

(No Model.)

2 Sheets—Sheet 1.

W. R. ZIEGLER.
COIN OPERATED VENDING MACHINE.

No. 483,093.

Patented Sept. 20, 1892.

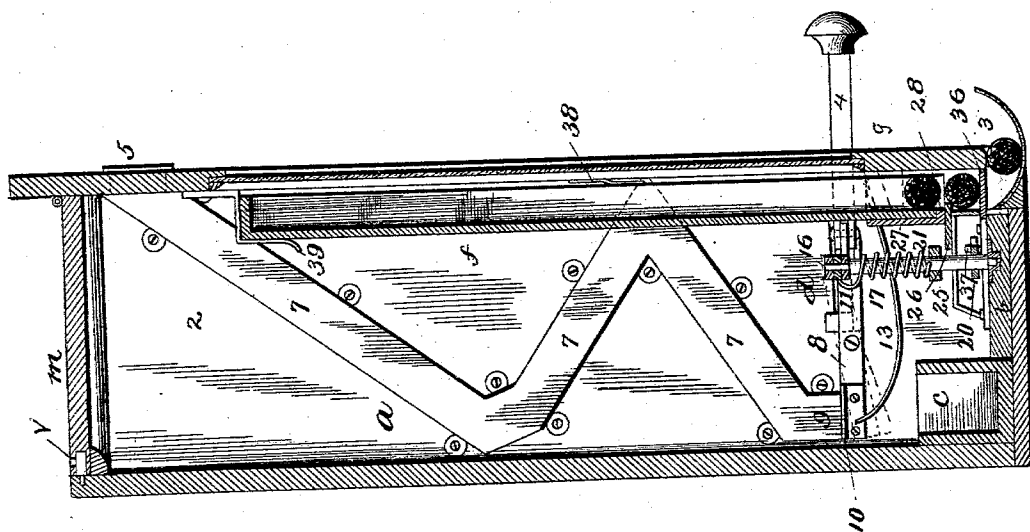


Fig. 2.

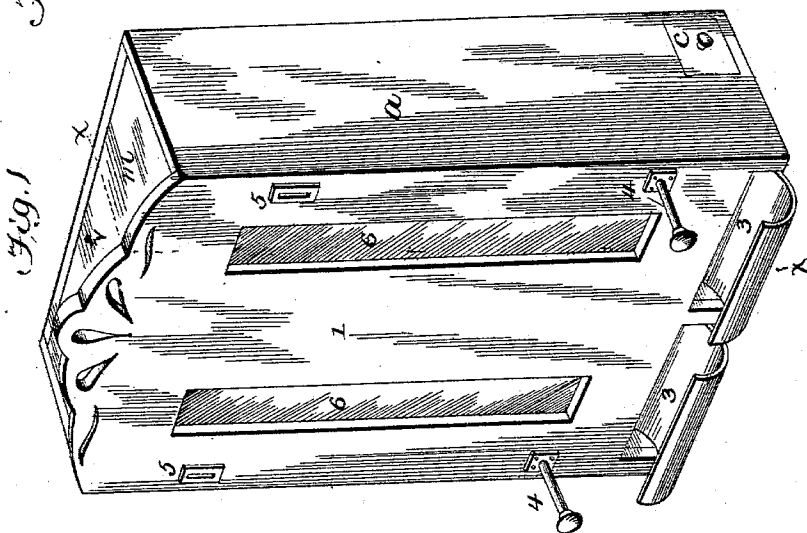


Fig. 1.

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2 Sheets—Sheet 2.

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Fig. 3.

