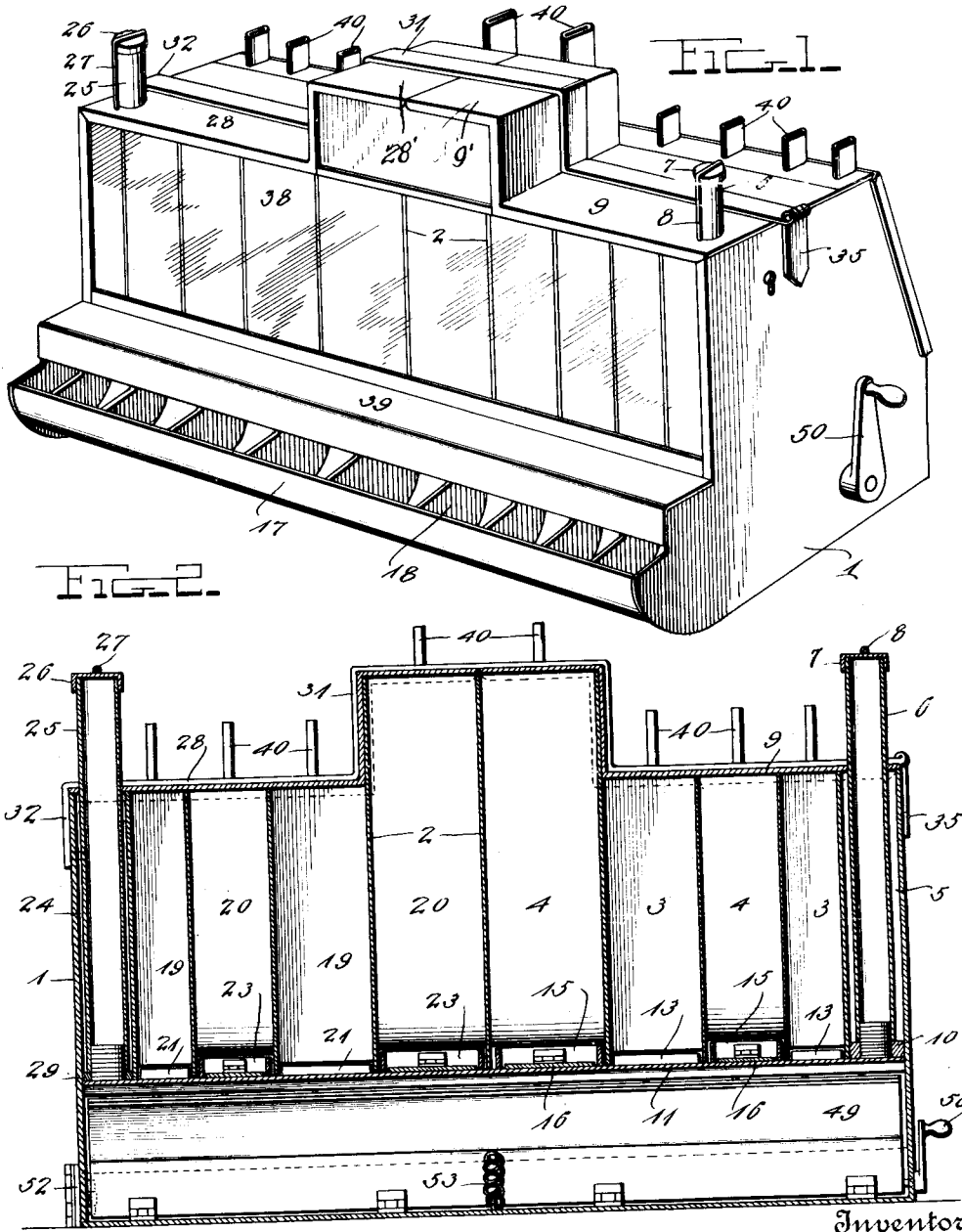


F. A. JOHNSON.
VENDING MACHINE.
APPLICATION FILED AUG. 5, 1912.

Patented July 8, 1913.

