(No Model.) 4 Sheets—Sheet 1.

J. F. SAWER & J. L. PURVES.

COIN CONTROLLED VENDING APPARATUS.

No. 524,511. Patented Aug. 14, 1894.

Fig. 1.

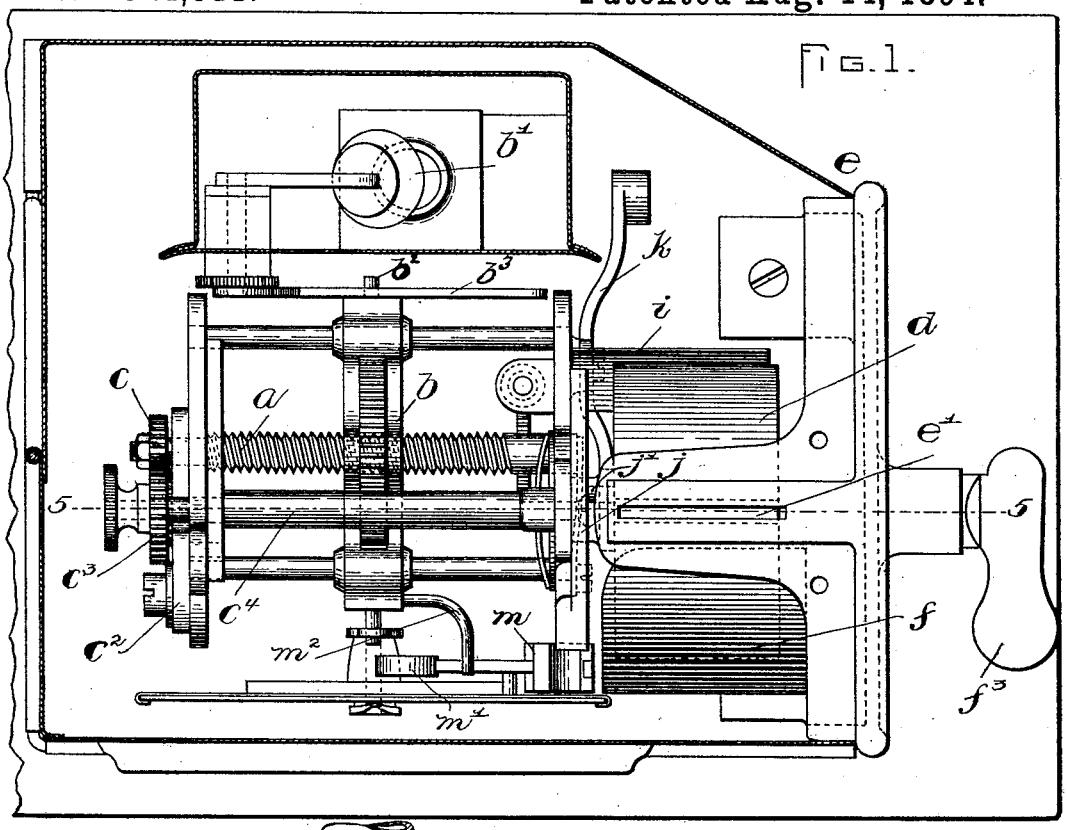
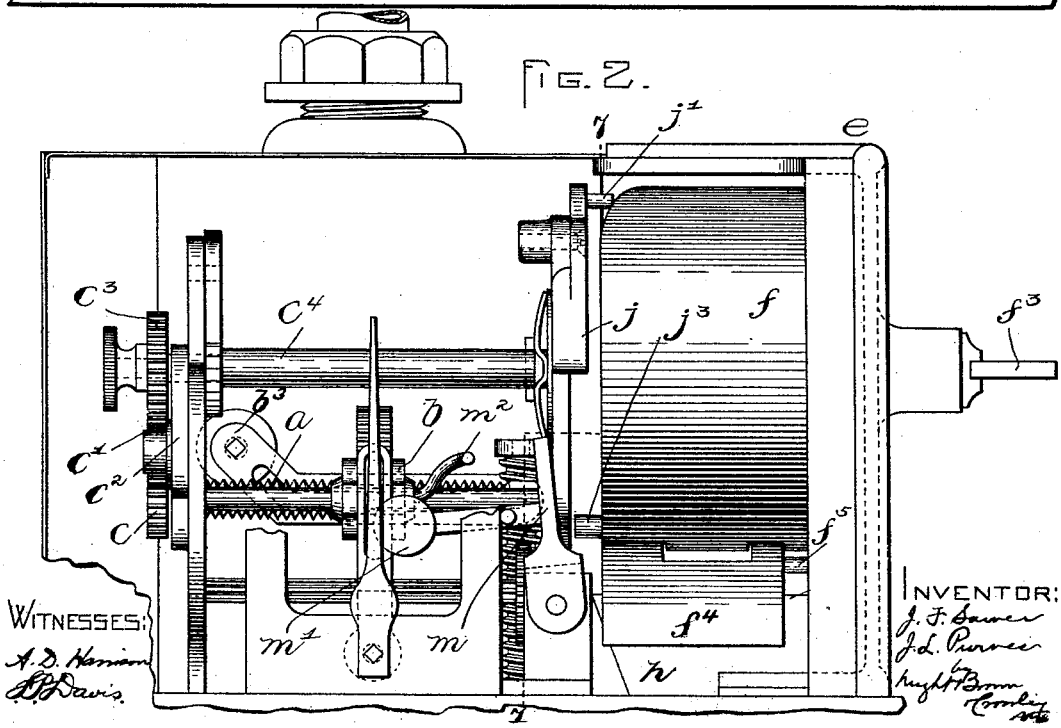


