

A. A. CAILLE.
TICKET VENDING MACHINE.
APPLICATION FILED APR. 14, 1910.

1,004,144.

Patented Sept. 26, 1911.

3 SHEETS—SHEET 1.

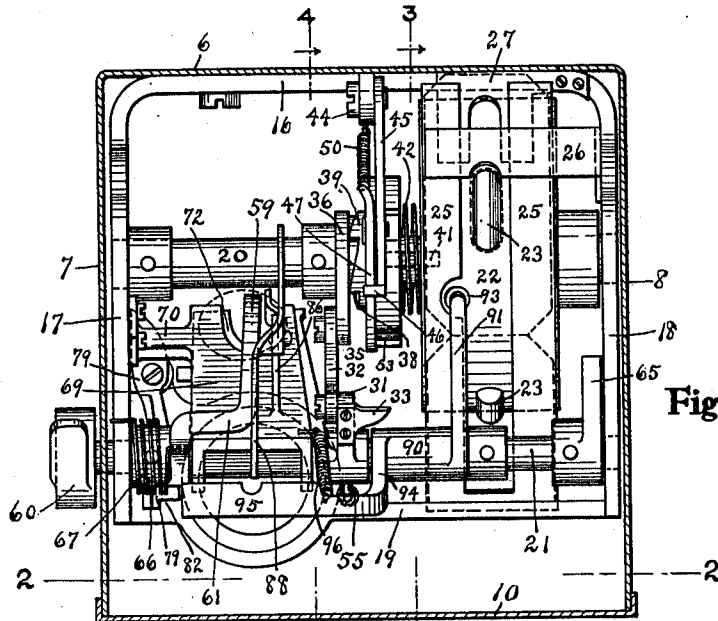


Fig. 1.

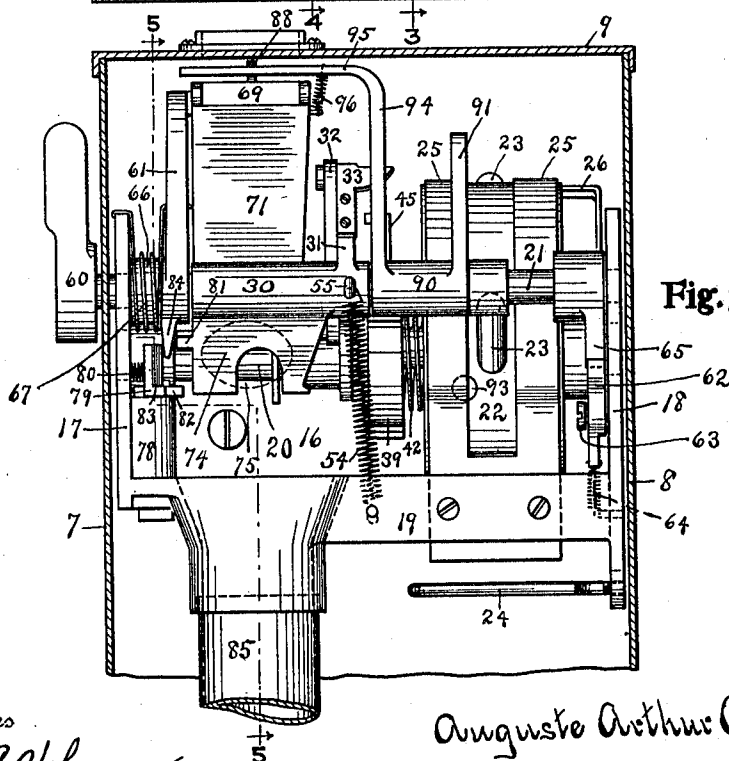


Fig. 2.

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3 SHEETS--SHEET 2.

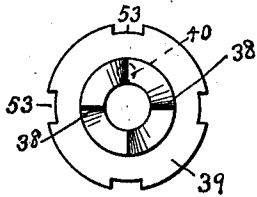


Fig.9.

