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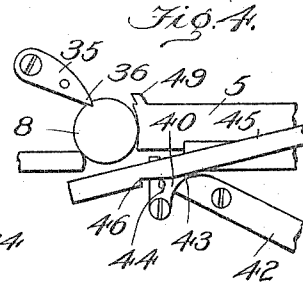
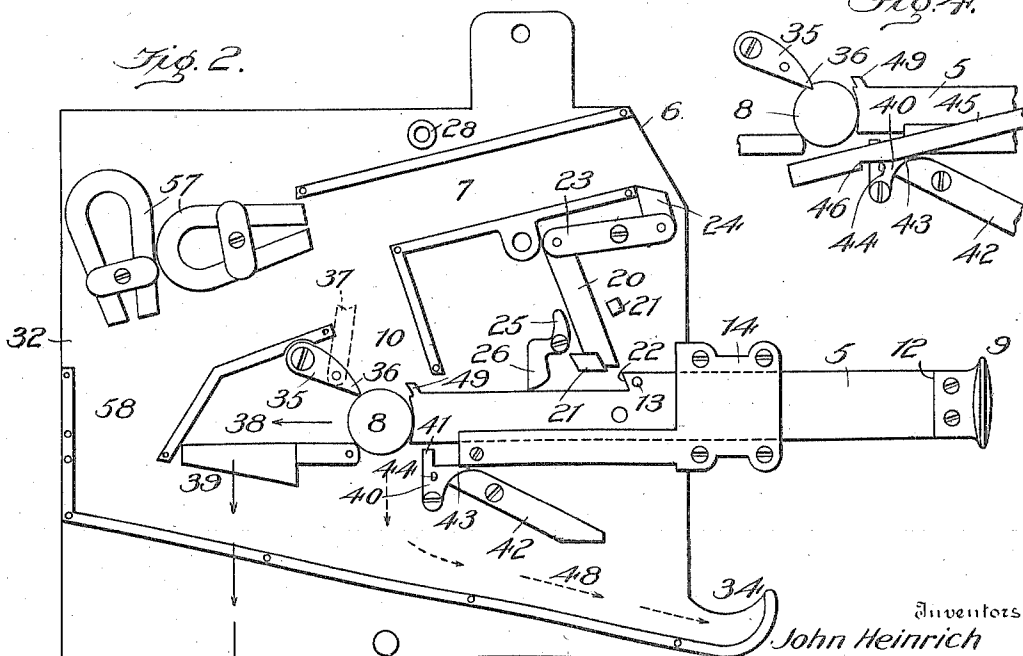
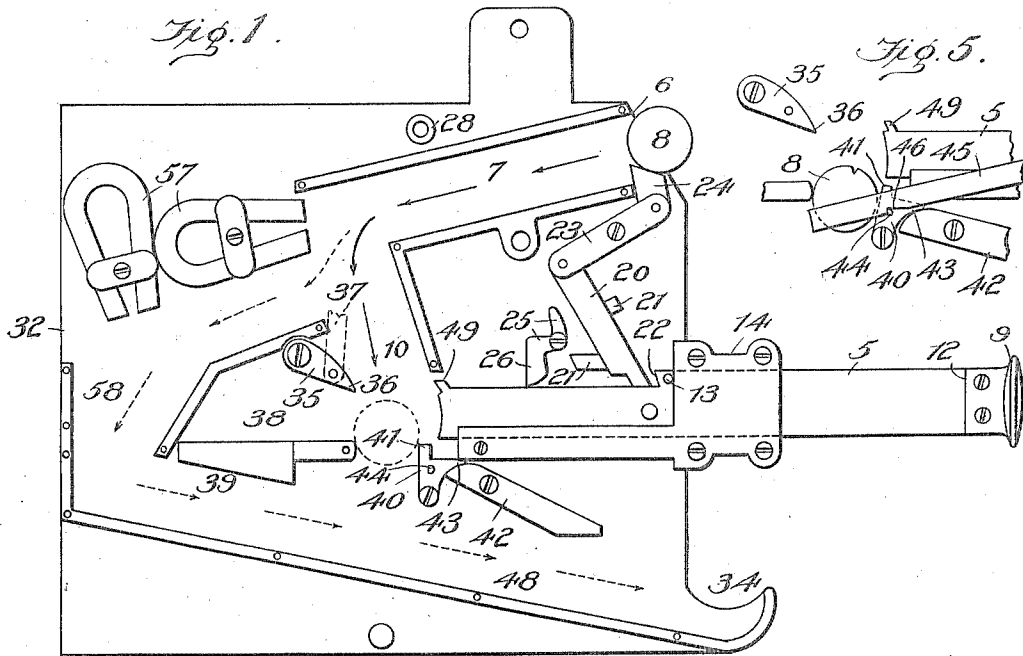
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APPLICATION FILED APR. 3, 1905.

