application filed Nov. 26, 1900.)

(No Model.) 6 Sheets—Sheet 5.

Fig. 5.



Witnesses
J. B. Keuder
H. Lee Helms

Inventor
James W. Pearson
by James L. Norris.
Atty

No. 676,686. Patented June 18, 1901.

J. W. PEARSON.

COIN FREED AUTOMATIC MACHINE.

(Application filed Nov. 26, 1900.)

(No Model.) 6 Sheets—Sheet 6.

Fig. 6.

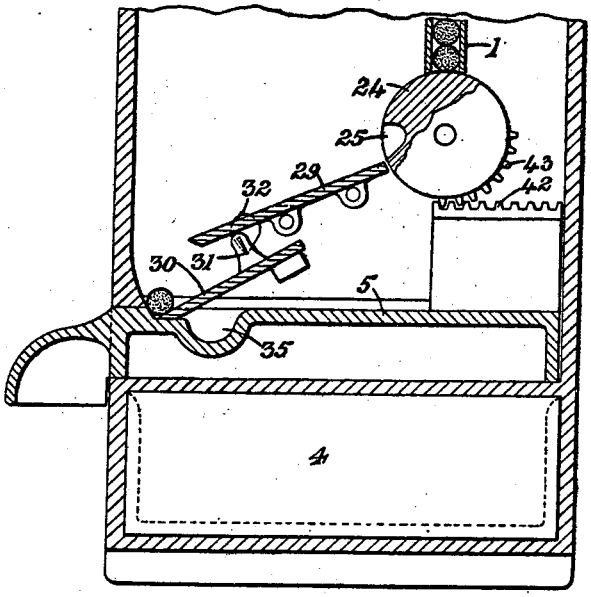
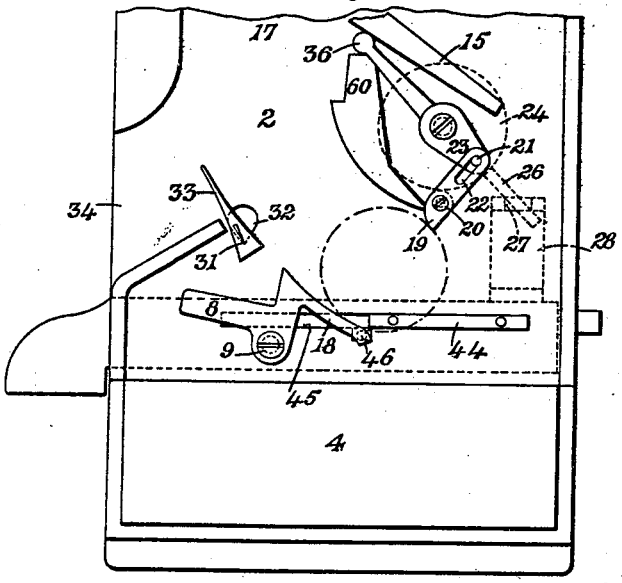


Fig. 7.



Witnesses
W. B. Keeler
H. Lee Hollins.

Inventor
James W. Pearson
by James L. Norris
Atty

UNITED STATES PATENT OFFICE.

JAMES WM. PEARSON, OF HORNSEA, ENGLAND.

COIN-FREED AUTOMATIC MACHINE.

SPECIFICATION forming part of Letters Patent No. 676,686, dated June 18, 1901.

Application filed November 26, 1900. Serial No. 37,829. (No model.)

To all whom it may concern:

Be it known that I, JAMES WM. PEARSON, a subject of the Queen of Great Britain, residing at Hornsea, county of York, England, have invented certain new and useful Improvements in or Relating to Coin-Freed Automatic Machines, of which the following is a specification.

My invention relates to coin-freed automatic machines—that is to say, to machines constructed to deliver goods in return for coins placed therein.

The said invention comprises a novel form of lever for controlling the admission of coins to the machine, novel means for ejecting the coin when there is no article in position for delivery, and various other novel features, as hereinafter described, whereby the machine is made very compact and efficient and suitable for use in road-vehicles.

Referring to the accompanying drawings, Figure 1 is a side elevation of my improved machine with the door opened to expose the coin-operated mechanism, a coin being shown in the position wherein it has unlocked the drawer and enables the latter to be opened. Fig. 2 is a transverse section of the machine, taken on the line $x\,x$, Fig. 1. Fig. 3 is a side view similar to Fig. 1, but showing the drawer pulled out to enable the article to be taken therefrom and the coin released and falling into the cash-box. Fig. 4 is a vertical section of the machine, taken on the line $y\,y$ Fig. 2, and illustrating the mechanism for transferring the articles to be sold from the hopper in which they are stored to the drawer. Fig. 5 is a side elevation of the upper portion of the machine, part of the door being removed to illustrate the position of a lever hereinafter described when the coin is passing down through the machine. Fig. 6 is a section of a portion of the machine, illustrating a modification; and Fig. 7 is a side elevation of the lower portion of the machine with the door removed, illustrating a further modification.

