(No Model.) 2 Sheets—Sheet 1.

J. C. STEVENS.

COIN OPERATED VENDING MACHINE.

No. 435,370. Patented Aug. 26, 1890.

Fig. 1

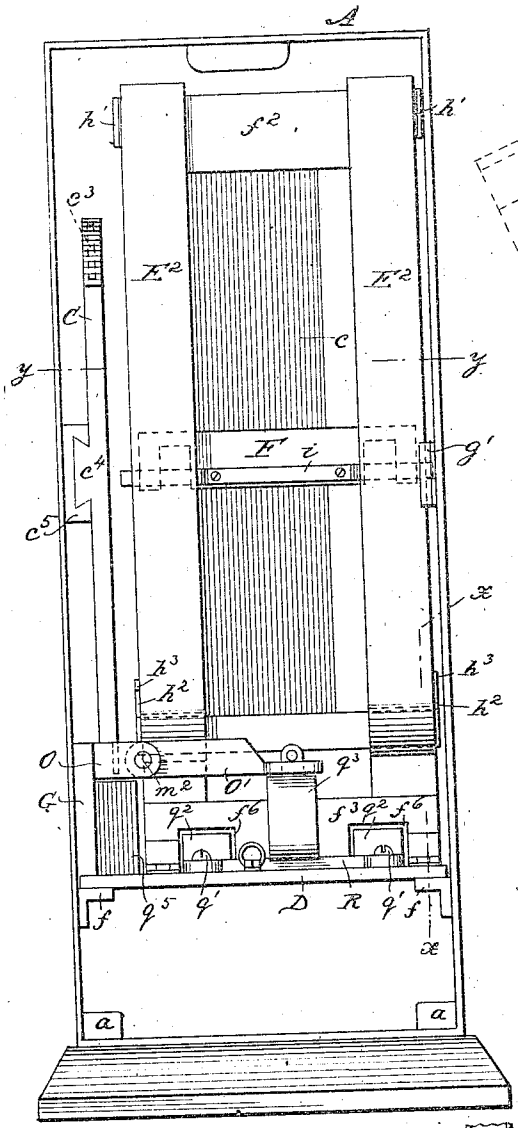


Fig. 2

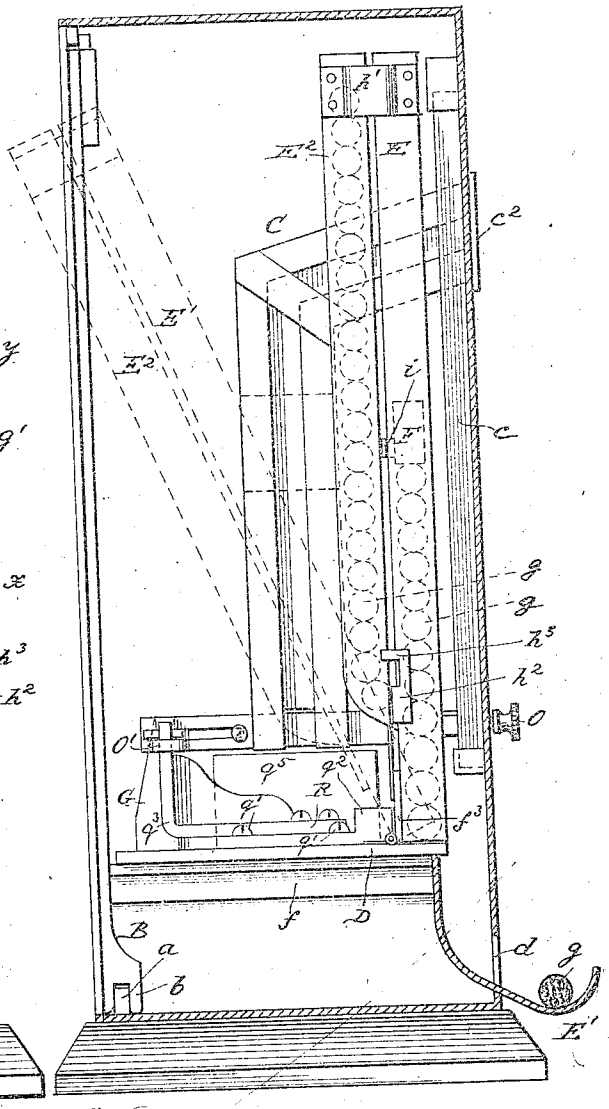
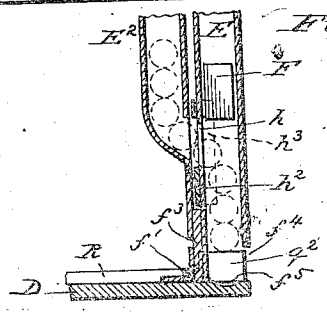


