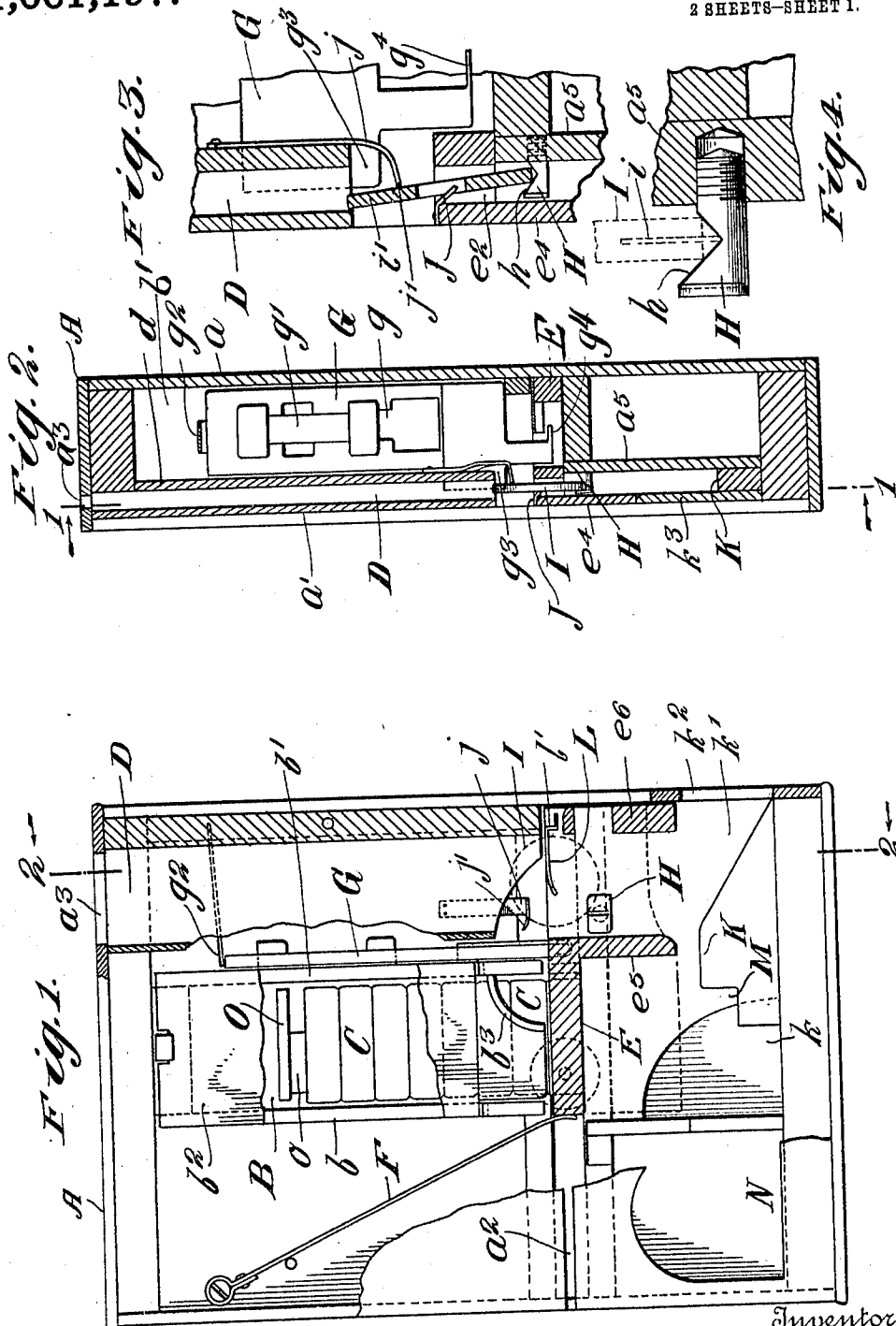


A. MOSES.
AUTOMATIC VENDING MACHINE.
APPLICATION FILED MAY 20, 1911.

Patented May 6, 1913.

2 SHEETS—SHEET 1.

1,061,197.



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AUTOMATIC VENDING-MACHINE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ADOLPH MOSES, a citizen of the United States, residing at Mount Vernon, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Automatic Vending-Machines, of which the following is a specification.

My invention relates to machines for automatically vending small packages of merchandise, such as chewing gum, chocolate and candy, etc., wherein the merchandise is released to the customer upon the deposit of a coin of the prescribed size.

The object of my invention is to provide a machine of this character which shall be simple, durable and efficient.