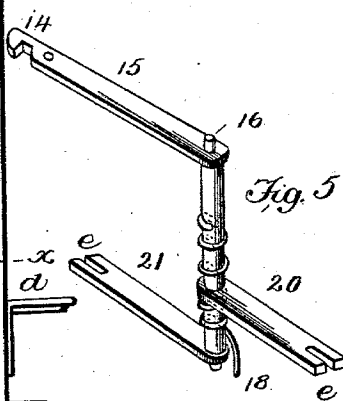
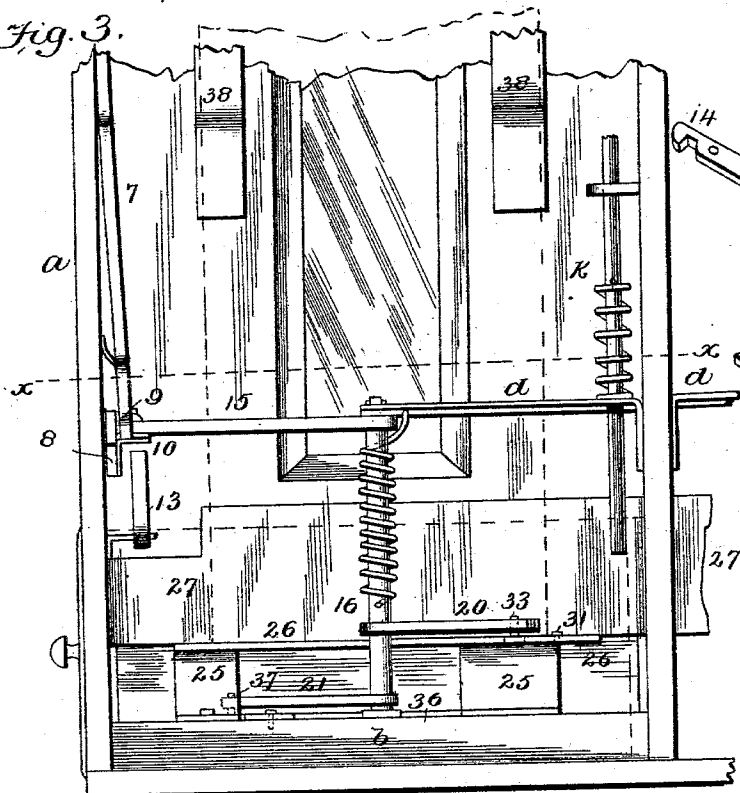
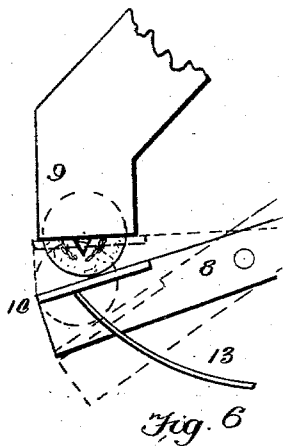
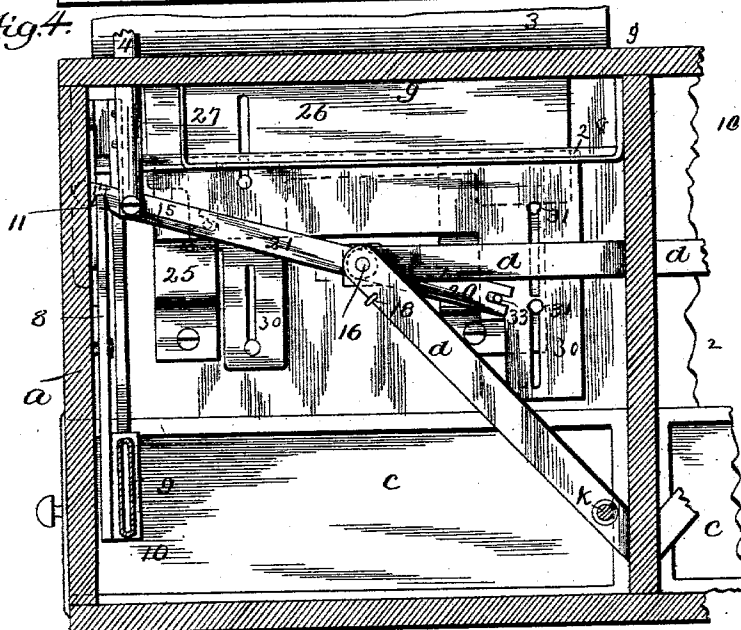


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM R. ZIEGLER, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR
OF ONE-HALF TO MILES S. HOADLEY, OF WAVERLY, NEW YORK.

COIN-OPERATED VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 483,093, dated September 20, 1892.

Application filed April 5, 1892. Serial No. 427,923. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. ZIEGLER, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Coin-Operated Vending-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to coin-controlled vending-machines, and is intended especially for use as a cigar-vender.

