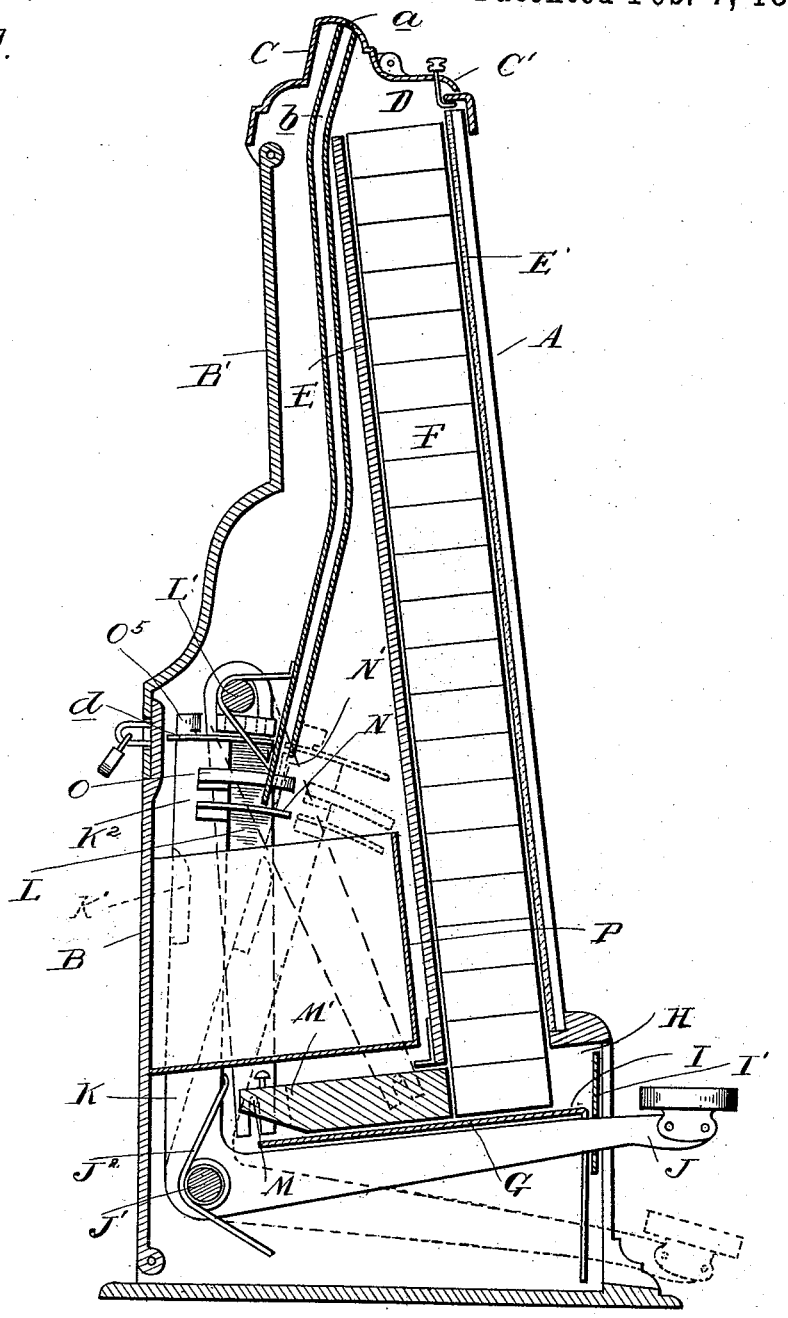
(No Model.) 2 Sheets—Sheet 1.

F. TOWLE.

MERCHANDISE SELLER.

No. 491,147. Patented Feb. 7, 1893.