Other objects are to improve the construction of coin-actuated locking means. Further, to provide improved means for insuring a full stroke of the delivery slide. Further, to provide improved means for preventing the release of the locking means by a washer, or by a coin of less than the prescribed thickness. Also to provide means whereby coins which do not operate the machine are returned to the purchaser.

A desirable form in which my invention may be embodied is illustrated in the accompanying drawings, wherein,—

Figure 1 is an elevation of a machine embodying my invention, partly in section; Fig. 2 is a vertical section thereof on the line 2—2 in Fig. 1; Fig. 3 is a detail cross-sectional view of a part of said machine illustrating the operation of the washer mechanism; Fig. 4 is a detail view of a coin support illustrating the action thereof upon coins of various thicknesses; Fig. 5 is a partial elevation partly in section, illustrating the operation of the machine with a coin which has not released the locking means; Fig. 6 is a view similar to Fig. 5 illustrating the operation of the machine with a coin which has released the locking mechanism, but has not yet passed into the coin receptacle; Fig. 7 is a view similar to Fig. 6 illustrating the coin as having passed out of the locking recess; Fig. 8 is a detail view of the package delivery slide; Fig. 9 is a side view of the delivery slide viewed from the rear side; Fig. 10 is an end view thereof taken from the right hand end of Fig. 8.

My machine in the particular embodiment thereof illustrated in the accompanying

drawings, is made in the form of a small box A well suited for attachment to the back of a theater chair, for which purpose it is made quite thin. It is provided with a rear wall *a*, and a front wall *a*¹ which may be slotted as at *a*² for the purpose of providing a passage way for a handle which reciprocates the slide. A package holding conduit B is formed by side walls *b* *b*¹ and removable front piece *b*², and within the conduit thus formed the packages C are piled one upon the top of another in position to be fed to the slide. A coin conduit D receives a coin through an opening *a*³ in the top of the machine, and has a rear wall *d* which acts as one side of the conduit, the opposite side being formed by the front casing *a*¹.

The packages are fed from the package conduit B to a horizontal reciprocating package delivery slide E, seen in plan view in Fig. 8, which has a package receiving recess *e*, a dog receiving recess *e*¹, and a coin slot *e*². This slide is normally held in its rearward position by a spring F mounted upon the rear wall *a* and engaging the front of the slide. A vertically reciprocating locking dog G is mounted upon one side of some suitable part of the casing, as for instance the wall *b*¹. It is slotted at *g* and receives a guiding block *g*¹ which is attached to the said wall *b*¹ and which guides the dog in its vertical reciprocations and keeps it in position. The dog is spring held in its lower position by a spring *g*². The lower end of the dog has a lifting shoulder *g*³ which is in line with the coin slot *e*², and likewise has a toe *g*⁴ which is a part of the mechanism to insure a full stroke of the delivery slide.

The rear part of the recess *e*¹ in the slide is bounded by a locking projection *e*³ forming one wall of the said recess, and which normally engages the dog when the same is in its lowermost position, as seen in Fig. 5, and prevents the forward movement of the slide.

Upon a fixed part of the apparatus is provided a coin support H for holding the coin in position to lift the locking dog. This coin support is made adjustable, and for this reason is threaded and screws into a threaded recess in a fixed part of the frame. The said coin support is provided on its upper face with a V-shaped recess *h* the purpose of which is to support a coin of the

proper dimensions at the right height to lift the dog G so that it will clear the locking stop e^3 .

As shown in Fig. 4 the dotted line I is intended to represent a proper coin, and it will be seen that its thickness is such that it is supported above the bottom of the slot h . The dotted line i represents a disk or washer of less than the right thickness which sinks down to the bottom of the slide h , and therefore is ineffective to raise the locking dog to the requisite height. Means are also provided whereby a washer will be ineffective to unlock the locking means. As clearly illustrated in Fig. 3 such means comprise the construction of the coin slot e^2 in the slide E wider than the coin, so that it will be possible to tilt the washer therein. Upon one side of the said coin slot, preferably upon the outside thereof as illustrated in Fig. 3, I provide a fixed projection J which is mounted upon the top of the front wall e^4 attached to the slide, and said projection extends partway across the coin slot as shown in Fig. 3. Upon a suitable part of the machine, as for instance upon the rear wall d of the coin conduit D, I mount a spring finger j , the lower end of which is slightly bent so that its point j^1 passes over the coin slot and is adapted to engage a coin in the slot e^2 . The said point j^1 is at a different elevation than the projection J and is illustrated as being above the same. By this means a washer i if passed to the said coin slot e^2 , will be pressed sidewise by the spring pointer j^1 , and the projection J entering the opening in the center of the said washer, will permit the same to be tipped in the slot e^2 to such an extent that its upper surface will be passed outside of the lifting shoulder g^3 upon the dog.

