

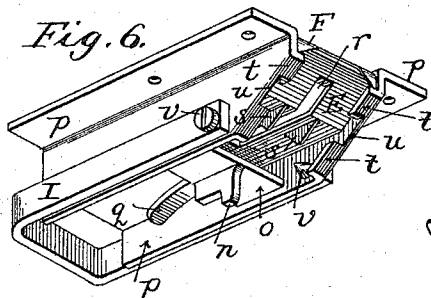
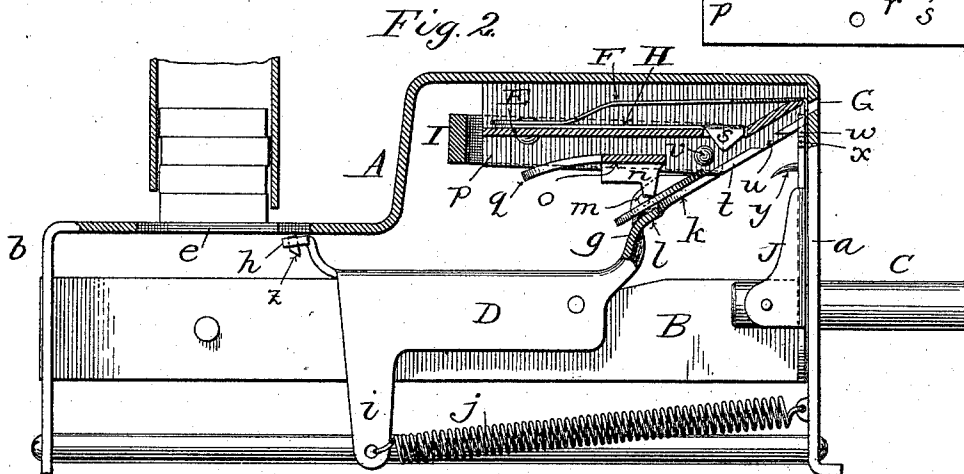
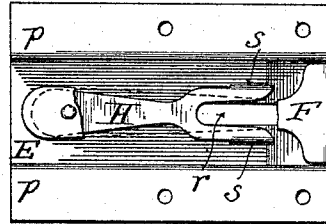
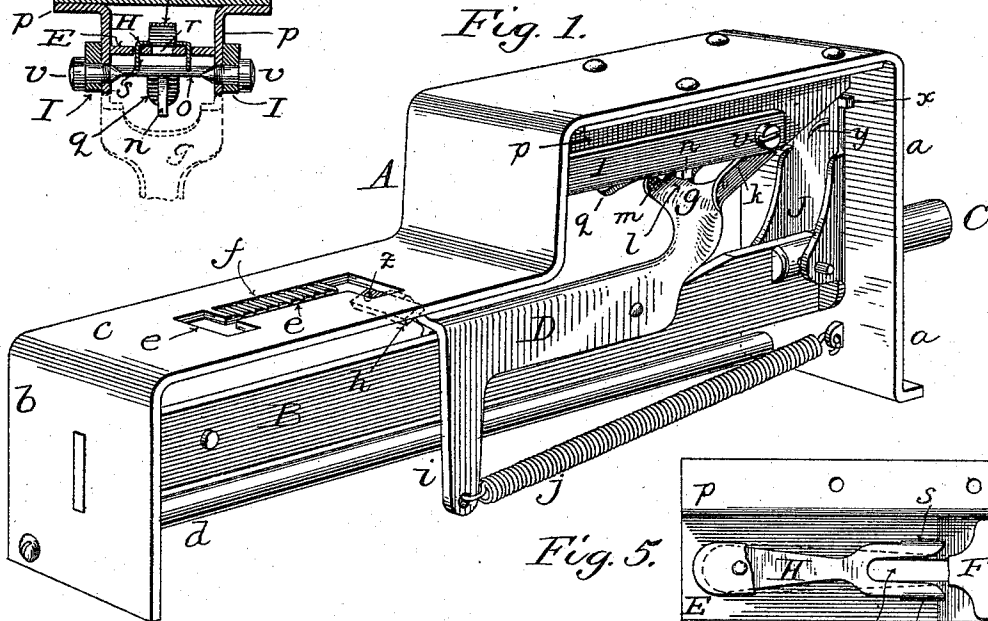
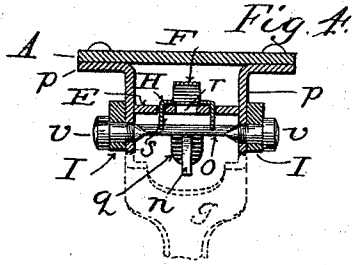
(No Model.)

