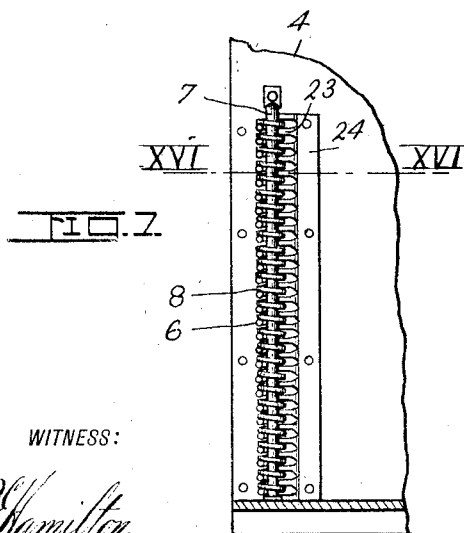
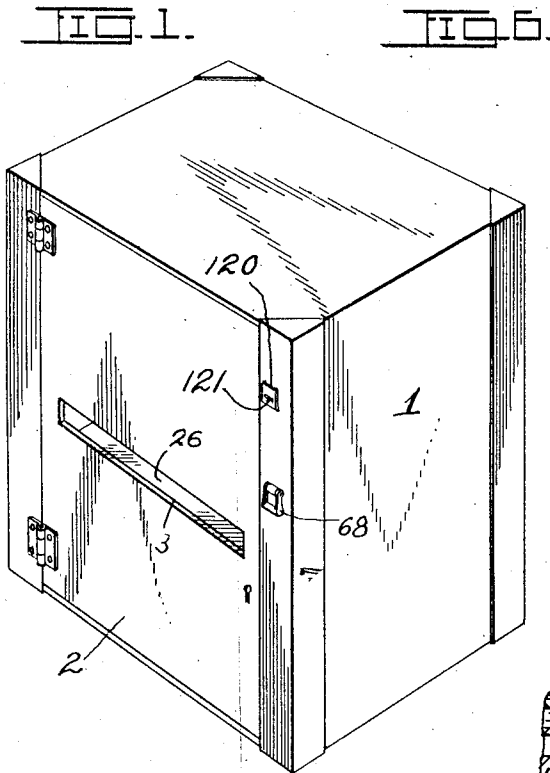


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VENDING MACHINE.
APPLICATION FILED MAY 2, 1918.

1,344,142.

Patented June 22, 1920.
6 SHEETS—SHEET 1.



WITNESS:

