No. 708,193. Patented Sept. 2, 1902.

O. ASHTON.

COIN CONTROLLED VENDING APPARATUS.

(Application filed June 26, 1901.)

(No Model.) 2 Sheets—Sheet 1.

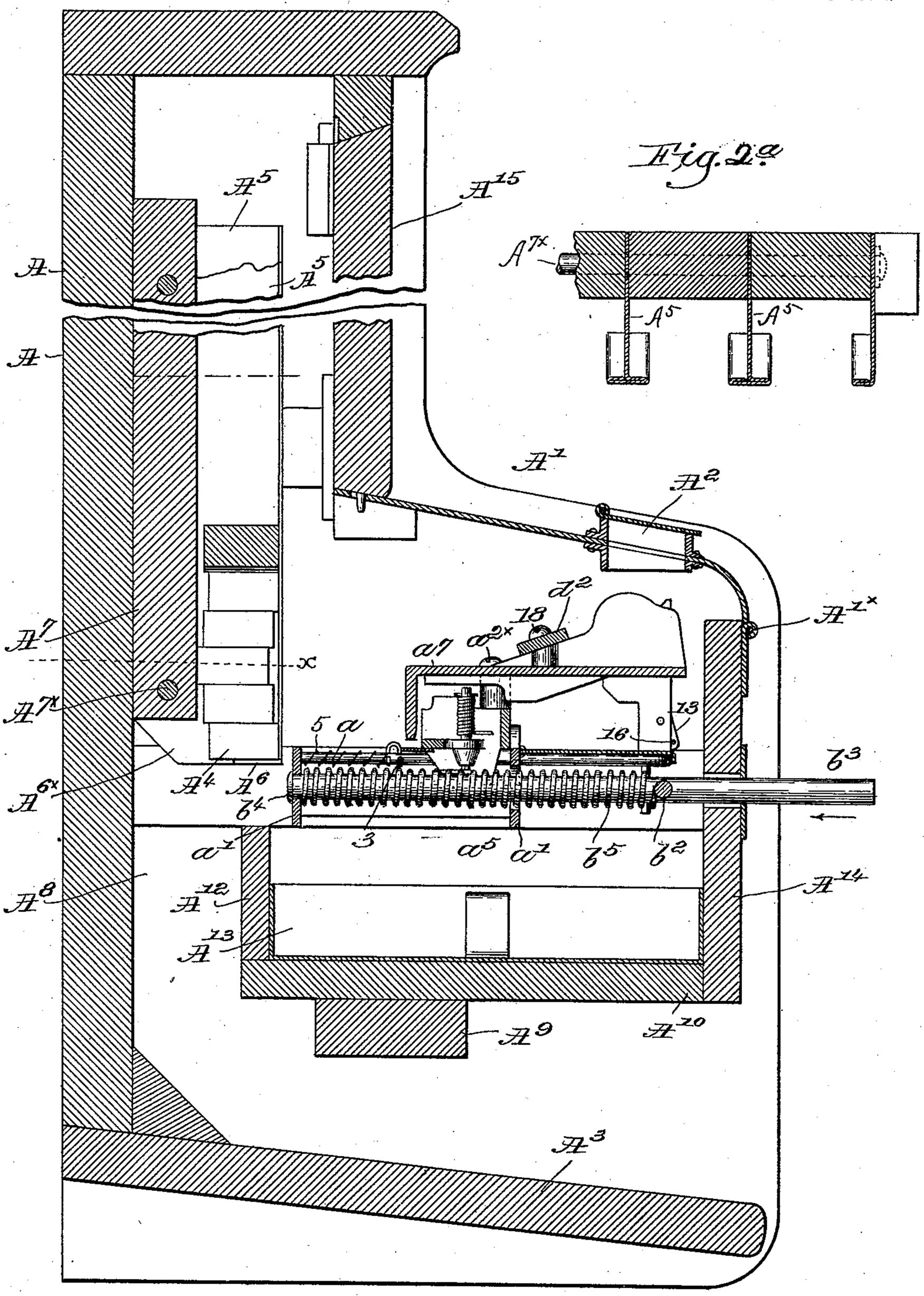

Fig. 1.

