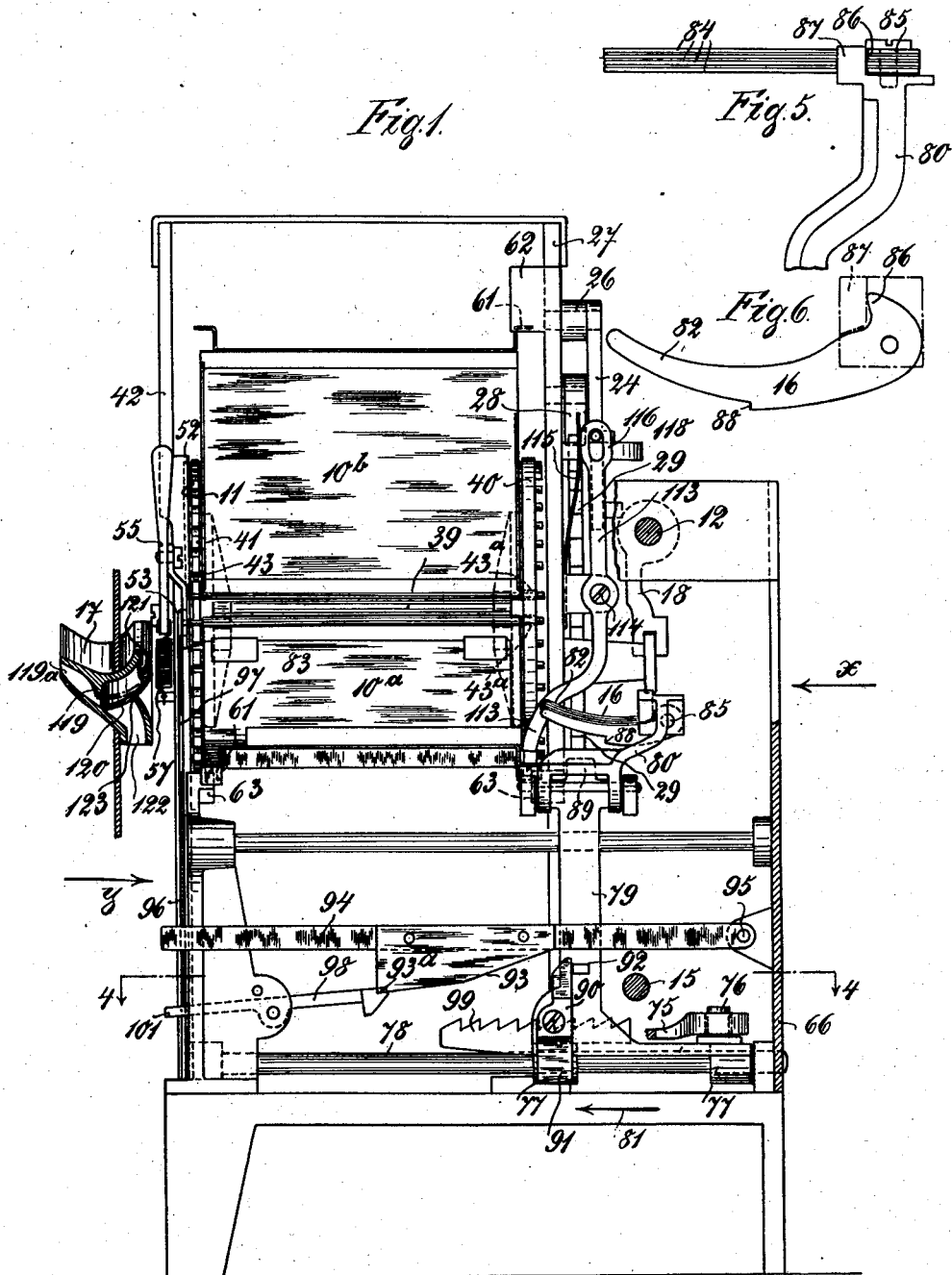


M. SIELAFF.
 AUTOMATIC DELIVERY MACHINE.
 APPLICATION FILED AUG. 31, 1909.

1,010,966.

Patented Dec. 5, 1911.

4 SHEETS—SHEET 1.



Witnesses:
 Alfred Lyons.
 Louis F. Addison.