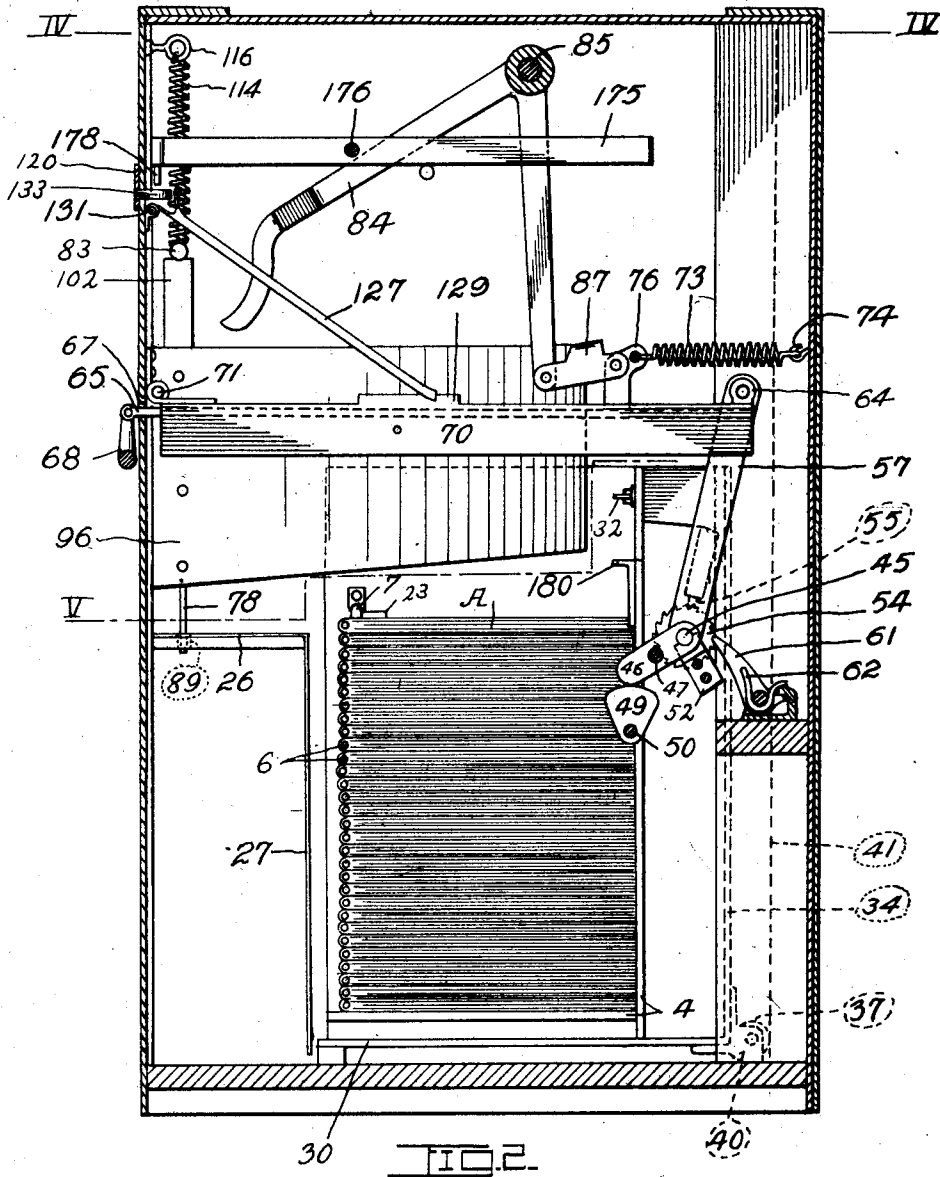
R. Hamilton.

INVENTOR:
William Meyer,
BY *F. G. Fischer,*
ATTORNEY

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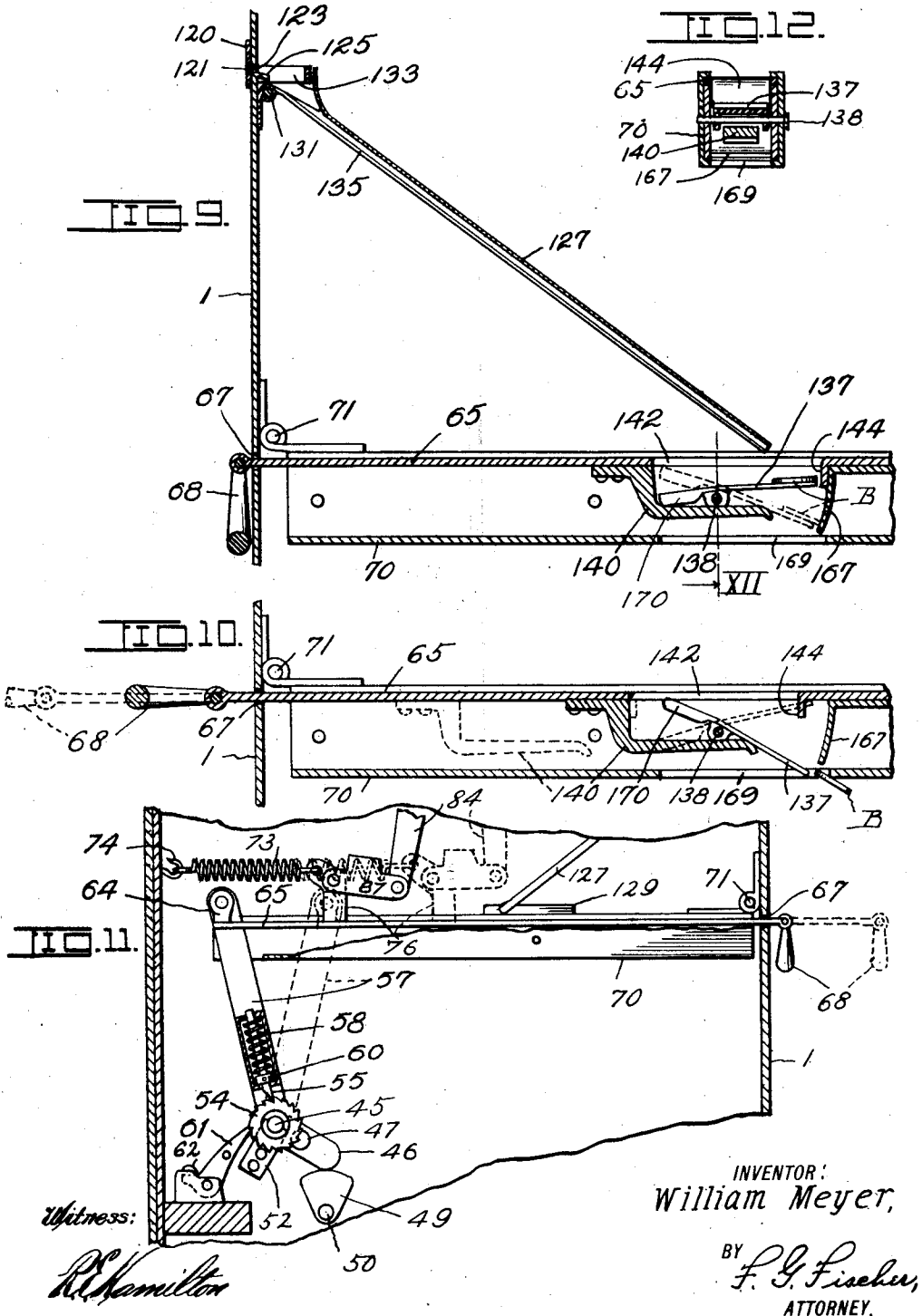
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ATTORNEY.

