(No Model.) 3 Sheets—Sheet 1.

R. WHITTAKER.

VENDING APPARATUS.

No. 387,670. Patented Aug. 14, 1888.

Fig. 2.

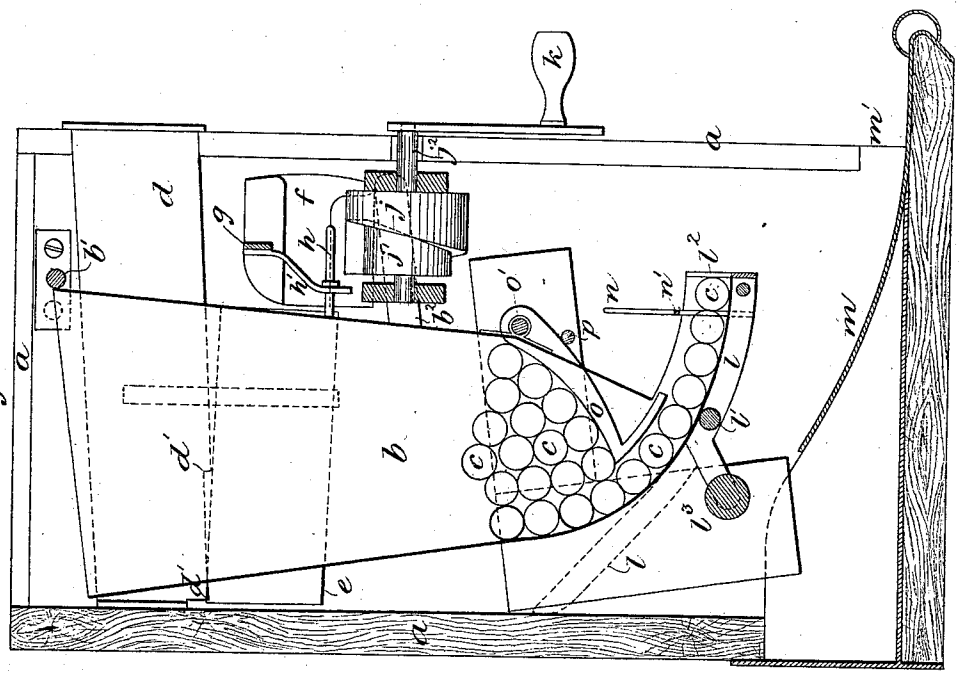
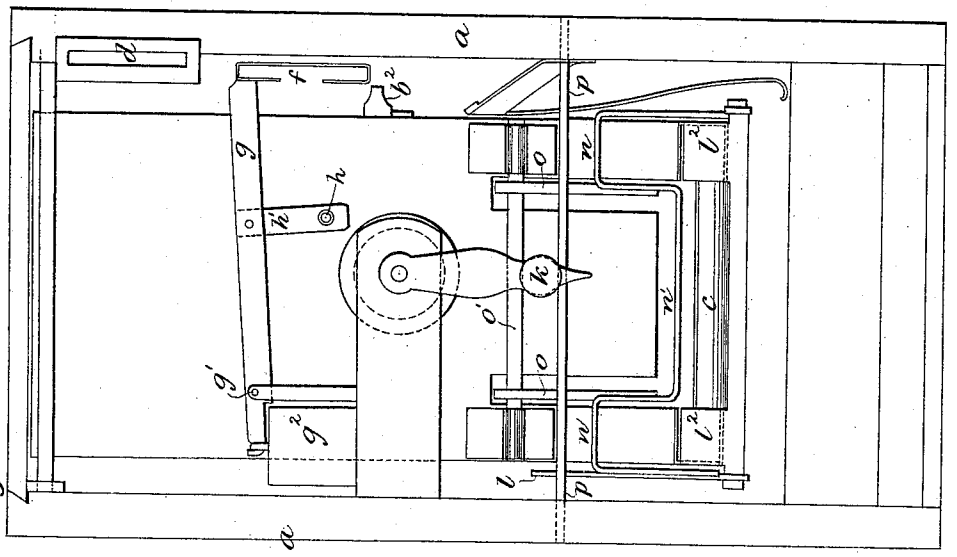


Fig. 1.