Like figures of reference indicate corresponding parts throughout the drawings.

My improved machine is divided into two compartments, in one of which is the hopper 1, containing the articles to be delivered and the mechanism for delivering same, and in the other of which is the coin-actuated mechanism for enabling the articles to be withdrawn. The latter compartment is shown formed between the side wall 2 of the larger compartment and a door 3, which is hinged thereto and which is kept locked when the machine is in use. When the said door is opened, the whole of the coin-operated mechanism is exposed to view and the money drawer or receptacle 4, arranged in the base of the machine, can be taken out to extract the money. The drawer or slide 5 by which the articles are withdrawn from the machine is provided with a catch 6 at the side, which projects laterally through a slot or opening 7 in the side wall 2 and is adapted to be engaged by a hooked lever 8, pivoted at 9 to the wall 2. When the drawer is pushed in, the hooked lever 8 automatically engages with the catch 6 and locks the drawer, and the latter cannot be opened again until the lever 8 is tilted.

An important feature of my invention is the provision of a lever 10, pivoted at 11 and having arms 13, 14, and 15 and a curved part 16 for a purpose that will be hereinafter explained. The normal position of said lever is with the arm 15 resting against a stop 60, as shown in Fig. 1, the lever being brought to that position by said arm 15, which is made sufficiently heavy to overbalance the weight of the arms 13 and 14. When a coin of the proper size and weight is introduced through the slot 17, it falls upon the arm 13 of the aforesaid lever and tilts the lever about its pivot, thus bringing the curved part 16 under the slot 17, as indicated in Fig. 3, and preventing the introduction of another coin until the lever returns to the normal position. (Shown in Fig. 1.) The coin then passes downward and falls upon the tail end 18 of the lever 8 and tilts the said lever, thus unlocking the drawer 5. The further movement of the coin is stopped by a link 19, pivoted at 20 and connected by a pin 21 and slot 22 with an arm 23, attached to the spindle of the transmitting-roller 24, hereinafter described. After the coin has passed the arm 13 of the lever 10 the said lever returns to its normal position and the coin cannot be withdrawn again. Moreover, the arm 14 of

the lever 10 operates to cut or jam any piece of string or wire that may be attached to the coin for fraudulent purposes.

The articles to be delivered (in the example shown in the drawings cigarettes) are placed in the hopper or chute 1, which is open at the lower end and side and closed at the top. An extension 55 of the door 3 serves for closing the side of the hopper when the door is shut. Immediately underneath the hopper or chute is an apparatus whose function is to transfer the articles one at a time from the hopper to the drawer. This transferring apparatus is in the form of a roller 24, having a pocket or recess 25, adapted to receive one article. The roller is furnished with an arm 26, that engages with a slot 27, formed in the drawer 5 or in a bracket 28, Fig. 4, attached thereto, the parts being so arranged that when the drawer is pulled out the roller 24 is turned to bring the recess or pocket 25 therein immediately underneath the hopper 1, whereupon an article falls into said pocket, and when the drawer is pushed in again the roller is turned in the opposite direction and discharges onto an inclined table 29 the article which it has received from the hopper. This article may pass directly into the pocket 35 of the drawer 5; but I prefer to deliver it onto a balancing table or board 30 for a purpose that will presently appear. This balancing-board is supported by knife-edges 31, resting in bearings 32 in the side walls of the machine, and works like a scale-beam, so that when the article delivered from the roller aforesaid slides down the incline 29 and falls upon the table 30 the latter is tilted from the position shown in Fig. 4 to that shown in Fig. 1. The said table 30 is furnished with an arm or finger 33, projecting into the compartment containing the coin-actuated mechanism and forms one side of the path down which the coin slides. When the article to be delivered is resting upon the balancing-table, as indicated in Fig. 1, the said arm 33 is inclined in such a way as to guide the coin toward the tail end 18 of the lever 8; but should there be no article resting upon the balancing board or table the arm 33 occupies the position shown in Fig. 3, and a coin introduced into the machine while the said arm is in that position will be guided toward the front of the machine, whence it will pass out through a slot 34, provided for the purpose, and return to the customer. By this means I insure that the coin shall be ejected from the machine when there is no article resting upon the balancing-board, so that the purchaser does not lose his coin in the event of the machine being empty or in the event of an article not being from any cause in position for delivery. Assuming that the parts are in the position indicated in Fig. 1, then when the drawer 5 is pulled out the article will slide from the board 30 into the pocket 35 of the drawer, the roller 24 will turn, as above described, to receive a fresh article from the hopper, and the link 19 will also turn through a suitable angle sufficient to liberate the coin and allow the latter to fall into the cash-box 4. When the drawer 5 is pushed in again, the parts resume their normal position, ready to receive another coin, and the last article received by the roller 24 will be delivered onto the balancing-table, ready to pass into the recess or pocket 35 in the drawer when the latter is opened. The construction is such that the article is not delivered by the roller until after the drawer is locked.