4 SHEETS—SHEET 1.

1,066,621.



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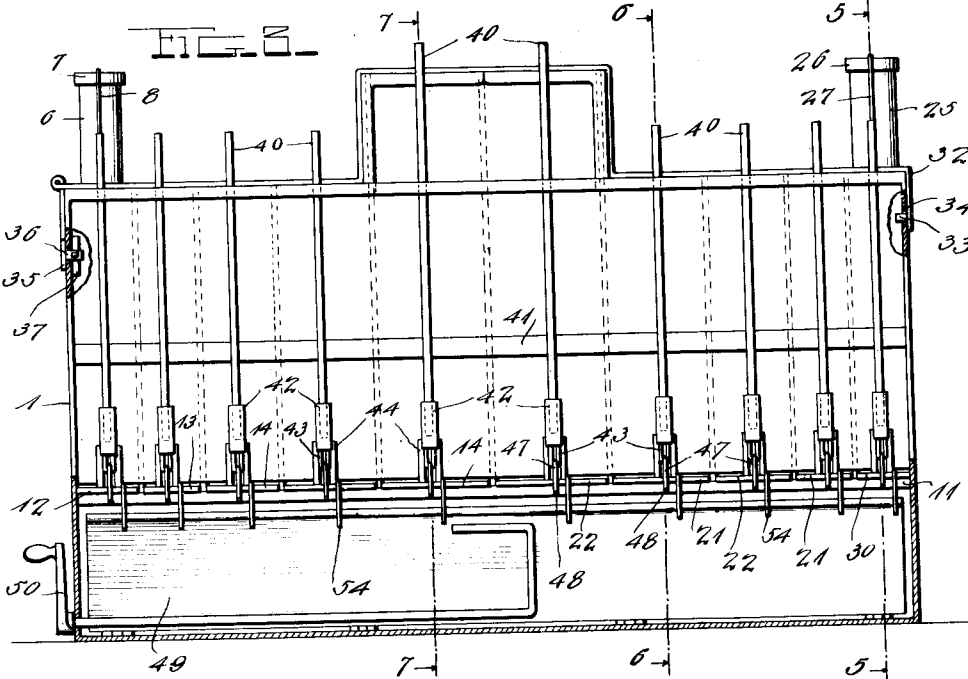
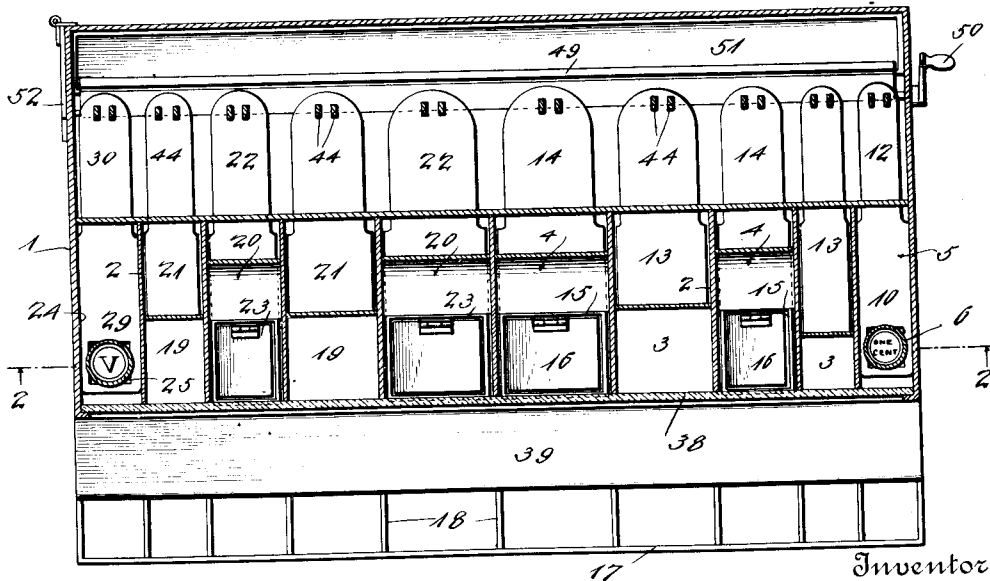
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4 SHEETS-SHEET 2.