Fig. 3



WITNESSES:
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Charles H. May.

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(No Model.) 2 Sheets—Sheet 2.

J. C. STEVENS.

COIN OPERATED VENDING MACHINE.

No. 435,370 Patented Aug. 26, 1890.

Fig. 4.

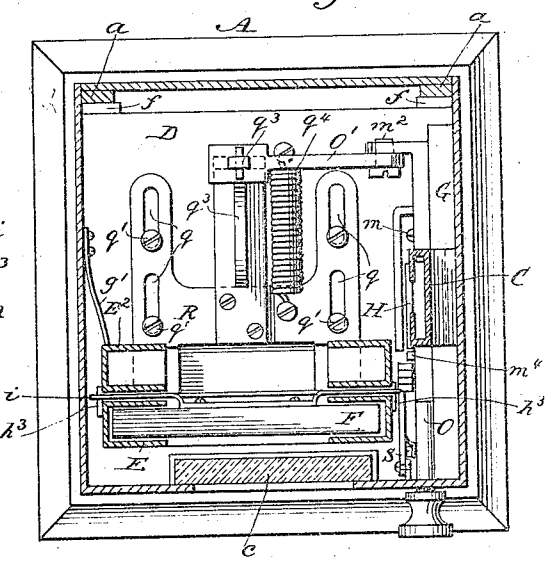


Fig. 5.

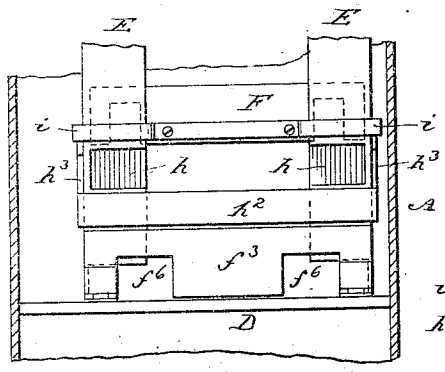


Fig. 6.

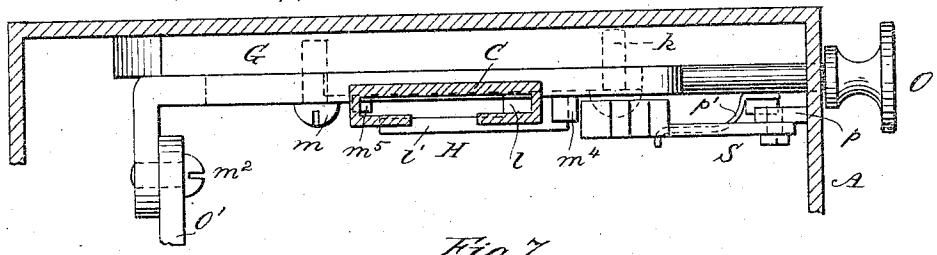
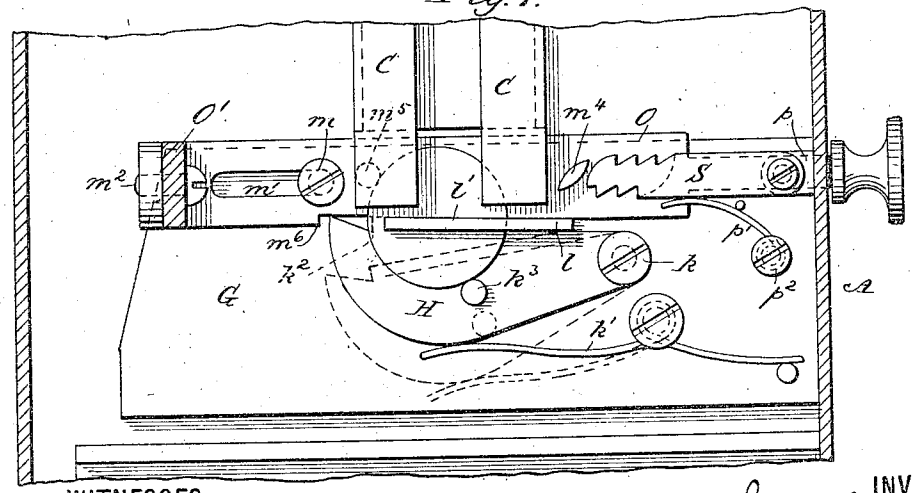