Witnesses
Allan McLane Abert
C. M. Brooke

Inventor,
R. Whittaker,
By attys.
Galeski, Hopkins & Dayton

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 3 Sheets—Sheet 2.

R. WHITTAKER.

VENDING APPARATUS.

No. 387,670. Patented Aug. 14, 1888.

Fig. 5.

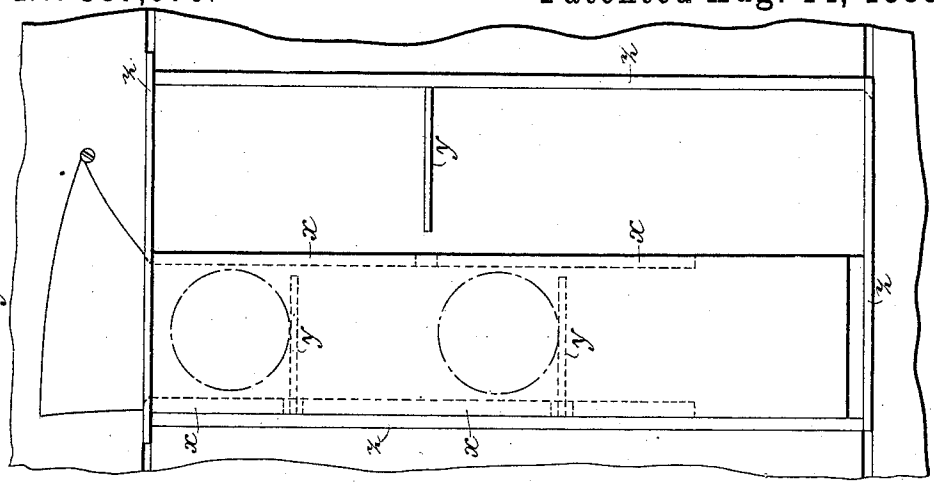


Fig. 6.

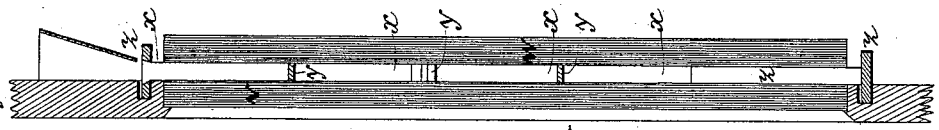


Fig. 4.

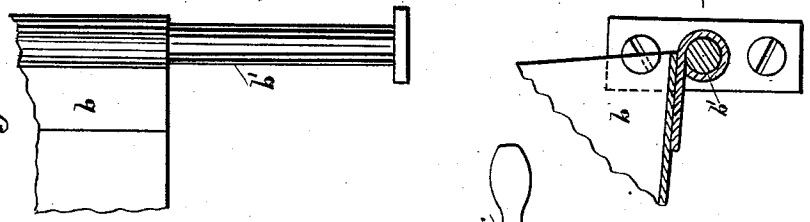
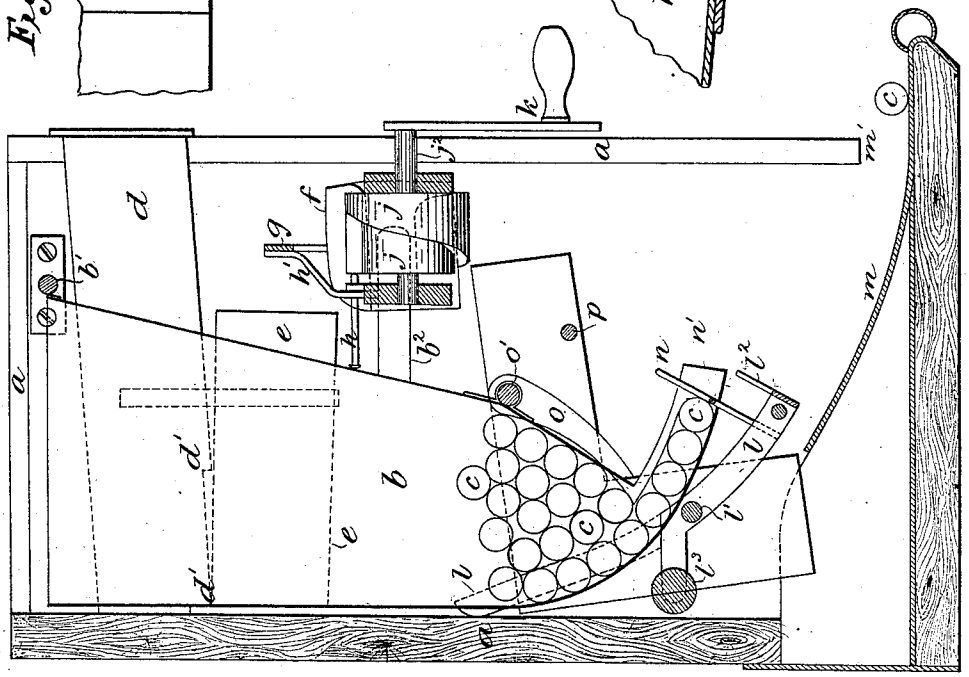