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Fig. 4-

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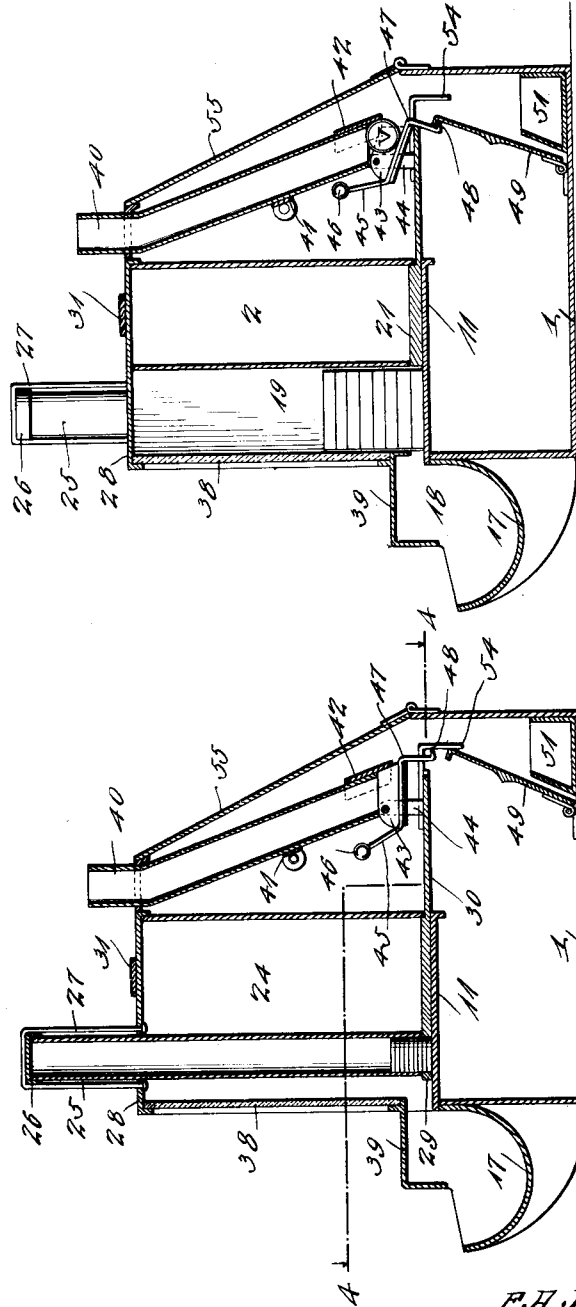
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FIG. 5-