Fig. 2.



WITNESSES:
A. D. Harrison
L. L. Davis.

INVENTOR:
J. F. Sawer
J. L. Purves
by Wright Brown Quinby & Co

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J. F. SAWER & J. L. PURVES.

COIN CONTROLLED VENDING APPARATUS.

No. 524,511. Patented Aug. 14, 1894.

FIG. 3.

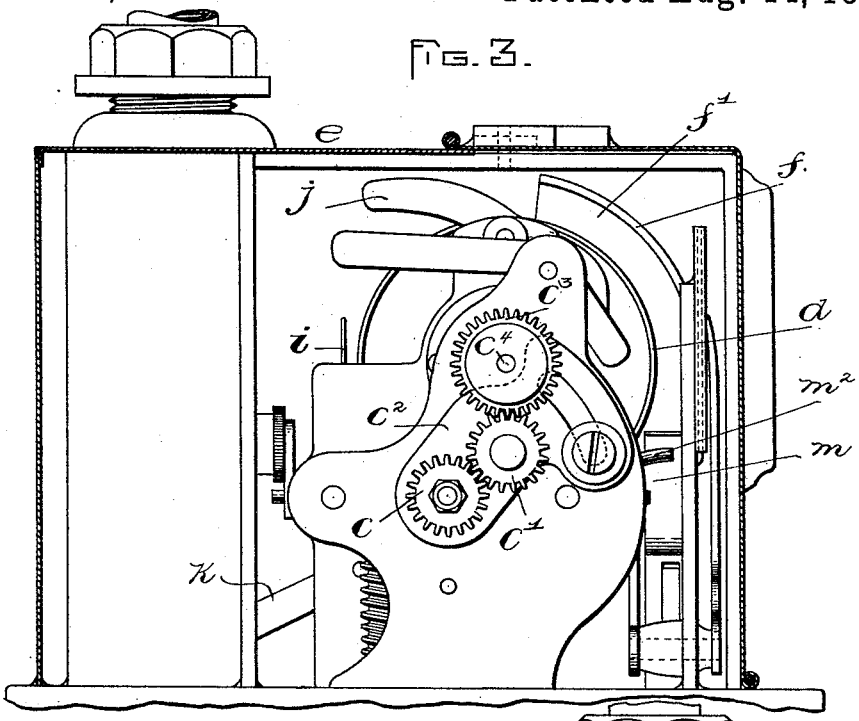
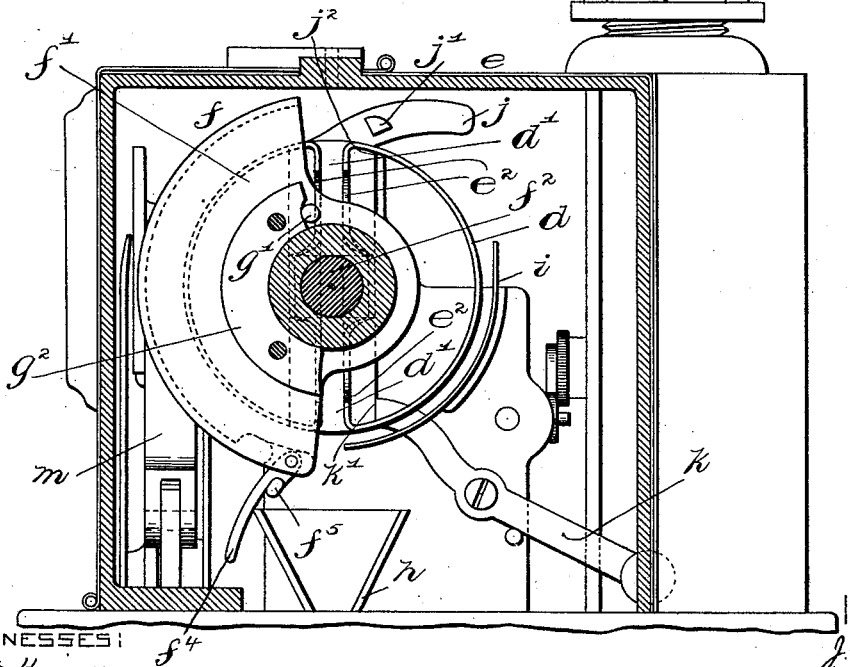


