

No. 890,046.

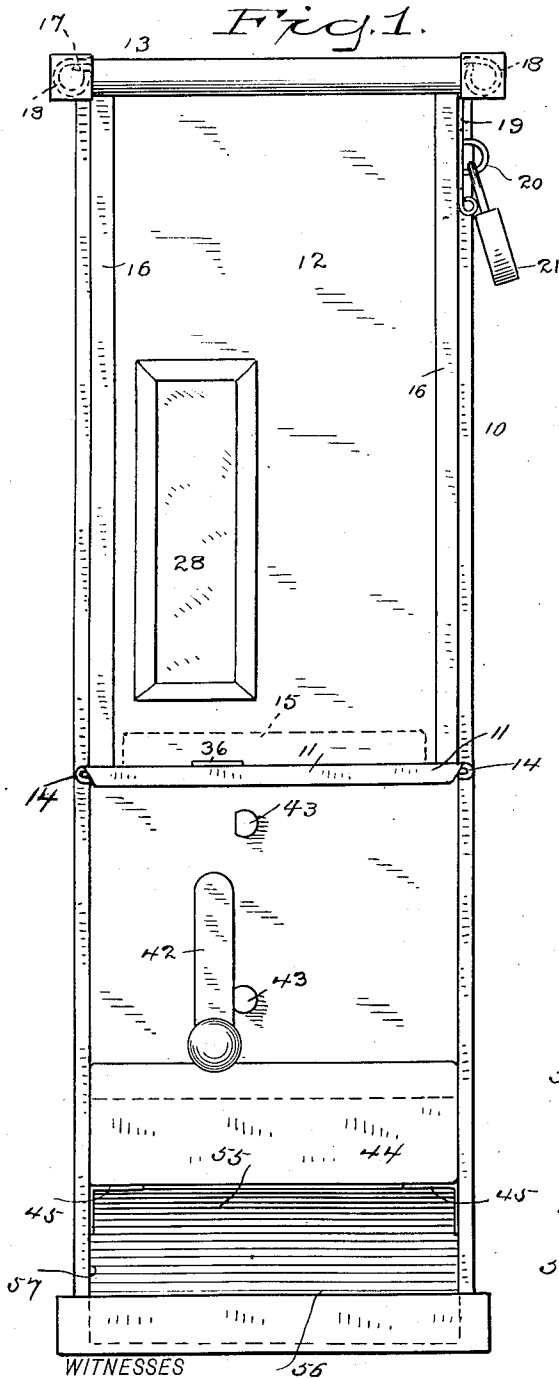
PATENTED JUNE 9, 1908.

F. W. GREEN.

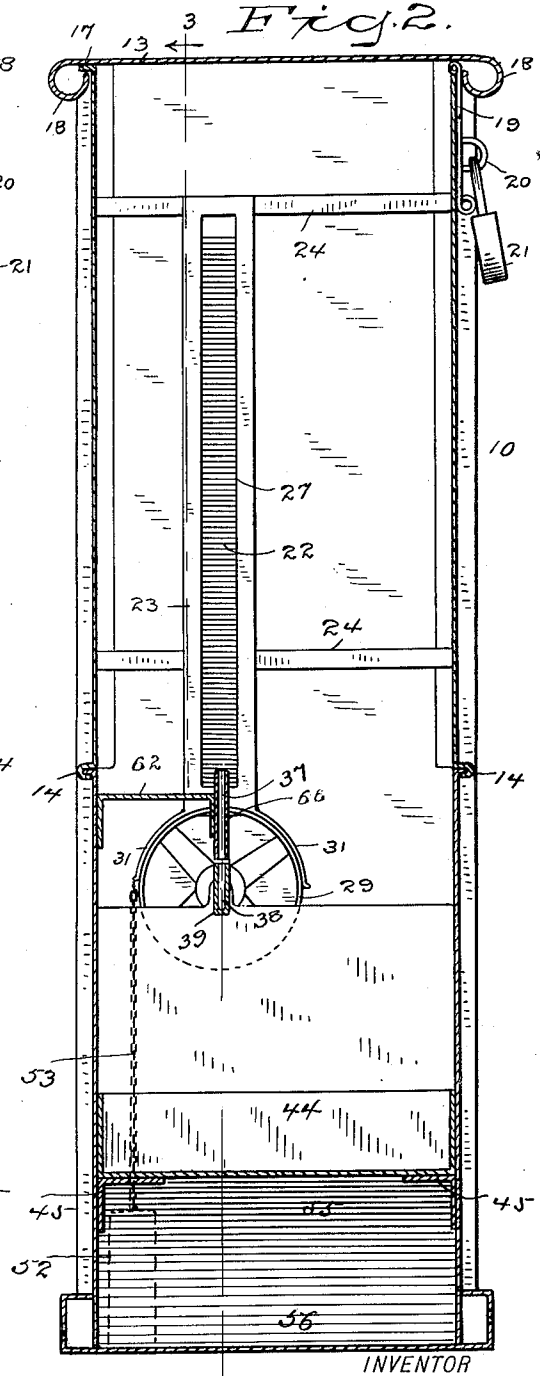
NEEDLE VENDING MACHINE.