Fig. 2a

Witnesses.
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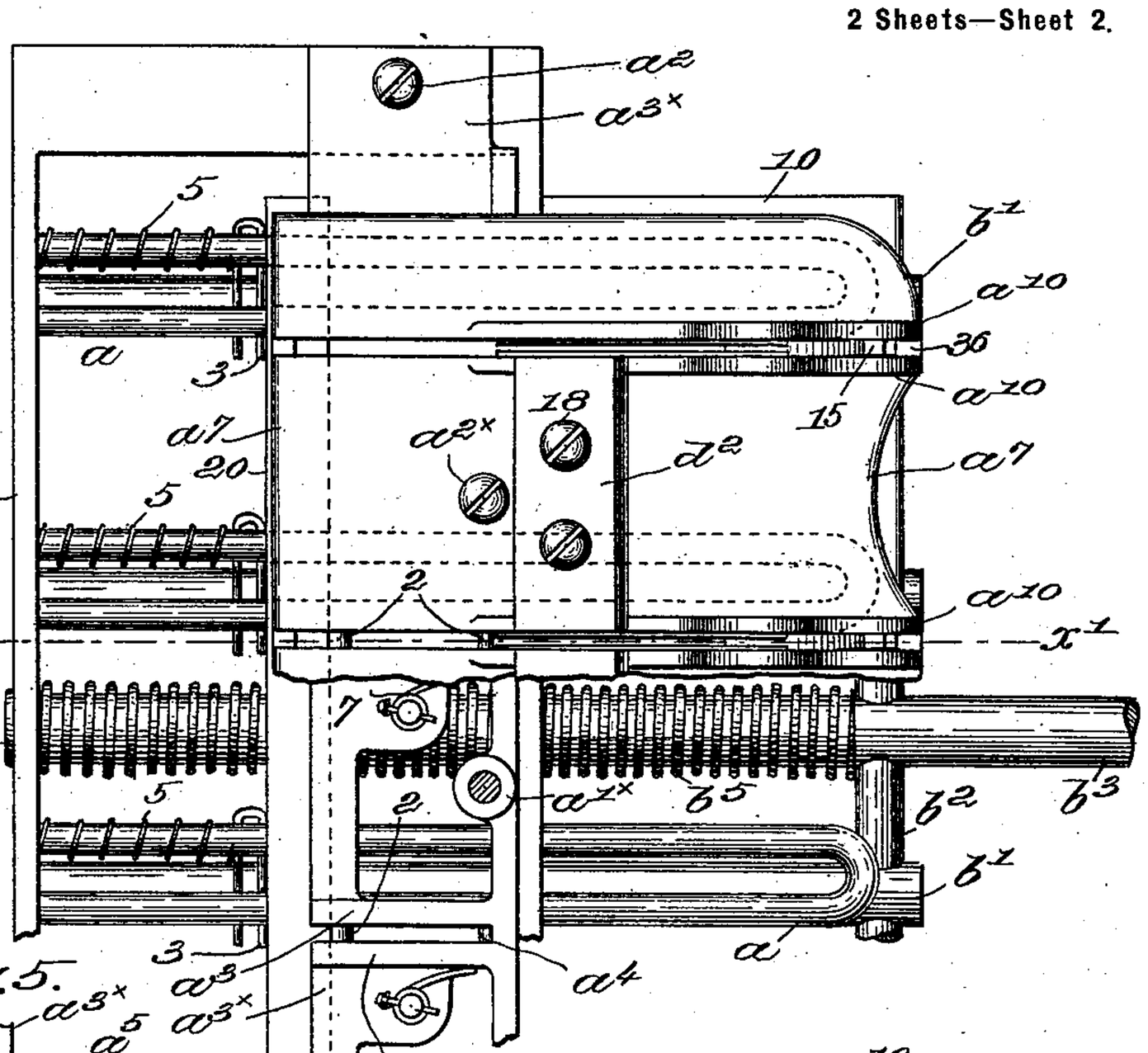
Fig. 2.



