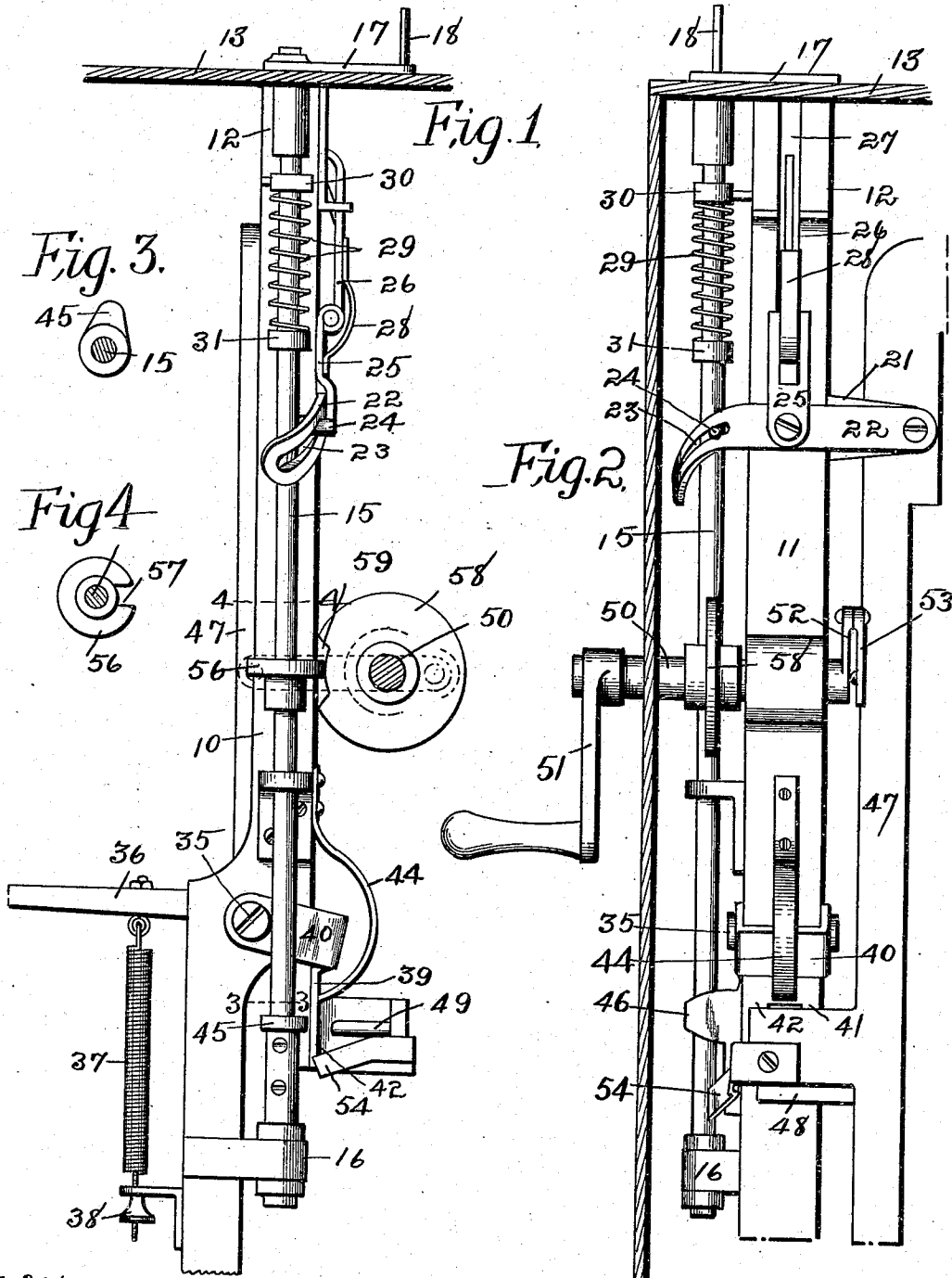


H. R. STODER.
COIN CONTROLLED MECHANISM.
APPLICATION FILED FEB. 8, 1909.

937,337.