2 SHEETS—SHEET 1.



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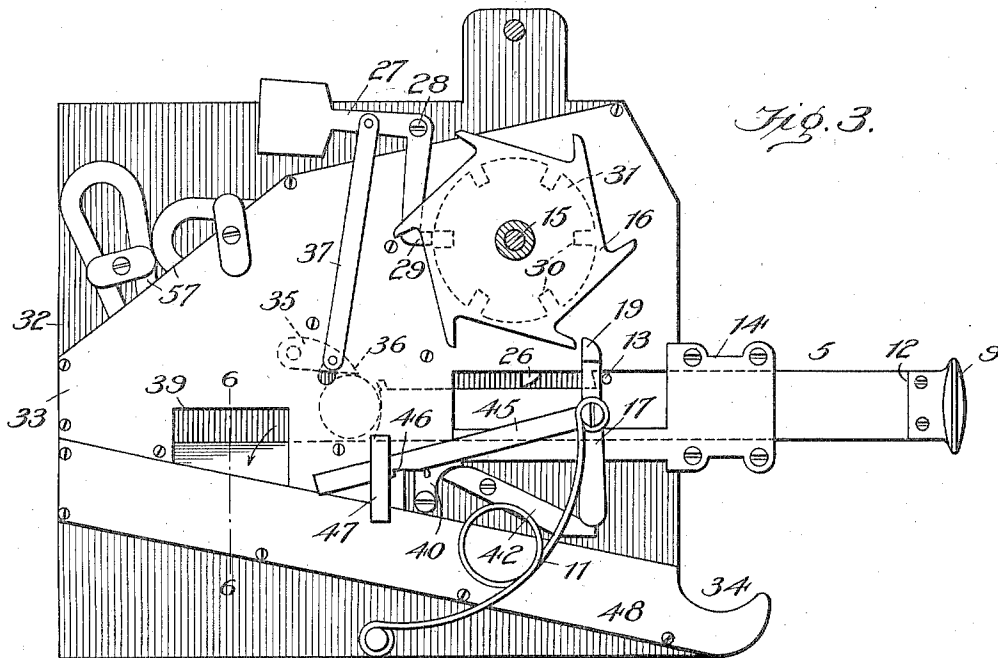
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UNITED STATES PATENT OFFICE.

JOHN HEINRICH, JOHN SCHMIDT, AND CARROLL L. ETHERIDGE, OF
KANSAS CITY, MISSOURI.

FRAUD-PREVENTIVE MECHANISM FOR CIGAR-VENDING MACHINES.

No. 811,395.

Specification of Letters Patent.

Patented Jan. 30, 1906.

Original application filed November 24, 1904, Serial No. 234,033. Divided and this application filed April 3, 1905. Serial No. 253,414.

To all whom it may concern:

Be it known that we, JOHN HEINRICH, JOHN SCHMIDT, and CARROLL L. ETHERIDGE, citizens 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 Fraud-Preventive Mechanism for Vending-Machines; and we do hereby 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.