UNITED STATES PATENT OFFICE.

WILLIAM MEYER, OF ROSEDALE, KANSAS.

VENDING-MACHINE.

1,344,142.

Specification of Letters Patent. Patented June 22, 1920.

Application filed May 2, 1918. Serial No. 232,026.

To all whom it may concern:

Be it known that I, WILLIAM MEYER, a citizen of the United States, residing at Rosedale, in the county of Wyandotte and State of Kansas, have invented certain new and useful Improvements in Vending-Machines, of which the following is a specification.

My invention relates to improvements in vending machines, and my object is to provide an efficient machine of this character whereby newspapers, magazines, and other reading matter may be delivered to vendees in exchange for proper coins inserted in the machine to release the delivery mechanism.

In order that the invention may be fully understood, reference will now be made to the accompanying drawings, in which:

Figure 1 is a perspective view of the vending machine.

Fig. 2 is a vertical sectional view of the vending machine on line II—II of Fig. 4.

Fig. 3 is an irregular vertical sectional view on line III—III of Fig. 4, with some of the parts removed.

Fig. 4 is a horizontal sectional view on line IV—IV of Fig. 2.

Fig. 5 is an irregular fragmentary horizontal sectional view, on line V—V of Fig. 2, with some of the parts removed.

Fig. 6 is a fragmentary vertical sectional view on line VI—VI, of Fig. 4, with some of the parts removed.

Fig. 7 is a fragmentary view of a receptacle and delivery mechanism carried thereby.

Fig. 8 is an elevation of a latch plate which coacts with the delivery mechanism, a portion of which latter is shown in section.

Fig. 9 is an enlarged fragmentary sectional view on line IX—IX of Fig. 4, of the coin-controlled mechanism and coacting parts.

Fig. 10 is a view similar to Fig. 9, with the coin chute removed and the operation of the coin-controlled mechanism shown in full and dotted lines.

Fig. 11 is a vertical fragmentary section on line XI—XI of Fig. 4.

Fig. 12 is a transverse section on line XII of Fig. 9.

Fig. 13 is a fragmentary vertical section on line XIII—XIII of Fig. 4.

Fig. 14 is an enlarged fragmentary cross section on line XIV of Fig. 13.

Fig. 15 is an enlarged fragmentary cross section on line XV of Fig. 13.

Fig. 16 is an enlarged cross section on line XVI—XVI of Fig. 7.

In carrying out the invention, I employ a suitable case 1, in which the mechanism is inclosed. Access is had to the interior of case 1 through a door 2 having a delivery slot 3 through which the newspapers are passed to the vendees.