Patented Oct. 19, 1909.

2 SHEETS—SHEET 1.



Witnesses
A. E. Hague
T. C. Dahlberg

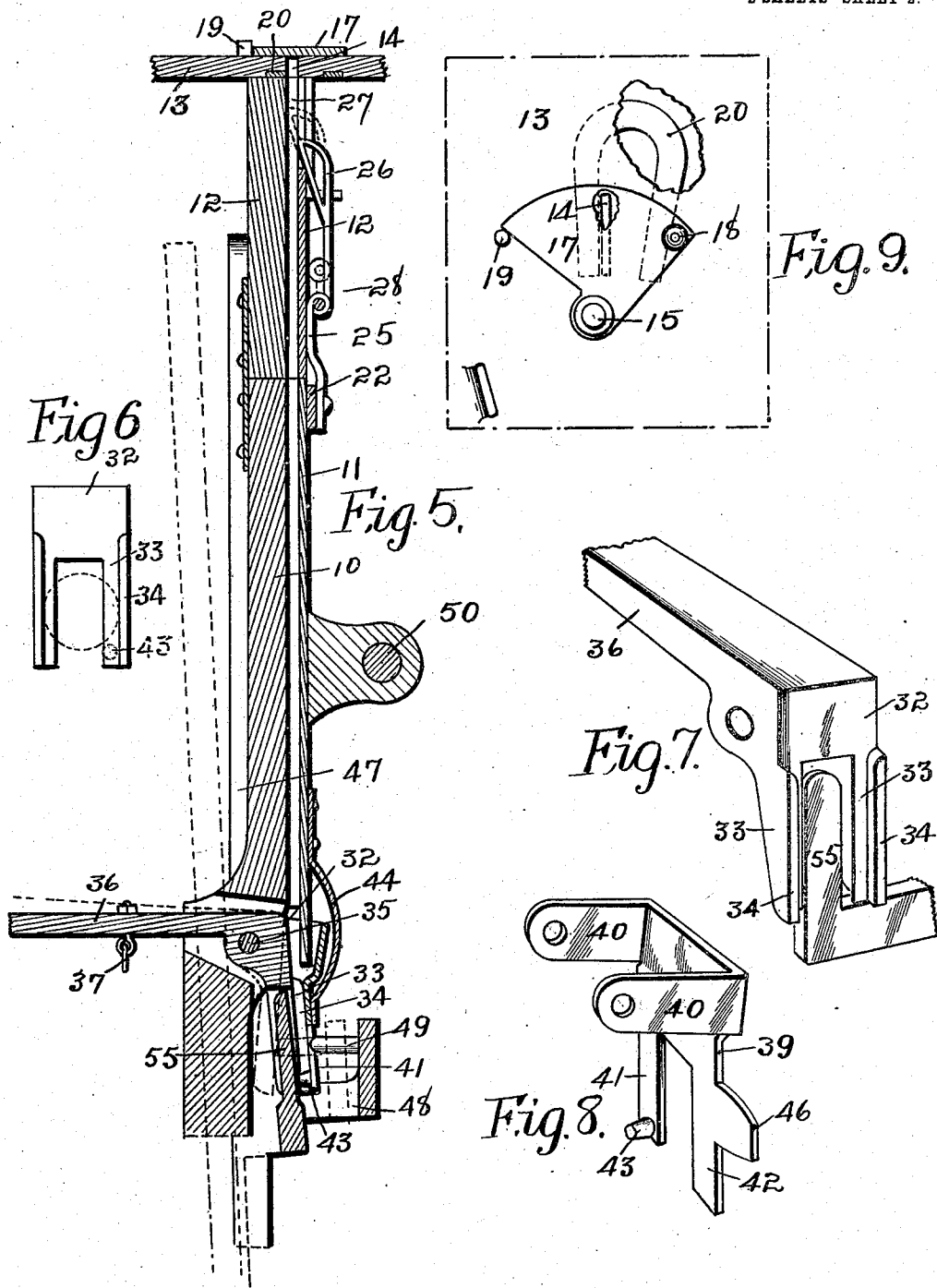
Inventor
H. R. Stoder
by Onwig Lane attys

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UNITED STATES PATENT OFFICE.