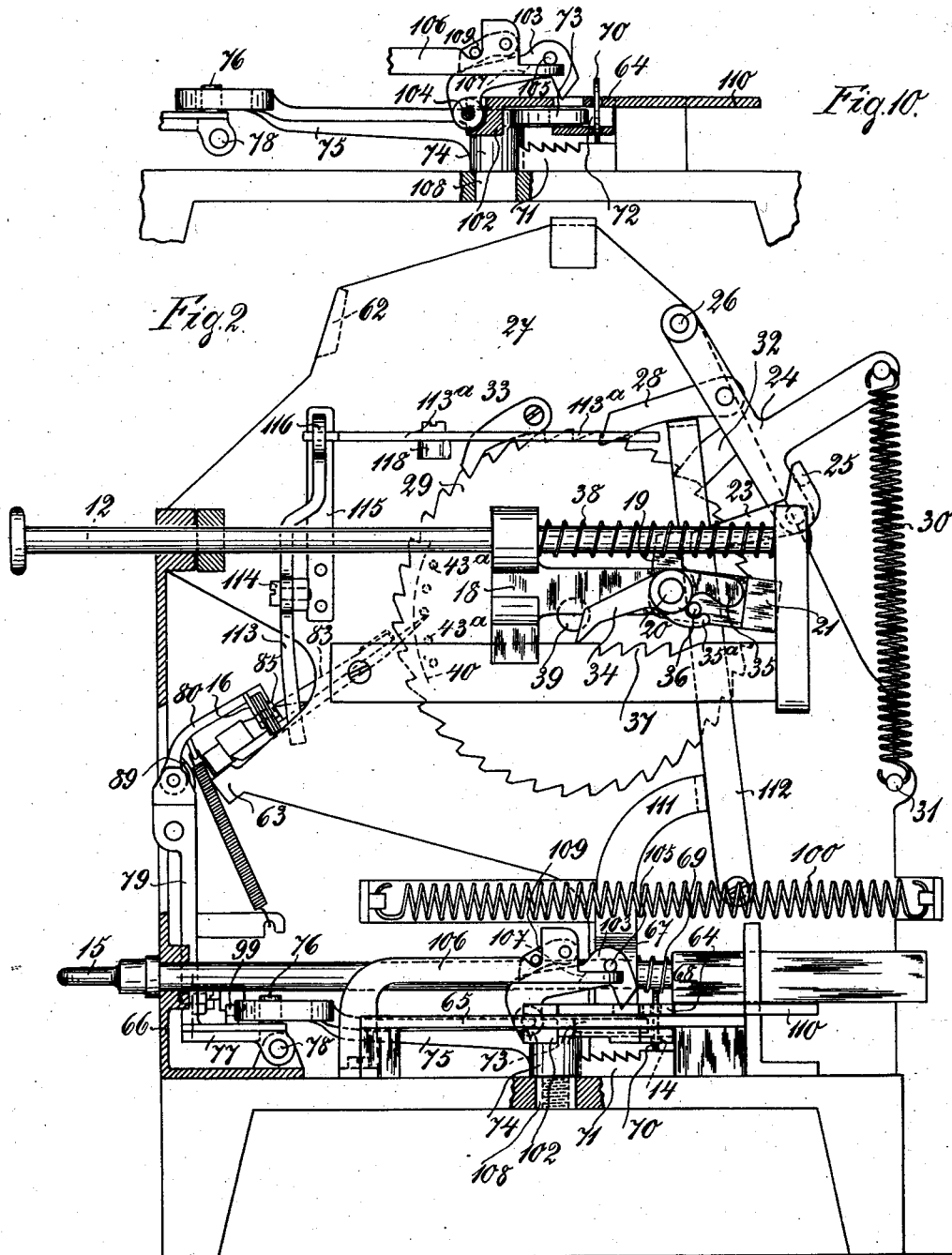
Inventor:
 Max Sielaff.
 by: L. K. Schmitt,
 Attorney.

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4 SHEETS—SHEET 2.



Witnesses:
 Alfred Lyons.
 Louis F. Allison.

Inventor:
 Max Sielaff.
 by: L. K. Böhm,
 Attorney.