Fig. 1.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

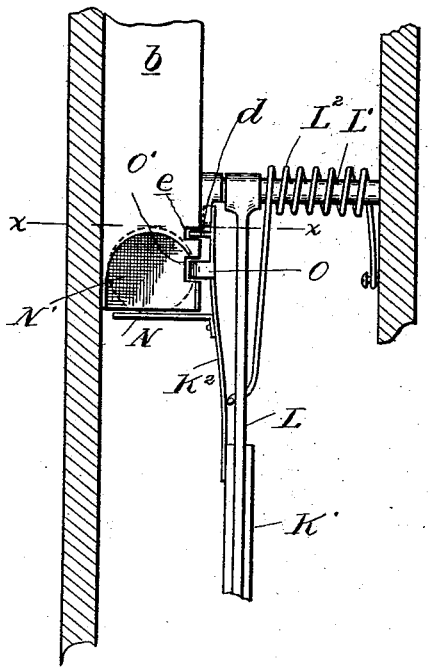


Fig. 3.

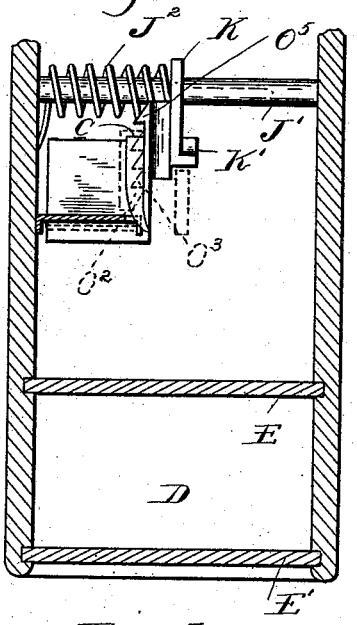
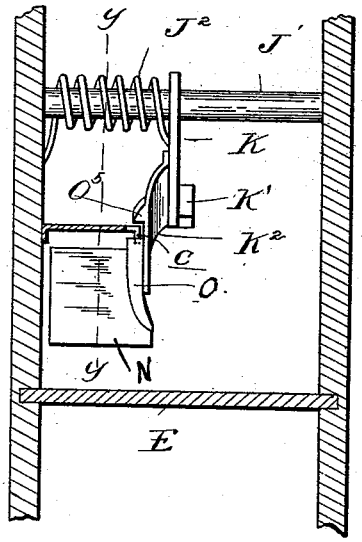
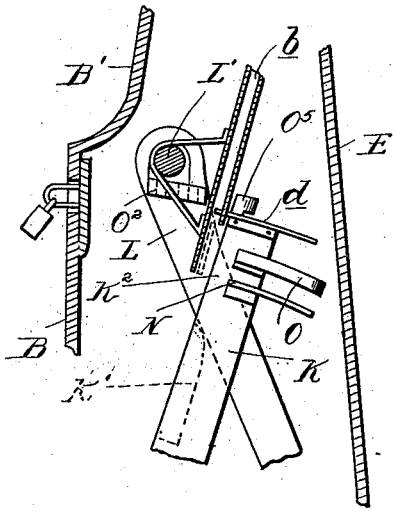


Fig. 5.

Fig. 1.





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UNITED STATES PATENT OFFICE.

FREDERICK TOWLE, OF DETROIT, MICHIGAN.

MERCHANDISE-SELLER.

SPECIFICATION forming part of Letters Patent No. 491,147, dated February 7, 1893.

Application filed April 7, 1892. Serial No. 428,214. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK TOWLE, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Merchandise-Sellers, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in merchandise vending apparatus, and relates to that class of vending apparatus having coin controlled actuating mechanism, adapted to eject one of a series of packages arranged in a supply chute.

The invention consists in the peculiar construction of the feeding and delivery mechanism and the coin controlling device for locking and unlocking the actuating mechanism and further in the peculiar construction, arrangement and combination of the various parts all as more fully hereinafter described.

In the drawings, Figure 1 is a vertical, central longitudinal section through my device. Fig. 2 is a front elevation of the lower end of the coin chute showing the construction of the coin controlled lock for the actuating mechanism. Fig. 3 is a cross section on line *x x* of Fig. 2 showing the parts in their normal position. Fig. 4 is a similar section showing the parts at the limit of their motion. Fig. 5 is a vertical section on line *y y* in Fig. 4.

A is the case of any desired shape and size. B and B′ are doors hinged respectively at the top and bottom and connected together at their meeting edges forming the back of the casing and allowing of access to the interior.