HERMAN R. STOUDE, OF NEWTON, IOWA.

COIN-CONTROLLED MECHANISM.

937,337.

Specification of Letters Patent.

Patented Oct. 19, 1909.

Application filed February 8, 1909. Serial No. 476,687.

To all whom it may concern:

Be it known that I, HERMAN R. STOUDE, a citizen of the United States, residing at Newton, in the county of Jasper and State of Iowa, have invented a certain new and useful Coin-Controlled Mechanism, of which the following is a specification.

The object of my invention is to provide a coin controlled mechanism of simple, durable and inexpensive construction designed to be used in connection with vending machines and the like.

More specifically it is my object to provide improved means for first testing a coin in order to determine whether or not it will be attracted by a magnet and to automatically eject it without operating the machine in the event that it is made of metal that will be attracted by a magnet; further to provide means for testing a coin as to diameter and for ejecting it without operating the machine in the event that it is too small; then to test the coin in regard to its tensile strength and to automatically eject it in the event that it is bent by the machine; and finally to actuate the machine by means of a coin that has been subjected to the foregoing tests.

A further object is to provide means for automatically locking the machine actuating shaft against movement when the coin slot is uncovered.

My invention consists in the construction, arrangement and combination of the various parts of the device whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 shows a side elevation of a coin controlled mechanism embodying my invention. Fig. 2 shows a front elevation of the complete device embodying my invention, a portion of the supporting frame therefor being shown in section. Fig. 3 shows a detail sectional view on the line 3—3 of Fig. 1. Fig. 4 shows a detail sectional view on the line 4—4 of Fig. 1. Fig. 5 shows a vertical, central sectional view through the complete device embodying my invention. The dotted lines in said figure show the parts tilted to the position which they may assume when a proper coin has been inserted therein. Fig. 6 shows a detail face view of the rear jaw for testing coins as to their rigidity.

The dotted lines therein show the position of a coin of proper size therein. Fig. 7 shows a perspective view of same with the filler plate in position between the sides of the jaw. Fig. 8 shows a perspective view of the front jaw, and—Fig. 9 shows a detail plan view illustrating the hinged cover for the slot and the magnet arranged under the top of the frame.

Referring to the accompanying drawings, I have used the reference numeral 10 to indicate the stationary frame of the device. In this frame is a vertical slot 11 extending from the upper to the lower end thereof. The upper portion of the frame is preferably made of material such as copper, which can not be magnetized by means of the permanent magnet hereinafter described.

The copper members of the stationary frame are indicated by the numeral 12. At the top of the frame 10 is a stationary top member 13 provided with a slot 14 in line with the slot 11 and capable of receiving a coin of proper size. At the side of the frame 10 is a vertical shaft 15 supported near its lower end in a bearing 16 and at its upper end in the top 13. Fixed to the shaft 15 is a cover 17 for the slot. This cover is of segmental shape and is provided with a handle 18 at one corner. The movement of the cover is limited by a pin 19 on the stationary top 13. Said cover normally extends over the slot, and when moved to one limit of its movement, the slot will be uncovered.