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UNITED STATES PATENT OFFICE.

ORRELL ASHTON, OF LAWRENCE, MASSACHUSETTS.

COIN-CONTROLLED VENDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 708,193, dated September 2, 1902.

Application filed June 26, 1901. Serial No. 66,121. (No model.)

To all whom it may concern:

Be it known that I, ORRELL ASHTON, a citizen of the United States, residing at Lawrence, in the county of Essex and State of Massachusetts, have invented an Improvement in Coin-Controlled Vending Apparatus, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention has for its object the production of a novel apparatus for vending small articles, such as gum, candy, &c.

The apparatus has a plurality of guideways which retain the different articles or packages to be delivered to a purchaser upon the prepayment to the apparatus of the price required for the same. The apparatus has a series of coin-throats adapted each to be fed by a proper coin, which descends in said throat by gravity and is retained in upright position in a coin-carrier. The coin is moved by the coin-carrier and, meeting a suitable projection extended from a package-delivering device, thereafter moves said delivering device until it meets the lowermost package of a series of packages and removes it from the remaining packages, the discharged package dropping upon a suitable shelf, where it may be reached by the purchaser. Each package-delivering device may be actuated independently of the others, and each will be moved to deliver a package only after a coin has been placed in the coin-throat coacting with that particular delivering device. I prefer for simplicity and cheapness to use one common actuator for moving all the delivering devices, the particular delivering device which is moved by the actuator depending upon the presence of a proper coin to couple the coin-carrier with the delivering device, and a delivering device can be actuated only when a coin of proper character is lodged in the coin-carrier which is provided for moving the same. In my invention the coin is sustained by the coin-carrier on suitable projections extended from the side thereof, said projections being located at a distance apart less than the diameter of the coin used to couple that carrier with its coacting package-delivering device, and the coin having acted to move the package-delivering device to deliver a package the coin-carrier is moved backwardly into its starting position, as herein represented, by as uitable spring, and the edge of the coin meets and is acted upon by a pick-off controlled by a spring and is discharged laterally from the coin-carrier into a suitable cash-box. The lower end of the coin-throat has a guard which occupies normally a position at one side of the coin-carrier between the coin-sustaining projections, so that a coin dropped into the coin-throat may be guided substantially throughout its movement until the coin is securely seated upon said projections. I have combined with the coin-throats a magnet which arrests any false coin of magnetic material, and such coin having been inserted the movement of the actuator operates a clearer, moving it toward the magnet to contact with the false coin, causing its discharge into the cash-box without being arrested by the projections of the coin-carrier. So, likewise, if a coin of a diameter less than that required for the article to be prepaid is put in the throat it will drop between the projections of the coin-carrier directly into the cash-box and, not being arrested, will not couple the package-delivering device with the coin-carrier.

Figure 1 is a vertical section, shortened in height, of an apparatus embodying my invention. Fig. 2 is a broken plan view of a portion of the prepayment apparatus to show a plurality of coin-chutes and delivery parts coöperating therewith removed from the case; Fig. 2^a, a partial sectional view of the case below the dotted line x to show a plurality of guideways. Fig. 3 is a sectional detail in the line x', Fig. 2. Fig. 4 is a sectional detail showing the coin-carrier as having moved the package-delivering device forward to effect the delivery of a package. Fig. 5 is a detail looking at the under side of the apparatus to show the pick-off and guide; and Fig. 6 is a detail looking at the apparatus, Fig. 2, from the right.