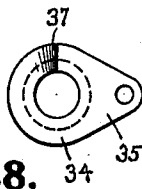
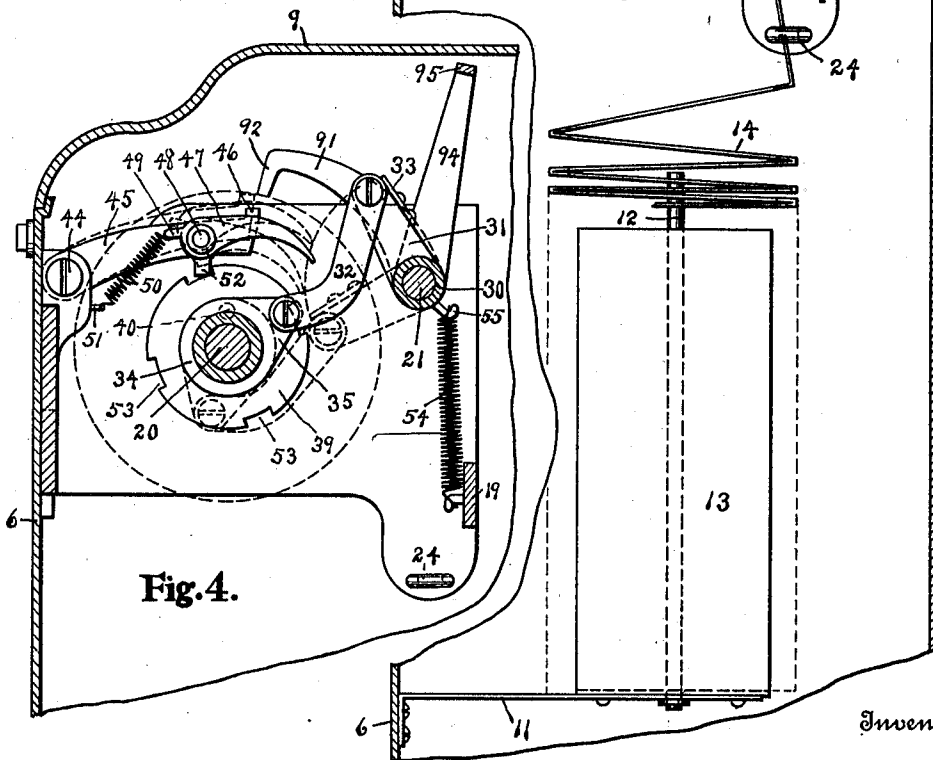


Fig.8.

Fig. 3.



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3 SHEETS-SHEET 3.

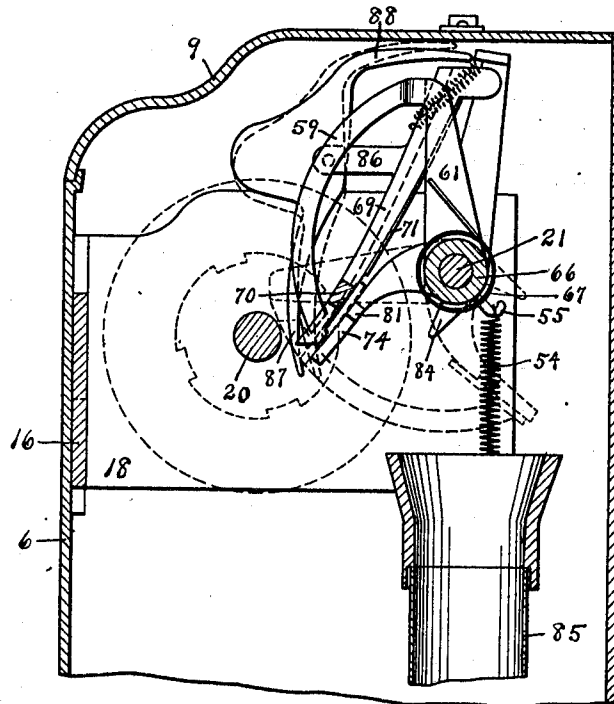


Fig. 5.

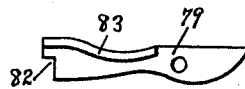


Fig. 6.

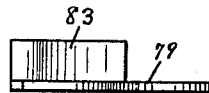


Fig. 7.

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AUGUSTE ARTHUR CAILLE, OF DETROIT, MICHIGAN.

TICKET-VENDING MACHINE.

1,004,144.

Specification of Letters Patent. Patented Sept. 26, 1911.

Application filed April 14, 1910. Serial No. 555,443.

To all whom it may concern.

Be it known that I, AUGUSTE ARTHUR CAILLE, a citizen of the United States, and a resident of Detroit, in the county of Wayne and State of Michigan, have invented a new and useful Ticket-Vending Machine, of which the following is a specification.

This invention relates to a coin-controlled mechanism mounted in a suitable case, adapted to eject a ticket upon the complete operation of the device, and the object of my invention is to provide a mechanism of this type which shall be positive in its operation, which may be constructed at moderate cost and which shall be especially adapted for the vending of tickets for cheap entertainments, for elevated and underground railways and other transportation, and in connection with savings banks.