C is the top which at its forward edge is provided with the lid C′ which gives access to the supply chute D formed between the transverse partition E and the front E′, which I preferably make of glass and detachable when the cover is open, or in other words the cover forms a lock to prevent the withdrawal of the glass front when it is closed.

The supply chute D is preferably vertical or nearly so, so that the packages F therein will be fed by gravity. At the lower end of this supply chute and separated therefrom a distance equal to the width of the package is a horizontal partition G communicating with the aperture H in the front of the casing of the machine, forming between it and the bottom of the supply chute, and at substantially right angles thereto a feed chute or discharge I.

The supply chute D is of a size and shape corresponding to the size and shape of the packages which are designed to be placed therein.

I′ is a sliding gate or cut-off closing the outer end of the discharge chute and supported upon the actuating key lever J which is pivoted at the rear end of the case upon the shaft J′, but held normally in its upper position by the tension of the spring J^2, thus normally holding the gate I′ closed.

The front of the case is suitably slotted to allow of the depression of the key J, as shown in dotted lines in Fig. 1. The key J is provided with an upwardly extending arm K which at its side has a cam shaped lug K′.

L is a discharge lever suspended upon the transverse shaft L′ and normally held in its vertical position by means of a spring L^2, shown in Fig. 2. This lever at its lower end is bifurcated to embrace the pin M in the block M′, which rests upon the partition, or platform G and is adapted to be reciprocated longitudinally of the discharge chute H to eject the package at the lower end of the supply chute which will normally rest in front of the block M′, as plainly shown in Fig. 1. It is evident that the operator depressing the key lever J will rock forward the arm K thereof and the cam shaped lug K′ striking the lever L, causes that lever to be rocked upon its pivot to the position shown in dotted lines in Fig. 1, quickly sliding the block M′ forward in the discharge chute and ejecting the package, the gate I′ being opened in advance of the package by the depression of the key lever which carries that gate, and at the same time the supply chute is closed by the block M′, which passes transversely across the lower end of said supply chute and thus keeps it closed until the operator releases his hold of the key lever, and the parts are returned to their normal position, when the gate I′ will be closed and another package will fall into position to be delivered, the springs J^2 and L^2

acting to return the key lever and discharge lever to their initial positions.

In order to prevent the actuation of my device except upon the insertion of a coin of proper size and dimension, I provide a lock for the actuating mechanism which is released upon the insertion of such coin, and that mechanism is of the following construction: The top of the casing is provided with a suitable slot *a* of a size to just admit the coin which is desired to operate the machine. This slot communicates into the coin chute *b* which extends a suitable distance into the casing below the top of the arm K of the key lever, as shown in Fig. 1, and the lower end of this chute is formed by a platform N, which is secured upon the arm K. At the lower end this chute is provided with a lateral discharge opening N′, which is of a size to permit any coin which is smaller than the coin with which it is desired to operate the machine, to fall out, but to retain upon the platform in the chute, as shown in Fig. 2, a coin of the proper size.

The upper end of the arm K is formed by a spring bar K^2 and carries in addition to the platform described a cam O working in a slot O′ formed at the side of the chute at the lower end opposite the middle of the coin when the coin rests upon the platform N. The upper end of this arm is also provided with a hook O^5 shown in Figs. 1, 3 and 4, which acts as a lock, preventing the forward movement of the arm K, by engaging with the end of the plate O^2, which on its inner face is provided with the notches O^3. Thus, normally no forward movement of the arm K can take place unless the hook O^5 is moved out of the path of the plate O^2. This lateral movement is accomplished when the coin is in the bottom of the chute, as shown in Figs. 2 and 3 by the engagement of the cam O against the edge of the coin, moving the spring arm K with the hook O^5 laterally, thereby clearing the hook of the plate O^2. Thus, when a coin of proper size is present in the chute, resting upon the plate N, the key lever may be operated and the package ejected. When the key has been depressed to the limit of its movement it will pass from beneath the coin, as shown in Fig. 4 and allow the coin to drop into the box P, and in returning the cam, not bearing upon the coin, the hook O^5 will successively engage with the notches O^3 on the plate O^2 and prevent a succeeding downward movement of the key until the key has been returned to its initial, position, in which position it will be again locked until a coin of proper size is dropped into the chute, as previously described.