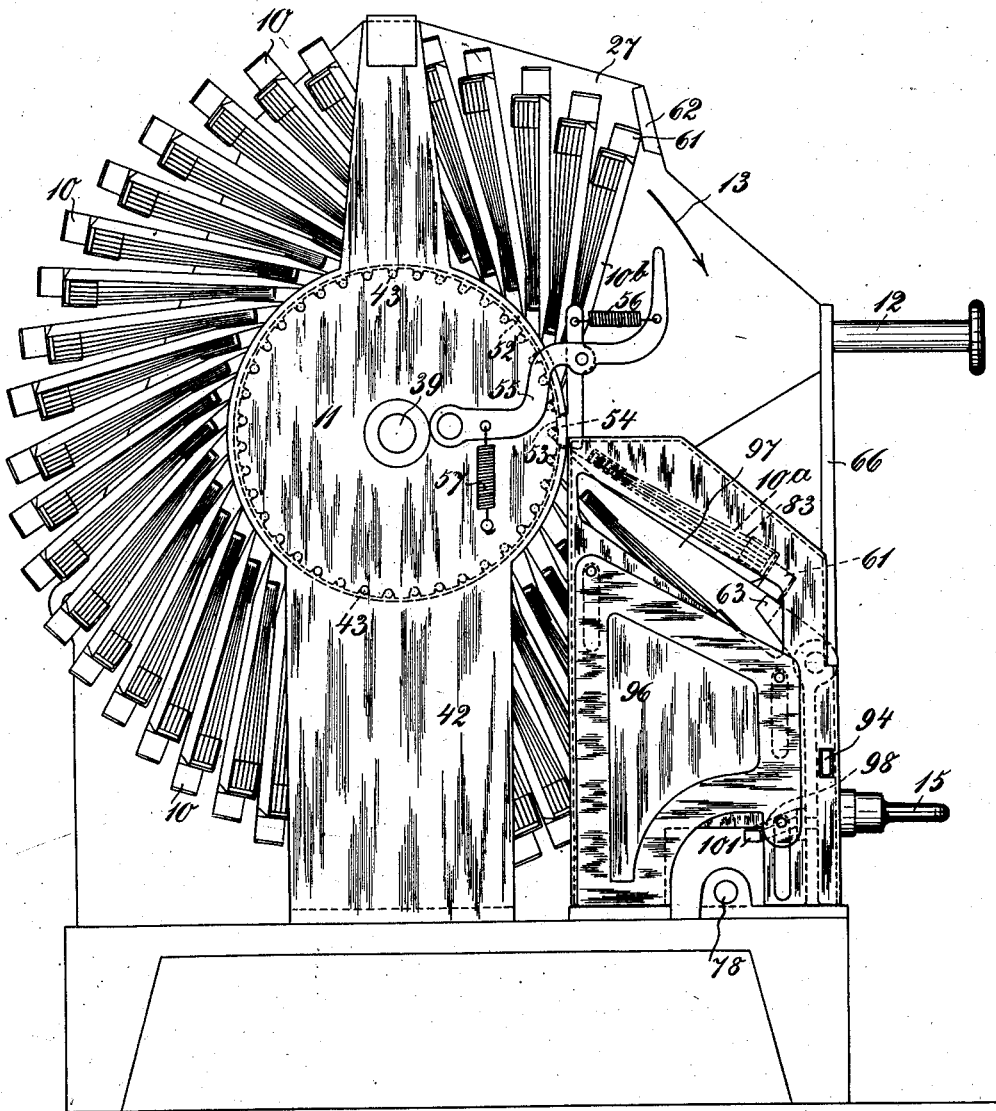
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4 SHEETS—SHEET 3.

Fig. 3.



Witnesses:
Alfred Lyons.
Louis E. Addison.

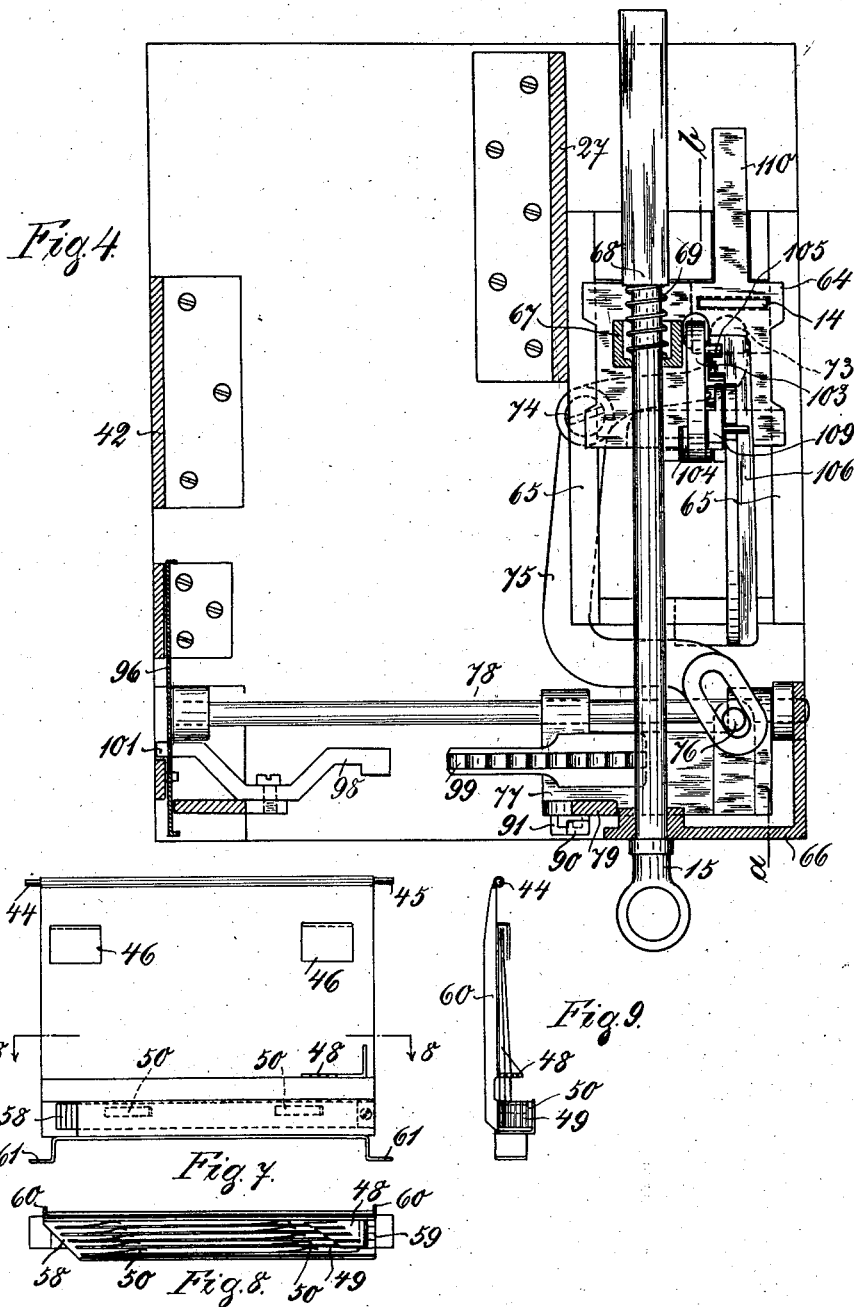
Inventor:
Max Sietlaff.
by: L. K. John,
Attorney.