APPLICATION FILED JULY 16, 1908.

3 SHEETS—SHEET 1.



WITNESSES
H. A. Ramlar
J. W. Atherton.



INVENTOR
Frank W. Green
BY
J. M. Wooster
ATTORNEY

No. 890,046.

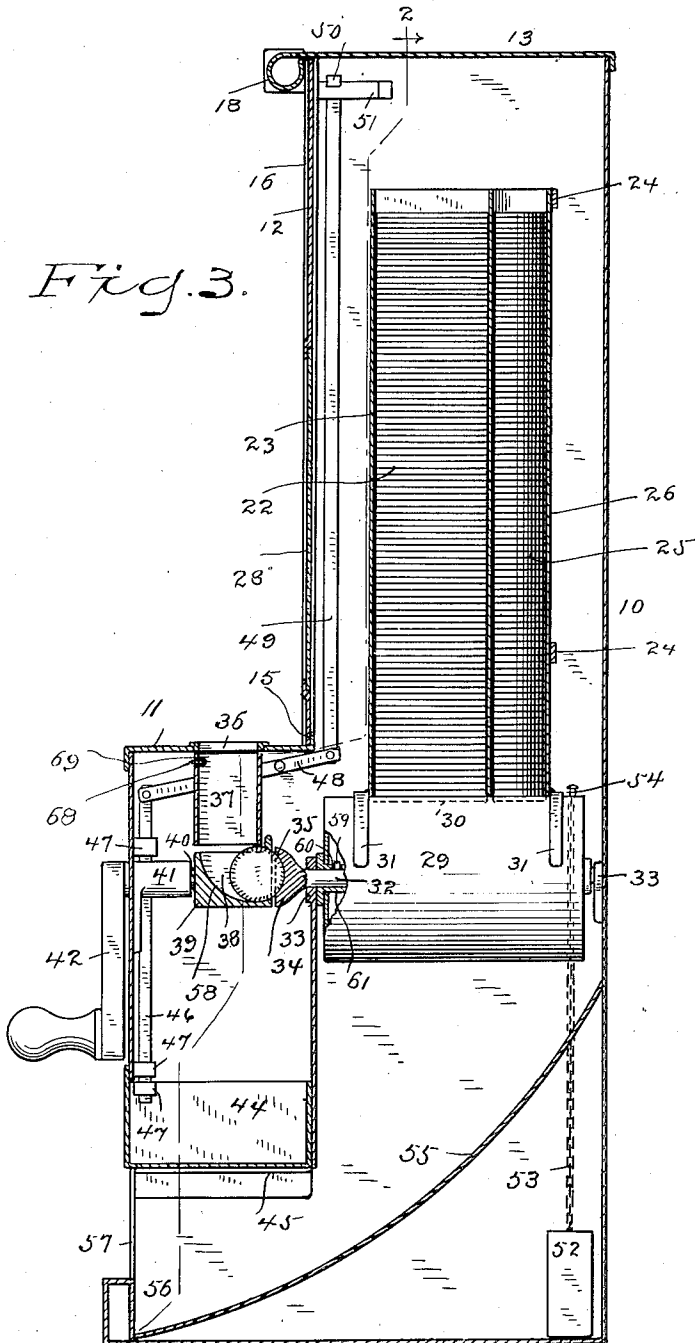
PATENTED JUNE 9, 1908.