FIG. 4.



WITNESSES:
A. D. Harrison.
E. F. Davis.

INVENTOR:
J. F. Sawer
J. L. Purves
by Wright Brown Quinby & Atty's

(No Model.) 4 Sheets—Sheet 3.

J. F. SAWER & J. L. PURVES.

COIN CONTROLLED VENDING APPARATUS.

No. 524,511. Patented Aug. 14, 1894.

Fig. 5.

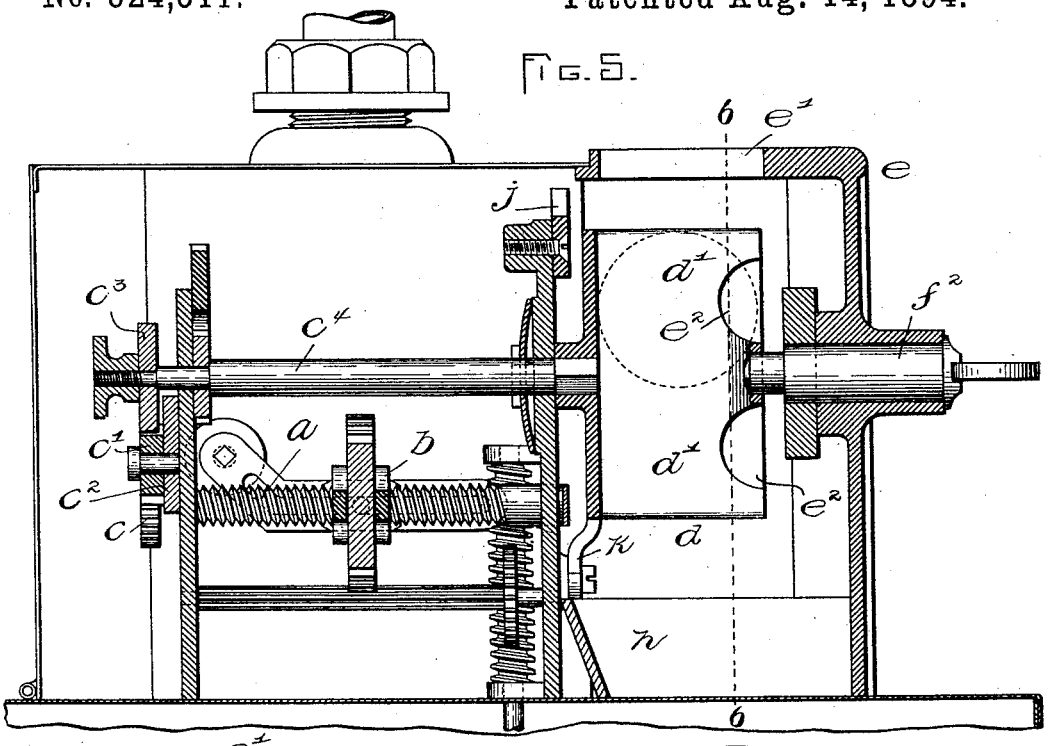


Fig. 6.