2 Sheets—Sheet 1.

J. A. WILLIAMS.
VENDING MACHINE.

No. 580,478.

Patented Apr. 13, 1897.



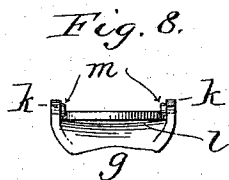
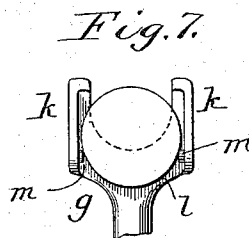
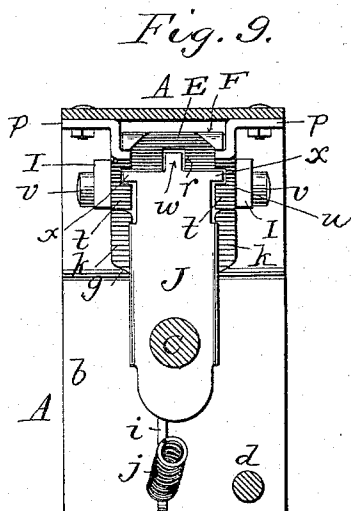
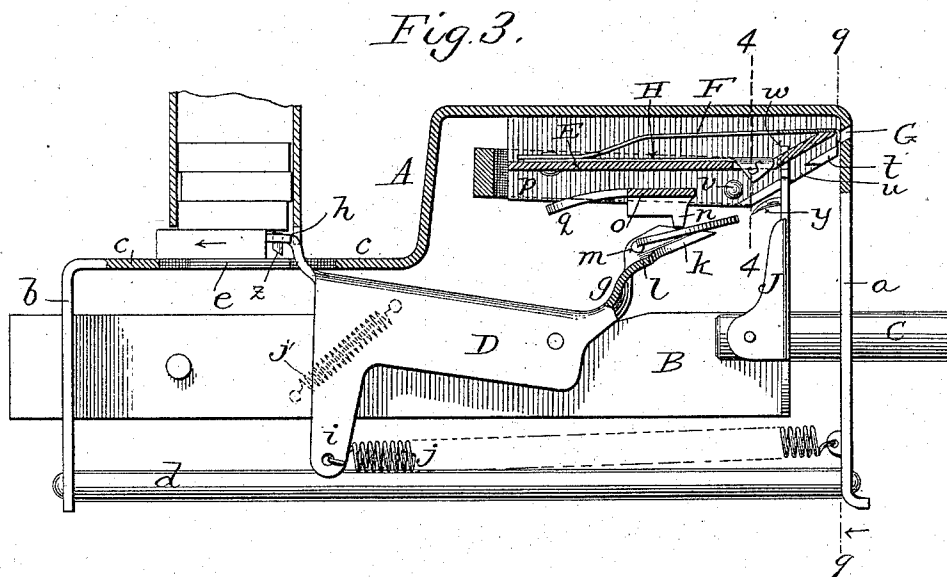
Witnesses
Samuel Hollingsworth
C. P. Bull.

Inventor:
John A. Williams,
by Dodge & Sons,
Attorneys.

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Witnesses:

Simon P. Hollingsworth
W. B. Burdine

Inventor:

John A. Williams,
by Dodger & Sons,
Attys.

UNITED STATES PATENT OFFICE.

JOHN A. WILLIAMS, OF BROOKLYN, NEW YORK.

VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 580,478, dated April 13, 1897.

Application filed November 30, 1895. Serial No. 570,653. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. WILLIAMS, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Vending-Machines, of which the following is a specification.