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4 SHEETS-SHEET 4.



Witnesses:
 Alfred Lyons.
 Louis F. Allison.

Inventor:
 Max Sielaff.
 by: L. K. Böhm,
 Attorney.

UNITED STATES PATENT OFFICE.

MAX SIELAFF, OF BERLIN, GERMANY.

AUTOMATIC-DELIVERY MACHINE.

1,010,966.

Specification of Letters Patent.

Patented Dec. 5, 1911.

Application filed August 31, 1909. Serial No. 515,529.

To all whom it may concern:

Be it known that I, MAX SIELAFF, a subject of the King of Prussia, and resident of 23 Spenerstrasse, Berlin, German Empire, have invented certain new and useful Improvements in Automatic-Delivery Machines, of which the following is a specification.

This invention relates to automatic delivery machines for delivering post cards and like thin articles and more particularly to such as are intended to give the purchaser a choice. Thus in the case of pictorial post cards the purchaser is in a position to choose the card which he wishes and by inserting a coin and operating a hand lever or pusher the desired card is delivered.

According to the present invention the apparatus is so arranged that during the delivery of a card from the machine means held in operative position by the card or the like being ejected are provided for preventing the effective reoperation of the machine.

The invention also embodies various other improvements and details which will be more clearly described hereinafter and pointed out in the claims.

In the following description I shall refer only to post cards and the machine herein illustrated is particularly adapted for pictorial post cards.

In the drawings: Figure 1 is a front view of the machine, the outer casing having been removed with the exception of the delivery mouth piece. Fig. 2 is a side view looking in the direction of the arrow x in Fig. 1. Fig. 3 is a side view looking in the direction of the arrow y in Fig. 1. Fig. 4 is a sectional plan view, the section being taken on the line 4—4 of Fig. 1. Fig. 5 is a plan view of the ejecting arm. Fig. 6 is a side view of the same. Fig. 7 is an elevation of a holding case. Fig. 8 is a section on the line 8—8 of Fig. 7. Fig. 9 is an end-elevation of the holder shown in Fig. 7. Fig. 10 is a section on the line a — b of Fig. 4.

I will first generally describe the operation of the machine and then proceed to details.

Post cards showing various views or pictures are provided in a number of holding cases 10 loosely pivoted to a drum 11, see Fig. 3. The drum 11 may be rotated stepwise by pushing a lever 12. The rotation

of the drum takes place in the direction of the arrow 13 in Fig. 3. As the drum rotates, the holding cases 10 are in turn brought into the position of the case 10^a in Fig. 3, where the intending purchaser may examine the cards contained in the case through an opening in the outer casing. For the sake of simplicity this outer casing is not shown in the drawings. When the intending purchaser sees through the opening in the casing a card which he wishes to purchase, he inserts a coin through a coin slot in the outer casing and this coin is guided to a coin-pocket 14 and thereby renders the delivery mechanism operative. When the coin is properly inserted in the coin slot 14 the intending purchaser pulls the rod 15 and thereby causes the pusher 16 to be moved to the left in Fig. 1, whereby the post-card is ejected through the mouth piece 17. According to the present invention the apparatus is so arranged that until the post-card ejected through the mouth-piece 17 has been removed by the purchaser no further effective operation of the machine is possible.