Fig. 3.



Witnesses,
Allan M Lane Asst.
C. M. Brooke.

Inventor,
R. Whittaker.
By attys.
Goldsborough, Hopkins & Peyton.

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 3 Sheets—Sheet 3.

R. WHITTAKER.

VENDING APPARATUS.

No. 387,670. Patented Aug. 14, 1888.

Fig. 7.

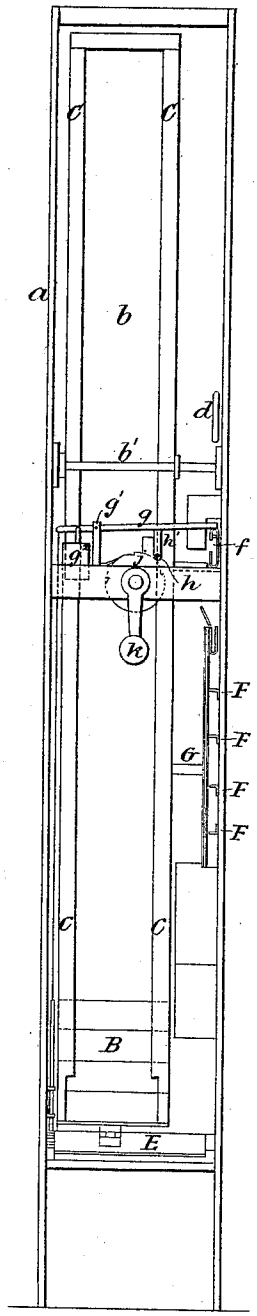


Fig. 8.

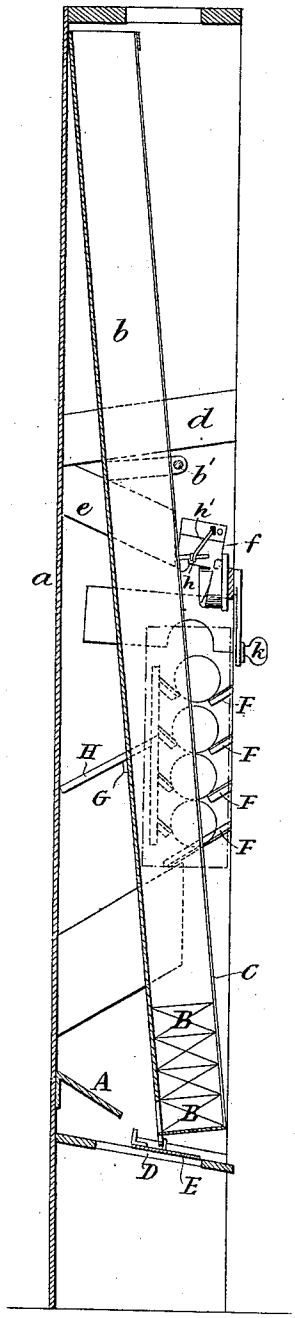
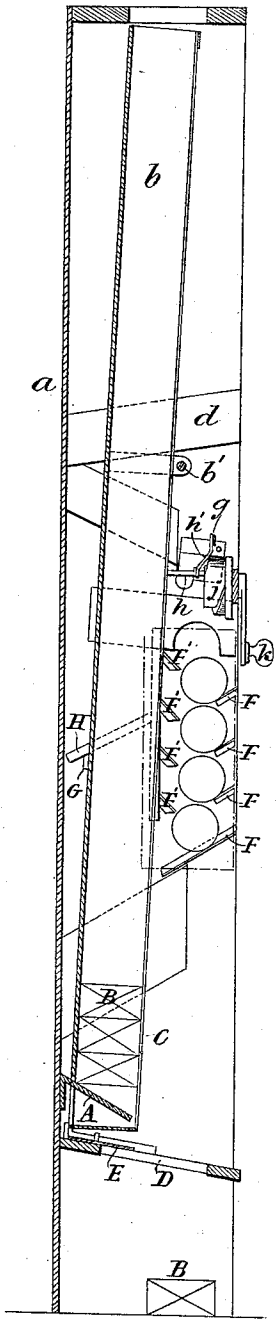