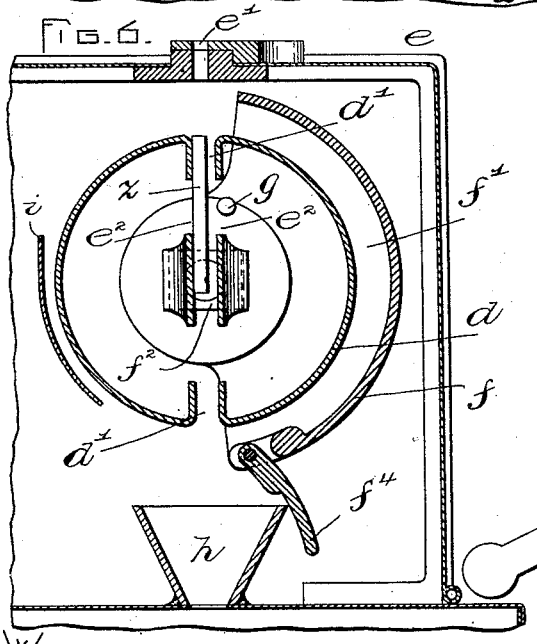
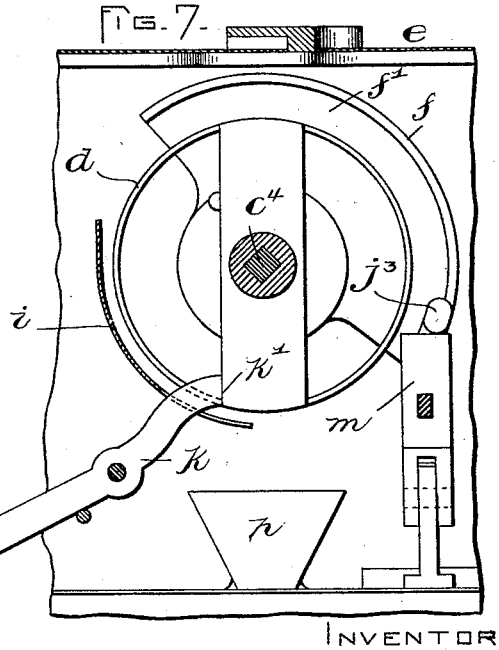


Fig. 7.



WITNESSES:
A. D. Harrison.
D. B. Davis.

INVENTOR:
J. F. Sawer
J. L. Purves
by Wright Brown Quinby & Otis
Attys

(No Model.) 4 Sheets—Sheet 4.

J. F. SAWER & J. L. PURVES.

COIN CONTROLLED VENDING APPARATUS.

No. 524,511. Patented Aug. 14, 1894.

FIG. 8.

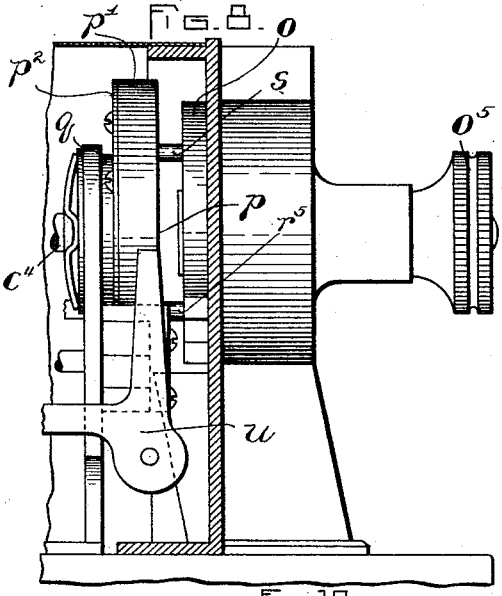


FIG. 9.

