

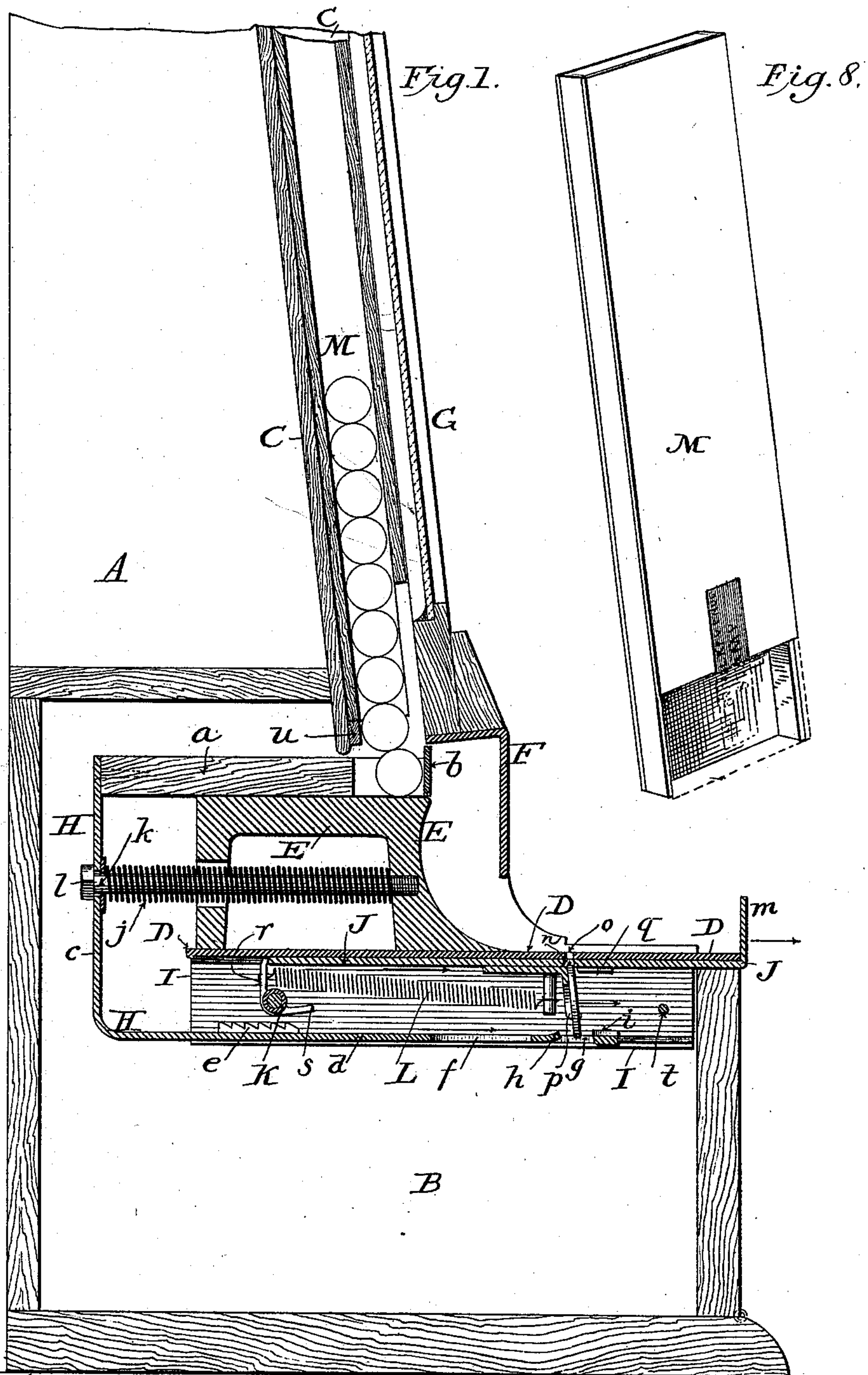
(No Model.)

2 Sheets—Sheet 1.

J. A. WILLIAMS.  
VENDING APPARATUS.

No. 402,374.

Patented Apr. 30, 1889.



Attest:

*Sidney P. Hoellingsworth*  
*Horace A. Dodge*

Inventor:

*John A. Williams,*  
*by Dodge & Sons, atty.*





# UNITED STATES PATENT OFFICE.

JOHN ALBERT WILLIAMS, OF KANSAS CITY, MISSOURI.

## VENDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 402,374, dated April 30, 1889.

Application filed February 2, 1889. Serial No. 298,460. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN ALBERT WILLIAMS, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Vending Apparatus, of which the following is a specification.

My invention relates to automatic vending-machines, and is designed primarily as an improvement upon the machine for which Letters Patent No. 388,101 were issued to me August 21, 1888, the objects of the invention being to simplify and cheapen the construction of this class of machines, to render their operation easy and certain, and to prevent the cheating or surreptitious working of the machine.

In the accompanying drawings, Figure 1 is a transverse sectional view of a portion of the machine; Figs. 2 and 3, similar views showing the parts in their different positions; Fig. 4, a front end view of the operating-slide, showing a coin in position; Fig. 5, a sectional perspective view of the parts in the position shown in Fig. 1; Fig. 6, a bottom plan view of the operating-slide; Fig. 7, a top plan view of the lower plate of the delivery-slide, and Fig. 8 a perspective view of the removable article-holders.

A indicates a box or casing, having at its base a receptacle, B, to receive the coins, and at its upper end a series of substantially upright chutes or channels, C, to receive the articles to be sold, or the boxes containing the articles, and between the coin-receptacle B and the chutes C is a horizontal plate, D, to which the actuating mechanism is secured.

Secured to the upper face of the plate D is a hollow block, E, which extends transversely across the machine below the mouths of the chutes or channels C, said block having its front face curved, as shown in Figs. 1, 2, and 5, to cause the articles delivered from the chute to roll outward away from the block and down upon the upper face of the plate.

A guard, F, secured to the lower edge of the upper door, G, of the box or casing, and extending parallel with the front face of block E, prevents the insertion of the fingers or any instrument by means of which the delivering-

slide might be operated. This delivery-slide H comprises a flat block, *a*, which rests squarely upon the upper face of block E, and which is provided with a forwardly-extending frame, *b*, which lies normally below the mouth of the chute C and prevents the articles passing therefrom from being delivered or discharged until the slide is pulled forward by means hereinafter set forth. The front edge of the frame *b* is higher than the sides, and upon reference to Fig. 1 will be seen to effectually prevent the removal of the articles.

Slide H extends downwardly behind block E, as at *c*, and thence forwardly beneath plate D, as at *d*, where it is supported by or slides in grooves in guides I, secured to the under side of plate D. Part *d* of slide H is made in the form of a flat plate, having near its inner end a ratchet, *e*, and at its forward or outer end openings *f* and *g*. Lugs *h* and *i* are secured to the plate *d* on opposite sides of the opening *g*, as shown, and for a purpose presently explained, the lug *h* being broader than lug *i* and curving upward slightly, while lug *i* is pointed and arranged with its pointed end directly opposite the center of lug *h*.

The delivery-slide H is retained in its normal position by means of a spring, *j*, which bears at one end against the block E and at the other end against the strap *c* of the slide, the spring being coiled about a stem or rod, *k*, secured to the block E and extending outward through the strap, where it is provided with a head or enlargement, *l*, by which the inward movement of the slide is regulated.

J indicates the operating-slide, which is made in the form of a flat plate seated and free to move back and forth in grooves in the inner faces of the guide I in a manner similar to plate *d*.

Plate J extends outward from beneath plate D, where it is provided with a hand-hold or handle, *m*, and is provided with a coin slot or opening, *n*, which is normally in alignment with a similar slot or opening, *o*, in the plate D, as shown in Fig. 1.

On the under side of the plate J is a coin-holder, which is made with two arms, *p p*, separated a distance from each other, and each having its lower end curved or bent for-



ward slightly, the said arms extending downward from or being arranged in line with the rear wall of the coin-slot *n*, as shown in Fig. 1.

Secured to the under side of plate J, close to the front wall of slot *n*, is a rib or projection, *q*, which prevents the coin from falling forward out of proper position. The rear wall of slot *n* should be beveled or sharpened, so that when the plate J is pulled outward this sharpened edge will, acting in conjunction with the walls of the slot *o*, shear or cut off any strings which are inserted with the coin.

K indicates a pawl, which is journaled in the guides I, as shown, said pawl being provided with two arms, *r* and *s*, one of which, *s*, is adapted under certain conditions to engage with the ratchet *e*, while the other, *r*, in its normal position extends upward behind the slide J, as shown in Fig. 1.

