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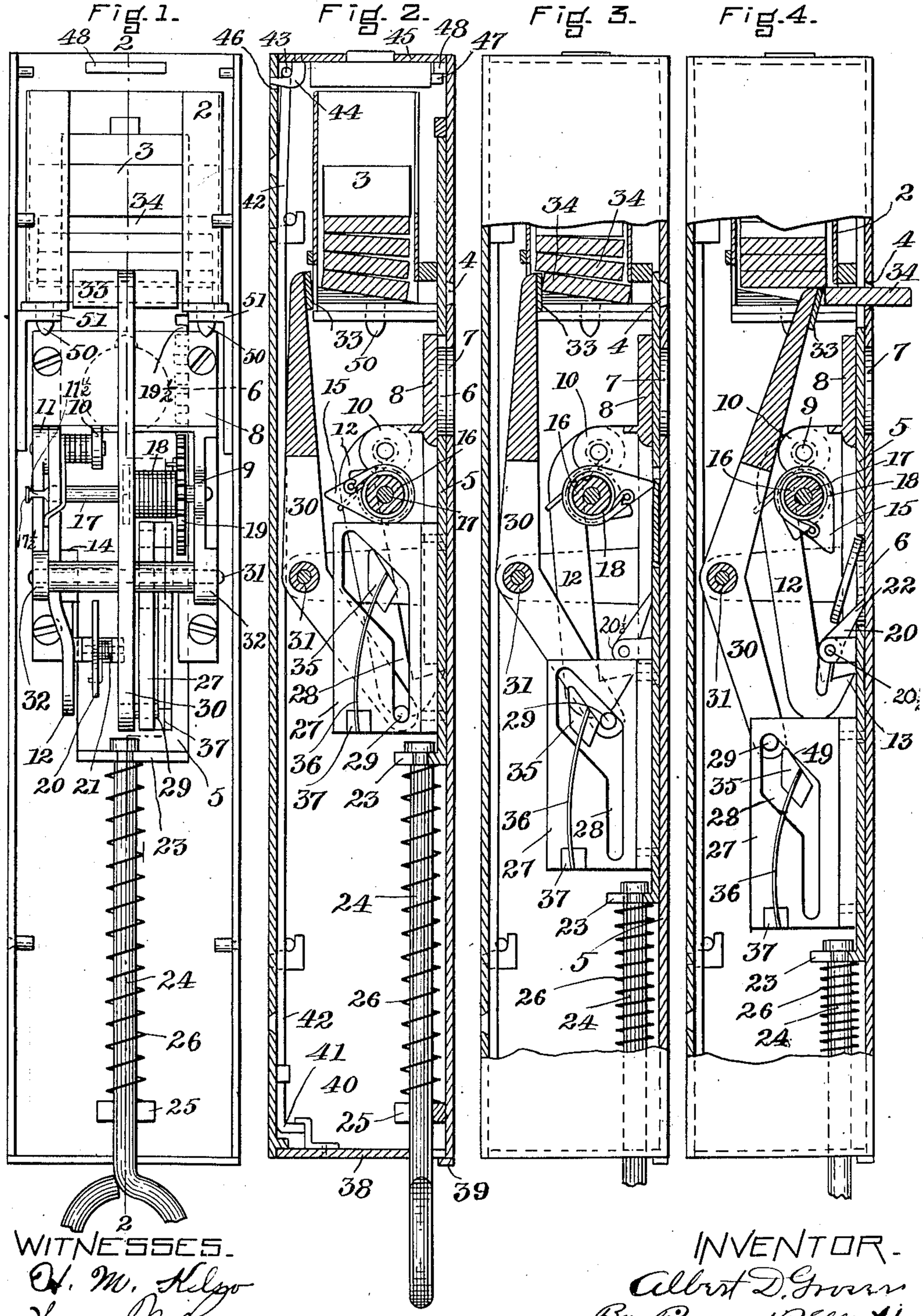
A. D. GROVER.

COIN CONTROLLED VENDING MACHINE.

APPLICATION FILED DEC. 18, 1905.

Fig. 1. Fig. 2. Fig. 3. Fig. 4.



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COIN-CONTROLLED VENDING-MACHINE.

No. 849,609. Specification of Letters Patent. Patented April 9, 1907.

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To all whom it may concern:

Be it known that I, ALBERT D. GROVER, a citizen of the United States, and a resident of Malden, county of Middlesex, Commonwealth of Massachusetts, have invented certain new and useful Improvements in Coin-Controlled Vending-Machines, of which the following is a specification, reference being had to the drawings accompanying the same.

My invention relates to coin-controlled vending-machines from which merchandise is vended in packages by a delivery mechanism operable by means of a coin of the proper denomination.

The object of my improved vending mechanism is to provide a delivery mechanism that will deliver the packages of merchandise one at a time and that will prevent their fraudulent removal from the machine.

