(No Model.)

D. E. DURIE & A. BEGG.

VENDING MACHINE.

No. 458,681. Patented Sept. 1, 1891.

Fig. 2.

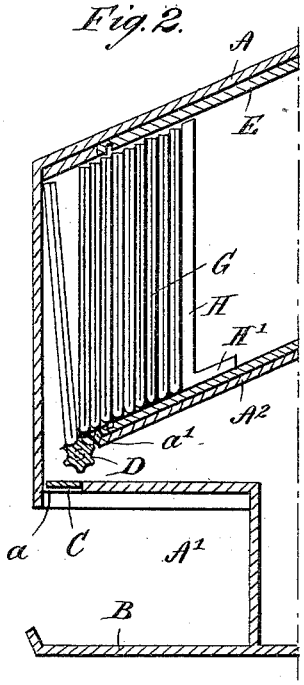


Fig. 1.

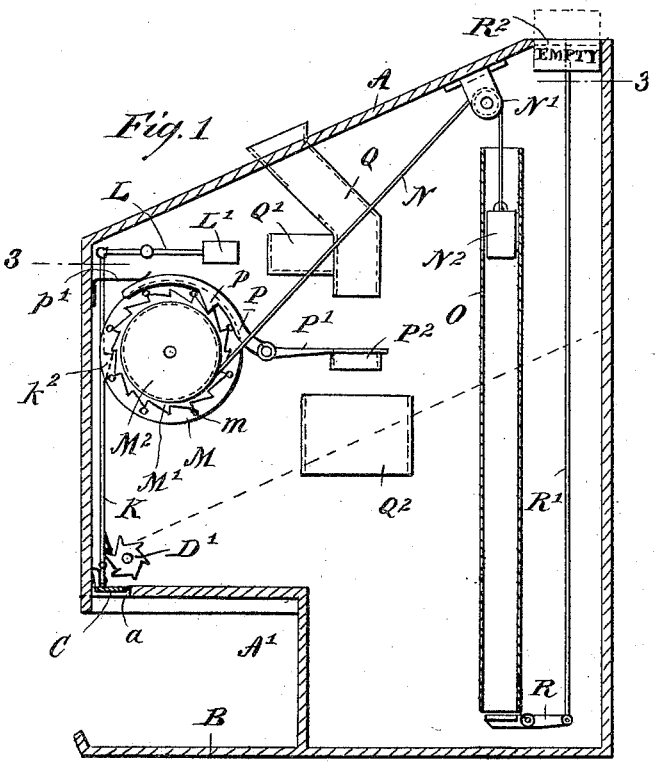


Fig. 4.

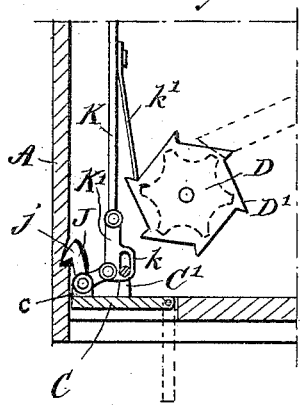


Fig. 3.

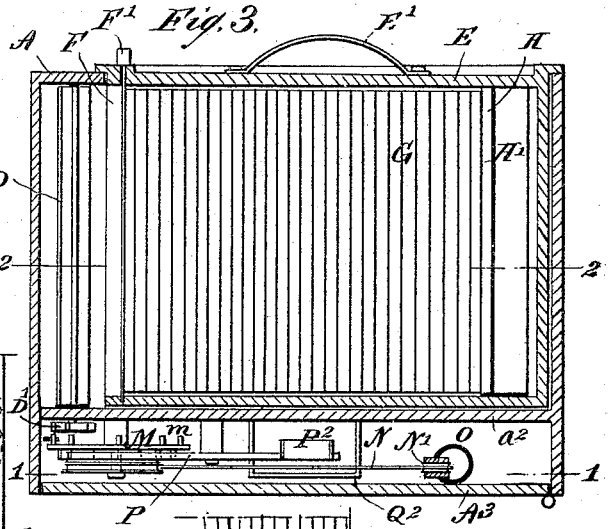


Fig. 5.