In the accompanying drawings, Figure 1 is a plan of this vending machine with the top of the case broken away. Fig. 2 is a rear elevation with the back of the case broken away on the line 2—2 of Fig. 1. Figs. 3 and 4 are cross sections on the lines 3—3 and 4—4 of Fig. 1, respectively. Fig. 5 is a vertical cross section on the line 5—5 of Fig. 2 with one pawl omitted for the sake of clearness. Figs. 6, 7, 8 and 9 are details of parts.

Similar reference characters refer to like parts throughout the several views.

This machine is primarily designed for the issuance of a ticket upon the insertion of a proper coin, and may be mounted in a case of any desired design. The ticket may be oblong with its corners beveled, although this is not necessary, and is provided with a hole through which the teeth of a feed-wheel may project. It is desirable that these tickets be printed on a continuous tape and projected from an opening in the case where they can be grasped and torn off.

The front 6 of the case may connect to the sides 7 and 8, and to the top 9. A back 10 is preferably removable to give access to the ticket and coin receptacles. The bracket 11 secured to the front 6 (Fig. 3) carries an upright rod 12 and sides 13. The ticket tape 14 is folded back and forth upon itself and slipped down between the sides 13, the rod 12 extending up through the holes in the tickets.

Mounted in the case and preferably se-

cured to the front 6, is the frame, formed of the front-plate 16, side-plates 17 and 18, and rear cross-bar 19, all preferably integral with each other. The main shaft 20 and the operating shaft 21 are journaled in holes in the side-plates. Loosely mounted on the main shaft is the ticket-wheel 22, provided with teeth 23, preferably four, which extend through the holes in the ticket tape and thus cause exact movement. A ticket guide 24 in the form of a loop of round wire may project inwardly from the side-plate 18. Extending from the cross-bar 19, up and over the ticket-wheel 22, is a pair of guides 25, preferably of sheet metal, separated by a central slot to permit the teeth 23 to pass through. A light bracket 26 connects to the side-plate 18 and supports the front ends of the guides 25. This side-plate also supports the scraper 27 which prevents the tickets from following down the front of the ticket-wheel and forces them to move out of the case as shown in Fig. 3. Means are provided for turning the ticket-wheel a circumferential distance equal to the length of a ticket at each operation of the machine, as follows:—A sleeve 30 is loose on the shaft 21 and is given a reciprocating movement on the shaft of about ninety degrees each way by means of the coin-controlled actuator. This sleeve is provided with an arm 31, to which is connected a link 32 and a spur or finger 33. (See Figs. 1, 2 and 4). The link connects to an arm 35 on the rocking-collar 34, connected to the shaft 20 so as to retain its position. This arm 35 has less radial length than the arm 31 and will therefore swing through a greater arc than ninety degrees, but the distance will be less than twice ninety degrees. The rocking-collar has a tooth 37 adapted to engage in any one of the four grooves 38 in the ring 39. This ring has a hole partially through it, into which hole the pin 41 connected to the hub of the ticket-wheel extends. A coil-spring 42 on the shaft 20 presses the ring 39 against the collar 34.

Pivoted on the screw 44 on the front-plate 16, is a pawl-carrier 45 having a finger 46 which extends over the pawl 47, pivoted to the carrier at 48. A finger 49 on the front of the pawl connects to the spring 50, which has its opposite end connected to the pin 51 on the front-plate 16. A tooth 52 projects down from the pawl and normally ex-

tends into one of the four notches 53 in the periphery of the ring 39. A stiff spiral-spring 54 connecting to the cross bar 19 and to a pin 55 on the sleeve 30 returns the parts to the positions shown in solid lines in the drawings and thereby turns the ticket-wheel.

The operation of the parts thus far described is as follows:—When the arm 31, the link 32, and the rocking-collar 34 are moved from the position shown in solid to that in dotted lines in Fig. 4, the tooth 37 on the collar will move from one groove 38, in the ring 39, around past a second groove and on toward a third. The exact distance is rather immaterial so long as it is sufficient. The tooth 52 in a notch 53 holds the ring 39 from turning. The finger 33 in passing down engages the free end of the pawl 47 and swings it down momentarily to the lower position shown in dotted lines, but this does not disengage the tooth 52 from the notch 53. Upon the return movement of these parts, the finger 33 engages under the pawl 47 and lifts the same and the pawl carrier 45 until the tooth 52 is out of the notch 53. At this time the tooth 37 engages in a groove 38 in the ring 39 and carries the ring and the ticket-wheel 22 with it through one-fourth revolution, sufficient to project a ticket from the case. Immediately after the finger 33 passes the pawl, the latter will fall, but the tooth 52 will ride on the face of the ring until the next notch 53 comes around. The necessary lateral movement between the rocking-collar 34 and the ring 39, because of the sliding of the tooth 37 out of the notches, and the subsequent reengagement, is provided for by the spring 42. A ticket is therefore fed from the case at each reciprocation of the arm 31.