F. W. GREEN.
NEEDLE VENDING MACHINE.

APPLICATION FILED JULY 16, 1906.

3 SHEETS—SHEET 2.

Fig. 3.



WITNESSES

H. A. Lamb.
S. W. Atherton.

Fig. 4.

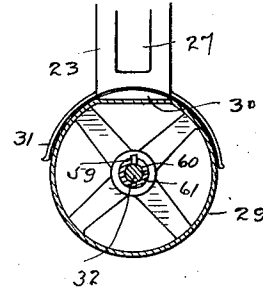


Fig. 5.

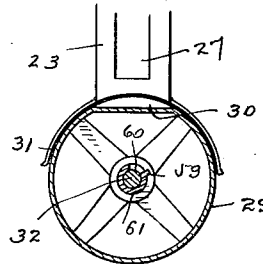
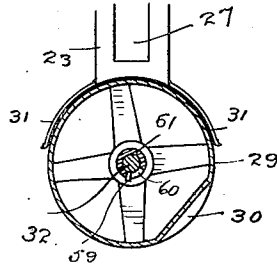


Fig. 6.



INVENTOR

Frank W. Green

BY

A. M. Hooster
ATTORNEY

No. 890,046.

PATENTED JUNE 9, 1908.

F. W. GREEN.
NEEDLE VENDING MACHINE.

APPLICATION FILED JULY 16, 1906.

3 SHEETS—SHEET 3.

Fig. 7.

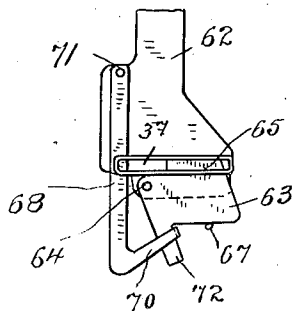


Fig. 8.

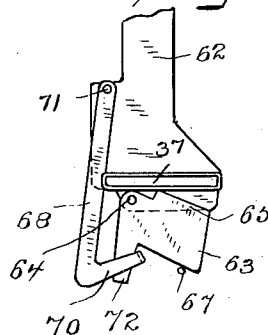
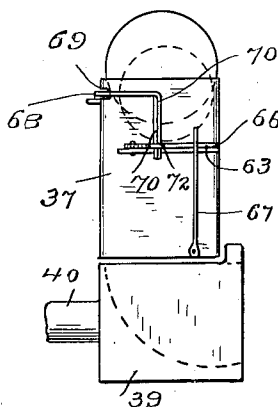


Fig. 9.



WITNESSES.

H. A. Lamb.
S. W. Atherton.

INVENTOR

Frank W. Green

BY

A. M. Worcester
ATTORNEY

UNITED STATES PATENT OFFICE.

FRANK W. GREEN, OF DANBURY, CONNECTICUT.

NEEDLE-VENDING MACHINE.

No. 890,046.

Specification of Letters Patent.

Patented June 9, 1908.

Application filed July 16, 1906. Serial No. 326,325.

To all whom it may concern:

Be it known that I, FRANK W. GREEN, a citizen of the United States, residing at Danbury, county of Fairfield, State of Connecticut, have invented a new and useful Needle-Vending Machine, of which the following is a specification.

This invention has for its object to provide a simple and inexpensive vending machine adapted for general use and especially adapted for vending articles for which exact payment is not made by the deposit of the operating coin and change is required to be made by the machine itself.