L indicates a spring secured at one end to the arm *r* and at the opposite end to the plate or slide J, so that when the latter is drawn outward the spring tips or rocks the pawl and throws its arm *s* downward, so as to permit the ratchet-teeth *e* to ride under the said arm *s*.

A pin or stop, *t*, secured to one of the guides I or any other fixed part of the machine, serves to limit the outward movement of the slide J.

The operation is as follows: If a coin of the requisite size be passed through the slots *o n* in plates D and J, it will rest upon and be supported by the arms *p p*, as shown in the drawings, and as the coin is embraced at its upper edge between the said arms *p p* and rib *q* it will be prevented from falling. Upon pulling the slide J outward the coin will be carried with it until it strikes the lug *i* on plate *d* of the delivery-slide H, this engagement of the coin with the lug serving to lock the plates or slides J H together, as it were, and causing them to move in unison as the slide J is pulled outward by the operator. As the slides J and H move outward the spring L is permitted to rock the pawl K and throw its arm *s* downward, so as to ride over the teeth of ratchet *e*, and when the slides have reached the limit of their movement the arm *s* of the pawl will be found to be in engagement with the ratchet. With the parts in this position it will be seen that the delivery-slide H will be held stationary by the pawl K until, by releasing the hold on the slide J, the spring L draws the latter inward to its normal position and causes it to strike arm *r* of the pawl, and of course when the slide J strikes this arm *r* it will throw the arm *s* up out of engagement with the ratchet and allow the spring *j* to return the delivery-slide to its normal position. Just as soon as the operating-slide J is released, but before the delivery-slide is released, the former, in going backward or inward with the coin, will carry the said coin against the lug or stop *h* on plate

*d* and throw its lower end forward, as shown in Fig. 3, thereby allowing the coin to drop through the recess or opening *g* into the money box or receptacle B. When the slide or plate J is first moved, its solid portion closes the slot or opening *o* in the plate D and prevents the insertion of anything that would tend to cheat or interfere with the proper working of the machine. If the coin inserted be too small, it will drop down between the two arms *p p*; or, in case it be large enough to be held by the said arms, but not of the requisite size, its upper edge will not engage with the rib *q*, and as a consequence, when the slide J is pulled outward and the lower edge of the coin strikes the lug or point *i*, the latter will throw the upper edge of the coin outward and permit it to drop through the plate *d* before it can serve to operate the latter. So, too, by making the point or lug *i* sharp it will cut through lead or other counterfeits and prevent the surreptitious actuation of the machine. These features, taken in connection with the shearing action of slide J and the subsequent closing of the slot *o*, make the machine proof against tampering.

The cases or boxes M, into which the articles to be sold are placed, are made to fit into the chutes or channels C, and are supported at their lower edges by a cleat, *u*, as shown in Fig. 1, and are left open at their lower ends, and, advisably, on the front face for a short distance, so as to obviate choking, and so, also, as to enable the operator to see, by looking through the glass of the door, whether or not the supply of articles is exhausted.

By making the machine in such manner as to receive the boxes or cases M the trouble and expense in rehandling are avoided, as the articles—cigars, for instance—may be placed in these boxes by the manufacturer and forwarded to different points in lieu of the boxes now employed.

I do not wish to limit myself to the vending of cigars, as it is obvious that by changing the form and proportions of the cases M and the chutes C the machine may be adapted for selling other articles.

The number of the chutes C will be varied as desired; but it is of course understood that each chute will have its particular delivery and operating slides.

The block E and guides I are secured to the plate D, and when it is desired to remove the operative parts of the machine it is only necessary to open the two doors on the front of the frame and pull the plate D and attendant parts outward.

Having thus described my invention, what I claim is—

1. In a vending-machine, the combination, with a reciprocating delivery-slide provided with a lug, as *i*, of a reciprocating operating-slide, and a coin-holder secured to the operating-slide in rear of the lug on the delivery-slide and adapted to hold and support the



coin, whereby, when a coin of the requisite size is inserted, it will, upon movement of the operating-slide, come into engagement with the lug on the delivery-slide and actuate the latter.