FIG. 5-



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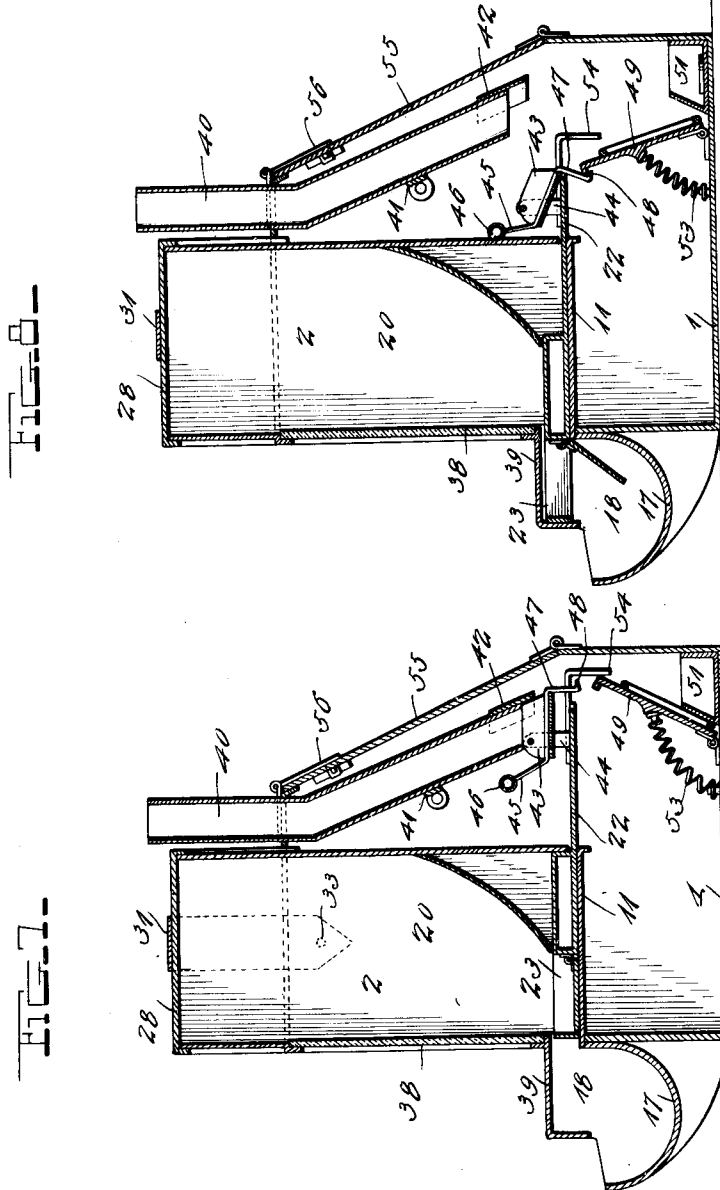
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UNITED STATES PATENT OFFICE.

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VENDING-MACHINE.

1,066,621.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANK A. JOHNSON, a citizen of the United States, residing at Danville, in the county of Vermilion and State of Illinois, have invented certain new and useful Improvements in Vending-Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in vending machines.

One object of the invention is to provide the machine with delivery mechanisms of a variety of types so that the operator according to his choice may be served with goods of different kinds, in bulk or in packages, or at different prices, or may be served with small change for a larger coin. To this extent and with this understanding I use the term "vending machine" throughout this specification because it vends or delivers to the operator some article (which may be a coin) in exchange for his deposit of a coin representing the proper price.

Another object is to improve and to simplify the coin-controlled trip mechanism whereby the deposit of a proper coin connects the operating mechanism with the proper delivering mechanism so that the latter will be actuated to serve the operator with what he desires.

A further object is to provide a vending machine of this character which will be simple, strong, durable and inexpensive in construction, efficient and reliable in operation and well adapted to the purpose for which it is designed.

With these and other objects in view, the invention consists of certain novel features of construction, and the combination and arrangement of parts as will be more fully described and claimed.

Figure 1 is a perspective view of my improved vending mechanism; Fig. 2 is a vertical longitudinal section on line 2—2 of Fig. 4. Fig. 3 is a rear view of the machine with the back cover plate removed; Fig. 4 is a horizontal sectional view on the line 4—4 of Fig. 5; Fig. 5 is a vertical cross section through the coin changing mechanism at one end of the machine taken on the line 5—5 of Fig. 3; Fig. 6 is a similar view through one of the goods holding compartments of the

machine and the vending mechanism thereof taken on the line 6—6 of Fig. 3; Fig. 7 is a similar view through another goods holding compartment showing a different form of goods delivering mechanism taken on the line 7—7 of Fig. 3; Fig. 8 is a similar view of the parts shown in Fig. 7 illustrating the delivering mechanism in a projected or operative position.

Referring more particularly to the drawings, 1 denotes the casing of my improved vending mechanism, said casing having its main portion divided by a plurality of partitions 2 to form a series of goods holding compartments. In the present embodiment of the invention the casing is shown as being arranged for holding different kinds and different priced goods. With this end in view one half of the casing has arranged therein compartments 3 and 4 which are intended to contain penny goods. The compartments 3 are intended to contain goods which are delivered or vended in single pieces or packages, while the compartments 4 are designed to contain loose goods such as small candies or the like, to be measured and vended in bulk.