To prevent "beating" the machine by the use of a coin tied on the end of a string or in event that a coin should become lodged at the foot of the chute, I so construct the cam that its shoulder *c* will pass beyond the coin, as shown in Fig. 4, and if the coin is held in its position in the chute, this shoulder will impinge against the coin and prevent the return of the parts to their initial position until it has been dislodged.

In case more than one coin of proper dimension is inserted in the chute at the same time, in order to insure the proper delivery of a package for each coin I arrange a cut-off plate *d* at the top of the extension K^2, which engages a slot *e* (Fig. 2) slightly above the first coin and so constructed that as soon as the extension K^2 begins its forward movement this plate will enter the chute effectively preventing more than one coin at a time from passing from the chute. If a second coin were in position in the chute, as soon as the parts return to their normal position, the cut-off plate *d* would be withdrawn and the coin would fall upon the plate N and the machine could then again be operated to obtain another package.

What I claim as my invention is:

1. In a merchandise vending machine, the combination of a supply chute, an ejecting mechanism, comprising a lever and actuating arm a lock therefor adapted to be unlocked upon the insertion of a coin, and movement of the lever and a yielding lock applied to the ejecting mechanism during its return to prevent the partial actuation, substantially as described.

2. In a merchandise vending machine, the combination of a supply chute, a transverse discharge chute at one end thereof, an ejecting block therein, an actuating mechanism therefor, consisting of a key lever, a yielding arm thereon, a connection between said arm and the block, a lock for the arm, engaging the lever a coin chute having a coin holder at the lower end, and a cam on the arm adapted to bear against the coin to release the lock and formed with a rear locking shoulder, substantially as described.

3. In a merchandise vending machine, the combination of a supply chute, a transverse discharge chute at one end thereof, an ejecting block therein, an actuating mechanism therefor, consisting of a key lever, an arm thereon, a cam on said arm, a lever connected to the block in the path of the cam, a coin operated lock for the arm, engaging the key lever and a normally closed door for the discharge chute opened by the actuation of the key lever, substantially as described.

4. In a merchandise vending machine, the combination with supply chute, a discharge chute and an ejecting mechanism, of the coin chute, a normally locked actuating arm for the ejecting mechanism, carrying a coin shelf adapted to support the coin at the lower end of the chute, means for moving the arm and a cam on the arm adapted to bear against the edge of the coin to release the lock thereof upon the prior movement of the arm, substantially as described.

5. In a merchandise vending machine, the

combination with the ejecting mechanism, of a coin chute, a normally locked actuating ejecting arm carrying a coin shelf across the chute to support the coin, a cam on said coin to move the arm laterally to disengage the lock, and an actuating lever for rocking the arm, to move the shelf from beneath the coin, substantially as described.

6. In a merchandise vending machine, an actuating arm, a lock therefor, and means for releasing said lock, consisting of a spring extension on the arm, a hook thereon engaging an abutment, and a cam adapted to engage a coin, and move the arm laterally to disengage the hook, substantially as described.

7. In a merchandise vending machine an actuating arm, a lock therefor, a spring extension on said arm, a hook on said extension engaging an abutment, a cam adapted to engage a coin to move the arm laterally to disengage the hook, means for discharging the coin at the end of the movement of the arm, and a notched plate with which said hook engages in its return acting as a lock to prevent partial operation, substantially as described.

8. In a merchandise vending machine, the actuating mechanism comprising the key and the arm K, the cam controlled lock therefor, the coin chute, the plate N at the end of the chute, the cam O, and the cut off *d*, substantially as described.

9. In a merchandise vending machine, the combination of the actuating mechanism comprising a rocking arm, the spring extension K^2, the cam O thereon adapted to bear against the coin, the hook O^5, abutment O^2, with which said hook normally engages, and the shoulder *c* on the cam, adapted to be moved in front of the coin at the end of its movement, substantially as described.

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

FREDERICK TOWLE.

Witnesses:
M. B. O'DOGHERTY,
N. L. LINDOP.