The casing A containing my apparatus may be made from wood and of any suitable shape to contain the working parts, said casing presenting a counter A′, having a plurality of slots A^2, in which the coin employed to secure the delivery of a package will be dropped. The casing has a bottom board A^3,

upon which may drop a package A^4 to be delivered from the guideways A^5, containing the packages to be vended, my invention in practice presenting a plurality of such guideways open at top and provided at their lower ends each with a suitable lip, as A^6, upon which may rest the undermost package of each series of packages. The lower ends of the side walls $A^{6\times}$ of said guideways or package-holders are extended below the back board A^7, with which they are connected by rods $A^{7\times}$, the lowermost package sustained on each lip A^6 being exposed to be struck by the package-delivering device a, said device meeting and pushing the lowermost package laterally from said lip, the package dropping through the space A^8 upon the shelf A^3, where it may be readily reached by the hand of the purchaser. I may place in the guideways A^5 either gum, candy, spools of thread, needles, or any articles which it is desired to vend by depositing a coin in the slots A^2 of the counter. The framework also has a cross-bar A^9, which sustains a board A^{10}, having a back board A^{12}, the board A^{10} supporting a suitable cash-box A^{13}, retained on the shelf A^{10} by a front plate A^{14}, permanently secured to the apparatus. To gain access to the guideways, I may remove a panel A^{15}, and to gain access to the cash-drawer I may turn up the counter A′ about the hinges $A'^{\times}$.

The apparatus referred to consists, essentially, of a frame a', composed of end and side pieces, said frame having mounted upon it a cross-bar $a^{3\times}$ by suitable screws a^2, one of which is shown in Fig. 2, said cross-bar being provided with upright substantially parallel projections a^3, having a space a^4 between them to receive the coin b. (Shown by dotted lines in Figs. 3 and 4.) The cross-bar $a^{3\times}$ has extended below it at one side of each of said passage-ways a^4 a suitable guide a^5, said guides presenting a surface which contacts with one side of each coin as the latter, descending in the slot a^4, comes into position between the lateral projections 2, extended from the coin-carrier, the guide forming a continuation for one side of the slot a^4 until said coin is firmly seated on said projections. The bar $a^{3\times}$ has suitable upright posts $a'^{\times}$, which receive screws $a^{2\times}$, extended through a throat-bar a^7, having projected upwardly therefrom suitable coin-throats a^{10} to receive the coins inserted in the slots A^2 in the counter A′.

The frame a' is provided with a series of alined holes in which are entered a series or any desired number of coin-carriers b', made as tubes for the sake of lightness. The coin-carriers are herein represented as united by a cross-rod b^2 in order that all of them may be moved simultaneously by one actuator b^3, (shown as a long rod provided at its inner end with a head or flange b^4 behind the frame a',) the other end of said rod extending outwardly through the front plate A^{14}, that it may be reached by a person desiring to operate the apparatus by pushing the said tube inwardly. This tube is surrounded between the cross-rod b^2 and one side of the frame a' by a suitable spring b^5, which acts to return and retain the coin-carrier in its normal or coin-receiving position. A coin of the character required to secure the delivery of a package is put through a slot A^2 and entering the throat a^{10} travels by gravity downwardly until it enters a slot a^4 and drops therethrough between the projections 2 of the coin-carrier, that side of the coin farthest from the coin-carrier being acted upon by the guide a^5. If the coin is too small in diameter, it will pass between the projections 2 and enter the cash-box and the movement of the coin-carrier will not cause a package to be delivered. A coin having been lodged upon the projections 2 of the coin-carrier, the operator will push the actuator b^3 in the direction of the arrow, Fig. 1, causing the edge of the coin b to meet a projection 3, extended laterally from the package-delivering device a, herein represented as a metallic rod of loop form free to be slid in suitable holes in the frame a' only by contact of a coin with a projection 3. Said delivering device is moved backwardly into its normal position by a suitable spring 5, shown as surrounding said device. The coin, meeting the projection, acts as a coupling and causes the movement forwardly of the package-delivering device in unison with the coin-carrier, and said device is projected through the frame a' far enough to meet the edge of the undermost package of the series to be delivered and push it from its sustaining-ear A^6. The projection 3 from the package-delivering device is so located with relation to the projections 2 of the coin-carrier that the latter may be moved with the coin for a distance nearly equal to the diameter of the coin b^4 before the coin meets the projection 3, so that before a package is delivered by action against it of the package-delivering device the coin shall have passed the free end of a spring-held pick-off d, to be described, and consequently such location of the projection 3 with relation to the projections 2 insures that but one package can be delivered by the use of one coin. The pick-off d has a heel 6, (see Fig. 5,) and its shank is acted upon by a spring 7, which acts normally to keep the pick-off pressed toward the coin-carrier and to act against the outer side of the coin b as it is moved beyond the guide a^5. A coin having moved the package-delivering device to deliver a package the spring b^5 operates to return the coin-carrier, and the rear side of the coin held by said carrier meets the end of the pick-off and the latter enters between said coin and the carrier and discharges the coin laterally, that it may drop into the cash-box. The coin-carriers are provided each with a pin d', extended through a suitable slot in a guard-plate 10, shown as hinged or pivoted at 12 to the frame a'. Each pin d' enters loosely a carriage 13, the lower side of