Secured to the outer end of the shaft 21 is an actuating handle 60 which is intended to reciprocate through an arc of about ninety degrees at each complete actuation of the machine. To prevent incomplete movements of the actuator, a "full-stroke" mechanism of any desired type may be employed, that shown consisting of a toothed flange 65 secured to the shaft 21, (Fig. 3), and a pawl 62 mounted on the screw 63 against the side-plate 18. A spring 64 normally holds the pawl in engaging position.

An arm 61 having a curved extension 59, is also secured to the shaft 21, and on its hub 66 is mounted a coil-spring 67, adapted to return these various parts to normal position. A coin-chute 69 is connected to the side-plate 17 by a bracket 70, and a plate 71 forms a partial bottom for the same. At the lower end, this chute has a notch 72, (Fig. 1) through which the curved extension 59 may travel. Connected to the sleeve 30 is a flat leaf or plate 74 which is normally held against the lower end of the coin-chute by the spring 54. This leaf has a notch 75,

which permits the curved extension 59 to move freely.

Under normal conditions, the arm 61 and its extension 59 can freely swing from the position shown in Fig. 5 in solid lines to that in dotted lines without affecting any other parts. When a proper coin is dropped into the chute, it will lodge in the lower end of the same in the path of the end of the arm 59, against the leaf 74, the chute being tapered slightly as shown in Figs. 1 and 2. When the handle 60 is turned down about ninety degrees, the curved extension 59 on the arm 61 will engage the coin and through it swing the leaf 74 to the position shown in dotted lines in Fig. 5. This causes the arm 31, which is connected to the leaf 74 by the sleeve 30, to position the collar 34 for turning the ticket-wheel, and tensions the spring 54, which will actuate the ticket wheel through the return movement of the parts just described.

It is desirable that the arm 61 and its curved extension 59 begin to return before the leaf 74, otherwise the coin would be held from falling into the proper receptacle. To do this, means are provided for temporarily holding the leaf 74 in its rearward position. On the shoulder 78 on the side-plate 17, (Fig. 2) is pivoted a pawl 79, shown in Figs. 6 and 7, between the rear end of which and this side-plate is a small spiral-spring 80. The front end of this pawl engages the side-plate and prevents the rear from swinging out too far. On the leaf 74 is a small lug 81 which slides along the edge of this pawl and rests in the notch 82 of the same when the leaf has reached the position shown in dotted lines in Fig. 5, and is held in that position while the spring 67 begins to swing back the arm 61, thus releasing the coin and permitting it to fall into its receptacle, preferably a tube 85. A cam-flange 83 on this pawl is so positioned that the finger 84, which extends down from the hub 66 of the arm 61, will slide along the same, which finger will swing back the pawl from its engaging position when this hub 66 and arm 61 have moved through about one-half of their return stroke. The spring 54 is then free to return the leaf 74 and also to swing the arm 31 and the collar 34 to normal position, thereby turning the ticket-wheel to feed out a ticket.

The usual safety devices may be employed if desired. Extending forward from the coin-chute 69 is a bracket 86 to which is pivoted a lever having the lower end of its lower arm 87 normally in the notch 72 in the lower end of the chute, and the upper end of its upper arm 88 near the upper inlet-end of the chute as shown in dotted lines in Fig. 5. When a coin is in the lower end of the chute, the arm 87 will be pushed forward to the position shown in solid lines, carry-

ing the end of the upper arm across the inlet end of the chute, thus preventing a second coin from being dropped in. When the coin is carried out of the chute, the lever resumes its normal position.

Loosely mounted on the shaft 21 is a sleeve 90 having arms at its opposite ends. The one arm 91 extends over the ticket-wheel and has a downwardly projecting finger 92 adapted to enter any one of the holes 93 in the wheel, unless prevented by a ticket. The other arm 94 has a lateral extension 95, normally just in the rear of the ticket chute. A light spring 96 tends to swing this extension 95 across the inlet opening of the chute. So long as tickets are passing over the wheel, they hold the finger 92 out of these holes, but as soon as they cease passing, this finger drops into one of the holes and the inlet of the chute is closed, thus preventing the insertion of a coin, the finger also locking the wheel.