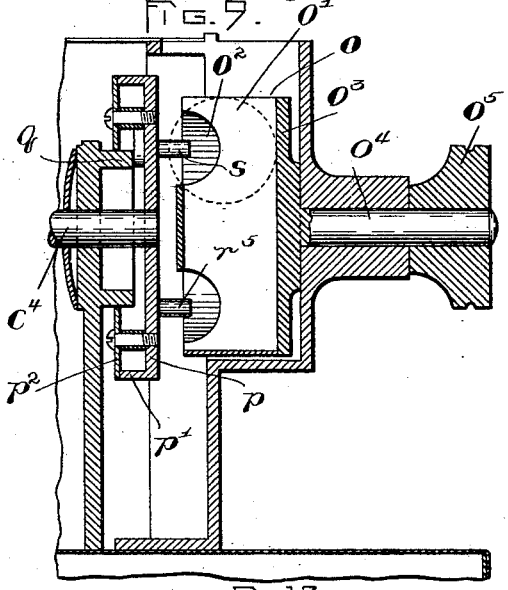


FIG. 10.

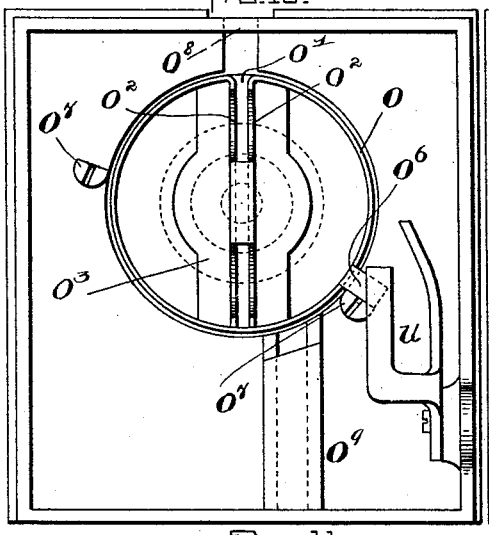


FIG. 13.

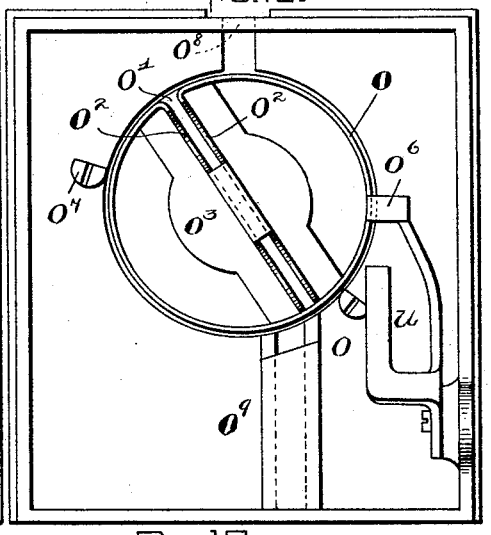


FIG. 11.

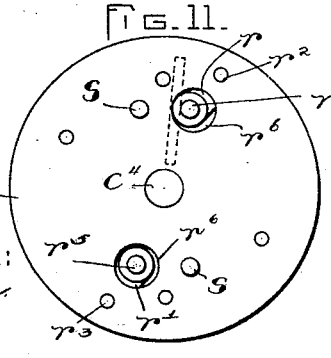
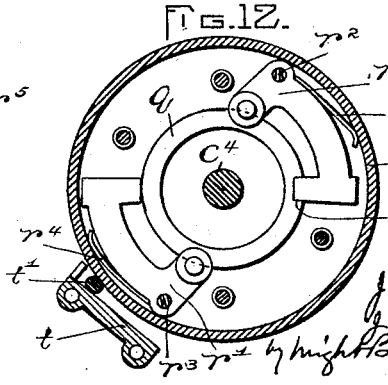


FIG. 12.



WITNESSES:
A. D. Harrison
E. F. Davis.

INVENTOR:
J. F. Sawer
J. L. Purves
by Wright Brown Quinby & Atty.

UNITED STATES PATENT OFFICE.

JAMES FEATHAM SAWER AND JAMES LYON PURVES, OF MANCHESTER, ENGLAND.

COIN-CONTROLLED VENDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 524,511, dated August 14, 1894.

Application filed March 17, 1894. Serial No. 504,077. (No model.)

To all whom it may concern:

Be it known that we, JAMES FEATHAM SAWER and JAMES LYON PURVES, of Manchester, England, subjects of the Queen of Great Britain, have invented certain new and useful Improvements in Coin-Controlled Vending Apparatus, of which the following is a specification.

