

(No Model.)

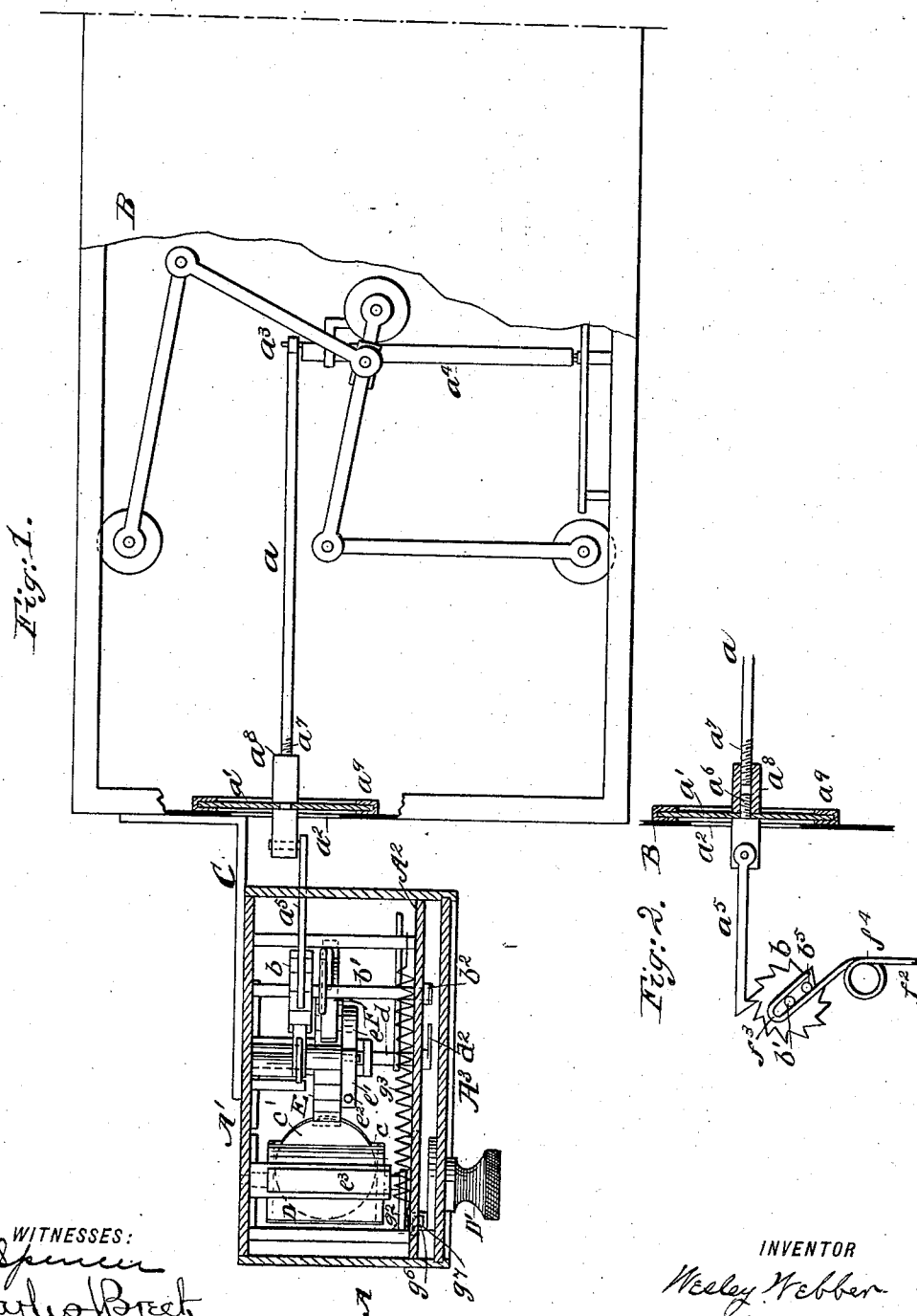
2 Sheets—Sheet 1.

W. WEBBER.

COIN CONTROLLED GAS OR LIQUID VENDING MACHINE.

No. 577,215.

Patented Feb. 16, 1897.



WITNESSES:

WITNESSES:
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(No Model.)