In order to prevent the insertion of a coin into the machine while the drawer is open, I provide an arm 36, connected, for example, to the roller 24 and bearing against the arm 15 of the lever 10. This arm 36 turns said lever 10 as the drawer opens into such a position that the curved portion 16 of the lever closes or partially closes the slot 17.

In order to prevent the accidental unlocking of the drawer 5 by shocks or otherwise, I provide a safety-catch 37, pivoted at 38 and weighted so as to hang vertically. Said catch in its normal position rests under the tail end 18 of the lever 8 and prevents the latter from turning on its pivot. The coin when introduced into the machine tilts the catch 37, as indicated in Fig. 1, and thus releases the locking-lever 8 and permits the latter to be tilted by the weight of the coin.

39 is a plate or projection at the side of the drawer, which projection slides in a slot 40 in the wall 2 and passes under the catch 37 when the drawer is opened, thus preventing the catch from falling and relocking the lever 8 until the drawer has been fully closed.

41 is an extension of the door 3, arranged to cover the catch 6 when the drawer is open and to prevent said catch being interfered with.

In a modification of my invention illustrated in Fig. 6 I have shown a rack 42 attached to the drawer 5 and gearing with teeth 43 on the roller 24 for the purpose of turning said roller when the drawer is opened and taking the place of the pin 26 and slot 27, above described.

In the modification illustrated in Fig. 7 the locking-lever is modified. In this case I provide a projection or plate 44 on the side of the drawer, working in a slot 45 in the wall 2 of the machine, and a pin or projection 46 in the tail end 18 of the lever 8, which pin 46 is adapted to rise in front of the aforesaid plate when the drawer is closed, thus locking the drawer; but when the tail end of the lever 8 is depressed by the weight of the coin, to allow of which movement the slot 45 is deepened underneath the pin, the drawer 5 is unlocked and can then be opened. In the opening of the drawer the plate 44 passes over the pin 46 and keeps the same depressed. The drawer does not therefore become locked

again until it is fully closed. This construction can also be provided with a safety-catch similar to the catch 37 shown in Fig. 1.

The cigarettes instead of being delivered singly, as indicated, may be delivered in packets containing two or more cigarettes, the recess or pocket in the roller 24 being suitably shaped for receiving such packets.

By changing the roller 24 the machine can be made to deliver different classes of goods.

In those instances where it is not desired to provide for the return of the coin to the customer the balancing-board 30 is dispensed with, the articles to be delivered being then passed directly to the drawer.

What I claim is—

1. A coin-freed automatic machine provided with a coin-channel having an outlet leading to a cash-box and another outlet for conveying the coin out of the machine, in combination with a pivoted balancing-table for receiving one at a time the articles to be delivered, means for delivering the articles to said table, means for receiving the articles therefrom, and an arm attached to the table and projecting into the coin-channel to form a guide or switch by which according to the position of said arm the coin is directed to one or other of the outlets from the coin-channel.

2. A coin-freed automatic machine provided with a coin-channel in combination with a lever pivoted in said channel, said lever having arms 13, 14 which control the admission of coins to the machine and prevent the return of the coins after the same have passed the lever, and an arm 15 for bringing the lever back to its normal position after the coins have passed the lever, substantially as described.

3. In a coin-freed automatic machine provided with a coin-channel in combination with a lever pivoted in said channel, said lever having arms 13, 14 for controlling the admission of coins to the machine and for preventing the return of the coins after the same have passed the lever, an arm 15 for bringing the lever back after the passage of the coins, a transferring-roller 24, a drawer 5, means connecting said drawer and roller for actuating the latter when the drawer is opened and shut, and an arm 36 connected to the roller 24 and controlling the lever 10 through its arm 15 so as to turn said lever and thus prevent the introduction of a coin into the machine when the drawer is not properly shut.

4. In a coin-freed automatic machine having a coin-channel, the combination of a drawer for withdrawing the articles to be delivered, a pivoted locking-lever 8 for locking said drawer, a transferring-roller 24, means connecting said drawer and roller for actuating the latter when the drawer is opened and shut, a pivoted lever 19 forming a stop for the coin when the drawer is shut, and a pin-and-slot connection between said lever 19 and the roller 24, whereby the lever 19 is moved to liberate the coin when the drawer is opened, substantially as described.

5. In a coin-freed automatic machine the combination of a drawer for withdrawing the articles to be delivered, a coin-operated pivoted locking-lever 8 for locking said drawer, a tailpiece 18 upon which the coin falls, a weighted pivoted catch 37 for locking the lever 8 and having its upper end resting in the path of the coin so as to be operated thereby to unlock the lever 8, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JAMES WM. PEARSON.

Witnesses:

HERBERT ARTHUR BEESTON,

W. M. HARRIS.