2. In a vending-machine, the combination, with the operating-slide provided with the separated arms *p p*, adapted to hold the coin by its side edges, of a lug, *q*, on the operating-slide in advance of and midway between the arms *p p*, and a delivering-slide provided with a lug, *i*, in advance of and midway between the arms *p p*, all substantially as shown.

3. In a vending-machine, the combination, with a delivery-slide, of an independent operating-slide, a coin-holder secured to the latter and adapted to hold the coin in position to strike the delivery-slide, and a lug, as *h*, secured to the latter, whereby, when the operating-slide is released, the coin will strike the lug and be deposited in the box.

4. In a vending-machine, the combination, with a delivery-slide and an operating-slide adapted to be connected by means of a coin, of a locking device for holding the delivery-slide in its extended position during the return movement of the operating-slide.

5. In a vending-machine in which the delivery and operating slides are connected by means of a coin, the combination, with said slides and a suitable coin-holder, of a pawl or dog adapted to engage the delivery-slide, said dog being arranged in position to be struck by the operating-slide.

6. In a vending-machine, the combination, with the delivery and operating slides and their retracting-springs, of a coin-holder secured to the operating-slide, as and for the purpose set forth, and a pawl or dog to engage the delivery-slide and arranged in the path of the operating-slide.

7. In a vending-machine in which the delivery and operating slides are connected by a coin, the combination, with said slides and their retracting-springs, of the coin-holder secured to the operating-slide, the lugs *h* and *i*, secured to the delivery-slide, and a pawl or dog to engage the delivery-slide, arranged in the path of the operating-slide, whereby, when the latter is released, the coin will be discharged before the delivery-slide begins to move backward.

8. In a vending-machine, the combination, with the delivery-slide provided with a ratchet, *e*, and a spring, of the operating-slide provided with a coin-holder and a spring, and a pivoted pawl or dog having a tail or arm to extend upward behind the operating-slide.

9. In a vending-machine, the combination, with the delivery-slide provided with a ratchet and a spring, of the operating-slide provided with a coin-holder, a pivoted pawl or dog provided with an arm to engage the ratchet and an arm to extend upward behind the operat-

ing-slide, and a spring connecting the said slide with the pawl.

10. In a vending-machine, the combination, with the delivery-slide provided with lugs *h* and *i*, separated as shown, of the operating-slide provided with a slot, *n*, and arms *p p*, and a rib, *q*.

11. In a vending-machine, the combination, with a delivery-slide and a slotted operating-slide adapted to be connected by a coin, of the arms *p p*, secured to the under side of the operating-slide in line with the rear wall of the slot, and a rib or lug, *q*, also on the under side of the slide, and adapted, if the coin be of the proper size, to hold said coin at its upper edge.

12. In a vending-machine, the combination, with the operating-slide provided with a slot, *n*, arms *p p*, and lug or rib *q*, of the delivery-slide provided with a sharpened or pointed lug, *i*, to engage the coin.

13. In a vending-machine, the combination, with the main plate *D*, provided with a coin-slot, *o*, of the operating-slide provided with a slot, *n*, to register with slot *o*, and having its rear wall sharpened, as and for the purpose set forth.

14. In a vending-machine, the combination, with the frame, of the parallel grooved guides *I*, secured thereto, and the operating and delivery slides mounted in said guides.

15. In a vending-machine, the combination, with the frame *A*, of the plate *D*, the block *E*, resting thereon, the operating-slide beneath the plate, and the delivery-slide provided with a delivering-frame, *a b*, to rest upon the block, and with a plate, *d d*, to be engaged by the coin, the frame *a b* and plate *d d* of the delivery-slide being connected by an arm, *c*.

16. In a vending-machine, the combination, with the chutes and the block *E* below the same, of the delivery-slide provided with a flat block and a forwardly-extending open frame, and means for actuating the slide.

17. In a vending-machine, the combination, with the chutes and the block *E*, of the delivery-slide, the bolt or stem secured to the block and provided with a head or enlargement at its outer end, a spring coiled about the bolt and bearing at its ends against the block and a part of the slide, and means for actuating the slide.

18. In a vending-machine, the combination, with the frame *A*, having chutes *C*, of the block *E* below the chutes, having its front face curved, as shown, the door provided with a guard, and the delivery-slide interposed between the block and the chutes.

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

JOHN ALBERT WILLIAMS.

Witnesses:

THOMAS E. PROPST,  
ROBT. B. GIBB.