On the under surface of the top 13 is a permanent magnet 20 of the ordinary horse-shoe kind, so arranged that one of its terminals is adjacent to the slot 14. Said parts are so arranged that when the cover 17 is moved to one side of the slot 14, then a coin may be placed in the slot. If said coin is made of a metal that will be attracted and held by the magnet, then the metal will fail to drop down through the slot 11. In order to prevent a coin of this kind from being forced down into the slot, I have provided the following mechanism: Fixed to the stationary frame 10 is a bracket 21. Pivoted to said bracket is a lever 22 having a curved end provided with a slot 23. Said slot is designed to receive a pin 24. Fixed to the lever 22 is an arm 25 extended upwardly and having a pivoted arm 26 at its upper end. This arm 26 extends through a slot 27 in the

front side of the stationary frame. The said arm 26 is yieldingly held in a direction to extend through the slot 27 by means of the spring 28. These parts are arranged for operation as follows: Assuming that the cover 17 is in its closed position, then the parts will be in the position shown in Fig. 2, and the arm 26 will be in the position shown in Fig. 5. When the cover 17 is moved to position to uncover the slot, then the rotation of the shaft 15 will cause the pin 24 to operate upon the slotted lever 22 in such a manner as to elevate the lever and to thereby raise the arm 26 and to cause it to assume the position shown by dotted lines in Fig. 5 to thereby prevent a coin from passing down through the slot. The arm 26 will remain in this position and thereby close the slot so long as the cover 17 is open; then when the cover is closed, the arm 26 will be moved downwardly and the coin may then drop downwardly through the slot 11 unless detained by the action of the horseshoe magnet. In order to normally hold the cover in its closed position, I have provided a spring 29 on the shaft 15, one end of the spring being connected to a stationary bearing 30 on the frame 10 and the other end to a collar 31 on the shaft.

The means for testing a coin as to its diameter and its rigidity is as follows: Pivotaly mounted near the lower end of the frame 10 is a rear jaw comprising a body portion 32 with two downwardly extending jaw members 33 spaced apart from each other. At the forward edges of the jaw members 33 are the ribs 34 which are spaced apart just far enough to admit a coin of proper diameter between them. The jaw 32 is pivoted to the pin 35 and it is provided with a rearwardly projecting arm 36. This arm is yieldingly held downwardly by means of a spring 37, the tension of which may be adjusted by a nut 38. The forward jaw comprises a body portion 39 having, at its upper end, two rearwardly projecting arms 40 pivoted to the pin 35. It also has two downwardly projecting jaw members 41 and 42 spaced apart from each other. The jaw member 41 is provided near its lower end with a projecting pin 43 extended rearwardly toward the jaw 33. The position of the pin 43 with relation to the jaw 33 is illustrated in Fig. 6 by dotted lines, and a coin of proper size is also indicated by dotted lines in Fig. 6. The function of said pin 43 is as follows: Assuming that a coin of smaller than the predetermined size is inserted between the jaws, it will engage and strike upon the pin 43 and hence it will be moved bodily toward the side of the jaws opposite from the pin 43. Then when the coin is pressed upon from the front as hereinafter described, the coin will pass through between the jaws 41 and 42 and the machine

will not be operated. However, when a coin of proper size is placed in the slot it will be held by the pin 43 until it is pushed upon by mechanism hereinafter described to thereby actuate the machine. The said jaw 39 is yieldingly held rearwardly by means of the spring 44. I have provided means for moving the jaw 39 outwardly away from the jaw 32 as follows: Fixed to the shaft 15 is a cam 45 arranged in position so that it will strike upon a lug 46 on the jaw member 42 when the said shaft is rotated. This will force the jaw 39 outwardly and permit a coin held between the jaws to drop out. Assuming, however, that a coin of proper size is pushed upon from the front, it is obvious that the jaws will both be tilted rearwardly and the arm 36 will be tilted upwardly and the machine to be operated by the coin-actuated mechanism will then be operated by the said arm 36.