4 designates a receptacle arranged within the case 1 to hold the newspapers to be vended. Said receptacle 4 carries the delivery mechanism which consists of a plurality of delivery arms 6 arranged one above the other on a vertical rod 7 secured to the inner surface of the side wall of the receptacle 4. Each delivery arm 6 is adapted to carry a newspaper and consists, preferably, of a piece of spring wire having a coil 8 loosely embracing the rod 7 and held under tension by one of its terminals 10 bearing against the adjacent wall of the receptacle 4, and a trigger 12 which is welded or otherwise firmly secured to the delivery arm 6. Said trigger 12 extends through registering slots 14 and 15 in the wall of the receptacle 4 and the latch plate 17, respectively, Fig. 16.

The latch plate 17 is secured to the outer side of the receptacle wall and each of its slots 15 has an upwardly-extending notch 18 to receive and hold the trigger 12 in set position, from which it is released at the proper time by its forwardly bent terminal 20 impinging against an abutment 21 secured to the adjacent wall of the case 1, Fig. 3. When thus released the trigger 12 is instantly swung backwardly against the rear end of the slot 15 by the coil 8, which swings the delivery arm 6 forwardly with its newspaper which is passed partly through the delivery slot 3 from which it can be readily withdrawn by the vendee. The coils 8 of the delivery arms 6 are spaced apart, approximately, the thickness of a folded newspaper by the intervening fingers 23 of a vertical plate 24 secured to the inner surface of the side wall of the receptacle 4.

A shelf 26 secured to the inside of the door 2 on a level with the bottom of the slot 3, guides each newspaper to said slot and supports it until withdrawn by the vendee. A vertical shield 27 depending from the rear side of the shelf 26, prevents the stack of newspapers A from getting

unduly out of vertical alinement as each uppermost newspaper is carried toward the delivery slot 3, by a respective delivery arm 6.

30 designates an elevator whereby the receptacle 4 is raised step by step as each newspaper is fed from the top of the stack A. The receptacle 4 is removably-secured in said elevator 30 by stud bolts 31 and thumb nuts 32, so that it can be readily removed preparatory to supplying it with a stack of newspapers. The vertical rear wall 34 of the elevator 30, is slidably mounted in a pair of vertical guides 35, one of which is secured to a side wall of the case 1, the other being secured to a strip 36 fixed to the rear wall of the case 1. Friction between the elevator wall 34 and the guides 35 incident to the tendency of the elevator to tip forwardly, is overcome by an antifriction roller 37 and a pair of spur gears 39. The roller 37 is journaled in a pair of bearings 40 on the elevator 30 and traverses a pair of vertical rails 41 secured to the rear wall of the case 1.

The spur gears 39 intermesh with vertically arranged racks 43, fixed to the elevator rear wall 34, and are fixedly-mounted upon a shaft 45 journaled in bearings 46 connected by pivots 47 to the two side walls of the case 1. This construction permits the spur gears 39 to be manually thrown out of mesh with the racks 43, so that the elevator 30 can be quickly lowered to the floor of the case 1. Normally the bearings 46 are prevented from rocking on their pivots 47 and disengaging the spur gears 39 from the racks 43, by segments 49 mounted on pivots 50 secured to the side walls of the case 1. Brackets 52 secured to the side walls of the case 1, support the shaft 45 when the gears 39 are in mesh with the racks 43, and thus relieve the bearings 46 of the weight of the elevator 30.

The shaft 45 is rotated step by step to effect upward movement of the racks 43 and the elevator 30, by a fixedly-mounted ratchet wheel 54 which is actuated by a detent 55, Figs. 2 and 11, operably-mounted on a rock arm 57 pivotally mounted upon the shaft 45. A coil spring 58 bearing against a collar 60 fixed to the detent 55, yieldably holds the same in engagement with the ratchet wheel 54. A pawl 61 yieldably held in engagement with the ratchet wheel 54 by a spring 62, prevents said ratchet wheel 54 from moving backwardly with the detent 55 and allowing the elevator 30 to fall.

The rock-arm 57 is pivotally-connected at its upper end to a lug 64 projecting upwardly from the rear end of a pull-bar 65, extending from the rear end of a pull-bar 65, extending forwardly through a slot 67 in the front wall of the case 1 and provided with a pivotally-

connected handle 68. The pull-bar 65 is reciprocally mounted in a channel bar 70 connected at one end by a hinge 71 to the front wall of the case 1, so that its opposite end may swing up and down as the upper end of the rock-arm 57 describes an arc when actuated by said pull-bar 65. After the pull-bar 65 has been drawn outwardly as indicated by full and dotted lines, Fig. 10, it is automatically returned to normal position by a coil spring 73 attached at one end to a stationary hook 74, and at its opposite end to an arm 76 fixed to the upper rear portion of the pull-bar 65.