Fig. 9.



Witnesses.
Allan McLane Hart.
C. M. Brooke

Inventor,
R. Whittaker.
By attys -
Baldwin, Hopkins & Peyton.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

RICHARD WHITTAKER, OF 105 HATTON GARDEN, COUNTY OF MIDDLESEX, ENGLAND.

VENDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 387,670, dated August 14, 1888.

Application filed November 21, 1887. Serial No. 255,805. (No model.) Patented in England August 31, 1886, No. 11,104; in France May 31, 1887, No. 183,907, and in India June 10, 1887, No. 117.

To all whom it may concern:

Be it known that I, RICHARD WHITTAKER, a subject of the Queen of Great Britain, residing at 105 Hatton Garden, in the county of Middlesex, England, watch-maker, have invented an Apparatus for the Delivery of Cigarettes or other Articles of Uniform Dimensions, (for which I have received Letters Patent in Great Britain, No. 11,104, dated August 31, 1886; in France, No. 183,907, dated May 31, 1887, and in the East Indies, No. 117, dated June 10, 1887,) of which the following is a specification.

This invention has for its object an apparatus for the delivery of cigarettes or other articles of uniform dimensions on the deposit of a suitable coin.

The apparatus is provided with a hopper-like holder suspended from an axis at its upper end within a box or casing. The box or casing is closed with the exception of a horizontal slit in front, through which the delivery takes place. The bottom of the hopper is inclined forward at such an angle that the articles will descend along it by gravity until the lowest comes against a movable end or stop, forming part of an escapement mechanism, hereinafter described. The front of the hopper does not extend down to the bottom, but terminates at such a distance above it that the cigarettes or articles are able to pass out one at a time beneath its lower edge. When it is desired that a cigarette should be delivered, the hopper or reservoir is displaced a short distance rearward by means of a press-button or other actuating mechanism provided on the case. The hopper or reservoir, when it is left free, returns by its own weight or by the aid of a spring. The press-button, however, does not act directly upon the hopper or reservoir, but upon an intermediate finger or push-rod, carried upon an axis on which there is also an arm with a coin-receiver at its end. A weight preponderates over the coin-receiver and holds it up to a stop when no coin is in it.

The coin is dropped by the purchaser through a slit into an inclined trough, along which it runs, and it is thereby conducted either directly or through the intervention of another trough to a slit through which the coin falls into the receiver. The coin-receiver descends by the weight of the coin and brings the finger into position to co-operate with the push-button to move the hopper or reservoir rearward. The escapement arrangements are as follows: The stop which retains the cigarettes or articles on the inclined bottom of the hopper is carried by inclined lever-arms, which can move around a horizontal pin fixed at the back of the hopper. These inclined arms extend to the back of the hopper and there support a weight, which, descending until it rests against the back of the case or other appropriate support, operates to retain the stop in place and to prevent the descent of the cigarettes or articles. The same arms carry another stop above and behind the first at a distance equal to the diameter or width of one of the cigarettes or articles. When the hopper or reservoir is moved rearward, as already explained, the weight at the back is raised by being pressed against the support, and the two stops descend. The front one allows a cigarette or article to move forward and be delivered, and the hinder stop or secondary prevents the cigarettes or articles in rear from following.