The object of the invention is to produce an improved machine in which a coin deposited in the proper receptacle will by its weight unlock the mechanism by which the cigar is held in the box, so that the cigar may thereafter be released; also, to improve the mechanism by which the coin is dislodged and the mechanism controlling the delivery of the goods.

Figure 1 is a front perspective view of the vending-machine. Fig. 2 is a vertical section about on line $x x$, Fig. 1. Fig. 3 is a rear elevation of the lower portion of one of the vending-compartments with rear part of casing removed. Fig. 4 is a horizontal section of one of the vending-compartments, showing in plan the cut-off mechanism. Fig. 5 is a perspective of the levers and post by which the cut-offs are operated. Fig. 6 is a detail elevation of part of the locking-lever in its relation to the coin chute or tube.

The numeral 1 denotes the vending-box. This may have any desirable external ornamentation and internally is, by preference, divided into two compartments 2 2, which are duplicates of each other, except as to reversal of location. It will therefore only be necessary to describe one compartment in order to give an understanding of the novel features of my device.

Externally the box 1 shows a trough 3 for each compartment, on which the cigars drop when the push-rod 4 is properly actuated, and also, by preference, a glazed opening 5 shows the cigars or similar goods inclosed in the box. Inside the compartment 2 a closed guide-tube 7 leads from the slot in the casing

to close vicinity to the top of a locking-lever 8. The guide-tube 7 is preferably of zigzag shape to prevent the introduction of a stick or wire to unlock the locking-lever, and is of such shape as to hold the coin in upright position at least in its downturned or mouth section 9. The tube is attached to one side, as a , of the box by suitable fastenings. The lower end 9 of the guide-tube is preferably a little way from the inner wall a of the casing or box. The end of the locking-lever 8, which is next the mouth 9 of the tube, has, by preference, a small plate or platform 10, extending under the mouth of the tube. The lever 8 is pivotally supported from the side a of the box and is so weighted that its end 11 falls by gravity behind the lever 15, on which the push-pin 4 operates to open the cut-offs. The lever is balanced, so that a small coin, as a cent, will not tilt the lever. A little below the platform 10 there is a light spring 13, suitably connected to the box. The dropping of a coin of suitable weight, as a nickel, into the slot will cause the coin to rest on the platform 10 and so tilt the lever 8 until the platform rests on spring 13, when the lever will swing no farther under the influence of the weight of the coin. The spring is such distance below the platform that it will support the platform, while the upper part of the coin is still in the lower part of the guide-tube. (See full lines, Fig. 6.) When the end of lever 8 next the coin-tube is depressed by the weight of the coin, its end 11 is lifted out of notch 14 in lever 15, in which notch the end 11 of the lever normally rests. Lever 15 is rigidly connected to rock-shaft 16 and the push-rod 4 is connected to said lever by a slightly-yielding pivot-joint. When lever 8 is tilted by the weight of a coin, as has been described, the push-rod 4 may be pressed in, carrying the free end of lever 15 with it. Said lever 15 thus rides under the end 11 of lever 8 and lifts that end, still further depressing the end which supported the nickel and causing the coin to still further fall down, following the lever until the coin finally drops out of the mouth 9 of the tube and rolls off the lever and falls into the small drawer C,