My invention relates to coin-controlled apparatus, and is designed as an improvement upon that for which Letters Patent of the United States were issued to me bearing date December 4, 1894, and numbered 530,148.

In the drawings, Figure 1 is a perspective view of the operative mechanism of my improved machine; Figs. 2 and 3, vertical longitudinal sectional views showing the parts in different positions; Fig. 4, a transverse section through the coin-detector on the line 4 4 of Fig. 3; Fig. 5, a top plan view of the coin-detector with the cut-off arm partially broken away; Fig. 6, a perspective view of the coin-detector and coin-chute, looking from below; Figs. 7 and 8, detail views of the coin-holder, and Fig. 9 a transverse vertical sectional view on the line 9 9 of Fig. 3.

The main frame of the machine comprises, preferably, a single piece of metal A, cut and bent to form the front and rear walls *a b* and the horizontal table *c*, as shown in Figs. 1, 2, and 3, the front and rear walls being connected by a rod or brace *d*. In the table *c* there is an elongated slot *e*, which is widened or enlarged at both ends, as shown in Fig. 1, and alongside the body of the slot is a series of notches or teeth *f*.

B indicates the actuating-slide, seated at its ends in suitable holes or slots formed in the front and rear walls, said slide being provided with a push rod or stem C, which projects normally beyond the front wall *a*. Pivoted to the actuating-slide is a lever D, which is provided at its forward end with the coin-holder *g* and at its rear end with an arm *h*, which when the lever is tipped rises vertically through the slot in the table *c*, as shown in Fig. 3. Normally this arm *h* rests below the table, but directly in line with the slot therein. Arm *h* is elongated laterally to conform to the enlarged ends of the slot, while its shank is of a size to pass freely along the main part of the slot, said arm being provided

with a pin *z* to engage the notches or teeth *f*. Lever D is further provided with a depending arm *i*, to which one end of a coiled spring *j* is secured, the opposite end of the spring being secured to the main frame, as shown in Figs. 1, 2, and 3, the said spring thereby serving not only to maintain the lever in its proper position normally, but also acting as a resistance, which must be overcome in order to actuate the slide B. If desired, an additional spring *j'* may be employed to hold the lever in proper position upon the slide, as indicated by dotted lines in Fig. 3.

The coin-holder *g* comprises merely two arms *k k*, separated from each other a distance slightly in excess of the diameter of the coin and connected at their lower ends by a cross bar or plate *l*, and two pins *m m*, which project inward beyond the inner faces of the arms *k k*, near their lower ends at a slight distance above the upper face of the cross-bar, as shown in detail in Figs. 7 and 8. The pins are set at such a distance apart as to hold a coin of proper diameter, as shown in Fig. 7, and they are located at such a distance above the flat upper face of the cross-bar as that a coin of less thickness than that for which the machine is built will slide down beneath said pins and off the coin-holder.

The plate or cross-bar is cut away at the upper end in order that the holder *g* may pass by the coin-engaging lug *n* in case no coin should be on the holder, the said lug *n* projecting downward into the path of the coin-holder, as shown in Figs. 2 and 3. This lug *n* is carried by a cross-bar *o*, Figs. 2, 3, 4, and 6, which in turn is supported by the flanged bars *p p*, secured to the main frame A. Projecting from the rear face of the cross-bar *o* is a tail or extension *q*, Figs. 2, 3, 4, and 6, which is for a purpose presently explained. Secured to the bars *p p* is a plate E, whose front wall is inclined upward and extends nearly to the front wall of the main frame, the said plate being slotted longitudinally, as at *r*, Figs. 4, 5, and 6. To the upper side of plate E is attached the cut-off F, which works across the coin-slot G, substantially as in my patent before referred to. There is also secured to the top of plate E a yielding arm H, whose ends or lips *s* project through openings

in the plate, the said ends *s* being beveled or inclined on their front faces, Figs. 2, 3, and 6, so as to be substantially parallel with the flanges *t*, formed by bending the ends of the bars *p p* inward toward each other, as shown in Figs. 6 and 9. These flanges *t t*, which are cut away, as at *u*, constitute a guide to direct the coin from the coin-slot to the coin-holder, which latter when in its normal position is in line with the said flanges.