which contacts with said plate. Each carriage has a stud 14, on which is pivoted a clearer 15. The lower end of the carrier at the right, Fig. 1, is held yieldingly against a stop 16 of the carriage by a spring 17, surrounding said stud 14 and connected at one end therewith and with said carriage. This spring permits the clearer to yield as the actuator is moved in the direction to move a package-delivering device to deliver a package, provided said clearer should meet any fixed or immovable obstruction, as a nail, inserted in the throat a^{10}.

I have connected with the frame a^7 by suitable screws 18 magnets d^2, the poles of said magnets being located in the path of the coin dropped into the coin-throat, and if the coin is of non-magnetic material (the material of which all genuine coins are made) the magnet performs no function; but should a false coin of iron or other magnetic material be dropped into the throat then the magnet will engage and arrest the descent of the false coin. A false coin having been inserted a subsequent movement of the coin-carrier will cause the clearer, made of non-magnetic material, to act upon said coin to detach it from the magnet and the coin will fall through the slot a^4 directly into the cash-box, for the projections 2 will not then be in position to receive between them the false coin. A coin smaller than the one which it is adapted shall couple a coin-carrier with a package-delivering device will either be arrested in its movement down the throat a^{10} or will drop between the projections 2 and not be retained thereby. In case the thinner and smaller piece, not the proper one to be used, should become lodged in the throat a^4, the clearer in its forward movement, as described, will move the thinner coin or device substituted for it downwardly and forwardly, and at the same time the projections 2 will be moved, so that as the said thin piece of material enters the throat a^4 it may drop into the cash-box and not be arrested by the projections 2. The clearer will also act to dislodge any material inserted in the guideway of the throat a^{10}, leading to the passage a^4, such as paper, and owing to the inclination of its acting edge (see Fig. 3) will force the same upwardly from the slot, the material passing over the top of the frame a^7, where it will not obstruct the throat a^{10}.

Fig. 3 shows a penny which has been inserted in the throat a^{10} and is supposed to be rolling downwardly into the slot a^4 between the fingers a^3. The depending edge 19 of the frame a^7 acts as a stop or arresting means to prevent the penny moving too far. I have provided the inner edge of the bar $a^{3\times}$ with a pressure-plate 20, (shown best in Fig. 3,) it acting upon the upper edge of a penny or other coin properly lodged between the projections 2 of the coin-carrier and preventing the same from slipping upwardly or rebounding with relation to said projections before the penny comes in contact with the projection 3 of the package-delivering device. The pressure-plate coacting with the pick-off permits the coin-carrier supplied with the proper coin to have imparted to it a movement and take with it the package-delivering device for a distance less than that required to effect the discharge of a package without discharging the penny, provided the carrier was being used by a child who failed to make a complete inward movement and the spring b^5 acted to return the coin-carrier into its normal position. In case of an accident of this kind the penny as it is moving backwardly by the coin-carrier will meet the heel of the pick-off, and the further movement of the coin-carrier into its normal position will be arrested, and to discharge the penny the coin-carrier may be again moved forwardly. The presser and the heel on the pick-off necessitate that the coin-carrier shall have a full forward movement sufficient to discharge a package before the coin-carrier can be returned, and in this movement the penny is carried beyond the extremity of the pick-off.