By the means just described it is apparent that a coin which is not of the requisite thickness, or a washer, will be ineffective to release the lock. Means are provided for returning said ineffective coins, disks or washers to the customer, and such means include flanges e^5 e^6 upon the wall e^4 carried by the slide. These flanges and this wall in connection with the fixed wall a^5 , form a coin slot whereby such coin or other token is guided after it has been moved beyond the support H, to a stationary ledge K, seen in Figs. 5, 6 and 7, and from the said ledge the coins are prevented from passing into the coin receptacle k by the flange e^5 , and by the fact that the locking dog will not permit the said flange to move farther in the forward direction. Upon the return of the slide, however, under its spring F, the coin is passed from the ledge to the coin return chute k^1 and emerges through the casing at k^2 . The front wall of the coin return chute k^1 is formed by the fixed portion of wall k^3 .

Means are provided for insuring a full stroke of the device. In Fig. 8 is illustrated a supporting plate L which forms one of such means. This plate is seen in side view in Figs. 5, 6 and 7; also in Fig. 1. It is attached to the slide in such manner that it projects over the recess e^1 and under the toe g^4 on the locking dog. Its forward end is bent downward slightly as at l , and at a suitable point in its length it has a shoulder l^1 . As the coin raises the locking dog G to the proper height, its toe encounters the inclined forward end of the said supporting plate L and causes the dog to ride up thereon. The dog drops down behind the shoulder l^1 and will prevent the return movement of the slide until the said slide has completed its forward movement, whereupon the toe g^4 will pass off the end of the support and will return beneath the same. The rear end of the slide is beveled as at e^7 to facilitate the reëtrance of the dog in the slide. As a further precaution, additional means are provided to insure a full stroke of the device. The purpose of both such means is to insure that the package will be delivered to the purchaser before the slide has been released, so that it will be impossible for the machine to deliver the coin to the coin receptacle k without having delivered a package. Such additional means comprise a shoulder M formed at the forward end of the stationary ledge K, whereby as the slide is moved forward the coin I will be passed from the said ledge and will fall upon the shoulder M. The coin will not be discharged from this shoulder to the coin receptacle k until the slide has moved far enough forward to discharge a package C to the opening N which is open to the customer. When the coin has arrived upon the shoulder M the slide cannot be returned by reason of the fact that the flange e^5 will engage the forward end of the coin and prevent the return movement of such slide. I deem it desirable for the purpose of preventing the coin hanging in the slot e^2 , to provide the cover b^2 of the package recess at its lower end with a small flange b^3 (Fig. 1) which extends across the path of the coin, and as it is fixed, will deflect the coin.

The operation of my device is extremely simple. A supply of packages having been inserted in the package recess B, they will be pressed downward by their own weight as also by a weight O upon the lower side of which is a rectangular projection o , which by entering the package recess e in the slide, holds the slide in closed position when the packages are exhausted. A coin being now inserted in the slot D, it will pass to the coin slot e^2 . If this should be a washer, it will be pressed sidewise by the spring j , and the projection J entering the hole in the said washer will permit the same to be tipped

sidewise, passing the lifting shoulder g^3 upon the dog G ineffectively. The said washer will thereupon drop out of the slot e^2 between the flanges e^5 e^6 , and said walls e^4 a^5 , on to the ledge K, and upon the backward movement of the slide E, which is not then locked against such movement, will be propelled by the flange e^6 and will pass down the coin return chute h^1 and out of the slot h^2 and so return to the purchaser. Should the token with which the purchaser attempted to work the machine have been a disk or coin of improper thickness, the V-shaped recess h in the support H will permit it to drop below the proper height for a proper coin, and it will lift the dog slightly but insufficiently to raise the same high enough to clear the locking stop e^3 upon the slide. Should however a coin of the proper thickness have been inserted, it will be held in place by the said spring j and the projection J, and being propelled by the slide will pass under the locking shoulder g^3 of the dog, and will lift the said dog so that its toe g^4 will pass up on the dog support L. A continued movement of the slide will cause the said dog toe to drop at the shoulder h^1 upon the said support, and the slide will thereupon be held against backward movement until it has completed its forward stroke. Further means for insuring against such backward movement are provided by the shoulder M which receives the coin, and in cooperation with flange e^5 prevents the backward movement of the slide. The slide continuing in its forward movement will discharge a package C to the space N. This will release the coin I from the shoulder M, and will also cause the toe g^4 of the dog to pass off the rear end of the dog support L on to the inclined face e^7 at the rear of said slide, whereupon it will reënter the dog recess e^1 in the slide under the influence of its spring g^2 .