The rod 12 carries a bracket 18 in which there is mounted a lever 19 pivoted at 20 to the bracket 18. The lever 19 has a tail-piece 21 which is heavier than the arm 19 and carries a pin 36 adapted to engage the tail 35 on the bracket 18. When the rod 12 is pressed to the right in Fig. 2, the lever 19 is adapted to engage the end of a pawl 23 pivoted to an arm 24. The tail-piece 25 of the pawl 23 is arranged with a stop to butt against the arm 24, so that the said pawl 23 cannot rotate in a counter-clockwise direction from the position illustrated. The arm 24 is pivoted at 26 to the side frame 27 of the machine. Midway in its length the arm 24 carries the pivoted pawl 28, which is adapted to engage in the teeth of a ratchet wheel 29. A spring 30 is fixed at one end to the end of the arm 24 and at the other end at 31 to the side frame 27 of the machine. When the rod 12 is pressed to the right in Fig. 2, and the lever 19 brought to bear against the end of the pawl 23 the arm 24 is caused to rotate upward in Fig. 2 against the action of the spring 30. In this way the pawl 28 is drawn back through one tooth. On releasing the rod 12 the arm 24 is pulled downward by the spring 30 and thereby the pawl 28 presses the ratchet wheel 29 through one step in its motion. It will

be seen that in this case the actuation of the ratchet wheel 29 is always effected by the spring 30 fixed at 31 to the side frame 27 of the machine and is therefore independent of the violence with which the prospective purchaser presses the rod 12. For the purpose of preventing rotation of the ratchet wheel 29 through more than one tooth an arm 32 is fixed to the arm 24. The arm 32 is adapted to engage in one of the teeth of the ratchet wheel 29. It is clear that since the arm 32 is rigidly fixed to the arm 24 that the ratchet wheel 29 can only be moved through the distance of one tooth. A pawl 33 is arranged to prevent back rotation of the ratchet 29. On the bracket 18 there is also mounted a pawl 34 having a tail piece 35^a on which there bears a pin 36 carried by the heavy lever 21. The pin 36 bears on the tail piece 35^a so as to raise the pawl 34 out of engagement with a fixed rack 37. When however the pusher 12 is pressed to the right and the lever 19 rotates through a limited angle in a counter-clockwise direction, the pin 36 is raised from the tail piece 35^a so that the pawl 34 falls into engagement with the teeth of the rack 37. In this way all careless and thoughtless operation of the machine is avoided for the reason that the pawl 34 prevents the rod 12 moving backward once its forward motion has been commenced. As soon as the pusher 12 has completed its stroke the pawl 23 has been raised out of the path of the lever 19 and the spring 30 has caused the operation of the pawl 28. In this state the lever 19 under the action of the heavy arm 21 rotates through a short angle in a clockwise direction in Fig. 2 and thereby the pin 36 lowers the tail piece 35^a and raises the pawl 34, so that the pusher 12 is free to be returned under the action of its spring 38.

The ratchet 29 is mounted on a shaft 39 on which there are also mounted two circular plates 40, 41. The shaft 39 is supported in the fixed side-frames 27 and 42. The circular plate 40 is provided with a number of holes 43^a corresponding to the number of teeth in the ratchet 29, these holes 43^a being arranged in a circle. The circular plate 41 is provided on its circumference with a number of notches or slots 43, these slots also corresponding in number to the number of teeth of the ratchet wheel 29. In the circular plates 40 and 41 there are supported the holding cases 10 for the cards. These cases are illustrated in detail in Figs. 7-9. The cases 10 are composed of plates of substantially rectangular shape and provided with pins 44 and 45 projecting sidewise at the corners of one edge of the plate. The plate is also provided with overlapping tongue-pieces 46, which may be stamped out from the plate, or otherwise formed, and these tongue-pieces are adapted to receive one edge