Forward movement of the pull-bar 65 raises a gate 78 which normally closes the delivery slot 3, so that papers can not be surreptitiously removed through said slot. One end of the gate 78 is provided with an upwardly-extending arm 80, having its upper end extending at right angles thereto and provided with an antifriction roller 83 arranged in the path of the forward end of a bell crank 84, pivoted at 85 and connected at its lower rear end to the arm 76 by a link 87. Hence, when the arm 76 moves forwardly with the pull-bar 65, the bell-crank 84 is rocked on its pivot 85 and on engaging the underside of the roller 83, raises the same and the gate 78 to the dotted line position, Fig. 13.

When closed the lower end of the gate 78 extends through a slot 89 in the shelf 26, to prevent any one from raising said gate 78 by inserting between its lower edge and the shelf a knife or other sharp edged instrument. The gate 78 is provided at a lower corner with a projection 91 which limits the upward movement of said gate by contacting with the upper end of a slot 92 in a compartment 96. One edge of the gate 78 is slidably-mounted between vertical guides 94 secured to a wall of the compartment 96, which is fixedly-mounted on the inner side of the door 2 and provided in its bottom portion with a slot 98 for the passage of the gate 78. The opposite side of the gate 78 which sustains the weight thereof, is reinforced with angle bars 100 to which the arm 80 is secured.

Said arm 80 and the angle bars 100 are slidably mounted between guides 102 and 104 rigidly secured to the compartment 96. The upper end of the guide 104 is further secured to a bracket 106 projecting rearwardly from the door 2. Antifriction rollers 108 and 110 mounted on the arm 80, traverse the guides 102 and 104, respectively, to reduce the friction between these parts to a minimum. Arms 112 on the guide 102 embrace the guide 104 to prevent said guides from springing apart under the pressure exerted thereon by the rollers 108 and 110. A spring 114 attached at its upper end to an eye 116 and at its lower end

to the gate 78, assists the bell-crank 84 in lifting said gate. The compartment 96 may be used for various purposes, but it is provided chiefly for holding a music box or talking machine, whereby attention of the public may be drawn to the machine.

Referring now more particularly to the coin mechanism, 120 designates a plate fixed to the front wall of the case 1 and provided with a slot 121 to receive a coin of proper size for unlocking the coin controlled mechanism. The slot 121 registers with a slot 123 in the front wall of the case 1, which has an internal flange 125 for directing the coin into the upper end of a coin chute 127 inclining downwardly to the channel bar 70, which has a raised flange 129 upon which the notched portions 130 of the coin chute rests. The upper end of the coin chute 127 is connected to the front wall of the case by a hinge 131, so that its lower end may move up and down with the channel bar 70 as the same is swung on its hinge 71 by the action of the rock-arm 57. The coin when inserted through the slots 121 and 123, is prevented from being pushed beyond the flaring mouth of the coin chute 127 by a semicircular deflector 133 secured to the front wall of the case 1. A longitudinal opening 135 is provided in the underside of the coin chute 127, so that coins or slugs of less diameter than the proper coin will fall through said opening before reaching a trip lever 137 arranged beneath the lower end of the coin chute 127, upon a pivot 138 secured to the channel bar 70.

140 designates a bracket secured to the underside of the pull-bar 65, which has a slot 142 arranged immediately above the trip lever 137, so that a proper coin, such as B, may be discharged from the coin chute 127 upon one end of said trip lever 137 and rock it out of the path of a lip 144 turned downwardly from the pull-bar 65 at the rear end of the slot 142. When the trip lever 137 is rocked to the dotted position disclosed by Fig. 9, it is stopped by the end of the bracket 140, and the coin B is prevented from sliding off by a flange 167 on the channel bar 70, until the pull-bar 65 has been drawn outwardly far enough for the lip 144 to pass over the end of said trip lever 137, as disclosed by full lines Fig. 10, whereupon the coin is free to fall through a slot 169 in the bottom of the channel bar 70. When relieved of the weight of the coin, the trip lever 137 is swung upwardly into engagement with the lower end of the lip 144, by a counterweight 170, which raises said trip lever into the path of the lip 144 the instant the same moves backwardly into engagement with the flange 167. From the foregoing it will be understood that the pull-bar 65 cannot be drawn outwardly to deliver a

newspaper until the trip lever 137 has been carried below the lip 144 by the weight of a proper coin.