The compartments 3 for vending the single pieces of goods are of rectangular form and extend straight down from the top of the casing to the discharge or delivery mechanism forming the bottom of the compartments. The compartments 4 for vending candy or goods in bulk are preferably considerably deeper than the compartments 3 and have the lower ends of their rear walls curved forwardly and terminating at the rear edges of the measuring and discharging or delivering mechanism, hereinafter described.

At the outer end of the series of compartments containing the penny goods just described is a compartment 5 adapted to contain a money changing mechanism for exchanging pennies for nickels. The money changing mechanism comprises a cylindrical tube 6 the diameter of which corresponds to the diameter of a penny and which is disposed in the compartment 6 and projects a considerable distance above the top of the machine as shown. The upper end of the tube 6 is closed by a cap 7 which is secured by rods 8 with the cover section 9 in this end of the casing.

In the lower end of the compartment 5

below the tube 6 is a coin delivering or discharging device in the form of a rectangular frame or bottomless tray 10 which is slidably mounted on shelf 11 extending throughout the entire length of the casing and forming a support for the various other goods and coin delivering mechanism hereinafter described. The frame or tray 10 is of sufficient depth to contain exactly five pennies, and said tray is connected with the forward end of a plunger 12 which projects back beyond the lower end of the compartment 5 and into the rear portion of the casing. The inner end of the rear end of the plunger has arranged thereon the coin receiving mechanism adapted to receive the nickel or coin to be exchanged for the pennies and which forms part of the delivering or discharging mechanism of the latter.

The goods delivering and discharging mechanism for the compartments 3 which contain the goods to be delivered in single pieces or packages comprises plungers 13 which are slidably engaged with the shelf 11 and are adapted to be projected and retracted across the lower ends of the compartments 3, thus projecting or forcing out the lowermost piece or package of the goods contained in the compartments. The projecting and retracting mechanism for the plungers 13 will be hereinafter more fully described.

The discharging or delivering mechanism for the compartments 4 which contain candy or goods to be delivered in bulk comprises plungers 14 which are slidably engaged with the shelf 11 and have on their outer ends measuring trays 15 provided with dumping bottoms 16 which are hingedly connected at their inner edges to the outer ends of the plungers whereby when the latter are operated to project the trays forwardly beyond the front side of the casing, will swing downwardly thereby depositing or discharging the contents thereof into a trough 17 secured to the front side of the casing and having a plurality of partitions 18 whereby the trough is divided into a series of receptacles one of which is disposed opposite each of the compartments of the machine as shown. When the plungers 14 are retracted the bottom of the trays will be brought into engagement with the forward edges of the shelf 11 and will thus be closed, so that when the tray is drawn back into the compartment the same will again be filled by the goods contained in the compartment.

In the end of the casing opposite to that having the compartments containing the penny goods are arranged compartments 19 and 20 corresponding to the compartments 3 and 4 in the opposite end of the casing, said compartments 19 and 20 however, being provided to contain goods costing five cents or to be vended upon the deposit of a

nickel in the proper coin receiving mechanism of the compartments. The compartments 19 which contain the single pieces or packages of goods are provided with ejecting or delivering plungers 21 which correspond to and are operated in the same manner as the plungers 13 of the compartments 3, while the compartments 20 are provided with plungers 22 having measuring trays 23, said plungers and trays corresponding to the plungers 14 and trays 15 of the compartments 4 hereinbefore described.