of the post cards. At a suitable distance from the overlapping pieces 46 there is arranged a comb 48, the teeth of which are arranged so as to hold the post cards apart from one another, as seen in Fig. 9. The edge of the post cards parallel to that edge which is held between the tongues 46 are arranged on shelves 49 which are shown as parallel and provided with spring tongues 50 by which the post cards are frictionally held. The cases 10 as described, are suspended between the plates 40 and 41 by inserting the pin 45 through one of the holes 43^a in the plate 40. The pin 44 is then let into one of the circumferential slots 43 in the plate 41. The fixed side plate 42 arranged next to the rotatable plate 41 is provided with an annular projection 52 which is arranged to project over the notches 43. At the point 53 the annular projection 52 is broken to enable the insertion of the pins 44 into the slots 43 at this point. The slots 43 are deep enough to allow the pins 44 to pass behind the inner edge of the annular projection 52. For the purpose of closing the opening 53 after a case has been inserted a movable member 54 is provided, carried by a rotatable lever 55. The movable member 54 is pressed by the spring 56 into the opening 53 so that normally the rim 52 is closed by the movable piece 54. When it is desired however to remove one of the cases or to insert a holding case, the lever 55 is rotated against the action of its spring 57, whereby the movable part 54 is moved away from the opening 53 to enable such extraction or insertion. It will be understood that in the lower part of the drum 11 the pins 44 rest on the annular projection 52 on the side plate, while in the upper part the pins 44 rest partly on the projection and partly in the notches 51. In order that all the cases may be inserted in proper manner, that is to say with the open ends 58 of the shelves to the delivery side of the machine and the closed ends 59 toward the non-delivery side, the pins 45 are made longer than the pins 44 and are in fact of such length that the pin 45 cannot enter the notches 43 owing to their length. This arrangement also insures that the correct sides of the holding cases are uppermost. The rear side of the cases 10 may be provided with raised edges 60 to enable the insertion of any suitable advertisement.

It will now be understood that when the pusher 12 is pressed to the left in Fig. 3 and to the right in Fig. 2, the drum 11 is rotated in the direction of the arrow 13 in Fig. 3. Normally one of the cases is held in an almost vertical position as shown in the case of the holder 10^b. This is effected by projecting side lugs 61, see Fig. 7, on the free rotating end of the holder engaging with a stop 62, see Fig. 1 carried by the fixed

side frame plate 27. The holding case 10^a is held in the downwardly sloping position illustrated by the lugs 61 resting on stops 63. When now the drum 11 rotates, the pin 44 of the case 10^b moves substantially vertically downward so that the lug 61 on the case 10^b is moved clear of the stop 62 and the case 10^b is now free to fall with a clockwise rotary movement in Fig. 3, so that the side lugs 61 of said case come to bear on the stops 63. In the meantime the pin 44 of the holding case 10^a has also moved substantially vertically downward until the lugs 61 of the case 10^a have moved forward clear over the stops 63. The disengagement of the side lugs 61 of the case 10^a with the stops 63 takes place simultaneously with the disengagement of the side lugs 61 of the case 10^b with the stop 62. It will be seen therefore that each stroke of the pusher 12 results in one of the cases being brought into the downwardly sloping viewing position 10^a and all the cases may be in turn brought to the said viewing position. Assuming now that the purchaser has chosen the post card which he wishes to buy, a coin is inserted in a suitable slot in the outer casing and this coin is guided by a guide not illustrated into the coin pocket 14. The coin pocket 14 is arranged in a slide 64 operating the arm 73 of a bell crank lever pivoted at 74. The other arm 75 of the bell crank lever is provided with an elongated slot in which there engages a pin 76. The pin 76 is fixed to a slide 77 guided on a rail 78. The slide 77 has cast on it a bracket 79 to the upper end of which there is pivoted an arm 80. On the arm 80 there are pivoted the pusher pieces 16. The slide 77 is adapted to be moved by the bell crank lever arm 75 in the direction of the arrow 81 in Fig. 1, the curved forward ends 82 of the pushers 16 rest on the upper card 83 in the holding case 10^a. The pusher 16 is composed of several thin plates 84 loosely pivoted about a pin 85, the said plates being provided with lugs 86, Fig. 6, for holding them in an approximately horizontal position. This is effected by the lugs 86 engaging the shoulder 87 on the pivoted arm 80. The curved forward ends 82 of the plates 84 terminate in shoulders 88. The arm 80 is normally held at the desired inclination by engaging with the stop piece 89. (Fig. 2.) From Fig. 3 it will be seen that the cards in the case 10^a all lie at different inclinations to the horizontal. It is also impossible to insure that even when the cases are filled that the top cards always lie at the same angle. By employing the laminated pusher illustrated the shoulders 88 properly engage the cards irrespective of alterations in the angles of the cards. Further the top and the bottom cards are equally firmly engaged by the device described. This is by reason of the fact that the pivoted arm 80 allows the

pushers 16 to be raised for the upper card and the forward curved ends 82 of the plates 84 ride on the edge of the card so that the shoulders 88 on all the plates 84 are efficiently brought to bear on the card. 70