175 designates a guard lever mounted on a pivot 176 and provided at its forward end with a pin 178, adapted to pass through the deflector 133 and prevent coins from being passed through the slots 121, 123, after the last newspaper has been vended. Said guard lever 175 is actuated by a contact member 180, secured to the upper rear wall of the receptacle 4. Thus as said receptacle 4 takes its final upward step, preparatory to the delivery of the last newspaper therein, the contact member 180 impinges against the forwardly-turned terminal 182 of the guard lever 175, and causes the same to move the pin 178 downwardly through the deflector 133 as above described.

In practice, the receptacle 4 is removed from the machine, so that it can be readily loaded with newspapers, one of which is folded over each delivery arm 6. Each arm 6 is then locked in normal position through the intermediacy of the trigger 12 and its respective notched slot 15. The loaded receptacle is then replaced in the elevator 30, which is lowered to the bottom of the case 1 after the spur gears 39 have been thrown out of engagement with the racks 143 to permit rapid downward movement of the latter with the elevator 30. The spur gears 39 are then thrown into engagement with the racks 43 by manually rocking the bearings 46 until the shaft 45 rests in the brackets 52, whereupon said bearings 46 are locked by the segments 49, as disclosed by Fig. 2. On the insertion of a proper coin through the slots 120 and 123, it is conducted downwardly by the coin chute 127 to the trip lever 137 which is tripped by said coin out of the path of the lip 144. The pull-bar 65 is then drawn outwardly, which operation actuates the rock-arm 57, which, through the intermediacy of the detent 55, rotates the ratchet wheel 54 and through the intermediacy of the intervening mechanism raises the elevator 30 one step. As the elevator moves upwardly it brings the uppermost trigger 12 into contact with the abutment 21, which releases said trigger from the notched portion of its respective slot 15 and permits the delivery arm 6 to swing forwardly and carry the topmost newspaper partly through the delivery slot 3, as disclosed by Fig. 5. As the delivery arm 6 swings forwardly it carries the trigger 12 from beneath the abutment 21, so that the following trigger may strike said abutment when the elevator makes its next upward step. Forward movement of the pull-bar 65 not only actuates the rock-arm 57 as above described, but also opens the gate 78 for the passage of the newspaper, through the intermediacy of the intervening parts consisting of the arm 76, the link 87, the bell- 130

crank 84, the roller 83, and the arm 80 connected to the gate 78. When the handle 68 of the pull-bar 65 is released the spring 73 restores said pull-bar 65 to normal position, together with the parts immediately controlled thereby and permits the gate 78 to descend and close the delivery slot 3.

The foregoing operations are repeated after the insertion of each proper coin until the last newspaper has been vended, whereupon further insertion of coins through the coin slots is barred by the pin 178 on the guard lever 175, which as before stated, is actuated by the contact member 180 secured to the upper rear portion of the receptacle 4.

From the foregoing description it will be readily understood that I have produced an efficient machine whereby newspapers, magazines, etc., may be vended, and while I have shown and described the preferred embodiment of the invention, I reserve the right to make such changes in the construction, proportions, and arrangement of parts as properly fall within the spirit and scope of the claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is:

1. In a machine of the character described, a case having a delivery slot, a delivery arm embodying resilient actuating means whereby it is enabled to deliver an article to said slot, means for securing said arm in normal position, and means for releasing said arm so that it may be actuated by the resilient means.

2. In a machine of the character described, a case having a delivery slot, a delivery arm adapted to hold a folded paper and feed the same through said delivery slot, means for actuating said arm, a latch plate for securing said arm in normal position, and means for releasing the arm from said latch plate.

3. In a machine of the character described, a case having a delivery slot, a delivery arm adapted to hold a folded paper and feed the same through said delivery slot, means for actuating said arm, a latch plate having a notched slotted portion, and means for releasing the arm from said latch plate.