The means for actuating a vending machine or other device by the coin retained between the jaws is as follows: The numeral 47 indicates a lever fulcrumed at its lower end to a suitable support and provided with a forwardly projecting pin 49 which pin stands directly in front of the space between the jaws 41 and 42. The means for manually tilting the lever 47 is as follows: Mounted in stationary supports is a rotatable shaft 50 having a crank 51 by which it may be manually turned, and a crank-arm 52 which is pivoted to a link 53 and said link is pivoted to the lever 47. After a coin has been placed in the slot, the operator turns the crank 51 and thereby causes the lever 47 to be tilted rearwardly. This carries with it the pin 49 which pin will, therefore, be firmly pressed upon a coin contained between the jaws. If the coin should be made of a soft or yielding material such, for instance, as lead, the pin 49 will cause it to bend and the coin after being bent will not press the jaws rearwardly or operate the arm 36, and when the jaws are again opened the coin thus bent will be dropped out without having actuated the machine.

I have provided an additional means for automatically opening the jaws when the lever 47 is returned to its normal position as follows: Fixed to the arm 48 is a spring-hook 54, which hook is in position to engage the lower end of the jaw member 42 during the rearward movement of the lever 47. Then when the lever 47 moves forwardly, it will draw the jaw 42 forwardly with it. The said jaw will be pulled forwardly far enough to permit a coin to drop out and then the lower end of the jaw will pass above the hook, and the jaw will then be returned to normal position by its spring 44. In order to prevent a coin between the jaws from tilting edgewise and thus moving rearwardly between the jaw members 33, I have pro-

vided an arm 55, fixed to the arm 48 and extended to position between the jaw members 33, as clearly shown in Fig. 7. This arm 55 moves forwardly and rearwardly with the arm 48 and the pin 49, hence, it will not in any way interfere with the operation of the pin on the coin within the slot.

I have provided means for automatically locking the shaft 15 against rotation at all times except when the cover 17 is in its closed position as follows: Fixed to the shaft 15 is a disk 56 having a slot 57 therein, and fixed to the shaft 50 is a disk 58 having a notch 59 therein, said disks being so arranged and positioned with relation to each other that when the cover 17 is closed, the slot 57 will be in position where the disk 58 may pass through the slot when the shaft 50 is rotated. However, when the cover 17 is wholly or partially opened, the disk 56 will lie in the notch 59 and thus lock the shaft 50 against rotation. Therefore, before the crank 51 may be turned, the operator must place a coin of the proper kind in the slot and then close the cover 17, as the crank 51 cannot be turned when the cover is open. Hence, it will be impossible to withdraw a coin after it has once been placed in the slot and the crank 51 turned.

In practical operation and assuming that a proper coin is placed in the slot 11, then it will drop past the magnet to position in engagement with the arm 26. Then when the cover is released, it will be closed by means of the spring 29 on the shaft 15, and the arm 26 will be withdrawn from the slot by means of the pin 24, the lever 22 and the connected mechanism. This will permit the coin to drop to position between the jaws. Then, when the operator turns the crank 51, he will tilt the lever 47 rearwardly and the pin 49 will press upon the coin. If the coin is of the proper material it will be pressed rearwardly with the jaws far enough to operate the arm 36 and actuate the vending machine; or, if the coin is not of the proper kind, but is made of a material that will bend, the pin 49 will bend it, and hence, the rear jaw will not be moved rearwardly far enough to actuate the vending machine. Then, when the lever 47 is moved forwardly by means of the crank 51, the hinged jaw will be carried forwardly away from the rear jaw and the coin will be permitted to drop out. If, for any reason, the coin should not be released upon this operation, the jaws will be again opened and the coin permitted to drop out when the operator first opens the hinged cover 17 preparatory to putting in a coin during a succeeding operation of the device. This second means for opening the jaws is also advantageous in the event that the operator of the machine should drop two coins into the slot during the time that the hinged cover was open, and provided that

the crank 51 was not operated between the times when the first and second coins were inserted.

I am aware that heretofore devices of this class have been provided with magnets to detain coins or other objects that are susceptible to the action of a permanent magnet, and also that means have been provided to co-act with a cover for the slot for the purpose of holding a coin to position near the magnet until the cover was closed. However, the mechanism herein shown and described for accomplishing this purpose is of very simple and inexpensive construction and is not likely to get out of order, and is, therefore, a valuable improvement in the art.