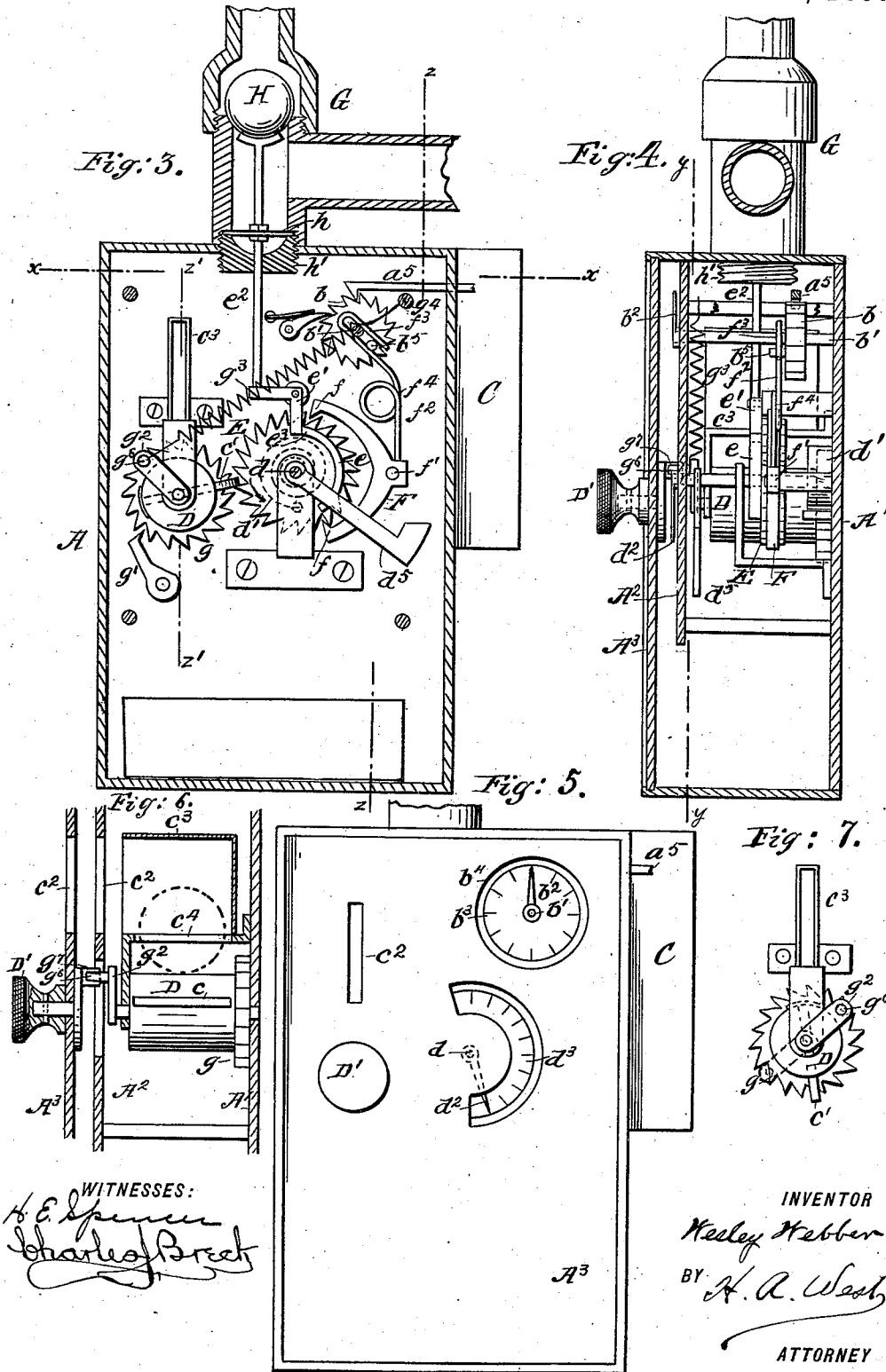
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UNITED STATES PATENT OFFICE.

WESLEY WEBBER, OF NEW YORK, N. Y.

COIN-CONTROLLED GAS OR LIQUID VENDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 577,215, dated February 16, 1897.

Application filed February 3, 1896. Serial No. 577,814. (No model.)

To all whom it may concern:

Be it known that I, WESLEY WEBBER, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Coin-Controlled Gas or Liquid Vending Machines, of which the following is a specification.

My present invention relates to coin-controlled gas or liquid vending machines, mainly of the type shown and described in Letters Patent No. 549,175, granted to me November 5, 1895; and the invention consists in the construction, arrangement, and combination of parts, all as hereinafter described and claimed.

In the accompanying drawings, to which reference is made, Figure 1 is a sectional plan view of a portion of an ordinary gas-meter having my invention applied thereto, the main casing of the coin-controlled vending-machine being shown in section on line $x x$ of Fig. 3. Fig. 2 is a detailed sectional view showing a portion of the meter-casing, one of the ratchets of the coin-controlled machine, the flexible diaphragm in the meter-casing, and the main operating rod or connection. Fig. 3 is an enlarged sectional elevation of my new gas-vending machine shown as applied for operating a valve in the gas-supply or service pipe, the section being on line $y y$ of Fig. 4. Fig. 4 is a transverse sectional view of the same, taken on line $z z$ of Fig. 3. Fig. 5 is a front elevation of the casing, showing the dials, &c. Fig. 6 is a detailed sectional view of the coin-chute, coin-casing, &c., taken on line $z' z'$ of Fig. 3. Fig. 7 is a detailed view of the coin-chute and rotary coin-casing.