The apparatus is also provided with an agitator, stirrer, or instrument to aid the cigarettes or articles to descend in the hopper or reservoir. It consists of a pair of fingers or prongs depending from a horizontal axis at the front of the hopper or reservoir, which the prongs enter, passing through slotted openings.

When the apparatus is at rest, the cigarettes or articles in the hopper or reservoir are in part supported by the prongs, which then bear against a stationary bar within the casing. This bar also serves to limit the forward movement of the hopper or reservoir. When, however, the hopper or reservoir retires, the prongs fall forward and pass out of the slots and allow the cigarettes or articles to drop freely. The coin is delivered from the coin-receiver when the hopper or reservoir is thrust back, and the coin is then received between two sheets of glass and is there retained by fingers fixed to the two sides of an external

frame and projecting between the sheets of glass. The coin thus remains visible, and if a counterfeit is easily recognized. The coin-holder frame receives a movement horizontally in a plane parallel to the glass by a connection with the hopper or reservoir, and in consequence of this movement the coin is able to descend step by step until it reaches the cash-drawer or coin-holder.

I sometimes substitute for a simple push-button a lever and cam or other convenient mechanical arrangement by which the requisite movement may readily be given to the hopper or reservoir.

In order that my said invention may be fully understood and readily carried into effect, I will proceed to describe the drawings.

Figure 1 is a front elevation, and Fig. 2 is a transverse section, of the apparatus constructed according to my invention. Fig. 3 is a view similar to Fig. 2, but showing the position of the parts when one of the articles has just been delivered. Fig. 4 is a detail view showing the mode of pivoting the hopper. Fig. 5 is an elevation, and Fig. 6 a vertical section, of a coin-holder to be applied to the apparatus shown by the preceding figures. Fig. 7 is a front elevation, and Fig. 8 a section, of a modification of the apparatus shown by the preceding figures. Fig. 9 is a view similar to Fig. 8, but showing the position of the parts when one of the articles has just been delivered.

a is the case, the front and sides of which may be of glass, so as to show the interior.

b is a hopper pivoted at *b'*, which contains the articles to be delivered—for example, cigarettes *c*—as shown.

d is a flat tube inclining downward and backward, into which the coin is placed. The coin runs down on edge until it comes to the back where the bottom of the tube is cut away at *d' d'*. The coin there drops down into the second inclined tube, *e*, from whence it runs into the coin-receiver *f*, which is carried by the rocking lever *g*, pivoted at *g'*, and having a weight, g^2, at its other end. The dimensions of this lever and weight are so proportioned that the coin is just sufficient to depress the lever *g* and raise the weight g^2. This operation brings the pin push-rod *h*, which is carried by an arm, *h'*, on the lever *g* into contact with the cylindrical enlargement *j'* of the axis j^2. There is a cam, *j*, on the same axis, which also carries a handle, *k*. The pin *h*, which may or may not be provided with a spring, is free to slide to and fro in its bearing in the arm *h'*, so that if the handle *k* be turned the cam-surface *j*, coming against one end of the pin, presses its other end against the hopper *b*, which is thereby swung back to the position shown in Fig. 3; or, in place of the cam and handle, a simple press-button may be provided on the front of the case to operate on the pin *h* after it has been brought into position by the agency of the coin. As the hopper is swung back, an arm or liberating-stop, b^2, fixed to it comes against the coin and pushes it out of the receiver *f*, from whence it drops into a box or till.

l is a lever pivoted to the hopper at *l'*. The rear end of the lever preponderates; but as the hopper swings back it is forced upward as it bears against the back of the case. The plates l^2 l^2, which I call a "cut-off," are carried by the other end of the rocking lever *l*, are then depressed to the position shown in Fig. 3, allowing the bottom cigarette to drop out of the hopper onto the inclined plane or guideway *m* at the bottom of the case, from whence it rolls down and is delivered through the slit *m'*.