One of the valuable features of my invention is the means for automatically locking the cover 17 in its closed position during the time that the crank 51 is being turned to operate a vending machine. Another important feature of my invention is the peculiar construction and arrangement of the jaws between which the coins are held for the purpose of testing the coins and for operating the machine, said jaws being of extremely simple, durable and inexpensive construction and being positive in operation. Another feature is the means for automatically opening the jaws for the purpose of dropping a coin both upon the return movement of the vending machine lever 47, and also upon the opening of the cover 17, for the purposes before described.

I claim as my invention.

1. In a device of the class described, the combination of a stationary frame having a coin slot therein, a cover pivoted in position over the coin slot, a shaft connected with the cover to be rotated when the cover is opened, an arm yieldingly held in the coin slot, and means connected with said arm and with said shaft for projecting the arm into the coin slot when the cover is opened, and for withdrawing it from the coin slot when the cover is closed.

2. In a device of the class described, the combination of a stationary frame having a coin slot therein, a shaft, a cover fixed to the shaft and capable of extending over the coin slot, a spring arranged for rotating the shaft in one direction, a pin fixed to the shaft, a lever pivoted to a stationary support and having a curved slot therein to receive said pin, a support fixed to said lever, an arm pivoted to the support and projected into the coin slot below the cover, a spring for yieldingly holding the arm in the slot, said arm being so shaped that when the lever is at its lower limit of movement the arm will be withdrawn from the slot, and when at its upper limit of movement, the arm will project into the coin slot, and a permanent magnet arranged adjacent to the upper end of the coin slot.

3. In a device of the class described, the combination of a stationary frame having a coin slot therein, a pivoted cover for the coin slot, two jaws independently pivoted to the frame at the lower end of the coin slot and being designed to receive a coin between them, said jaws being formed with a central opening, a pin normally supported in front of said central opening, means for forcing said pin rearwardly to engage a coin held between the jaws, and means for automatically tilting the forward jaw away from the rear one when the cover is opened.

4. In a device of the class described, the combination of a stationary frame having a coin slot therein, a pivoted cover for the coin slot, two jaws independently pivoted to the frame at the lower end of the coin slot and being designed to receive a coin between them, said jaws being formed with a central opening, a pin normally supported in front of said central opening, means for forcing said pin rearwardly to engage a coin held between the jaws, and means for automatically tilting the forward jaw away from the rear one when the cover is opened, and means for tilting the forward jaw away from the rear one when the said pin is moved forwardly.

5. In a device of the class described, the combination of a stationary frame having a coin slot therein, a pivoted cover for the coin slot, two jaws independently pivoted to the frame at the lower end of the coin slot and being designed to receive a coin between them, said jaws being formed with a central opening, a pin normally supported in front of said central opening, means for forcing said pin rearwardly to engage a coin held between the jaws, means for automatically tilting the forward jaw away from the rear one when the cover is opened, means for tilting the forward jaw away from the rear one when the said pin is moved forwardly, and a spring for normally holding the forward jaw to its rearward limit.

6. In a device of the class described, the combination of a stationary frame having a coin slot therein, a rear jaw pivotally supported at the lower end of the frame and having its central portion open, ribs at the sides of the front face of said jaw, a forward jaw pivotally supported and having a central opening, and a rearwardly projecting pin on the forward jaw so arranged that it will cause a coin of small diameter placed between the ribs on the rear jaw to move to one side of the jaws so that it may be pushed through the opening in the rear jaw.

7. In a device of the class described, the combination of a stationary frame having a coin slot therein, a rear jaw pivotally supported at the lower end of the frame and having its central portion open, ribs at the sides of the front face of said jaw, a forward jaw pivotally supported and having a central opening, and a rearwardly projecting pin on the forward jaw so arranged that it will cause a coin of small diameter placed between the ribs on the rear jaw to move to one side of the jaws so that it may be pushed through the opening in the rear jaw.