The invention which forms the subject of this patent is directed to the production of fraud-preventive means for use in novel co-operative relation and combinations for preventing the operation of the mechanism by which the delivery of the goods is effected, and in which said means are specially adapted for use in a coin-controlled machine organized for vending articles, such as cigars, and in the claims appended hereto the parts and combination of parts which constitute our invention will be specifically pointed out.

The following description read in connection with the accompanying drawings will enable persons skilled in coin-controlled vending-machines to understand and to practice our invention in the form in which we prefer to practice it; but it will be understood that our invention is not limited to the precise form and details of construction herein illustrated and described, as various modifications and changes may be made without exceeding the scope of the claims in which our invention is set out.

Referring to the drawings, Figure 1 shows in vertical elevation a plate fixed to the inner side wall of a casing or cabinet and carrying the plunger in locked position, the parts actuated by the coin or nickel for locking and unlocking the plunger, and also the fraud-preventive means in their normal positions, the coin or nickel being shown in the position just before being pressed down to unlock the plunger. Fig. 2 is a similar view showing the plunger as having been unlocked and the locking device held in position to be tripped by the inward movement of the plunger to again lock it when retracted, the fraud-preventive means being in their normal positions. Fig. 3 is a similar elevation

showing all the operative parts and particularly the means connected with the plunger for actuating the fraud-preventive device by the retractive movement of the plunger. Fig. 4 is a detail side view illustrating the means for preventing the operation of the goods-delivery mechanism when a lead disk or slug is used and causing it to pass through the machine by the releasing action of the plunger in its retracting movement. Fig. 5 is a like view showing the parts in the positions they occupy when the lead disk has been released by the retracting movement of the plunger.

* Referring to Fig. 4, the outline may represent the side wall and the front of the casing or cabinet within which the coin-controlled vending and the fraud-preventive mechanisms are organized, and at the front thereof 6 indicates the position of the coin-slot, and 15 a shaft on which is mounted a rotatable goods-delivery cylinder, which is above the plunger and is operated by its inward movement. The coin-actuated mechanism including the coin passages or runways and the plunger or push-bar 5 are preferably arranged upon and at the inner wall of the inside of the casing or cabinet, and the coin-slot 6 is conveniently located at the side of that part of the casing at which the goods are presented to view. From this coin-slot extends, on a slightly-downward incline, the runway or passage 7 for the nickel or other disk 8, while beneath the cylinder is the plunger, slidably supported within a guide-way on the casing-wall and has its hand-actuated end 9 projecting from the front of the casing. The path of the plunger intersects a vertical branch 10 of the nickel-passage, and at such intersection the plunger has a pushing and displacing action upon the nickel. A spring 11, having one end connected to the plunger and the other end to the casing, serves to retract and hold the plunger in its normal position, as in Fig. 3. A shoulder 12 at the handle end of the plunger serves to limit its inward movement, while a stop 13 on the plunger adapted to engage its fixed guide 14 serves to limit the outward movement of the plunger. This inward movement of the plunger causes the rotation of the delivery-cylinder, and the means for effecting this rotation will now be