Fig. 7.



WITNESSES:

D. C. Reusch

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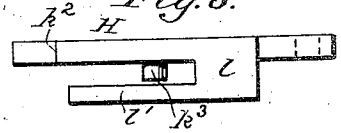
Fig. 8.



INVENTOR

John C. Stevens.

BY

Isaac L. Storer,

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UNITED STATES PATENT OFFICE.

JOHN C. STEVENS, OF NEW YORK, N. Y., ASSIGNOR TO EBEN N. HIGLEY, OF SAME PLACE.

COIN-OPERATED VENDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 435,370, dated August 26, 1890.

Application filed May 21, 1890. Serial No. 352,625. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. STEVENS, of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Coin-Operated Vending-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The object of this invention is to provide an improved coin-operated vending-machine particularly adapted to the vending of cigarettes.

The invention embraces a detachable coin-chute, an improved goods-delivery chute, a locking device connecting the pull-bar with the goods-ejecting mechanism, a spring-actuated coin-receiver, a device for preventing the fraudulent operation of the machine, and other novel devices, all in combination, all of which will be hereinafter fully set forth.

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

Figure 1 is a rear elevation of the machine with the back of the case removed. Fig. 2 is a partly sectional side elevation of the same with a side of the case removed. Fig. 3 is a sectional side elevation of the lower portion of the goods-delivery chutes on line $x\,x$, Fig. 1. Fig. 4 is a plan view on line $y\,y$, Fig. 1. Fig. 5 is a sectional elevation of the lower part of the device, showing the rear of the front delivery-chute and attachments with auxiliary chute removed. Fig. 6 is an enlarged partly sectional plan showing the pull-bar and fraud-preventing device in position. Fig. 7 is an enlarged side elevation of the same. Fig. 8 is a plan of the coin-receiver.

In the drawings, A represents the case of the vending-machine having fixed on its floor near the rear edge thereof the blocks a, over which are engaged the forks b of the door B when the latter is closed in position, and b' represents the door-lock. The front of the case A is provided with an opening behind or in which is set a pane of glass c, through which the goods to be vended may be seen.

The coin-entrance slot-plate c^2 has a slot c^3, (shown in dotted lines, Fig. 1,) that opens into the coin-chute C, which is removable, and is held in position by the engagement of its lateral dovetailed projection c^4 in a corresponding block c^5, secured on the inside of the case A. This chute C is so arranged that it may readily be taken out to be freed from paper, sticks, or other interfering articles that may be maliciously introduced into it through the coin-entrance slot.

In the bottom of the case-front is an opening d, extending the whole width of the case, through which the vended goods are delivered.