With this and other objects in view I have devised the novel coin-operated vending machine, of which the following description in connection with the accompanying drawings is a specification, reference characters being used to indicate the several parts.

In the present instance I have illustrated an embodiment of the invention especially adapted for vending packages of needles at four cents a package, the machine being constructed to be operated by a nickel five-cent piece and to give to the operator for each nickel five-cent piece deposited in the machine a package of needles and one cent in change, it being understood however that the machine is equally adapted to the vending of any other article of commerce in packages and to give any amount of change that may be required. For example, if the packages were thicker, two pennies instead of one might be given out by the machine or a plurality of columns of pennies or other coins might be manipulated in connection with the packages to be sold.

In the accompanying drawings:—Figure 1 is an elevation of my novel machine closed as in use; Fig. 2 a vertical section on the line 2—2 in Fig. 3 looking in the direction of the arrow; Fig. 3 a vertical section on the line 3—3 in Fig. 2, looking in the direction of the arrow; Figs. 4, 5 and 6 are detail sectional views illustrating the connection between the vending cylinder shaft and the cylinder in the normal, the engaged and the vending positions respectively; and Figs. 7, 8 and 9 are detail views illustrating the operation of stop mechanism for coins smaller than operative coins.

It is a novel feature of the machine that the entire machine, including the case and the operative parts, is adapted to be made from sheet metal.

10 denotes the body of the case which is made from plates of sheet metal jointed and soldered together in any convenient manner, for example, as indicated in the drawings, 11 a cover plate, 12 a front plate and 13 a top plate. These plates are removable and when removed fully disclose the internal mechanism of the machine. The edges of the cover plate are turned over to form grooves which receive ways 14, at about the mid-height of the machine, upon which the cover plate slides. At the rear end of the cover plate is an upturned flange 15 which is engaged by the front plate, thus locking the cover plate in position so that it cannot be removed until the front plate is raised. The front plate slides in ways 16 in the sides of the body. One of the sides of the body is provided at its upper end with an outwardly turned flange 17, see Fig. 2, which is engaged by a rolled flange 18 on the top plate. The other end of the top plate is provided with a hinged hasp 19 having a slot to receive a staple 20 which projects outward from that side of the case. The top plate is locked in place, thus locking the front plate and the cover plate in any suitable manner as by means of a padlock 21 engaging the staple.

22 denotes packages to be vended which lie superposed in a chute 23 secured to cross pieces 24 within the case. 25 denotes coins given in change by the machine, which lie superposed in a chute 26 likewise secured to the cross pieces. Both the chutes and the cross pieces may be made from sheet metal bent to angular form to give sufficient strength and rigidity. Chute 23 is shown as provided with a vertical opening 27 and the front plate is provided with a window 28 so that any one can look into the machine at any time and see how much stock is on hand. Below the chutes is a vending cylinder 29 which is provided with a longitudinal receiving recess 30 which just receives one package from chute 23 and one coin from chute 26. The lower ends of the chutes are shown as provided with curved plates 31 which partly encircle the cylinder and assist in retaining the chutes firmly in place relatively to the cylinder.

32 denotes a shaft upon which the bearing sleeve 61 of the cylinder is mounted loosely and which is journaled in suitable bearings 33 within the case. The inner end of the shaft is provided with a head 34 having in its face a slot 35 which receives a portion of

the operating coin edgewise. The operating coin, for example a nickel five-cent piece, is passed through a slot 36 in cover plate 11, drops through a guideway 37 which is rigidly secured in any suitable manner within the case and is received edgewise in a slot 38 in a coin holder 39 carried by an operating shaft 40 journaled in a bearing 41 within the case. This shaft passes through the front of the case and is provided externally with a crank 42 for convenience in operation. Stops 43 upon the front of the case limit the movement of the crank in both directions.