stated. The shaft 15 of the cylinder is
 mounted in the side walls of the casing, and
 between the latter and the end of the cylinder
 a ratchet-wheel 16 is fixed on the shaft. Piv-
 5 otally mounted on the plunger is an arm 17,
 which extends above the plunger and is
 adapted to engage one tooth of said ratchet-
 wheel each time the plunger is pushed in-
 ward to turn said wheel and the delivery-
 10 cylinder a part of a revolution. The normal
 position of the pivoted arm 17 is vertical and
 is so normally maintained by its lower
 weighted end, while the pushing action of the
 upper end of said arm to rotate said wheel is
 15 sustained by said stop 13 on the plunger.
 The upper end 19 of said arm 17 is beveled to
 allow it to pass freely under the teeth of the
 wheel on the retracting movement of the
 plunger. The plunger is normally locked
 20 against inward movement by mechanism
 comprising a bolt 20, supported by wall-
 guides 21, with its lower end adapted to en-
 gage by gravity a shoulder 22 on the upper
 edge of the plunger, as in Fig. 1, to lock it.
 25 At its upper end the bolt is connected to one
 end of a lever 23, pivoted to the wall and hav-
 ing at its other end a pivoted key 24, which
 stands within an opening in the bottom of
 the nickel-passage and in its normal or raised
 30 position partially closes the entrance to the
 nickel-slot, as in Fig. 1. We prefer to hang
 and support the bolt 20 in a slightly-inclined
 position, so that its lower end will stand in
 advance of its upper end, and thereby cause
 35 its lower end to fall back by gravity in the
 raised position of the bolt to hold it up out of
 engagement with the plunger, and for this
 purpose the lower end of the bolt has a recess
 or shoulder by which it is adapted to fall into
 40 engagement with a lug 21 of the bolt-guide,
 as in Fig. 2. In the locked position of the
 plunger the nickel-actuated key is lifted by
 the weight of the bolt members and held in
 position partially closing the entrance to the
 45 coin-slot, so that the key will receive the coin
 or other disk and be pressed down by the act
 of inserting it, forcing thereby the key down
 out of the slot to allow the coin to be put into
 the passage. This depression of the key ac-
 50 tuates the bolt members so as to cause the
 bolt to be raised and release its engagement
 with the plunger. In this lifting of the bolt its
 lower end is free to swing back by gravity, and
 this movement brings its shoulder into en-
 55 gagement with the fixed guide-lug 21 and
 holds the bolt in its unlocked position. The
 bolt is returned to its normal or lower locked
 position by means of a tappet 25, pivoted on
 the side wall at the rear of the bolt and hav-
 60 ing a weighted arm 26, adapted to be struck
 by the locking-shoulder 22 of the plunger
 when the latter is pushed inward. In this
 engagement of the plunger with the hanging
 arm of the tappet its upper arm 25 is caused
 65 to strike the rearedge of the bolt, and thereby

throw or push the latter forward, disengaging
 its shoulder from the lug and allowing the bolt
 to drop on the plunger behind its shoulder 22
 to lock it when the plunger is forced outward
 by its spring. In this way the plunger will
 70 be released from its locked position by a five-
 cent nickel or any similar disk held in the
 hand of the operator to depress the key and
 allow the plunger to be pushed inward; but
 this manipulation of the plunger will not
 75 cause the movement of the delivery-cylinder,
 since the latter is provided with locking mech-
 anism which can only be released by a coin
 of the required character. This cylinder-
 locking mechanism comprises a lever 27, 80
 preferably of bell-crank form, fulcrumed
 upon a wall-stud 28 at the rear side of the
 delivery-cylinder. The hanging arm of this
 lever terminates in a tooth 29, which is
 85 adapted to successively enter peripheral
 notches 30 of a disk 31, fixed on the cylinder-
 shaft to hold the cylinder from rotary move-
 ment. A weighted arm of the lever 27 in-
 90 sures engagement of its tooth with the
 notches of the disk at each movement of the
 cylinder. The coin-passage extends from
 the front slot to the rear of the casing and is
 intersected at the limit of the inward move-
 95 ment of the plunger by a vertical branch 10,
 which terminates in the path of the plunger
 and extends a short distance rearward in said
 path.

The following description will show the co-
 operating function of the plunger in its oper-
 ation of the delivery-cylinder in effecting the
 100 release of the cylinder-locking mechanism
 only through the instrumentality of the re-
 quired or proper coin. At a point about the
 upper rear corner of the intersection of the
 vertical with the terminal coin-passage is piv-
 105 oted a dog 35, which stands toward the inner
 end of the plunger and terminates in a sharp
 point 36, which hangs in the path of the coin
 as it drops in the path of the plunger for a
 purpose presently stated. A link 37 connects
 110 the free end of the dog with the weighted arm
 of the bell-crank lever, so that the lifting of
 the sharp point of the dog by the passage
 thereunder of the coin in the manner herein-
 115 after described will cause said weighted arm
 to be raised by its connected link 37, and
 thereby cause the toothed arm 29 of said lever
 to be withdrawn from its engagement
 with the notch in the cylinder-disk to permit
 120 the cylinder to be turned. The lever is re-
 turned by its weighted arm to its normal po-
 sition against the disk to engage its next
 notch after the impaling-dog is released. The
 coin-passage 38 in rear of the dog terminates
 125 in a bottom outlet 39, through which the
 proper coin drops into a coin-receiver, (not
 shown,) and for this purpose this drop-open-
 ing 39 is outside of and independent of other
 passages through which spurious coins or
 disks pass.