I have described and illustrated a desirable form in which my invention may be constructed, and this is the best form now known to me.

Modifications and changes may however be made therein within the limits of the appended claims.

I claim as my invention:—

1. In an automatic vending machine employing a horizontally reciprocating delivery slide, means for locking said slide comprising a locking dog having a vertically reciprocating movement and fixed against longitudinal movement and a cooperating stop on the slide, combined with means for insuring a full stroke of said slide comprising a dog support upon said slide, adapted to hold the dog out of locking position when lifted by a coin, and a shoulder on said support adapted to prevent the return of the slide until the stroke has been completed.

2. In an automatic vending machine employing a package delivery slide, a coin released lock for said slide comprising a locking dog, having a vertically reciprocating movement and fixed against longitudinal movement, a corresponding locking projection on said slide, means for supporting a coin in position to be moved by said slide and raise said dog out of locking position, means for holding said dog above the line of said locking stop when raised by a coin, comprising a dog support carried by said slide and having a locking shoulder therein adapted to prevent the return of the slide until it has completed its delivery stroke.

3. In an automatic vending machine employing a sliding platform, a lock therefor comprising a vertically reciprocating dog on the frame, a cooperating locking stop on the slide, means on said slide for holding and propelling a coin, disk or washer under said dog, a support having a V-shaped recess within which an edge of said coin is adapted to rest, whereby a coin or other disk or washer of less thickness than the proper coin will fail to lift said dog high enough to clear said stop.

4. In an automatic vending machine employing a sliding platform, a lock therefor comprising a vertically reciprocating dog on the frame, a cooperating locking stop on the slide, means on said slide for holding and propelling a coin, disk or washer under said dog, which permit the tipping of said article so held, a projection on one side of said coin supporting means substantially centrally located with respect to the article so held, and a spring on the other side adapted to press the article so held against said projection, whereby a proper coin will be held substantially upright in position to lift said dog and a washer will be pressed by said spring, and said projection will enter the hole in the washer and said washer will be tipped out of proper lifting position with relation to said dog.

5. In an automatic vending machine employing a sliding platform, a lock therefor comprising a vertically reciprocating dog on the frame, a cooperating locking stop on the slide, means on said slide for holding a coin disk or washer and propelling the same under said dog, means whereby a coin of insufficient thickness will fail to release said lock, means for returning said ineffective coin disk or washer to the customer comprising an inclined coin return chute, flanges upon the slide which, when the slide is moved to cause the lock to engage, provide a coin slot directing the coin toward said chute, one of said flanges preventing the coin, disk or washer from entering the receptacle for proper coins.

6. In an automatic vending machine employing a sliding platform, a lock therefor

comprising a vertically reciprocating dog on the frame, a cooperating locking stop on the slide, means on said slide for holding a coin, disk or washer and propelling the same under said dog, means whereby a washer will fail to release said lock, means for returning said ineffective coin, disk or washer to the customer comprising an inclined coin return chute, flanges upon said slide which, when the slide is moved to cause the lock to engage, provide a coin slot directing the coin toward said chute, one of said flanges preventing the coin, disk or washer from entering the receptacle for proper coins.

7. In an automatic vending machine employing a sliding platform, a lock therefor comprising a vertically reciprocating dog on the frame, a cooperating locking stop on the slide, means on said slide for holding a coin, disk or washer and propelling the same under said dog, means whereby a washer will fail to release said lock, comprising a projection upon one side of the coin support, and a spring upon the other side in a different horizontal plane, and adapted to press against a washer and cause said projection to enter the hole in the washer and tip the washer out of dog lifting position, means for returning said ineffective coin, disk or washer to the customer comprising an inclined coin return chute, flanges upon the said slide which, when the slide is moved to cause the lock to engage, provide a coin slot directing the coin toward said chute, one of said flanges preventing the coin, disk or washer from entering the receptacle for proper coins.