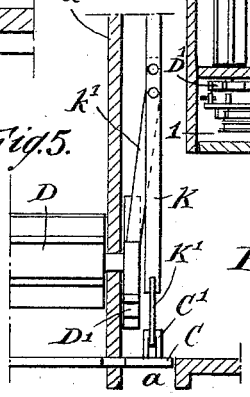
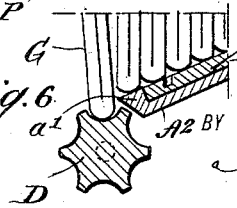


Fig. 6.



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DAVID E. DURIE AND ALEXANDER BEGG, OF SEATTLE, WASHINGTON.

VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 458,681, dated September 1, 1891.

Application filed January 2, 1891. Serial No. 376,492. (No model.)

To all whom it may concern:

Be it known that we, DAVID E. DURIE and ALEXANDER BEGG, of Seattle, in the county of King and State of Washington, have invented a new and improved Vending-Machine, of which the following is a full, clear, and exact description.

Our invention relates to improvements in vending-machines, and more especially to that variety of vending-machines which are adapted to deliver newspapers or other publications by means of mechanism operated by coins dropped into a slot of the machine; and the principal object of this invention is to provide means whereby the papers will not only be delivered by the insertion of a single coin, but the mechanism will also operate on the insertion of a number of coins, the mechanism being intended to deliver two and three cent papers or other papers where a coin or several coins are necessary to pay the price of them.

To this end our invention consists in certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a vertical section on the line 1 1 of Fig. 3, showing the coin-operated driving mechanism of the machine. Fig. 2 is a broken cross-section on the line 2 2 of Fig. 3, the section being taken through the newspaper-holding receptacle. Fig. 3 is a horizontal section on the line 3 3 of Fig. 1. Fig. 4 is an enlarged end view, partly in section, of the mechanism for operating the delivery-door. Fig. 5 is a detail side elevation of the same, partly in section, and Fig. 6 is an enlarged detail sectional view of the delivery-roller with the papers in position thereon.

The main case A is adapted to rest upon the ground or floor, and is intended to be used in various public places, and the front portion of the case is cut away on the under side, as shown at A′, so that the papers which are delivered through said cut-away portion will fall upon a tray B, which extends beneath that part of the case. The case is provided on the front side and in the bottom above said cut-away portion with an opening *a*, which is closed by a door C, operated in the manner described below, and in the rear of the said door is an inclined shelf A^2, the front end of which terminates above and near the door, and is turned up, as shown at *a′*, and the shelf extends rearward to the back of the case and is inclined upward, so that the papers which are placed thereon will slide to the front of the case and be delivered upon the door, as hereinafter described.

The case is provided near one end with a vertical partition a^2, which divides the case into two compartments, one containing the shelf and door above described and being adapted to receive the newspaper-holding receptacle, and the other and smaller compartment carrying the coin-operated driving mechanism, which will be described below, and this latter compartment is reached by means of a door A^3 in the end of the case.

A grooved roller D is pivoted in the lower front portion of the case, said roller extending across the main compartment of the case, and the roller is located in front of the shelf A^2 and a little above the door C. The grooves in the roller are intended to receive a folded newspaper, and the roller is arranged so that only one newspaper will be delivered at a time. The roller-shaft extends through the partition a^2, and is provided at the end with a ratchet-wheel D′, which is operated by mechanism which will be described below and which turns the wheel and roller a distance to deliver a paper upon the door C.

The case A is open at one end and is adapted to receive the newspaper-holding receptacle E, which is inclined to correspond with the incline of the shelf A^2 and which fits between the shelf and the top of the case. The receptacle E is provided with a handle E′ to facilitate its adjustment, and it may be provided with any suitable lock, so that it may be locked into the case. The receptacle is open in front; but the open portion is temporarily closed by a slide F, which terminates in a handle or button F′, and the slide holds the newspapers G in place in the receptacle; but when the receptacle is inserted in the case the slide F is removed.