While these coin-controlled machines are especially adapted for vending tickets for transportation and amusements, they may be employed in savings banks which accept small deposits, the tickets being numbered and the coins stacked in the coin receptacle so that worthless coins can be detected and steps taken to prevent credit being given for the ticket issued thereon.

Many changes in the details of this construction can be made by skilled mechanics without departing from the spirit of my invention.

Having now explained my construction, what I claim as my invention and desire to secure by Letters Patent is:—

1. In a ticket machine, the combination of a case, a shaft mounted therein, a ticket-wheel mounted on said shaft and having teeth adapted to engage in perforations in the ticket-tape, a ring mounted on said shaft and connected to said wheel and having notches in its circumference, a pawl normally engaging in said notches, a spring adapted to turn said ring and wheel, oscillating means to tension said spring and position the pawl, and connections between the spring and pawl to lift the same out of the notches in said ring.

2. In a ticket machine, the combination of a case, an actuating shaft mounted therein, a reciprocating-arm loosely mounted on said shaft, connecting means between the shaft and arm, a second shaft, a rocking-collar thereon, connections between said arm and collar, a ticket-wheel mounted on the second shaft, and connections between the collar and ticket wheel whereby the ticket-wheel will be actuated a circumferential distance equal to the length of a ticket at each actuation of the reciprocating-arm.

3. In a ticket machine, the combination of a case, an actuating shaft mounted therein, a

reciprocating-arm mounted on said shaft, means to actuate the arm, a second shaft, a ticket-wheel mounted thereon and provided with teeth adapted to engage in apertures in a ticket-tape to feed the same, connections between the ticket-wheel and reciprocating-arm whereby the ticket-wheel will be actuated a circumferential distance equal to the length of a ticket at each operation of the reciprocating-arm, manually operated means to position the arm, and a spring to drive the arm through its operating stroke.

4. In a ticket machine, the combination of a case, a ticket-wheel mounted therein, guides for conducting a ticket-tape around said wheel, an arm extending over said wheel and having a projection adapted to enter perforations in the face of the wheel to stop the same when not prevented by the ticket-tape, and a reciprocating mechanism for turning the wheel a circumferential distance equal to the length of a ticket at each actuation of the machine.

5. In a ticket machine, the combination of a case, a shaft mounted therein, a ticket-wheel mounted on the shaft, said wheel having teeth to engage in apertures in a ticket-tape, a rocking-collar mounted on the shaft and having a laterally extending tooth, a ring slidably mounted on said shaft between the collar and wheel and revoluble with the wheel, and provided with notches in its face and grooves in the side toward the collar to receive the tooth on the same, a spring to press the ring against the collar, and actuating means to rock said collar to turn said ticket wheel the angular distance between its teeth.

6. In a ticket machine, the combination of a case, a ticket-wheel mounted therein, guides for conducting a ticket-tape around said wheel, an arm extending over said wheel and having a projection adapted to enter perforations in the face of the wheel to stop the same when not prevented by the ticket-tape, mechanism for turning the wheel a circumferential distance equal to the length of a ticket at each actuation of the machine, a spring for operating said mechanism, and a manually operated device for positioning said mechanism and thereby tensioning the spring.

7. In a ticket machine, the combination of a case, a shaft mounted therein, a ticket-wheel mounted on the shaft, said wheel having teeth to engage in apertures in a ticket-tape, a rocking-collar mounted on the shaft and having a laterally extending tooth, a ring slidably mounted on said shaft between the collar and wheel and revoluble with the wheel and provided with notches in its face and grooves in the side toward the collar to receive the tooth on the same, a spring to press the ring against the collar, a spring to rock said collar to turn said ticket-

wheel the angular distance between its teeth, and a manually operated device to position said collar and tension the spring.

8. In a ticket machine, the combination of
5 a case, an actuating shaft mounted therein, a reciprocating-arm mounted on said shaft, means to actuate the arm, a second shaft, a ticket-wheel mounted thereon and provided
10 with teeth adapted to engage in apertures in a ticket-tape to feed the same, connections between the ticket-wheel and reciprocating arm whereby the ticket-wheel will be actuated a circumferential distance equal to the

length of a ticket at each operation of the reciprocating-arm, a spring to swing said arm through its operative stroke, and a device to position the arm and tension the spring.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

AUGUSTE ARTHUR CAILLE.

Witnesses:

WALTER E. WHELAN,
EDGAR ELLIOTT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