Another object of my invention is to so construct and arrange the various parts of the delivery mechanism and the coin-testing device that they will occupy the smallest possible space.

In the drawings, Figure 1 represents a rear elevation of my improved vending-machine. Fig. 2 is a sectional elevation of my improved vending-machine through line 2 2, Fig. 1. Fig. 3 is a partial sectional elevation through line 2 2, Fig. 1, showing a coin inserted in a coin-slide and the delivery mechanism in the act of delivering a package of merchandise Fig. 4 is a sectional elevation similar to Fig. 3, showing the delivery mechanism in position where it is delivering one of the packages of merchandise and the coin being removed from the coin-opening.

In the drawings representing my improved vending-machine 1 represents the casing of the machine.

2 is the stack, arranged to contain the merchandise to be vended, and 3 a weight which serves to move the packages of merchandise downward to insure their delivery from the opening 4.

My coin receiving and testing device is comprised of a coin-slide 5, provided with a bearing in the casing 1 and a round opening 6 of a size to receive a coin of the proper denomination, the coin-opening 7 in the casing, through which the coin is inserted into the coin-opening 6, the frame 8, located over and partially inclosing the coin-slide 5, which is provided with a projecting lug forming bearings 9, 10, and 11 for portions of the testing mechanism, and a movable pawl 12, pivoted in the bearing 11 and provided with a point 13 so formed as to enter a notch 14 in one edge of the coin-slide 5. The notch 14 and the lever 12 serve to lock the coin-slide against operation when a fraudulent money token is placed in the coin-opening or when an attempt is made to operate the mechanism without placing a coin in the coin-opening. A coin-testing segment 15 is revolubly mounted on the sleeve 16, which sleeve 16 is in turn mounted on the shaft 17 in such manner as to revolve thereon. The shaft 17 is pivoted at one end in the bearing 9, passes under the movable pawl 12 in contact therewith, its outer end being flattened and mounted in a slot $11\frac{1}{2}$, contained in the bearing-lug 11 in such manner that it is free to move sidewise vertically with reference to the coin-slide, so that when the segment 15 is revolved by means of the pinion 19 and the rack-teeth $19\frac{1}{2}$, cut in the edge of the coin-slide 5, the point 15 will contact with the coin and raise the end of shaft 17 in the slot $11\frac{1}{2}$ and by its contact with the under side of the pawl 12 raise the point 13 out of contact with the notch in the edge of the coin-slide.

18 is a spiral spring wound upon said sleeve 16, one end of which is attached to the segment 15, its other end being secured to a pinion 19, the pinion 19 being secured to the sleeve 16 and arranged to enmesh with the rack-teeth $19\frac{1}{2}$, cut in the edge of the coin-slide 5.

20 is a tilting lever pivoted in the bearing 20—and provided with a spring 21, which normally causes its point 22 to lie upon the top of the coin-slide 5, which is so arranged as to permit said point to enter a slot in one side of the coin-opening 6 to project under and lift the coin out of said coin-opening when a package of merchandise has been delivered.

23 represents an outwardly-projecting lug upon the lower end of the coin-slide 5 and is adapted to receive the end of the pull-rod 24. Said pull-rod 24 passes through a slot in the lug 25, which is attached to the casing of the machine. A spiral spring 26 is inserted between the lugs 23 and 25 in such manner as to be compressed when the coin-slide 5 is pulled downwardly by the pull-rod 24.

There is attached to the coin-slide a plate 27, which extends downwardly at right angles thereto and is provided with an angular slot 28 so shaped as to receive the point 29, attached to the lower end of the goods-ejector

30, and impart an oscillating movement to it. Said goods-ejector 30 is attached to the shaft 31, which in turn is revolubly mounted in the bearings 32 32. The upper portion of the goods-ejector 30 has the cross-piece 33 so formed and arranged as to contact with the lowermost of the merchandise packages 34 34, &c., to eject it from the stack 2.

35 is a block which is attached to a spring 36, the lower end of said spring 36 being attached to the plate 27 by means of a suitable lug 37, the purpose of the spring 36 being to permit the block 35 to move in the opening 28 by contact with the pin 29. The purpose of the block 35 will be hereafter explained.

The lower part of the casing 1 serves as a money-receptacle and is provided with the door 38, one edge of which rests upon the lug 39, the other being provided with a catch 40, adapted to receive the bent end 41 of the rod 42. Said rod 42 extends upwardly to the upper end of the machine and has a portion 43 bent at right angles, so as to be inclosed by the catch 44 when in its locked position.

45 represents a lock-plate which is secured in the upper end of the casing 1 by means of the catch 44, secured therein, which catch passes through an opening 46 in the back plate of the casing 1. The lock is provided with the usual key-tumblers and the bolt 47, which passes under the lug 48. The lug 48 is secured to the casing 1 of the machine.