when the lever 8 is relieved and is thrown back again by gravity and by the spring 13. The end of lever 15 may extend into a notch in the casing (see dotted lines, Fig. 4) and be guided thereby. The vertical rock-shaft 16 is shown as having its lower end stepped in a bearing in the bottom *b* of the box or casing and the top having bearings in a triangular bracket *d*. It is not very material how said shaft is supported, however, so that it be free to rock in its bearings. Shaft 16 is preferably surrounded by a spiral spring 18, one end of said spring being held by the casing *b* or bracket *d* and the other connected to the shaft, so as to rock said shaft and swing lever 15 into the position shown in Fig. 4. Shaft 16 has two rigid arms 20 and 21 extending in opposite directions, and the outer ends of these arms are slotted, as indicated at *e*. One of these arms is higher than the other above the lower bearing of the vertical rock-shaft 16. Suitable platforms or supports 25 near the bottom of shaft 16 guide a sliding gate 26, which gate lies in a horizontal plane near the bottom of the casing and works through a slot in the partition 27, which partition supports and incloses the lower end of cigar-box *f*, having a ledge 28 just above the slot referred to, on which ledge the cigar-box rests. The gate 26 has a rear extension 30, which extension has a slot or slots extending from front to rear. Two pins 31 project from the platform 25 through these slots, and thus guide the gate, so that it must slide directly forward or back. The gate 26 has a pin 33 extending into the slot *e* of arm or lever 20. By this connection when shaft 16 is rocked the slide 26 is moved either to the front or rear, its front edge extending into the slot in partition 27 or extending through said slot against the front *g* of the box, serving as a cut-off to prevent anything passing down inside partition 27. The gate is guided in a straight line by pins 31, extending into the slot, and need not partake of the curved movement of the arm or lever 20. A second gate 36 lies parallel with gate 26 and about as far below the same as the diameter of a single cigar. This gate 36 is guided, in the same manner as gate 26, by pins extending through slots in the gate and is operated by means of a pin 37 from the gate extending into the slot *e* of arm 21. Thus when shaft 16 is rocked one gate 26 will move forward as the other gate 26 moves toward the rear. The lower gate may move either through a slot in partition 27 or under said partition. When there are cigars resting horizontally on the upper gate 26, the backward movement of gate 26 and forward movement of gate 36 will permit the cigars to fall on gate 36. A reversal of the movement will cut off all but one of the column of cigars by means of gate 26, and gate 36 will drop its cigar (the lower one, which is left below gate 26) onto the

curved plate or trough 3, when it rolls to the front and may be taken from said trough. As the shaft 16 can only be rocked by pushing in the rod 4 after the lever 15 has been unlocked and as said lever will be at once locked again by lever 8 as soon as the coin falls therefrom, it appears that only one article can be allowed to fall from the machine with each coin introduced and that the push-rod can only be operated after the introduction of said coin.

The cigars are introduced into each compartment in a shallow box *f*, which box is open at the front and lower end. The box fits easily inside the partition 27 and is held back so that the lower end of the box will rest on ledge 28 by light springs 38, attached to the inner wall of the front casing. A hook or turn-button 39 holds the upper part of the box after it is placed in position. The cash-drawer *C* is preferably held closed by a spring-bolt *k*, which is attached to the inside of the casing and closes down into the drawer or into a catch thereon. This spring-bolt is preferably connected by any usual mechanism to the cover *m* and is withdrawn when the cover is lifted. The cover *m* is held closed by a suitable lock, as *v*, and when opened the cash-drawer may also be opened.

When a new box of cigars is to be applied in one of the compartments, the cigars may be held therein by a cord or ribbon passed lengthwise around the box, and the cord can be withdrawn after the box is in place. The attendant can see through the glazed opening when a box is nearly or quite empty and can then remove the empty box and insert a full one.

It will also be understood that it is not material which gate 26 or 36 is opened first, and that the push-rod might operate as a pull-rod without change of construction other than to reverse the tension of spring 18.

What I claim is—

1. In a coin-controlled vending apparatus, the horizontal sliding gates guided on suitable supports, the vertical shaft having rigid horizontal arms extending in opposite directions, the elongated slot and pin connections between said gates and arms, and the push-rod connected to an arm on the vertical standard, all combined substantially as described.
2. The vertical rock-shaft and its operating lever and rod, the slotted arms extending in opposite directions from said rod and at different elevations, and the sliding gates connected to said arms by slot-and-pin connection, each gate slotted in the direction of its line of movement and having a plurality of guide-pins projecting into the slot, whereby the gates are guided in right lines of movement without regard to the movement of the arms, all combined substantially as described.
3. The vending box or compartment having cut-off gates and operating means there-

for, substantially as described, the partition
through which said gates operate of size to
receive the end of the box *f*, and the springs
38 on the wall of the compartment, tending to
5 press the box *f* against said partition and
the box-retaining catch 39, all combined sub-
stantially as described.

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

WILLIAM R. ZIEGLER.

Witnesses:

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JOSEPH ROY.