This invention relates to an improvement in the prepayment sale and delivery apparatus shown and described in our former United States Patent No. 468,999, granted February 16, 1892, the present improvement being directed to the coin-controlled actuating means, with a view of simplifying the construction and rendering it more sure and certain in its operation and absolutely secure against fraudulent manipulation. The improved coin-controlled actuating devices may be combined with the delivery mechanism described in our former patent, or with any other delivery mechanism with which they can be made to co-act.

In the accompanying drawings, which form part of this specification, the invention is illustrated as applied to the form of delivery devices shown in our former patent above referred to, the mechanism being specially adapted for use in conjunction with a gas meter to control the supply of gas according to the amount prepaid therefor.

Figure 1 of said drawings shows a top plan view of the complete apparatus with the top of its casing removed. Fig. 2 shows a front elevation with the front side of the casing removed, and also the dial plate and support omitted. Fig. 3 shows an elevation of one end with casing omitted. Fig. 4 shows an elevation of the other end, with the casing omitted. Fig. 5 shows a central longitudinal section on line 5—5 of Fig. 1. Fig. 6 shows a section on line 6—6 of Fig. 5, with the parts in the position they assume when operated through the medium of a coin. Fig. 7 shows a section on line 7—7 of Fig. 2, with the parts in the position they assume when the maximum limit of the delivery mechanism's capacity is reached. Fig. 8 shows in side elevation a modification in the coin-controlled actuating devices. Fig. 9 shows a longitudinal section of the same. Fig. 10 shows an inside view of the coin-holder, its support, and appurtenances of this modified machine. Fig. 11 shows a face view of a driving disk or head. Fig. 12 shows the same with its flange in section. Fig. 13 shows a view similar to Fig. 10 with the parts in the adjustment they assume when the maximum limit of the delivery mechanism's capacity is reached.

In view of the fact that the delivery devices have been fully shown and described in our former patent referred to, it will not be necessary to enter into a detailed description of their construction and operation here, but it will be sufficient for the purposes of this specification to simply enumerate a number of the parts of this delivery mechanism to establish clearly the connection between the invention herein described and the said mechanism.

The letter a designates the screw which is operatively connected with the gas meter, and b designates the carriage which embraces a gear engaged by said screw and is operatively connected with the valve b' controlling the flow of gas to the service pipe, the connection being effected through the engagement of a stud, b^2, on the carriage, with a slotted arm, b^3, affixed on a rock-shaft carrying the valve. In carrying out our present invention, the said screw has affixed to one end a gear c which meshes with a gear c' on a swinging bracket c^2, and said latter gear meshes with a gear c^3 affixed to a shaft c^4 which carries affixed to its opposite end a coin receptacle or holder d, of cylindrical form and having diametrically opposite radial pockets d' receding from its periphery. Motion imparted to the coin-holder in a manner hereinafter described is transmitted to the screw a through the gears c^3 c' and c, and the extent of movement imparted to the screw is regulated to accord with different denominations of coins by adjusting the gearing, a larger or smaller change gear being affixed to the shaft c^4 and the swinging bracket adjusted accordingly. The casing e which incloses the apparatus is formed in its top with a slot e' with which the radial pockets d' are designed to register, so that a coin dropped in said slot will fall into the registering pocket, and each of said pockets is formed with reg-

istering openings e^2, in its opposite sides and is constructed to hold the coin in a position where it projects across the said openings.

An actuating device under control of the vendee and which we term the driver, is here shown in the form of a semi-cylindrical shell f extending over the peripheral surface of the coin-holder and having a segmental web f' extending over the outer side of the latter and having formed on it or affixed to it a spindle f^2 which journals in the hub of the coin-holder and carries a handle f^3 on the exterior of the casing, said spindle being supported in a bearing on the casing. This driver is normally disconnected from the coin-holder, and oscillates freely independently thereof. At a suitable point inside the periphery of the coin-holder, a stud g is affixed to or formed on the web f' and projects into the coin-holder in alignment with the opening e^2 in the pockets, so that under oscillation of the driver the said stud passes freely through said openings. The movement of the driver on its pivot is limited to a half-revolution in each direction by abutment of a stud g' on the web f' with a semi-circular lug g^2 on the inner side of the casing. The studs g and g' may be formed of a single pin entered through the web f'.