At the rear end of slot 38 in the coin holder is an incline 58 which causes a coin dropped therein to roll forward and its forward edge to pass into slot 35 in head 34 on the cylinder shaft. Should a smaller coin than the proper operating coin be dropped into the machine, it would not fill slots 38 and 35 and when the coin holder was turned it would be drawn out of the slot in the head and deposited in the cash drawer without operating the vending cylinder.

In order to provide that the machine shall not be continuously operated by means of a single coin by turning the cylinder slowly forward until the package and change coin drop out and then turning it quickly back again retaining the operating coin therein, I leave the vending cylinder loose on shaft 32 and pick up the cylinder after the shaft has made a partial rotation. Bearing sleeve 61 of the cylinder is provided with an arc slot 60 which is engaged by a pin 59 which projects radially from the shaft. This pin normally lies at one end of the slot and engages the other end thereof after the shaft has made approximately an eighth rotation, see Figs. 4, 5 and 6. This insures that in order to carry the package and change coin to drop out, the operating coin will have been carried around approximately an eighth of a rotation farther and must necessarily drop out into the cash drawer the instant the crank is released or turned backward after the package and change coin have dropped into the receptacle, as will be more fully explained.

44 denotes the cash drawer which slides on angle rests 45 within the case. The cash drawer is locked by means of a bolt 46 which slides in guides 47, one of which is on the cash drawer, and is operated by means of a lever 48 pivoted within the case and a rod 49 pivoted to the inner end of the lever and extending to the upper end of the case. The upper end of the rod is provided with an angle arm 50 which hooks over an abutment 51 rigidly secured to the case and makes it impossible to operate the bolt to release the cash drawer until top plate 13 is removed. It will thus be seen that the single lock 21 not only locks the three removable plates to the case but

also locks the cash drawer. 52 denotes a weight and 53 a chain extending therefrom which partly encircles the vending cylinder and is attached thereto as at 54. When the vending cylinder is operated, as will presently be described, the weight is lifted thereby and as soon as the cylinder is released acts to return it to its normal position, as in Figs. 1 and 2. Beneath the cylinder is an incline 55 upon which the package and change coin or coins drop, when they pass from the cylinder, and slide to the front of the case into a receptacle 56 from whence they may be removed by the operator through an opening 57.

In order to provide that the machine shall not be operated by means of a smaller coin, for example a penny instead of a nickel five-cent piece, stop mechanism is placed in the guideway 37 which I will now describe. The guideway is shown as supported by a sheet metal bracket plate 62. A stop plate 63, pivoted to the bracket plate as at 64, is provided with a lip 65 which normally passes through a slot 66 in the guideway and bars the passage of any coin therethrough, a spring 67 bearing against the outer edge of the stop plate acting to retain the lip in the slot. The stop plate can only be operated to withdraw the lip from the slot by means of a lever 68 pivoted to the bracket plate on the opposite side of the guideway as at 71. The edge of lever 68, at about its mid-length, normally passes into a slot 69 in the guideway lying above slot 66, as clearly shown in Fig. 9, and partly fills the slot. Lever 69 is provided with a downwardly extending angle arm 70 which operatively engages an arm 72 extending from the stop plate. The guideway is just wide enough to receive a nickel five-cent piece, which in order to be passed into the guideway must be pressed against the edge of lever 68 with force enough to oscillate said lever, the movement of which through the engagement of the angle arm with arm 72 will oscillate the stop plate also and move the lip out of slot 66 in the guideway, leaving the latter clear for the coin to pass through. A smaller coin, as a penny, will not fill the guideway and will pass the projecting edge of lever 68 without operating said lever and the stop plate so that the lip of the stop plate will bar the passage of the smaller coin through the guideway. The operation will be readily understood from Fig. 9, in which an operative coin is shown in full lines and a smaller coin in dotted lines.