The machine can only be operated by genuine nickels, because the nickel having been forced into the nickel-slot and dropped through the vertical passage 10 is arrested in the path of the plunger and supported upon a latch device 40, in which position the plunger is then caused to strike and move the coin beneath the sharp point of the dog, and the nickel being of hard metal will not be pierced or impaled by the point of the dog, but will be forced under it and out of the drop-passage 39, lifting the dog in passing beneath it and by such lifting release the lever-lock of the delivery-cylinder. In this ejection of the genuine nickel the dog rides over it and unlocks the cylinder by the direct action of the plunger, while the coin-actuated bolt device releases the lock of the plunger in advance of the release of the cylinder-lock to allow the plunger-arm 17 to engage a tooth of the ratchet-wheel 16 to turn the delivery-cylinder to deliver the article. In this operation the latch device serves no other purpose than to support the nickel in the path of the plunger, and so long as genuine nickels are used the operation of the machine is unchanged. We have, however, made provision for preventing fraud in operating the machine with lead disks, and thus prevent the delivery of the goods, and for this purpose we utilize this latch device, as will now be described. This latch is pivoted to the wall-plate at an opening in the bottom of the plunger-guideway and has a lip 41, which stands up and forms a stop on which the lead disk is dropped from the vertical passage and supported, as shown by dotted lines in Fig. 1. A weighted dog 42, pivoted to said wall-plate in front of the latch, engages a nose projection 43 of the latch and serves to support it in position to hold the lead disk in the path of the plunger. To move the latch from its disk-supporting position by turning it on its pivot toward the front to allow the lead disk to drop through said opening, the latch is provided with a pin 44, with which an arm 45, having a notch 46, is caused to engage, so as to pull the latch forward by the retracting movement of the plunger, and for this purpose said arm 45 is pivotally connected to the plunger, as in Fig. 3, and acts by gravity to engage the latch. To render this engagement of the arm 45 with the latch-pin 44 certain, the notched end of said arm rests and rides upon said pin, and this end of the arm is held by its weight and a guide-loop 47 upon the pin so that as this arm is drawn out by the plunger the notch in said arm drops over the pin, and thus pulls the latch from under the lead disk. It will thus be seen that a genuine nickel and a lead disk takes the same course, as indicated by the arrows in full lines in Fig. 1, and both are arrested by the latch. When, however, the plunger is pushed in, instead of forcing the slug or lead disk rearward under

the dog the plunger will force the lead disk against the sharp point of the dog, causing it thereby to penetrate the soft metal, as in Fig. 4, and bind the lead disk in the opening or space between its edge and the lip of the latch. This prevents the raising of the dog, and the cylinder-releasing mechanism does not operate, so there can be no delivery of the goods. The pushing force of the plunger being at its limit, on its retracting movement the notched arm 45 is thereby drawn into engagement with the pin of the latch, and the latter is thereby drawn forward, and the lead disk or slug is released from its support and will drop into the base-passage 48 and pass to the front 34 of said passage. It will be noted that the nose of the latch and the weighted dog have a curved bearing engagement, so that as the latch is pulled back it slides on the end of the dog and depresses said end, so that as the plunger is moved forward the arm 45 is thereby disengaged and the weighted arm returns to its normal position of rest. At the inner end of the plunger rises a lug 49, which serves as a safety-stop, so that if from any cause (as by wire or other device) the plunger should be released from its lock without forcing a genuine nickel in the slot to actuate the plunger-lock the plunger-lug will strike the dog, but will not lift it when the plunger is pushed in, and thus prevent the operation of the cylinder-releasing mechanism and the rotation of the cylinder, so that there can be no delivery.