With the driver at the rearward limit of its movement, the forward edge of its semi-cylindrical portion is just back of the entrance slot e', and one of the radial-pockets d' is directly in line with the said slot and the stud g is just back of the pocket. A coin, as z, dropped into the slot falls into the pocket, and presents a surface for the said stud to act against, so that upon the vendee turning the handle f^3 to the right, the driver and coin-holder will be found to be operatively connected through the medium of the coin, and the coin-holder will be turned by the driver through a half-revolution, at the end of which the holder is stopped by the stud g' coming against the lug g^2, with the open end of the coin-containing pocket directed straight downward. The coin falls from the pocket into a flaring chute h, and thence into a suitable sealed receptacle. A curved plate i extending over the coin-holder prevents the coin from falling out of the pocket until the coin-holder has completed its half-revolution. The rotary movement of the coin-holder is transmitted through the gears c^3 c' c to the screw a, and the carriage b thereby moved to a predetermined extent and the delivery valve opened. The carriage is gradually restored, through connections with the gas meter, as described in our former patent.

It will be observed that the turning of the driver to actuate the coin-holder carries the former across the entrance slot e' and thus effectually closes the same and prevents the insertion of another coin until the driver has been restored to its initial position, the semi-cylindrical portion of the driver being of sufficent extent to close the slot when at the limit of its former movement. As in the construction here shown the extension of the driver to effect this purpose would cause its rear end to abut the chute h and prevent its assuming the desired initial position, the semi-cylindrical portion f of the driver is formed with a hinged section f^4 adapted to lie in the plane of the said semi-cylindrical portion and rigidly sustained against movement toward the coin-holder by the abutment of a lug f^5 formed on it against the end of the driver, but free to swing on its pivot so that when it encounters the chute h it yields and permits the driver to assume the desired initial position.

The driver as it approaches the end of its forward movement actuates a detent which locks the coin-holder against further movement in a forward direction, said detent being here shown as a weighted lever j pivoted to a stationary support and having a lug j' for engagement with a shoulder j^2 on the coin-holder, and the driver being shown as provided with a lug j^3 which acts on said lever and carries the latter's lug j' behind the shoulder j^2. Backward movement of the coin-holder is prevented by the engagement of a weighted detent k with a shoulder k' on the coin-holder, the latter tripping said detent as it nears the end of its movement, and the weight of the latter carrying it behind the shoulder k'. The half-revolution of the coin-holder brings its other radial pocket in alignment with the entrance slot e' so that when the driver is returned to its initial position a coin may be dropped through the entrance slot into the said pocket, and the operation described above repeated.

There is a maximum limit to the number of coins which may be successively inserted; and when said limit is reached the driver is rendered inoperative, the following described means being employed to accomplish this object.

The capacity of the delivery mechanism is determined by the progressive travel of the carriage b on the screw a, and when the carriage reaches the limit of this progressive travel it operates a detent which prevents restoration of the driver to its initial position and renders the apparatus inoperative by further introduction of coin, until the gas-meter's action retracts the carriage.

The letter m designates the detent, which is pivoted to a stationary support so as to be capable of moving into and out of the path of the driver, and carries a weight m' which holds it out of said path; and the letter m^2 designates a finger affixed to the carriage b and adapted to act against the detent m as the driver is turned through the half-revolution which takes the carriage to the limit of its progressive movement and to move said detent into the path of the lug j^3 on the driver, whereby the latter is prevented from being restored to its initial position, and keeps the entrance slot closed (see Fig. 7).

It is evident that the invention herein described is susceptible of embodiment in numerous forms other than here shown, and hence is not limited in this respect. For example, the driver may constitute the coin-holder, as in the modification illustrated in Figs. 8 to 13 inclusive.

The letter o designates a cylindrical shell having a radial pocket o', whose sides are formed with registering openings o^2. A cross-bar o^3 of the shell has a stem o^4 journaled in a bearing on the frame and carrying a handle in the form of a knob o^5 on the exterior of the casing.

The rotary movement of the shell o is limited to a partial revolution by the abutment of a lug o^6 against stop-screws o^7. When said lug is abutting one screw o^7, the pocket o' is in line with the receiving slot o^8 of the machine, and when said lug is abutting the other screw o^7, the said pocket registers with a discharge chute o^9.