4. In a machine of the character described, a case having a delivery slot, a delivery arm arranged to extend into a folded paper and swing the same in a horizontal plane part way through said slot, means for actuating said arm, means for securing said arm in normal position, and means for releasing said arm.

5. In a machine of the character described, a case having a delivery slot, a receptacle within said case for superimposed articles to be vended, means for raising said receptacle step by step, superimposed deliv-

ery arms mounted in the receptacle and successively raised thereby in position to deliver the articles to the delivery slot, means for actuating the arms, means for securing the arms in normal position, and an abutment whereby the arms are successively released so that they may be actuated.

6. In a machine of the character described, a case having a delivery slot, a receptacle within said case for superimposed articles to be vended, an elevator for raising said receptacle step by step, rack bars secured to said elevator, spur gears intermeshing with said rack bars, ratchet mechanism for actuating said spur gears step by step, and a pull-bar whereby said ratchet mechanism is actuated.

7. In a machine of the character described, a case having a delivery opening, a receptacle within said case for superimposed articles to be vended, means for delivering the articles one by one to the delivery opening, rack and pinion gearing for raising the receptacle step by step, ratchet mechanism for actuating said gearing, and reciprocatory means for actuating said ratchet mechanism.

8. In a machine of the character described, a case having a delivery opening, a receptacle within said case for superimposed articles to be vended, means for delivering the articles one by one to the delivery opening, rack and pinion gearing for raising the receptacle step by step, ratchet mechanism for actuating said gearing, and a pull-bar for actuating said ratchet mechanism.

9. In a machine of the character described, a case having a delivery opening, a receptacle within said case for superimposed articles to be vended, means for delivering the articles one by one to the delivery opening, rack and pinion gearing for raising the receptacle step by step, ratchet mechanism for actuating said gearing, a pull-bar for actuating said ratchet mechanism, and a spring for restoring said pull-bar to normal position.

10. In a machine of the character described, a case having a delivery slot, a delivery arm adapted to hold a folded paper and feed the same through said delivery slot, means for actuating said arm, means for securing said arm in normal position, a gate to normally close the delivery slot, and means for raising said gate before the arm is actuated.

11. In a machine of the character described, a case having a delivery opening, a receptacle within said case for superimposed articles to be vended, means for delivering the articles one by one to the delivery opening, rack and pinion gearing for raising the receptacle step by step, ratchet mechanism for actuating said gearing, a pull-bar for actuating said ratchet mechanism, a gate to

normally close the delivery opening, and means controlled by the pull-bar for opening the gate before the delivery of each article.

12. In a machine of the character described, a case having a delivery opening, mechanism within said case for delivering articles one by one to said delivery opening, reciprocatory means for controlling said mechanism, a gate to normally close the delivery mechanism, an arm extending upwardly from said gate, a roller mounted on said arm, and means actuated by said reciprocatory means adapted to engage the roller and open the gate before the delivery of each article.

13. In a machine of the character described, a case having a delivery slot, a shelf in said case on a level with the delivery slot, a delivery arm adapted to hold a folded paper and swing the same over said shelf and through the delivery slot, and means for controlling said delivery arm.

14. In a machine of the character described, a case having a delivery slot, a receptacle within said case for superimposed articles to be vended, means for raising said receptacle step by step, superimposed delivery arms in the receptacle and successively raised thereby in position to deliver the articles to the delivery slot, a rod in the receptacle on which the arms are loosely

mounted, fingers to space the arms apart, and means for actuating the arms.

15. In a machine of the character described, a case having a delivery opening, a receptacle within said case for superimposed articles to be vended, an elevator on which said receptacle is removably mounted, means for vending the articles one by one, racks fixed to said elevator, spur gears for raising said racks, means for rotating said spur gears step by step, a shaft upon which said spur gears are mounted, brackets in which said shaft rests when the spur gears are in mesh with the racks, pivotal bearings in which the shaft is journaled, and means to lock the bearings from pivotal movement when the shaft rests in said brackets.

16. In a machine of the character described, a case having a delivery opening, a receptacle within said case for superimposed articles to be vended, an elevator on which said receptacle is removably mounted, a roller mounted at the lower portion of the elevator, and rails traversed by said roller.

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

WILLIAM MEYER.

Witnesses:

F. G. FISCHER,
L. J. FISCHER.