On the slide 77 there is mounted a pivoted pawl 90. This pawl is weighted at its lower end 91 and its upper end is adapted to rest against a stop 92. As the slide 77 moves in the direction of the arrow 81 the upper end of the pawl 90 bears on the inclined lower surface 93 of a lever 94 pivoted at 95 to the side frame, see Fig. 1. The left-hand end of the lever 94 engages in an opening in a plate 96 adapted to slide vertically. The plate 96 normally closes the communication between the mouth piece 17 and the delivery edge of the card case 10^a. When however the lever 94 and plate 96 are raised, a slot 97 in the plate 96 comes opposite the card 83 which is being pushed to the left in Fig. 1 by the pusher 16. The card thereby enters the mouth piece 17 and owing to its support in the mouth piece 17 it is sufficiently rigid to hold the plate 96 raised so that the said plate cannot fall until the card 83 has been wholly removed. When the plate 96 is raised a pivoted catch 98 falls downward to engage in teeth 99 of a rack carried by the slide 77. In this way the slide 77 is held in its extreme lefthand position during the time in which the card 83 is passing through the slot 97 in the plate 96. The effect of this is that the releasing of the pull rod 15 does not cause the return of the sliding carriage 77 and thereby it is impossible to operate the ejecting mechanism for ejecting a plurality of cards at one time. 75 80 85 90 95 100

The sliding carriage 64, as described, is adapted to be operated in one direction by the pull rod 15. Its return motion is effected by the spring 100. So long as the post card 83 remains partially delivered the spring 100 remains stretched; as soon however as the post card is extracted the plate 96 falls on the tail 101 of the catch 98 thereby raising the said catch out of engagement with the rack 99. In this way the carriage 77 is free to move to the right in Fig. 1 during which time the pivoted pawl 90 passes the corner 93^a of the inclined plane 93. The spring 100 presses the carriage 64 to the right in Figs. 2 and 10 so that the shoulder 102 on the lower side of the carriage 64 engages the arm 73 of the bell crank lever 75 and causes the said lever to move the slide 77 to the right in Fig. 1. 105 110 115 120

It will be understood that it is advisable to prevent the operation of the drum 11 by the push rods 12 during the time in which a card is being ejected by the pusher 16. For this purpose I provide an arm 111 carried by the slide 64 and adapted to bear 125 130

against a lever 112. The lever 112 has a projection at its upper end which when the lever falls to the left in Fig. 2 rests in one of the teeth of the ratchet wheel 29. In this way when the pawl 28 moves to the right in Fig. 2 it rides over the projection on the lever 112 and thereby is prevented from gripping the next tooth of the ratchet wheel 29. As soon however as the coin carriage 64 returns, the arm 111 on the carriage 64 strikes against the lever 112 and removes it from the ratchet wheel 29. The drum 11 may then be rotated further as desired.

In the device described the card holding cases 10 can only be inserted when the notches are opposite the opening 53, Fig. 3, if then a card case has been removed for the purpose of refilling it, it is of considerable importance that no further operation of the machine is possible so that the part of the drum from which the case has been removed always remains opposite the opening 53. For this purpose there is provided a lever 113 pivoted at 114 to the side wall 27. The lower end of the lever 113 is curved and projects into the path of the cases 10 as they fall from the position 10^b to the position 10^a in Fig. 3. When a case is in the position 10^b, the arm 113 is held to the right in Fig. 1 against the action of a spring 115. The upper end 116 of the lever 113 is provided with an elongated slot which engages with the end of a lever 113^a which carries a projection similar to the projection on the lever 112. Normally the projection on the lever 113^a is out of engagement with the teeth of the ratchet wheel 29. When however no case 10 is in the position 10^a the lever 113 is pressed with its upper end 116 to the right in Fig. 1 and thereby the lever 117 is rotated about its center of rotation 118 and the projection on the said lever is brought under the tooth in the ratchet wheel 29 immediately behind that with which the pawl 28 is in engagement.

In Fig. 1 there is illustrated the delivery mouth piece 17 which is fixed to the external frame or casing of the machine. The mouth piece 17 is cast so as to offer a tortuous path for the card being ejected. The outlet 119^a is upwardly directed and a nose 119 is cast within the passage and after passing the nose 119 the passage has an upward tendency. The lower wall of this upwardly tending passage is composed of a door 120 hinged at its upper end 121. The door 120 normally rests against the upper end of a downwardly directed passage 122. It will be seen that any fraudulent attempt to extract post cards by the insertion of a bent wire would always meet with failure. Thus owing to the fact of the passage in the mouth piece 17 having an upwardly concave shape the inner end of any wire in-

serted through the opening 118 would be directed upward away from the post cards in the case 10^a. When the post cards are pushed to the left in Fig. 1 by the pusher 16 the cards rest on the upper corner 123 and pass under the hinge door 120. The distance between the end of the case 10^a and the edge 123 is so small as to give the post card 83 the necessary rigidity for holding the plate 96 in the elevated position until the said post card is free of the slot 97.