At the end of the casing containing the compartments 19 and 20 is arranged a coin changing compartment 24 having therein a coin holding tube 25 adapted to contain nickels and which is constructed and arranged in a similar manner to the tube 6 at the opposite end of the casing. The tube 25 is closed on its upper end by a cap 26 which is held in position by fastening rods 27 having their lower ends secured to a cover section 28 which corresponds to the cover section 9 and closes the top of this end of the casing. The tube 25 is provided with a coin delivering mechanism comprising a frame or bottomless tray 29 which is slidably engaged with the shelf 11 beneath the lower end of the tube and is of the proper depth for holding two nickels at a time and which is provided with a projecting plunger 30 and adapted to be actuated through the medium of a dime deposited into a plunger projecting mechanism hereinafter described. The plunger 30 when thus operated will project the tray beyond the outer or front side of the casing until the bottom of the tray is uncovered by its disengagement with the shelf 11 thus permitting the nickels carried by the tray to drop through into the receptacle of the trough 17 provided opposite to the compartment 24. By this arrangement it will be seen that a dime may be exchanged for two nickels at this end of the machine, while at the opposite end a nickel may be exchanged for five pennies by the coin exchanging mechanism at this end of the casing, thus enabling the purchaser to obtain the proper coin for operating the vending mechanism for the desired kind or price of goods.

It will be noted that the two central compartments of the casing both of which contain goods in bulk are larger than the other compartments and extend a considerable distance above the top of the casing thereby further increasing the capacity of these compartments. The upwardly projecting portion of the central compartments forms a dome above the center of the casing and the top of the dome thus formed is closed by the offset or right angularly formed inner ends 9' and 28' of the cover sections 9 and 28, the inner ends of said sections coming together into close engagement over the

center of the dome as shown. The cover sections 9 and 28 are securely fastened in position on top of the compartments by a locking bar 31 arranged across the top of the sections and having its central portion offset to fit around the dome formed by the upper ends of the central compartments of the casing. One end of the locking bar 31 is turned downwardly at right angles as at 32 and engages one end of the casing said end of the bar having thereon an inwardly projecting locking stud 33 which is adapted to be projected into a locking aperture 34 in this end of the casing. On the opposite end of the bar 31 is hingedly connected a locking plate 35 having an inwardly extending keeper 36 which is adapted to be engaged with a suitable lock 37 arranged in this end of the casing whereby the bar 21 is locked in position for holding the cover sections in place on the casing. The front of the casing opposite the goods holding compartments is covered by a heavy glass plate 38 which forms the outer wall of said compartments and which is secured in the front side of the casing in any suitable manner.

Above the trough 17 and spaced a suitable distance therefrom is a forwardly projecting shield or guard strip 39 beneath which are formed the openings through which the goods are delivered or discharged from the compartments into the various receptacles of the trough.

In the rear portion of the casing immediately behind each of the goods holding compartments and money changing compartments is arranged a coin conducting chute 40 the upper end of which projects through and extends a suitable distance above the top of the casing as shown. The lower portions of the chutes 40 are braced and supported by a brace bar 41 arranged across the casing as shown. On the lower ends of the chutes are arranged guides 42 the purpose of which will be hereinafter described. Each of the goods delivering plungers is provided with a coin controlled operating mechanism whereby, until the proper coin has been deposited in the chute of the compartment containing the goods desired this plunger will not be operated. The coin controlled operating mechanism for all of the plungers is the same and said mechanism comprises a substantially U-shaped coin receiving member or cup 43 which is pivotally mounted between a pair of upwardly projecting bearing lugs 44 secured to the upper side of the plungers. The members 43 are provided on their inner ends with upwardly and inwardly projecting arms 45 having on their upper ends operating weights 46 which are provided to restore the members 43 to their normal positions for being swung downwardly by the weight of a coin delivered thereto by the