The guard-plate 10 is interposed between the throat a^{10} and the package-delivering device a, so that a person may not insert a wire or other device through the slot of the throat and move the delivering device and cause a package to be discharged from the guideway containing it.

I have shown a plurality of coin-carriers and package-delivering devices operable by a common actuator; but this invention is not limited to moving the plurality of coin-carriers by a single actuator.

The projections on the coin-carriers may be located at various distances apart according to the particular coin which it is intended only shall operate a coin-carrier, and I may make one coin-carrier to be operated, say, by a penny, another by a nickel, and another by a ten-cent piece, the guideways having packages to be delivered equal in value to the amount of the coin, or all the coin-carriers may be made operable by a like coin, and the person desiring to make a purchase may deposit a coin in that one of the throat-pieces located opposite the particular thing which the purchaser desires, and only that thing will be delivered if the coin is of the kind required to secure the delivery of the article or package.

The spring 5 surrounding the package-delivering device is important, as it prevents said device from being thrown forward, as it might do by momentum of the push-rod b', it being moved rapidly for a number of times in succession. The spring 5 further acts to keep the projection 3 of the delivering device against the edge of a coin sustained by the coin-carrier, thus keeping the coin seated firmly in operative position.

If a penny or anything which can enter between the walls 10^a of the raceway should be inserted after the clearer 15 has been moved toward the packages to be delivered, such

penny or thing will drop through the slot 36 and enter the cash-box, thus preventing the machine from being clogged.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a vending-machine, a coin-carrier comprising a rod having projections extended therefrom substantially at right angles to the longitudinal axis of said rod to sustain the edge of a coin at two points, a plate having a slot and provided with a depending guide independent of said coin-carrier to act on one side of a coin as it passes through said throat to enter the space between and to be sustained by said projections.

2. In a vending-machine, a coin-carrier comprising a rod having projections extended therefrom substantially at right angles to the longitudinal axis of said rod to sustain the edge of a coin at two points, a plate having a slot and provided with a depending stationary guide to act on one side of a coin as it passes through said throat to enter the space between and to be sustained by said projections, a package-holder containing packages to be delivered, a package-delivering device having a projection located above the projections of the coin-carrier whereby as the coin-carrier is moved toward the package-holder the coin sustained by the projections of said carrier will move the package-delivering device in unison with it to meet and deliver a package.

3. In a vending-machine, a coin-receiving throat, a coin-carrier composed of a sliding rod having lateral coin-supporting projections extended from one side thereof substantially at right angles to the longitudinal axis of the coin-carrier and being separated for a distance less than the diameter of the coin which must be used to effect the delivery of a package, combined with a stationary guide located at one side said coin-carrier and acting upon one side of the coin entering the space between said projections, and means to actuate said coin-carrier to slide one face of the coin along the face of the guide.

4. In a vending-machine, a coin-receiving throat, a coin-carrier composed of a sliding rod having lateral coin-supporting projections extended from one side thereof substantially at right angles to the longitudinal axis of the coin-carrier and being separated for a distance less than the diameter of the coin which must be used to effect the delivery of a package, combined with a stationary guide located at one side said coin-carrier and acting upon one side of the coin entering the space between said projections, means to actuate said coin-carrier to slide one face of the coin along the face of the guide, a package-delivering device having a projection to be engaged by the coin sustained by the coin-carrier, and a spring-controlled pick-off acting upon the face of the coin which was in contact with the guide to thereby aid in maintaining the coin in operative position in the coin-carrier.

5. In a vending-machine, a coin-receptacle, a coin-throat, a magnet coacting therewith to engage and arrest a false coin of magnetic material, a coin-carrier provided with projections extended therefrom substantially at right angles to the longitudinal axis of said carrier to sustain a good coin, and a clearer, said clearer being located sufficiently behind the projection of said carrier to leave a space between said projections and carrier through which the false coin detached by said clearer may drop into the coin-receptacle.