I claim;—

1. In a vending machine, cases carrying the vendible goods, means for bringing said cases as desired to the delivery position, means for ejecting the goods from said cases, a locking device for temporarily preventing the return of said ejecting means and means, operated by the goods being ejected, for bringing said locking device into operative position so as to prevent repeated operation of the ejecting means until the goods being ejected have been completely removed.

2. In a vending machine, a rotatable drum, holding cases for vendible cards adapted to be successively brought to the delivery position by the rotation of said drum, means for ejecting a card from the case in delivery position, means held in operative position by the card for preventing repeated operation of the delivery mechanism and further rotation of the drum until the card is properly extracted.

3. In a vending machine, a rotatable drum, holding cases for vendible cards mounted on said drum and adapted to be successively brought to the delivery position by the rotation of said drum, means for ejecting a card from the case in delivery position, means held in operative position by the card for preventing repeated operation of the delivery mechanism and further rotation of the drum until the card is properly extracted, and a support for said card opposite its point of ejection from the case to render the said card sufficiently rigid.

4. In a vending machine, a case having a number of vendible cards, means for ejecting the cards from said case, an outer casing having a delivery mouth piece through which said cards are ejected, a slotted plate vertically movable by the ejecting apparatus to bring a slot in the same opposite the delivery opening for the card, a catch for said ejecting mechanism to render the same inoperative, said catch being operable by the said movable plate to release the ejecting mechanism when the card is extracted.

5. In a vending machine, means for carrying the vendible goods, means for ejecting the goods, a rack carried by the ejecting means, a catch engaging said rack when the goods are ejected, and means for operating said catch to release the ejecting

means after the ejected goods have been removed.

6. In a vending machine, means for carrying the vendible goods, a slidable member for ejecting the goods, a centrally pivoted member weighted at one end and carried by said slidable member, a stop on the slidable member engaging said pivoted member to allow it to rotate only in one direction, a slidable plate, a pivoted lever engaging said slidable plate, an inclined plane on said pivoted lever over which said pivoted member slides to raise said lever and thereby the slidable plate, substantially as described.

7. In a card vending machine, a card containing case having overlapping lugs for holding the cards close together at their rear edges, a comb fitting between the side edges of the cards and adapted to hold the front edges of the cards apart, shelves on which the front edges of said cards rest, and blade springs intermediate each shelf for frictionally holding the front edges of the cards in position on said shelves.

8. In a card vending machine, a card containing case in which the cards are held close together at their front edges and held apart at their rear edges, and means for ejecting the cards from said case comprising a plurality of thin loosely pivoted levers arranged side by side, the forward ends of said levers being adapted to rest on and move over the rear edge of the topmost card, a shoulder on the underside of each of said pivoted levers and at a midpoint in their length, said shoulders being adapted to abut against the rear edge of the topmost card, and means for simultaneously sliding said levers forwardly so as to eject the topmost card in front of the levers.

9. In a vending machine, means for delivering vendible cards from a case comprising a plurality of thin loosely pivoted levers arranged side by side, said levers being curved at their forward ends and hav-

ing shoulders at a midpoint in their length, a pivoted arm on which said levers are mounted and a slidable member carrying said pivoted arm.

10. In a vending machine, a card case holding a plurality of vendible cards close together at one edge and spread at the opposite edge, a slidable member movable in the direction of ejection of the cards from the said case, an arm pivoted on said slidable member and movable in a plane at right angles to the direction of motion of the same, a plurality of thin levers pivoted side by side on said arm, said levers being curved at their forward ends and having shoulders at a midpoint on their under side, said shoulders being adapted to engage the edge of the cards in the case during the forward movement of the slide.

11. In a vending machine, a rotatable drum, ratchet mechanism for rotating said drum stepwise, holding cases in said drum, mechanism for ejecting goods from said holding cases, an operating slide for said ejecting mechanism, a lever having a projection thereon, an arm on said slide engaging said lever in the position of rest of said slide to hold said projection out of engagement with the ratchet mechanism but when the slide is moved leaving said lever free to rotate and render the ratchet mechanism inoperative.

12. In a vending machine, a rotatable drum, ratchet mechanism for rotating said drum, a plurality of holding cases pivoted to said drum and adapted on the stepwise rotation of the drum to be brought to delivery position, and means for rendering said ratchet mechanism inoperative when no holding case is in the delivery position.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

MAX SIELAFF.

Witnesses:

WOLDEMAR HAUPT,
HENRY HASPER.