It is important to note that in the operation of the machine it not only fails to operate when a lead disk is used, but automatically ejects such disk instead of permitting it to pass to the genuine-coin receptacle and that the two coacting locking devices are provided, one for controlling the operation of the plunger or push-rod and the other for controlling the rotary movement of the delivery-cylinder, both by the direct action of the plunger. These two separate and distinct locks are released successively by a five-cent nickel, the first at the entrance of the nickel-slot and the second near the exit-opening for the nickel. The nickel is seen in Fig. 1 as having been placed by the operator upon the upper inclined end of the key, which partially closes its entrance, so that the operator presses upon the nickel, which thereby causes the depression of the key, and thus allows the nickel to be inserted. To facilitate the entrance of the nickel into the slot, the end of the key is inclined inward and upward, so that pressure on the nickel has a wedge-action upon the key in depressing it. As stated, the runway or coin-passage leading from the nickel-slot extends to the rear of the casing and crosses the vertical passage, and at the junction of these passages and in the rear portion thereof is arranged, preferably, a pair of magnets 57, having their poles placed

so as to attract a steel or iron slug or disk and direct it into a drop branch 58 and thence into the same base-passage into which the lead disk is dropped and passes to the front receptacle. This diversion of a steel or iron slug or disk from the path of the five-cent nickel prevents the operation of the delivery-cylinder. It will be understood that the several passages for the nickels and for the slugs are narrow channels, through which the nickels and slugs roll edgewise.

Except for the purposes of the combinations hereinafter set forth in the claims, we do not in the Letters Patent to be issued on this application claim the inventions in the coin-actuated mechanisms for vending articles shown and described herein, as such matters and inventions are shown, described, and made the subject of claim in an application filed by us of date November 24, 1904, under Serial No. 234,033, and of which this is a divisional application and in which the claims are for the fraud-preventive feature and coacting mechanisms disclosed in said parent application.

We claim—

1. In a coin-actuated mechanism for vending-machines, means for preventing the use of lead disks to actuate the machine comprising a plunger, coin-controlled locking means therefor, a dog pivotally mounted in the path of the plunger and adapted to impale said lead disk, a latch pivoted in the path of said lead disk below the plunger, a weighted dog automatically maintaining said latch as a rest for the lead disk, and means connecting the plunger and said latch whereby the retracting movement of the plunger pulls the latch from under the lead disk for the purpose stated.

2. In a coin-controlled mechanism for vending-machines, mechanism for preventing the use of lead disks to actuate the machine comprising a plunger, coin-controlled

locking mechanism therefor, a dog pivotally mounted in the path of the plunger and adapted to impale said lead disk, a latch pivoted in the path of said lead disk below the plunger as a rest for the lead disk, a weighted dog to automatically maintain said latch in its position as a rest, an arm pivotally mounted on the plunger and adapted to engage said latch whereby it is tripped from its supporting position by the retracting position of the plunger.

3. In a coin-controlled mechanism for vending-machines, a plunger, a coin-controlled locking device therefor, a dog pivotally mounted in the path of the plunger and adapted to impale said lead disk, a latch pivoted in the path of the lead disk below the plunger as a rest for the lead disk, a weighted dog automatically maintaining said latch in its position as a rest, the said disk lead being impaled on the dog by the forward movement of the plunger and the said latch tripped by the retracting movement of the plunger, and means connecting the plunger and latch for effecting the tripping of the latter.

4. In a coin-controlled mechanism for vending-machines, a plunger, means automatically locking the plunger in its normal position, means controlled by the coin to automatically release said lock and to maintain such release, means automatically to trip said locking device from its released position by the inward movement of the plunger, a pivoted coin-support below the path of the plunger, means automatically maintaining said support, and means automatically releasing said support by the outward movement of the plunger for the purpose stated.

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