On the opposite sides of the case above the blocks a are secured angle-strips f, that support the bed-plate D, to the front part of which is hinged by hinges f' the main delivery-chute E, that is designed to receive and deliver the goods to be vended, said chute E being composed of two upright rectangular channel-beams, with their open edges facing each other, held together at suitable distance apart with cross-bars $f^2\,f^3$, and the fronts of these channels are cut away at the bottom, as indicated at f^4, Fig. 3, to permit of the discharge therefrom of the cigarettes (indicated at g) upon the front portion of the bed-plate D, whence they may be discharged into the apron E', which extends from the front ends of the angle-strips f out through the opening d in the front of the case A. The face of the plate D has near its front edge a transverse groove (shown at f^5, Fig. 3) to hold the cigarettes as they successively fall from the chute E. This chute E is hinged, as shown, so that it may be inclined rearward by the operator, as indicated in dotted lines, Fig. 2, when he removes the case-door to refill said chute with the articles to be vended, and when said chute is restored to its normal upright position (shown in full lines, Fig. 1) it is held in place by a spring-plate g', (best shown in Fig. 4,) that is secured to the inside of the case. In the lower edge of the cross-bar f^2 two openings f^6 are made for the admission of the fingers f^5 of the ejecting-plate R, whose functions will be hereinafter set forth.

Only the main chute E may be introduced into the machine for the purpose of receiving and delivering the goods to be vended; but I prefer to make openings h in the rear faces

of the uprights of the chute E, as best shown in Fig. 3, and secure by plate h' to the rear of the chute E a like chute E^2, that at its lower end shall coincide with the openings h of the said chute E, as best shown in Figs. 1, 2, 3, and 4. The delivery-openings in the auxiliary chute E^2 are kept closed, when desired, by a plate h^2, that is retained in normal position by the engagement of its upwardly-projecting end lugs h^3 about the outer edges of the chute E^2. When the chute E is filled with its charge of cigarettes, a weight or follower F is placed on top of them for the purpose of assuring their movement forward when desired. As the cigarettes contained in the said chute are one by one ejected therefrom, the follower F, which has attached to it a bar i with ends projecting beyond the outer edges of the two chutes moves downward until the ends of said bar come in contact with the end lugs h^3 of the gate h^2 with the effect of pushing said gate down below the openings h, so that the cigarettes in the chute E^2 can fall through said openings h into chute E and thence into the groove of the bed-plate D to be packed into the apron E', as best indicated in Fig. 3. In like manner one or two more auxiliary delivery-chutes could be added to those herein shown.

On a plate G, secured on the inside of the case A just beneath the coin-chute C, is pivoted by pivot h the coin-receiver H, (the angle-strip f on that side being partially cut away for that purpose,) which is held up in normal position, as best shown in Fig. 7, by a spring k', secured beneath it on the plate G. This coin-receiver H consists of a segmental plate held with its straight edge uppermost flat against the plate G and projecting inward laterally from the said straight edge to a block l, to which is firmly secured a narrow metal strip l', as best shown in Fig. 8, parallel with the said upper edge of the coin-receiver plate and far enough from it to admit of the passage of a suitable coin between them. This coin-receiver plate has also a notch k^2 in its upper edge and a laterally-projecting stud k^3 about midway of its body, the functions of both of which will hereinafter be fully explained.

The pull-bar O, that projects through the front of the case, extends rearward inside of the case and is held to the plate G by a screw m, which passes through a slot m' in said bar, and the inner end of said bar is bent at right angles and has pivoted to it by a pivot m^2 a locking-latch O', capable of movement in a vertical plane and having a closed slot (not shown) in its extreme end. Projecting from the inner face of this bar O are an oval-shaped dog m^4, set diagonally, and a stud m^5, whose functions will be hereinafter set forth, and a shoulder m^6 is made in the lower edge of said pull-bar to engage under certain conditions with the nose of the coin-receiver.

Pivoted to an offset p on the inside of the case-front and so as to move in a vertical plane is a double rack-bar S, with a rounded end and with teeth wider than the shank of the bar, which is held up in operative position by a spring p', that is secured by screw p^2 on the plate G.