I indicates a permanent magnet which is carried by the bars *p p* and which is secured to the latter by means of screws *v v*, Figs. 2, 3, 4, and 6, which constitute the poles of the magnet, the said screws, which are pointed, projecting inward over the flanges *t t*.

Secured to the actuating-slide B is an upright arm or plate J, which is of a width to pass between the inturned flanges *t t* of bars *p p*, said arm or plate being provided with an upwardly-extending lug *w* to work in the slot *r* and with laterally-extending lugs *x x* to pass through the slots or openings *u* in the flanges *t t* to act upon the ends or lips *s* of arm I. This arm or plate J is further provided with a hook *y* on its rear face, Figs. 1, 2, and 3, for a purpose to be explained.

I will now describe the operation of the means employed for preventing the surreptitious operation of the machine.

The coin-slot G being at an angle of about thirty degrees and the cut-off F working vertically across the corners or ends of the slot, the insertion of soft disks or tokens, such as lead and cardboard, or of rough-edged tokens, such as glass, is prevented. If, however, a disk of magnetic metal, such as iron or steel, should be passed through the slot onto the coin-guides *t t*, it would be immediately attracted to and held away from the coin-holder by the magnet I, whose poles *v v* project inward over the flanges or guides *t t*. It will be noticed that the front edges of lips *s* are parallel with these guides and thus prevent a light magnetic token from being raised too high by the magnet. If after the insertion of the magnetic token the actuating-slide be pushed inward, the lug *w* of arm J will strike against the upper edge of the token held by the magnet and will force said token away from the magnet; but as the coin-holder moves with slide B and passes from beneath the magnet-poles the token when dislodged will fall into the machine behind the coin-holder. Of course, as there is nothing on the coin-holder to engage the lug *n* the coin-lever D will not be tipped or rocked. When the arm J is carried inward, as just described, the upper end thereof rides against the lips *s* and forces them back up through the plate E. If this arm H did not thus yield, it would be necessary to slot or slit the arm J. Lips *s* prevent the token or coin inserted from riding above the poles *v v* and also hold the token in such position upon the guides *t* as that the token shall be engaged at its upper

edge by the lug *w* of arm J. Otherwise the token would be jammed in the guide by the arm when the latter moves inward.

By making the poles *v v* pointed the magnet is rendered capable of attracting and lifting disks of varying diameters, whereas if the poles were straight they would interfere with the ready dislodgment of the token and would permit only a limited lifting of the token.

If by any possibility a token should pass over the magnet-poles, it would be carried by arm J onto the cross-bar *o*, whose tail or extension *q* prevents the token from falling down upon the coin-holder and thereby probably clogging the machine.

The lugs *x x*, projecting laterally from arm J and entering through the guides or flanges *t t*, completely fill up the coin-guide and prevent the insertion of anything onto the coin-holder.

If a string be attached to the coin inserted, it is liable to be broken or cut off as the arm J moves inward, but in case it should not be so destroyed it will be caught by the hook *y*, which approaches quite close to the coin upon the tipping coin-holder. By means of these various devices I have succeeded in preventing the surreptitious working of the machine.

Assuming now that the proper coin is inserted and that it is held by the coin-holder, as in Figs. 1 and 2, all the operator has to do is to push the slide inward a short distance to effect the discharge of the article to be sold. When the slide is pushed inward, the coin is brought against the lug *n* and the lever D thereby rocked, as shown in Fig. 3, the arm *h* of the lever being carried up through the outer enlarged end of slot *e* and above the top of the table *c*, so as to engage one of the packages to be sold. Continuing to push upon the slide causes the lever D to move through the main body of the slot, and in thus moving to carry rearward a package or article to be sold. If the finger should be removed from the actuating-slide, the spring *j* would tend to return the slide and lever to their normal positions, but it will be seen upon reference to Fig. 3 that the arm *h* cannot pass down through the table *c* unless said arm be at one end or the other of slot *e*. Furthermore, the instant that the spring rocks the lever and throws its arm *h* down toward the table its pin *z*, engaging the notches or teeth *f*, prevents said lever and slide from moving backward. By this means the slide and lever are held in any intermediate position in which they may be placed or left. Now by continuing to push upon the slide B the arm *h* will be carried to the end of the slot *e*, which, being enlarged at this point, permits the spring *j* to rock the lever D and carry its arm *h* down through and beneath the table *c*, and the instant this is done the same spring returns the slide and the lever to the position shown in Figs. 1 and