The operation of the machine as a whole is as follows: It will be noted that the only connection between coin holder 39 and head 34 on the cylinder shaft is made by the operating coin and in the absence of a coin that will fill slot 38 in the coin holder and slot 35 in the head, there can be no operation

of the cylinder. The operating shaft and coin holder may be turned backward and forward without any effect whatever until an operating coin is dropped in. An under-size coin will not lock the coin holder to the head so as to operate the cylinder but will simply be drawn out from the slot in the head and dropped from the coin holder into the cash drawer when the coin holder is rotated. To operate the machine, the proper coin, for example a nickel five-cent piece, is passed through slot 36 in the cover plate and drops through the guideway into slot 38 in the coin holder, the incline of which causes the coin to roll forward and its forward edge to closely engage slot 35 in head 34. The operator then turns the crank upward until it engages the upper stop. This will rotate the coin holder and, through the medium of the coin engaged with the head on the cylinder shaft, will rotate the latter, and pin 59 on the cylinder shaft will engage the end of slot 60 in the bearing sleeve of the cylinder and carry the latter around also. In practice the shaft is given approximately a half rotation and the vending cylinder approximately a three-eighths rotation.

In Fig. 5 I have illustrated the position of the pin projecting from the vending cylinder shaft at the instant the shaft picks up the cylinder, and in Fig. 6 I have illustrated the position of said parts when the crank is at the extreme of its movement, that is in engagement with the upper stop. It will be noted that recess 29 in the cylinder has been carried around far enough to insure that the package and change coin will drop out into the receptacle beneath, and that the coin holder has been completely inverted so that there will be no possibility of retaining the operating coin therein by turning the crank backward quickly after the package and change coin have dropped out of the cylinder. As soon as the crank is released it will drop back to its normal position and the weight will turn the cylinder to its normal position as soon as it is disconnected from the coin holder by the dropping out of the operating coin. As soon as the cylinder reaches its normal position, another package and change coin will drop from their respective chutes into recess 30 in the cylinder, it being understood of course that the chutes receive the packages and change coins loosely so that they will feed by gravity. When the package and change coin in a recess pass out from under the chutes, the lower package and lower coin will rest upon the periphery of the cylinder but will drop into the recess the instant the cylinder is returned to its normal position by the weight.

Having thus described my invention I claim:

1. A vending machine comprising a plurality of chutes located adjacent each other, and a single drum mounted to oscillate adjacent the delivery ends of said chutes and having its periphery provided with means for simultaneously engaging and removing the lowermost articles in all of the chutes.

2. A vending machine comprising a plurality of chutes located adjacent each other, and a single drum mounted to oscillate adjacent the delivery ends of said chutes, the periphery of said drum being provided with a single recess to simultaneously engage and remove the lowermost articles contained in all of the chutes.

3. A vending machine comprising a plurality of chutes of different contours to contain articles of different characteristics, and a single drum mounted to oscillate adjacent the delivery ends of said chutes, the periphery of said drum being provided with a single recess to simultaneously engage and remove the lowermost articles contained in all of the chutes.

4. A vending machine comprising a plurality of chutes located adjacent each other, and a single drum mounted to oscillate adjacent the delivery ends of all of said chutes, the periphery of said drum being provided with a flattened portion forming a recess to simultaneously engage and remove the lowermost articles contained in all of the chutes.

5. A vending machine comprising a plurality of chutes located adjacent each other, a single drum mounted to oscillate adjacent the delivery ends of said chutes and having its periphery provided with means for simultaneously engaging and removing the lowermost articles contained in all of the chutes, means for oscillating said drum in a direction to discharge said articles, and means for returning said drum to its normal position.

6. A vending machine comprising a plurality of chutes located adjacent each other, a single drum mounted to oscillate adjacent the delivery ends of said chutes and having its periphery provided with means for simultaneously engaging and removing the lowermost articles contained in all of said chutes, a crank arm for oscillating said drum in a direction to discharge said articles, and a weight for returning said drum to its normal position.

In testimony whereof I affix my signature, in presence of two witnesses.

FRANK W. GREEN.

Witnesses:

CHAS. W. MURPHY,

O. C. FRASER.