The ejecting-plate R consists of an H-shaped piece of metal having slots q, and it is held flat on the bed-plate D by screws q', that pass through said slots into said bed-plate. The front extensions or fingers q^2 of this plate R are enlarged, so that they may nearly fill the bottom openings f^6 in the chute E, and to the cross-bar of the said plate is fixed an angle-piece q^3, over the vertical extremity of which the slotted end of the locking-latch O' is designed to engage, and a retracting-spring q^4, having one end secured to the bed-plate D and the other end to the cross-bar of the plate R, holds the latter normally in position, (shown in Figs. 2 and 4,) and at the same time operates through the latch-connection O' to draw and hold the pull-bar O inward to its normal locking position, when it is released by the operator.

The side of the bed-plate D nearest the coin-receiver H is cut away, as indicated in Fig. 4, so that the introduced coin may fall from said receiver into the chamber beneath the said bed-plate, and an angle-shield q^5 is fixed vertically on the edge of said cut to inclose said receiver. This bed-plate with its attachments can be readily withdrawn from the case A on disengaging the latch O' from the angle-piece q^3, and be as easily returned to position.

The parts being in position, as shown in Figs. 1, 2, and 3, with the nose of the coin-receiver locking the pull-bar in inoperative position, the operator will drop a suitable coin, as v, through the slot c^3 into the coin-chute, whence it will fall into the position shown in Fig. 7, with its lowered edge setting on the stud k^3 of the coin-receiver and its upper edge against the stud m^5 of the pull-bar, and be held there. Then the operator, taking hold of the projecting handle of the pull-bar, draws the latter out with the effect of causing the stud m^5 to travel over the upper edge of the coin and to make said coin push the coin-receiver downward, as indicated in dotted lines, Fig. 7, until the coin can pass between the two studs k^3 m^5 and fall into the chamber below, when the spring k' immediately operates to force the said coin-receiver back with its nose in contact with the lower edge of the pull-bar O. As the coin-receiver is pushed downward by the coin, its nose is disengaged from the shoulder m^6 of the pull-bar, thereby unlocking the latter, so that as said pull-bar is further drawn out the ejecting-plate R is synchronously moved forward (because of the connecting locking-latch O') until its fingers q^2 push the lowest cigarette of the chute E into the apron E', whence it may be removed by the operator. As the pull-bar is drawn out, its stud m^4 comes in contact with the rounded or up-

ward-sloping end of the rack-bar S and moves over the upper and forward projecting teeth of the same, which prevent the pushing in again of said pull-bar while it is unlocked until it has passed over the last one thereof and to its extreme outward pull, and then the spring p' operates to raise the said rack-bar sufficiently for the stud m^4 on the release by the operator of the pull-bar to engage against the end curve w (shown in dotted lines, Fig. 7) of the rack and run freely over and off the lower rack-teeth which point rearward, and then the pull-bar being by the operation of the spring q^4 returned to its normal position the spring k' operates to force the coin-receiver upward, so that its nose shall engage in the shoulder m^6 of the pull-bar and lock the latter in place. Could the operator, after the unlocking of the pull-bar by means of an introduced coin, freely move the said bar out and in to the extent of the distance between the shoulder m^6 and the rear end of the said bar he could move and reciprocate the ejecting-plate sufficiently to eject a cigarette at each pull until the chute E would be emptied of its contents. Hence the rack-teeth pointing in opposite directions and the stud m^4 are provided to make such movement and consequent perpetration of fraudulent practice upon the machine impossible.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent—

A coin-operated vending-machine constructed substantially as herein shown and described, containing the following elements: an adjustable hinged chute for receiving and delivering the goods to be vended, a detachable coin-chute, a goods-ejecting plate connected with the pull-bar by a detachable locking-link, a coin-operated coin-receiver, and a spring-actuated rack-bar for preventing the fraudulent operation of the machine, all combined and operating substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, in the presence of two witnesses, this 7th day of May, 1890.

J. C. STEVENS.

Witnesses:
JACOB I. STORER,
ROBERT P. GETTY, Jr.