2. After having been raised above the table *c* and moved forward the slightest distance into the main body of the slot *e* the lever cannot return to its normal position without being moved to either end of the slot; but as the pin *z*, engaging the notches *f*, precludes backward movement the arm *h* must when once elevated be carried forward. Pin *z* is beveled on one face to permit it to ride freely over the teeth or notches *f* when moving in one direction. As the coin-holder passes beneath the lug *n* the coin is tipped or rocked upon the arms *k* of the coin-holder in the manner indicated in Fig. 3, and finally falls therefrom, but not until the T-shaped ejector-arm *h* is raised above table *c* and moved a certain distance along the slot *e*.

Having thus described my invention, what I claim is—

1. In a vending-machine, the combination of a magazine to contain articles to be sold; a table beneath said magazine provided with a slot or opening; an actuating-slide; a lever pivotally mounted upon the ejecting-slide and provided at one end with an ejecting-arm and at the other end with a coin-holder; and a fixed lug located in the path of a coin carried by the coin-holder and serving to depress said coin and holder and thereby to lift the ejector-arm through the slot in the table.

2. In combination with table *c* provided with slot *e* having enlarged ends; an actuating-slide; and a lever pivotally attached to the actuating-slide and having at one end a T-shaped ejecting-arm and at the other end a coin-holder, substantially as described and shown; whereby the ejecting-arm is enabled to rise through the opening at one end and fall through that at the other end, but is prevented from falling at any intermediate point.

3. In combination with table *c* provided with notches *f* and slot *e*; an actuating-slide; a coin-lever carried by the slide, and having an arm *h* provided with pin *z*.

4. In combination with a main frame; a plate *E* provided with slot *r*; coin-guides *t t*; actuating-slide *B*; coin-holder *g* directly attached to and movable with slide *B*; and arm

J provided with lugs *x x*, adapted to pass through the openings *u* and to close the coinway, substantially as set forth.

5. In combination with a main frame, the bars *p p*, provided with flanges *t, t*, intervening coinway or chute and openings *u*; plate *E* having an upturned end over and parallel with flanges *t t*; actuating-slide *B* provided with pivoted coin-holder *g*; and arm *J* carried by slide *B* and provided with lugs *x x*, adapted to pass through the openings *u u* and to close the coinway, substantially as described and shown.

6. In combination with a coin-guide; a magnet *I* having pointed poles *v, v*.

7. In combination with a coin-guide; a magnet; and an arm *H* provided with lips *s* projecting toward the guide in advance of the magnet-poles.

8. In combination with a coin-guide; arm *H* provided with lips *s*; an actuating-slide; and an arm *J* carried by the slide to press the lips back.

9. In combination with bars *p, p* provided with guides *t, t*; a plate *E*; yielding arm *H* carried by the plate and provided with lips *s* to project through the plate; an actuating-slide; and an arm *J* carried by the slide to act upon said lips.

10. In combination with an actuating-slide provided with a coin-lever; a cross-bar *o* provided with tail *q*; and a coin-guide, in advance of the coin-lever.

11. In a vending-machine, the combination with an actuating-slide, and with a tipping coin-holder carried thereby; an arm *J* carried by the slide and provided with a hook, adapted to move into close proximity to the coin-holder as the latter tips, and to engage a string or band inserted with the coin, substantially as set forth.

In witness whereof I hereunto set my hand in the presence of two witnesses.

JOHN A. WILLIAMS.

Witnesses:

HORACE A. DODGE,
C. C. BURDINE.