In the rear of the papers G is a sliding abutment H, which has a flange H′ at the bottom, which flange is inclined, so as to fit the inclined bottom of the receptacle E and have

the main portion of the abutment in a vertical position. The abutment will then press against the papers and will slide forward as fast as the papers are removed, thus continually forcing the papers to the front portion of the case. The door C is hinged at its rear corners, so as to drop down into the position indicated by dotted lines in Fig. 4, and on the upper side of the door near one end is a staple C′, and on the front side of the door near the forward edge are lugs *c*, between which is pivoted an elbow-lever J, the upper arm of the lever being formed into a catch *j*, which engages a notch in the wall of the case A and thus holds the door locked, and the lower arm of which is pivoted to a link K′, connecting with a vertical rod K. The link K′ has a projecting slotted portion *k*, which is hooked upon the staple C′ of the door, and it will thus be seen that when the rod K is depressed it will tilt the lever J and release the catch *j* and will push the door C into an open position, and when the rod is raised it will lift the door and will throw the catch into engagement with the notch in the wall, thus holding the door locked. The rod K extends upward near the edge of the ratchet-wheel D′, and it is provided with a spring-pawl *k*′, which engages the teeth of the ratchet-wheel, so that when the rod is depressed the ratchet-wheel D′ and the roller D will be turned and a newspaper G will be delivered upon the door C and allowed to drop through the opening in the case. The rod K has near its upper end a catch k^2, which is operated upon by the teeth of a pin-wheel, as described below, and the upper end of the rod is pivoted to a horizontal lever L, which lever is centrally pivoted in the case and has at its its inner end a weight L′, so that when the rod K is forced downward by the coin-operated mechanism the weight L will immediately return to its place. The coin-operated mechanism used in the machine is substantially like that shown in other applications of ours filed December 29, 1890, and January 2, 1891, said applications being serially numbered 376,148 and 376,491, respectively, with the exception of the pin-wheel and its connection with the ratchet-wheel, and therefore the mechanism will only need sufficient description to show that it is operative.

Pivoted in the smaller compartment of the case A is a pin-wheel M, a ratchet-wheel M′, which is fixed thereto, and a pulley M^2, which is fixed to the same shaft as that on which the pin-wheel and ratchet-wheel are mounted, so that the pulley and the two wheels will turn simultaneously. The pin-wheel M is provided with projecting pins *m*, which engage the catch k^2 on the rod K, and these pins are placed farther apart than are the teeth on the ratchet-wheel, so that the ratchet-wheel will need to be twice operated before one of these pins will engage and operate the rod K, and if three coins represent the price of a paper the ratchet-wheel and pin-wheel may be arranged so that the ratchet-wheel must turn a distance of three teeth to enable the pins to operate the rod, and this principle may be carried out to any extent. The ratchet-wheel and pin-wheel are turned by a belt N, which extends under and is fixed to the pulley M^2, said belt or cord extending over a pulley N′, pivoted between lugs on the top of the case, and the belt or cord is secured at its lower end to a weight N^2, which moves vertically in a slideway O, and the weight thus serves to turn the pulley M^2 and the ratchet-wheel and pin-wheel. The shaft on which the pulley M^2 is fixed may be squared at the end, so that a wrench or key may be applied thereto to wind up the mechanism. A bent pawl P is pivoted adjacent to the ratchet-wheel M′, said pawl having a tooth *p* to engage the teeth of the ratchet-wheel, and the pawl is normally pressed against the ratchet-wheel by a spring *p*′. The rear end P′ of the pawl is extended beyond the pawl-pivot and terminates in an inclined plate P^2, on which the coins are delivered, and the weight of the coin will tilt the pawl, thus releasing it from the ratchet-wheel and permitting the ratchet-wheel to turn the distance of one tooth, the coin then sliding off and allowing the pawl to return to the ratchet-wheel.

A coin-chute Q is arranged to deliver upon the plate P^2, said chute opening through the top of the case and having lateral bends therein with an opening on the under side, so that small coins will drop into a box Q′ without operating the driving mechanism of the machine, and a box Q^2 is arranged beneath the plate P^2, so as to receive the coins. The coin-chute and its attachments are substantially like those shown in another application filed simultaneously herewith and forms no part of this invention.

A lever R is pivoted near the bottom of the slideway O, so as to extend beneath the same, and the rear end of the lever is pivoted to a vertical rod R′, which extends to the top of the case, and is fixed to a sign R^2, on which the word "empty" is produced, so that when the mechanism is run down and the newspapers all sold the weight N^2 will strike and actuate the lever R and display the sign, and intending purchasers will refrain from dropping coins in the slot until the newspaper-holding receptacle is again filled.