The operation of my improved coin-controlled vending-machine is as follows, assuming the machine to be in its normal position, as shown in sectional elevation, Fig. 2: On placing a coin in the coin-opening 7 and thereafter pulling downwardly upon the pull-rod 24 the coin-slide 5 will be moved downwardly and the pinion 19 revolved by means of rack-teeth cut in the side of said coin-slide 5 until the point of the segment 15 contacts with the coin. It will be noted that the distance from the slide 5 to the center of the shaft 17, as indicated in Fig. 4, is less than the length of the segment 15 from the center of the shaft to its point, so that when the shaft 17 is revolved and the point of the segment 15 contacts with the coin in the coin-slot, as indicated in Fig. 3, and the coin travels downward, revolving said segment 15 it will raise the shaft 17 in its bearings, and thereby move the point 13 of the lever 12 outwardly and out of contact with the notch 14 in the side of the coin-slide, thereby permitting said coin-slide to move downwardly, as shown in Fig. 3, whereupon the pin 29 will contact with the wall 49 of the angular slot 28 and will oscillate the goods-ejector 30, as shown in Fig. 4, and push outwardly a package of the goods. At the same time the pivoted lever 20 will eject the coin, so that it will fall downwardly into the bottom of the casing. Upon releasing the pull-rod 24 the coin-slide 5 will move upwardly to its normal position, and the pin 29 will ride upon the angular piece 35, as shown in Fig. 4, and hold the goods-ejector 30 in the position shown in Fig. 4 until the upper end of the coin-slide 5 moves upwardly to a position to cover the goods-opening 4 in the casing 1, as shown in Figs. 2 and 3. The purpose of this movement is to prevent persons from fraudulently pulling out packages of goods without inserting a coin of the proper denomination.

The stack or receptacle for holding the packages to be vended is so constructed as to be easily removed from the casing 1 when the lock-plate 45 is unlocked and removed and has secured to the bottom the pins 50 50, which are arranged to enter holes in the brackets 51 51. The brackets 51 51 are attached to the casing 1 of the vending-machine.

Having described my invention, what I claim is—

1. In a coin-controlled vending-machine, a casing having a coin-opening and an opening for the delivery of merchandise; a coin-slide mounted in said casing and arranged to cover both said openings; means for locking the coin-slide; coin-operated means for unlocking the coin-slide; means mounted on the coin-slide to operate a goods-ejector; and said goods-ejector.

2. In a coin-controlled vending-machine, a casing; a merchandise-holding receptacle mounted in said casing; a merchandise-ejector mounted in the casing; a coin-slide mounted in said casing adapted to cover the opening through which the merchandise is delivered; coin-controlled means for releasing the coin-slide; cam-surfaces on said coin-slide adapted to operate the ejector to deliver packages of merchandise.

3. A coin-controlled vending-machine, comprising a casing; a coin-opening in said casing, and an opening through which merchandise is ejected; a coin-slide arranged in said casing to cover both said openings; coin-controlled means coöperating with said coin-slide; a merchandise-ejector mounted in said casing and operated from the cam on the coin-slide; said cam; and means for returning the coin-slide to its normal position.

4. In a vending-machine, a casing having a coin-opening and an opening through which merchandise is ejected; a coin-slide slidably mounted in said casing and arranged to cover both said openings; means for locking the coin-slide when it covers both said openings; coin-operated means for unlocking said coin-slide; a merchandise-ejector capable of being oscillated; and means on the coin-slide adapted to oscillate said goods-ejector.

5. In a vending-machine, a casing provided with a coin-opening and an opening for the delivery of merchandise; means for covering both said openings; coin-controlled

means arranged to coöperate with the covering means for releasing said covering means to uncover the opening for the delivery of merchandise, and to operate the merchandise-ejector to deliver a package of merchandise; and said merchandise-ejector.

6. In a vending-machine, a casing provided with a coin-opening and an opening for the delivery of merchandise; means for covering both said openings; coin-controlled means arranged to coöperate with the covering means for releasing said covering means to uncover the opening for the delivery of merchandise and to operate a merchandise-ejector to deliver a package of merchandise, and to convey the coin to the coin-receptacle.

7. In a vending-machine, a casing; means in said casing for holding merchandise; an opening in said casing through which the merchandise is to be delivered; a coin-slide for covering said opening; a merchandise-ejector; means coöperating with the coin-slide for operating said merchandise-ejector; a coin-controlled locking device, all said means being so formed and arranged as to be operated when a coin of the proper denomination is inserted in the coin-slide, and said coin-slide moved downwardly.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses, this the 17th day of November, A. D. 1905.

ALBERT D. GROVER.

Witnesses:
H. M. KELSO,
R. P. ELLIOTT.