The shaft c^4 of the delivery mechanism carries affixed to its end immediately back of the shell o, a disk p which is formed with a peripheral flange p' and has fastened against said flange an annular plate p^2, thus forming a chamber within the disk. An annular flange q is formed on the frame of the machine and projects into this chamber, and is there provided with a notch q'. A pair of detents r and r', of angular form, are pivoted to the web of the disk at diametrically opposite points, as shown at r^2 and r^3, and one arm of each detent is formed at the end for engagement with the notch q' and actuated by a spring r^4 in a direction to enter into such engagement. The other arm of each detent is formed or provided with a pin r^5 which projects through an opening r^6 in the disk, of a size to permit play of the pin sufficient to disengage the detent from the notch. Pins s are fastened in the disk opposite the pins r^5 respectively, the space between a confronting pair of pins being sufficient to freely admit a coin dropped in the pocket o'. When the pins are positioned to thus receive the coin, the detent carrying one of them is in engagement with the notch q', and the disk is locked against rotation.

In the absence of a coin in the pocket o', the shell o may be freely turned, the openings o^2 passing over the pins s and r^5.

When a coin has been dropped into the pocket o', and the shell is turned, the coin will be carried against the pin r^5 and will lift the detent out of engagement with the notch, and the disk p will be carried around with the coin-holding shell, and the delivery mechanism will be operated. At the completion of a half-revolution of the disk, the other detent interlocks with the flange q, and the coin falls into the discharge chute.

The disk p is prevented from being turned backward by suitable provision, such as a ratchet and pawl, or the arrangement here shown, comprising a bracket t affixed beside the periphery of the disk and having a tangentially extending surface supporting a roller t' which bears against the periphery of the disk. When the disk is rotated forward, this roller is kept at the upper wide part of the bracket, and does not resist the movement of disk; but movement of the disk backward wedges the roller between its periphery and the supporting surface of the bracket, and the disk is blocked.

The means for preventing the insertion of more coins when the maximum limit of the delivery mechanism's capacity is reached are similar to those heretofore described in connection with the other form of device, and comprise a detent u arranged to be moved by the carriage of the delivering mechanism into the path of the lug o^6 (see Fig. 13). This prevents the coin-holder from being returned to its receiving position, and the cylindrical portion closes the receiving slot.

The coin-holder may have two diametrically opposite pockets instead of one as described.

It will be seen that our invention renders it impossible to work the machine without inserting a coin, or to operate the machine and then withdraw the coin.

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

1. In a coin-controlled vending apparatus, the combination of two independently rotatable parts or members having provisions for rotative connection by a coin and one of said parts being capable of oscillation and constituting a driver to be turned by the vendee, the other being operatively connected with delivery mechanism, and a normally retracted detent constructed and arranged for engagement with said latter member to prevent forward rotation thereof and being in the path of a projection on the driver, so located as to move the detent into locking position at the end of the driver's movement.

2. In a coin-controlled vending apparatus, the combination of two independently rotatable parts or members having provisions for rotative connection by a coin and one of said parts constituting a driver to be turned by the vendee, the other being operatively connected with delivery mechanism, and a detent for preventing forward rotation of the latter member, and arranged to be acted upon by a coin.

3. In a coin-controlled vending apparatus, the combination of an inclosing casing having a coin-slot, two independently rotatable parts or members having provisions for rotative connection by a coin and one of said parts constituting a driver to be turned by the vendee, and adapted to close the coin-slot in the casing under rotation, delivery devices operatively connected with the other rotatable member, and a stop arranged to be moved by the delivery devices into the path of the driver, and

to hold the same closing the coin-slot when the maximum limit of action of said delivery devices is reached.

4. In a coin-controlled vending apparatus, the combination of an inclosing casing having a coin-slot, a normally disconnected pivotal driver adapted under movement on its pivot to close said slot, a rotatable coin-holder constructed to sustain a coin in the path of the driver and receive motion therefrom through the medium of the coin, delivery devices operatively connected with the coin-holder, and a stop arranged to be moved by the delivery devices into the path of the driver and to hold the same closing the coin slot when the maximum limit of action of said delivery devices is reached.

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, this 6th day of January, A. D. 1894.

JAMES FEATHAM SAWER.
JAMES LYON PURVES.

Witnesses:
JOSEPH NASMITH,
HERBERT GELDER.