The machine is operated as follows: The ratchet mechanism is wound up in the ordinary way, so as to raise the weight N^2, the newspaper-holding receptacle E is inserted in the case A and locked in place, the slide F is removed, and the newspapers therein will be pushed to the front part of the receptacle by the abutment H, and when a person drops two coins, one after the other, in the chute Q the ratchet-wheel and pin-wheel will be operated and a pin on the pin-wheel will strike upon the catch k^2 of the rod K, thus depressing the rod and opening the door C. At the

same time the pawl k' will turn the ratchet-wheel D′ and the grooved roller D and the the newspaper G will be delivered through the opening a upon the tray B. The weight L′ will then return the rod K to its normal position and close the door C, and the machine is then ready for another operation.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. A vending-machine comprising a case having a swinging door in the bottom and having a newspaper-holding receptacle with an inclined floor, a grooved roller located above the door, means for delivering the papers upon the roller, and coin-controlled mechanism for operating the roller, substantially as described.

2. A vending-machine comprising a case having a swinging door in the bottom and having a newspaper-holding compartment with an inclined floor terminating above the door, a grooved roller between the door and the inclined floor, means for delivering the papers upon the roller, and coin-controlled mechanism for operating the door and roller, substantially as described.

3. A vending-machine comprising a case having an opening in the bottom closed by a swinging door and having a newspaper-holding compartment with an inclined floor terminating above the door, a roller pivoted in the case between the inclined floor and the door, a sliding abutment mounted in the compartment, and coin-controlled mechanism for operating the door and roller, substantially as described.

4. A vending-machine comprising a case having an opening in the bottom and a newspaper-holding compartment with an inclined floor terminating above the opening, a grooved roller pivoted at the lower edge of the inclined floor, and coin-controlled mechanism for turning the roller, substantially as described.

5. A vending-machine comprising a case carrying coin-operated driving mechanism of the character described, said case having a compartment with an opening in the bottom and an inclined shelf terminating above the opening, a swinging door pivoted in the opening, a grooved roller pivoted above the door, connections between the door and roller and the coin-operated driving mechanism, and a newspaper-holding receptacle shaped to fit the main compartment of the case, substantially as described.

6. In a vending-machine, the combination, with a main case having an opening in the bottom and an inclined shelf above the opening, of a removable newspaper-holding receptacle shaped to fit the shelf, and a sliding abutment mounted in the receptacle, substantially as described.

7. In a vending-machine, the combination, with a grooved roller and a swinging door, of a weighted rod connected with the door and roller, and coin-controlled mechanism for moving the rod in opposition to the weight on the rod, substantially as described.

8. In a vending-machine, the combination, with a grooved roller having a ratchet-wheel at one end and a swinging door beneath the roller, of a vertical rod connected with the door and provided with a pawl to engage the ratchet-wheel, said rod having a catch thereon and having a counter-balance connected therewith, a pin-wheel having its pins arranged to strike the catch on the rod, a ratchet-wheel fixed to the pin-wheel, means for turning the ratchet-wheel, and a coin-operated pawl connected with the ratchet-wheel, substantially as described.

9. In a vending-machine, the combination, with a swinging door and a grooved roller pivoted above the door and provided with a ratchet-wheel, of a weighted rod pivoted to the door and provided with a pawl to engage the ratchet-wheel of the roller, said rod having a catch thereon, as described, a revoluble ratchet-wheel, a coin-operated pawl for releasing the ratchet-wheel, and a pin-wheel fixed to the ratchet-wheel and having its pins adapted to strike the catch on the rod, the pins being arranged to operate at one or more movements of the ratchet-wheel, substantially as described.

10. In a vending-machine, the combination, with a swinging door and a grooved roller pivoted above the door and provided with a ratchet-wheel, of a weighted rod pivoted to the door and provided with a pawl to engage the roller ratchet-wheel, said rod having a catch thereon, a locking device for the door, a revoluble ratchet-wheel having a coin-operated releasing-pawl connected therewith, and a pin-wheel connected with the ratchet-wheel and having its pins arranged to strike the catch of the rod, said pins being placed to operate at two or more movements of the ratchet-wheel, substantially as described.

11. In a vending-machine, the combination, with a swinging door and a grooved roller pivoted above the door and provided with a ratchet-wheel, of an elbow-lever pivoted on the door and provided with a catch to engage a notch adjacent to the door, and a vertically-movable rod pivoted to the door and to the elbow-lever, said rod having a pawl thereon to engage the roller ratchet-wheel, substantially as described.

12. The combination, with a swinging door and a grooved roller pivoted above the door, of coin-controlled mechanism connected with the door and roller and adapted to operate only on the insertion of a number of coins in the machine, substantially as described.

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