6. In a vending-machine, a coin-carrier having lateral projections to sustain the edges of a coin at two points, a coin-throat to receive a coin and guide the same into position between said projections, a magnet located in the direction of travel of the coin to engage and arrest a false coin of magnetic material, a clearer operatively connected with said coin-carrier, and means to actuate the coin-carrier and the clearer, the clearer acting upon the edge of a false coin held by the magnet and detaching it from the magnet that it may continue its movement through the throat, the projections of the coin-carrier having been moved out of the range of the descent of the false coin so that the coin is not arrested by the coin-carrier.

7. In a vending-machine, a coin-carrier having extended from it lateral projections separated for a distance less than the diameter of the coin required to enable a package to be delivered, a spring-controlled coin pick-off located at one side of the coin-carrier and kept pressed normally against one face of the moving coin as the carrier is moved to carry the coin past the position of the pick-off and to effect the discharge of a package.

8. In a vending-machine, a coin-carrier having lateral projections to sustain a coin by its edge, a package-delivering device located above said coin-carrier and having a projection to be acted upon by the edge of said coin, a presser to act upon the upper edge of said coin and keep the same seated on said projections, a spring-controlled pick-off located at one side of said coin-carrier and having a heel to prevent the coin-carrier from returning to its normal position until said carrier has been moved sufficiently far to cause the delivery of a package.

9. In a vending-machine, a coin-carrier having lateral projections between its ends extended therefrom at substantially right angles to the longitudinal axis of said carrier to sustain a coin of the proper diameter, combined with a coin-throat having a guide cooperating therewith to guide the coin as it is being seated on the projections of the coin-carrier.

10. In a vending-machine, a coin-carrier having projections to sustain the edge of a coin of proper diameter, a spring-controlled

coin pick-off acting in a yielding manner upon the exposed side of the coin being moved by the coin-carrier, the spring moving the free end of the coin pick-off into a position across the path of movement of the coin as the coin passes the free end of the pick-off whereby as the coin-carrier is retracted the coin pick-off meets the edge of the coin and discharges it from said projections.

11. In a vending-machine, a coin-carrier having projections to sustain a coin of the proper diameter, an inclined throat to receive a coin and lead it into position between said projections, a yielding spring-sustained clearer located in said throat and having an inclined acting edge whereby said edge meeting an obstruction stuffed into the slot may remove the same.

12. In a vending-machine, a coin-carrier having projections to sustain a coin, a throat having an inclined guideway to receive a coin and conduct it between the projections of the coin-carrier, a yielding clearer carried by said coin-carrier and movable in said throat as the coin-carrier is moved, whereby the breaking of the clearer may be obviated in case of a fixed obstruction placed in said throat.

13. In a vending-machine, a coin-carrier having lateral projections between its ends to sustain and carry a coin, a separate slotted throat to receive and direct coin in position between the projections of the coin-carrier, a package-delivering device sustained independently of said carrier and located between said coin-carrier and said throat and adapted to be moved by a coin sustained by the coin-carrier, combined with a guard-plate interposed between said throat and said package-delivering device to prevent the movement of the package-delivering device by an instrument inserted through the slot in said throat.

14. In a vending-machine, a sliding coin-carrier having extended from its side between its ends projections separated for a distance less than the diameter of the coin required, to enable a package to be delivered, an independently-sustained package-delivering device surrounded by a spring and having a projection adapted to be acted upon by the coin sustained by the coin-carrier, said coin causing the package-delivering device to be moved in unison with the coin-carrier.

15. In a vending-machine, a frame, a series of connected coin-carriers, and an actuating device to slide the series of coin-carriers in said frame, combined with a series of package-delivering devices sustained in said frame above the coin-carrier, a spring for each of said devices to normally retract it from its operative position, each delivering device being adapted to be moved independently of the other by a coin in the coin-carrier below it.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ORRELL ASHTON.

Witnesses:
FRANK H. STETSON,
SAMUEL ASHTON.