l^3 is an additional weight on the rear part of the lever *l*.

n is a bent wire carried by the lever *l*. It forms the upper stop or element of the escapement mechanism, which I call a "secondary stop." As the front end of the lever is depressed the wire *n* is depressed also, and the portion *n'* comes between the two front cigarettes, thereby preventing more than one cigarette from falling out of the hopper when the plates l^2 are withdrawn from in front of the mouth.

o o are two arms carried by an axis, *o'*. These arms pass through slots in the front of the hopper and act as stirrers, causing the cigarettes to arrange themselves. When the hopper is in its forward position, the arms *o* rest against a transverse bar, *p*, fixed to the case of the machine. As the hopper swings back, the weight of the arms and of the cigarettes upon them causes the arms *o* to turn downward. After the hopper reaches its extreme backward position and the pin *h* the position shown in Fig. 3, as the handle and cam continue to revolve the pin *h* clears itself from the cam. The hopper then swings forward, and the arms *o*, striking against the bar *p*, are caused to enter the hopper, causing a stirring movement among the cigarettes in the hopper.

The coin-holder shown in Figs. 5 and 6 consists of two plates of glass, *v* and *w*, separated from each other by the distance-pieces *x*. The coin, when delivered from the coin-receiver *f*, falls down between the plates *v* and *w* and the distance-pieces *x x*, which are so set that the coin can descend freely. *y y* are fingers fixed to a frame, *z*, and entering through apertures in the distance-pieces *x*. They serve to regulate the descent of the coins. The frame *z* is connected by a lever and link with the hopper *b* and moves to and fro with it. The coin, when it drops from the receiver *f* between the plates *v* and *w*, comes to rest upon the uppermost finger, *y*, and on the return motion of the hopper taking place it falls onto the second finger. The next movement of the hopper permits a farther descent of the coin, until finally it falls out below the plates *v w* into a receptacle provided to contain the coins. During the descent of the coins they can be freely seen

through the glass plates. This greatly facilitates the detection of attempts to tamper with the apparatus.

In the modification shown in Figs. 7, 8, and 9 the money-receiving apparatus and the cam and pin for pushing back the hopper are similar to those shown in Figs. 1, 2, and 3, and therefore need no further description. These and other parts, which remain the same or similar in all the figures, are marked with the same letters of reference.

The modification is very suitable for delivering flat articles—such as boxes of matches. In this case the escapement mechanism—previously described for only allowing one article at a time to be delivered—is replaced by a pusher, A, fixed at the back of the case. As the hopper swings back this pusher forces one of the match-boxes B out of the front of the hopper, it being free to do so by reason of the plates C which form the front of the hopper, being cut away at the bottom. When it has been pushed out, the match-box falls through the slot D and is delivered. The gate E moves with the hopper. It opens the slot D at the proper time for delivery of the match-box and closes it at other times. As shown in Fig. 9, the inclined pusher A prevents the boxes above it from descending until the hopper again swings forward.

The coin-holder shown in Figs. 7, 8, and 9 is a modification of that shown by the Figs. 3^a and 3^b, and is applicable to other boxes or delivery apparatus of this class. The coin when it passes out of the coin-receiver *f* is guided into the space between two parallel plates of glass, as already described. Between the glass plates are inclines F and F′.

F F F F are inclines fixed to the case, and F′ F′ F′ F′ are other inclines fixed to a vertical bar, which is reciprocated up and down by any suitable means—for example, by a pin, G, fixed to the hopper and an incline, H, fixed to the vertical bar, as shown. The coins descend between the two sets of inclines, as the drawings indicate, each up and down movement of the inclines F′ F′ causing the series of coins between the glass plates to descend one step.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. The combination, substantially as hereinbefore set forth, of the case, the suspended hopper, its pivots, and the cut-off adapted to be automatically actuated by each movement of the hopper to deliver one of the articles contained therein.