8. In an automatic vending machine employing a sliding platform, a lock therefor comprising a vertically reciprocating dog on the frame, a cooperating locking stop on the slide, means on said slide for holding a coin, disk or washer and propelling the same under said dog, a V-shaped support for a coin adapted to permit a coin of insufficient thickness to drop below lifting position, means operating in connection with the hole in a washer whereby the same is tipped sidewise and out of alinement with said dog, a coin return chute leading to the outside of the machine, and a flange for directing said ineffective coins, disks or washers to said coin return chute.

9. In an automatic vending machine employing a sliding platform, a lock therefor comprising a vertically reciprocating dog on the frame, a cooperating locking stop on the slide, means on said slide for holding a coin, disk or washer and propelling the same under said dog, a coin slot formed in said slide having a flange, a stationary ledge receiving said coin, said ledge having a recess to which said coin is adapted to be propelled by the wall of said slot when

the lock is released, said recess adapted to hold said coin and by contact with the said flange prevent the return of the slide until a full stroke has been completed.

10. In an automatic vending machine employing a sliding platform, a lock therefor comprising a vertically reciprocating dog on the frame, a cooperating locking stop on the slide, means on said slide for holding a coin, disk or washer and propelling the same under said dog, a dog support carried by said slide and adapted to support the dog when lifted to unlocking position by a proper coin, a shoulder on said support, adapted to prevent the return of said slide until a full stroke has been performed, a coin slot formed in said slide having a flange, a stationary ledge receiving said coin, said ledge having a recess to which said coin is adapted to be propelled by the wall of said slot when the lock is released, said recess adapted to hold said coin and by contact with the said flange prevent the return of the slide until a full stroke has been completed.

11. In an automatic vending machine comprising a sliding platform, a lock therefor comprising a vertically reciprocating dog on the frame, a cooperating stop on the slide, a coin slot in said slide in alinement with the dog, a V-shaped coin support adjacent said dog adapted to support a coin of proper thickness in position to lift said dog, flanges projecting downwardly from said slide and forming in connection with the walls of the casing a coin slot, a ledge receiving a coin from said slot, an inclined coin return chute leading from said ledge to the outside of the machine, a shoulder on the other side of said ledge, whereby a coin delivered to said ledge without having released the lock will be propelled by the wall of the coin slot to the coin return chute, and a coin so delivered which has released the lock will be propelled to said shoulder and will lock the slide against return movement, but will be removed from said slide by a continued forward movement of the slide.

12. In an automatic vending machine comprising a sliding platform, a lock therefor comprising a vertically reciprocating dog on the frame, a cooperating stop on the slide, a coin slot in said slide in alinement with the dog, a V-shaped coin support adjacent said dog adapted to support a coin of proper thickness in position to lift said dog, a dog support carried by said slide and adapted to support the dog when lifted to unlocking position by a proper coin, a shoulder on said support, adapted to prevent the return of said slide until a full stroke has been performed, flanges projecting downwardly from said slide and forming in connection with the walls of the casing a coin slot, a ledge receiving a coin from said slot,

an inclined coin return chute leading from said ledge to the outside of the machine, a shoulder on the other side of the said ledge, whereby a coin delivered to said ledge without having released the lock will be propelled by the wall of the coin slot to the coin return chute and a coin so delivered which has released the lock will be propelled to said shoulder and will lock the slide against return movement, but will be removed from said slide by a continued forward movement of the slide.

13. A full stroke device for an automatic vending machine employing a vertically reciprocating dog and a horizontally reciprocating slide with a cooperating locking stop thereon, comprising a support on said slide adapted to receive said dog and to hold the same in lifted position when raised out of locking position, and a projection on said support adapted to lock the slide against return movement until the slide has completed its forward movement and the dog has passed off the rear of said support, and means permitting the return of the slide after the completion of a forward stroke free of said dog.

14. In an automatic vending machine the combination of a coin slide having a stop

thereon, a dog adapted to engage said stop and adapted to be lifted by a coin, said slide having a dog-support thereon adapted to engage said dog when lifted for holding it lifted until it passes said stop on the slide.

15. In an automatic vending machine, the combination of a coin slide, a dog adapted to lock the same and adapted to be lifted by the coin to release the slide, a projection upon said slide and a cooperating spring arm beside said slide adapted to press upon said coin when the slide is moved to tip to one side a perforated article inserted in place of a coin, whereby it is moved out of position to strike said dog.

16. In an automatic vending machine, the combination of a slide, a coin chute leading to a coin receptacle, and a recess in said coin-chute into which the coin is adapted to fall to lock the slide against back-movement prior to completing a full forward stroke.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

ADOLPH MOSES.

Witnesses:

FRANCIS S. WANDOD,
JOHN J. HAGMANN.