chutes 40. The lower ends of the chutes 40 are disposed immediately above the members 43 and the outer ends of the members are normally swung up into the guides 42 on the lower ends of the chute by the weights 46 so that when a coin is dropped into a chute the coin will be guided into the outer end of the members, overbalance the weight 46, and swing said outer end downwardly against the upper side of the plunger. The outer ends of the members 43 have fixed thereon depending catch fingers 47 the lower ends of which are bent outwardly to form hooks or lugs 48 which are beveled on the lower side of their outer ends as shown. When the members 43 are swung downwardly by the weight of the coins deposited therein the lower ends of the fingers 47 and the lugs 48 thereon will be brought into the path of movement of a plunger projecting plate or bar 49 which is hinged at its lower edge to the bottom of the casing and is provided on one end with a crank handle 50 which projects upwardly adjacent to the outer side of one end of the casing and is adapted to be grasped to swing the plate or bar 49 forwardly. The plate or bar when thus swung forwardly by the handle 50 will catch or engage in all the fingers which have been swung downwardly by the weight of coins in the members 43 to which the fingers are attached. The continued movement of the bar 49 when thus engaged with the finger will project the plunger to which this finger is attached thereby actuating the goods discharging mechanism carried by the plunger and discharging the goods directly from the compartment with which the plunger is engaged. When the coin has been delivered to the coin cup or member 43 by the chute above the same and said member thus swung downwardly the coin will be held in engagement with the member by the guard 42 on the chute until the plunger and the member thereon have been started on their forward movement by the plunger operating bar 49 whereupon the coin will roll out of the rear end of the member 43 and will drop into a suitable coin box or receptacle 51 arranged in the rear portion of the casing to receive the coins. The coin receiving box or receptacle is preferably in the form of a drawer adapted to be removed from the casing through a suitable opening arranged in one end thereof and which is normally closed by a suitable cover plate or door 52 as shown. After the plungers have been projected by the bar 49 as hereinbefore described and the handle 50 released, said bar 49 will be instantly swung back to its normal position by a coiled spring 53 arranged in the bottom of the casing and engaged with said bar. When the bar is thus swung backwardly the same is engaged with right angularly formed plunger retracting arms

54 secured to the rear ends of the plungers and projecting downwardly in the path of the rearward movement of the bar 49 as shown. As soon as the coins roll out of the members 43, the weights 46 thereon will swing said members back to their normal positions so that when the plungers are retracted in the manner described the parts will be in position for receiving another coin deposited into the chute whereupon the vending operation herein described may be repeated.

The upper portion of the back of the casing is preferably closed by a hinged back plate 55 which is adapted to be swung back to an open position to provide access to the coin chutes and coin controlled mechanism of the plungers and which is adapted to be locked in closed position by a locking plate 56 secured to the top of the casing as shown.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention as claimed.

Having thus described my invention, what I claim is;

1. In a machine of the class described, the combination with an upright compartment having an outlet at its lower end, a plunger movable across its bottom and out said outlet, a retracting arm depending from the inner end of the plunger, a coin chute, a coin cup pivoted on the plunger and standing normally beneath said chute, a weight for holding it normally horizontal, and a pendant finger passing through said plunger forward of said arm; of operating mechanism comprising a bar standing beneath and extending across said plunger forward of its arm, and manually operable means for moving said bar.

2. In a machine of the class described, the combination with an upright compartment having an outlet at its lower end, a plunger movable across its bottom and out said outlet, a retracting arm depending from the inner end of the plunger, a coin chute having a guide at the rear side of its outlet end, a coin cup pivoted on the plunger and standing normally beneath said chute, a weight at the forward end of said cup holding the latter in position to coact with said guide and retain a coin, and a pendant finger on the cup projecting through said plunger forward of said arm; of operating mechanism comprising a bar standing beneath and extending across said plunger forward of its arm, and manually operable means for moving said bar.

3. In a machine of the class described, the combination with an upright compartment having an outlet at its lower end, a plunger movable across its bottom and out said outlet, a retracting arm depending from the inner end of the plunger, a coin chute having a guide at the rear side of its outlet end, a coin cup pivoted on the plunger and standing normally beneath said chute, a weight at the forward end of said cup holding the latter in position to coact with said guide and retain a coin, and a pendant finger passing through said plunger forward of said arm; of a casing inclosing said compartment and having a trough forward of and beneath its outlet and a coin receptacle rearward of and beneath said plunger, a plate hinged at its lower edge in the bottom of said casing with its upper edge standing between said arm and finger, and a crank for permitting the swinging of said plate by hand.

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

FRANK A. JOHNSON.

Witnesses:

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ARTHUR D. MALCOM.