2. The combination, substantially as hereinbefore set forth, of the case, the suspended hopper, its pivots, the rocking lever *l*, its pivots on the hopper, its counter-balance l^3, and its cut-off adapted to be automatically traversed across the mouth of the hopper by the movement of the latter to deliver one of the articles contained therein.

3. The combination, substantially as hereinbefore set forth, of the case, the suspended hopper, its pivots, the counterbalanced cut-off adapted to be automatically actuated by the movement of the hopper to discharge one of the articles contained therein, and the secondary stop *n*, which is adapted to be automatically interposed between the article being discharged by the cut-off and the succeeding articles by the same movement of the hopper.

4. The combination, substantially as hereinbefore set forth, of the case, the suspended hopper, its pivots, the cut-off adapted to be automatically actuated by each movement of the hopper, the stirrers pivoted on the hopper and working through slots therein, and the stop-bar, which actuates the stirrers on the return or forward stroke of the hopper after discharging one of the articles contained therein.

5. The combination, substantially as hereinbefore set forth, of the case, the suspended swinging hopper, the cut-off, the secondary stop, and the stirrers, the cut-off, secondary stop, and stirrers being all adapted to be automatically actuated by the swinging of the hopper, as set forth.

6. The combination, substantially as hereinbefore set forth, of the case, the swinging hopper, the cut-off adapted to be automatically actuated by the movement of the hopper, and the guideway traversed by the discharged article, which guideway delivers the article outside the case after its discharge from the hopper.

7. The combination, substantially as hereinbefore set forth, of the case, the suspended swinging hopper, its pivots, the automatic cut-off, its pivots on the hopper, and the actuating mechanism by which the hopper is moved from the outside of the case.

8. The combination, substantially as hereinbefore set forth, of the case, the hopper, its pivots, the automatic cut-off, the endwise-moving pin or push-rod, and the cam which actuetes it to traverse the hopper.

9. The combination, substantially as hereinbefore set forth, of the case, the hopper, its pivots, the cut-off, actuating mechanism on the case, the rocking lever *g*, and the push-rod carried by said lever and interposed between the actuating mechanism and hopper when the latter is to be actuated.

10. The combination, substantially as hereinbefore set forth, of the case, the suspended swinging hopper, the cut-off, the actuating mechanism, the counterbalanced rocking lever, the coin-receiver mounted thereon, and the push-rod carried by said lever, and adapted to be automatically interposed between the actuating mechanism and hopper when the latter is to be actuated.

11. The combination, substantially as hereinbefore set forth, of the case, the hopper, the cut-off, the actuating mechanism, the case having the coin slot and guide, the rocking lever, the coin-receiver on the rocking lever, and the push-rod, also carried by said lever and adapted to be automatically interposed by the action of the coin in the receiver between

the actuating mechanism and hopper to actuate the latter.

12. The combination, substantially as hereinbefore set forth, of the case having a coin-slot and guide, the suspended swinging hopper, the rocking lever, the coin-receiver carried thereby, and the coin-liberating arm or stop on the hopper adapted automatically to discharge the coin from the receiver as the hopper swings back after delivering the article.

13. The combination, substantially as hereinbefore set forth, of the case, the suspended swinging hopper, the coin-receiver, the coin-liberating arm, the coin-holder, its reciprocating fingers, and the connection with the hopper, whereby they are actuated to deliver the coin step by step to its final receptacle.

14. The combination, substantially as hereinbefore set forth, of the case, the suspended swinging hopper, the coin-holder, its reciprocating fingers, and the connections with the hopper, whereby they are intermittently actuated to deliver the coin step by step to its final receptacle.

15. The combination, substantially as hereinbefore set forth, of the case, the suspended swinging hopper, the coin-holder, its fixed inclines F, its opposing reciprocating inclines F′, their actuating-bar H, and the actuating-pin G on the hopper.

RICHARD WHITTAKER.

Witnesses:

JOHN H. WHITEHEAD,

24 *Southampton Buildings, London, W. C.*

WALTER J. SKERTEN,

17 *Gracechurch Street, London, E. C.*