8. In a device of the class described, the combination of a stationary frame having a coin slot therein, a rear jaw pivoted below the coin slot and having a central opening, ribs on the sides of its forward face, a second jaw pivoted in front of the first and also having a central opening, a lug on one side of said forward jaw extending rearwardly toward the rear jaw, a pivoted lever, a pin connected with said pivoted lever extended rearwardly in front of the opening between the jaws, and an arm connected with said lever to normally stand in the opening in the rear jaw.

9. In a device of the class described, the combination of a frame having a coin slot therein, a rear jaw pivotally mounted at the lower end of the coin slot and having a rearwardly projecting arm at its upper end, and having two downward extensions on opposite sides of its lower end spaced apart from each other, ribs on the forward faces of said extensions, a forward jaw pivotally supported and also having two downwardly extended jaw members spaced apart, a pin on one of said members extended rearwardly, a spring for normally holding the forward jaw to its rearward limit, a lever fulcrumed at its lower end, an arm carried by the lever, a pin fixed to said arm in front of the forward jaw, an arm fixed to said lever to normally stand in position between the sides of the rear jaw, said parts being so arranged that when a proper coin is placed between the jaw and the lever is tilted, the pin will engage the coin and move it together with the rear jaw rearwardly to thereby throw the arm of the rear jaw upwardly.

10. In a device of the class described, the combination of a stationary frame having a coin slot therein, a vertical shaft, a cover fixed to the vertical shaft to extend over the coin slot, a spring for normally holding the shaft in position with the cover closed, a cam fixed to the shaft, two pivoted jaws at the lower end of the coin slot designed to receive a coin between them, the forward one of said pivoted jaws being so arranged with relation to the cam that when the cover is open it will be tilted forwardly to permit a coin between the jaws to drop out.

11. In a device of the class described, the combination of a stationary frame having a coin slot therein, a vertical shaft, a cover

120 125 130

fixed to the vertical shaft to extend over the coin slot, a spring for normally holding the shaft in position with the cover closed, a cam fixed to the shaft, two pivoted jaws at the lower end of the coin slot designed to receive a coin between them, the forward one of said pivoted jaws being so arranged with relation to the cam that when the cover is open it will be tilted forwardly to permit a coin between the jaws to drop out, and a hook connected with said lever and so arranged with relation to the forward jaw that when the lever is moved forwardly, the hook will engage the forward jaw and move it forwardly to permit a coin to drop out.

12. In a device of the class described, the combination of a stationary frame having a coin slot therein, a vertical shaft, a cover fixed to the vertical shaft to extend over the coin slot, a spring for normally holding the shaft in position with the cover closed, a cam fixed to the shaft, two pivoted jaws at the lower end of the coin slot designed to receive a coin between them, the forward one of said pivoted jaws being so arranged with relation to the cam that when the cover is open it will be tilted forwardly to permit a coin between the jaws to drop out, and a hook connected with said lever and so arranged with relation to the forward jaw

that when the lever is moved forwardly, the hook will engage the forward jaw and move it forwardly to permit a coin to drop out, and a spring for normally holding the forward jaw to its rearward limit.

13. In a device of the class described, the combination of a stationary frame having a coin slot therein, a vertical shaft, a cover fixed to the shaft adjacent to the coin slot, a disk fixed to the shaft and having a slot therein, a pivoted lever, a horizontally arranged shaft, a crank thereon, a crank arm on the horizontally arranged shaft, a link connecting the crank arm with the said pivoted lever, and a disk on the horizontally arranged shaft having a notch therein and so arranged with relation to the slotted disk on the vertical shaft that when the cover is in a closed position, the disk on the horizontal shaft may be rotated through the slot of the disk on the vertical shaft, but when said cover is in any other position, the disk on the horizontal shaft will be locked against rotation by the disk on the vertical shaft.

Des Moines, Iowa, Dec. 17, 1908.

HERMAN R. STODER.

Witnesses:

RALPH ORWIG,
MILDRED B. GOLDIZEN.