A represents the casing which contains the mechanism of the coin-controlled machine and which may be attached to the meter-casing B by the plate C or held in position by other suitable means. The movement of the meter mechanism is communicated to the mechanism of the vending-machine by a rod a , which reciprocates a diaphragm a' , of rubber, leather, metal, or other suitable flexible material, held gas-tight over a suitable aperture a^2 in the meter-casing. As here shown, one end of said rod a is connected to a crank a^3 at one end of the so-called "two-foot shaft"

a^4 of the meter, so that the rotation of the shaft a^4 reciprocates the rod a . A cam, eccentric, or other means of converting rotary into reciprocating motion may be employed in place of the crank a^3 and shaft a^4 . The opposite end of the rod a is connected to a part, section, or extension a^5 , which reaches into the casing A and operates the vending mechanism. The two parts a and a^5 are connected to the diaphragm a' preferably by screws $a^6 a^7$ and turnbuckle a^8 , which latter permits ready longitudinal adjustment of the connection. This arrangement has advantage in attaching the vending-machines to old meters, but with new meters the attachment of the diaphragm to the operating connection may be effected in any other suitable way, as by cementing the diaphragm to or around a continuous rod or by clamp-plates, one or both screwed upon the rod on opposite sides of the diaphragm. The edge of the diaphragm may be secured to the meter-casing by cement or it may be held in a clamp or flange a^9 , secured to the meter-casing.

The power of the meter acting through the connection serves to operate a pallet or other letting-off device F for the gas-controlling disk or wheel E, as hereinafter described, and it is preferable to employ for this purpose an intermediate or reducing wheel b , which serves to operate the letting-off device at the proper speed or intervals, and also serves as the means for measuring or indicating the consumption of gas. The latter function is obtained by a shaft b' , to which the said wheel is secured, and to the outer end of which, in front of a dial b^3 , Fig. 5, is secured a hand or pointer b^2 . The wheel b may be of larger or smaller diameter or provided with a greater or less number of teeth, according to the price of gas. The shaft b' is journaled at one end in the back A' of the casing A and at the other in a front plate A² of the casing, which latter is inclosed by a door A³, in which an aperture b^4 is formed to reveal the dial b^3 and pointer b^2 .

The rotation of the wheel b imparts reciprocating motion to the let-off device or pallet F through a crank or pin b^5 and arm or rod f^2 and allows the vending mechanism to operate, the preferred construction of which vending mechanism will now be described.

D represents a rotary coin-casing formed

with a slot c , adapted to receive a coin c' proper to the machine when inserted into the external coin-slots c^2 c^2 in door A^3 and plate A^2 . (See Fig. 6.) From the slots c^2 c^2 the coin enters a narrow stationary chamber c^3 , which guides the coin into a horizontal slot c^4 , through which it drops into the slot c of the rotary casing D or rests upon said casing ready to drop into said slot when the casing D shall be revolved to bring slot c into coincidence with slot c^4 .

The casing D being provided with a coin c' , the same projects from the casing, as shown in Fig. 3, so that when the casing is revolved the coin will serve to operate a wheel or escapement-disk E through a predetermined space—that is to say, the coin, acting on the principle of the ward of a key, will engage one of the teeth of the escapement and turn the latter in the direction of the arrow the space of one tooth, and then the coin will drop from the casing D down into the lower part of the casing or a cash-box placed to receive it. The escapement-disk will thus be operated once for each coin inserted. The said escapement-disk is secured to a shaft d , and a coiled spring d' is applied to said disk or shaft, which constantly tends to urge the escapement-disk in the direction opposite to the arrow, but is prevented from turning said disk except as the pallet or let-off device F is reciprocated for that purpose, directly or indirectly, by the power of the meter.

The escapement-disk E is provided with means for operating a valve H in the supply or service pipe G , which means, as here shown, consists of a flange e , bell-crank lever e' , and valve-rod e^2 . The flange e is in the form of a segment or arc of a circle, one end e^3 of which, when the valve is closed, clears, but stands adjacent to, the lower member of the lever e' . In this position the valve is permitted to close by gravity or otherwise (here shown by gravity) and cut off the flow of gas. If a single coin be inserted in the machine and the disk E be turned one notch only in the direction of the arrow, Fig. 3, the end e^3 of the flange e will operate the lever e' and rod e^2 and thus open the valve and retain it open until the said disk E is returned to its original position. If more than one coin be inserted at one time, the disk E will be turned in the direction of the arrow the distance of one tooth for each coin inserted. Hence it is necessary to extend the flange e to include as many teeth as are available for use in the escapement-disk. In a single-coin machine the said flange may be made comparatively short.

The pallet or let-off device F is formed with points or pawls f f' and is pivoted at f' , and is reciprocated by the power of the meter at intervals which mark the delivery of each coin's equivalent in gas. It is by preference reciprocated from the wheel b once for each revolution thereof by a crank or pin b^5 and arm f^2 , rigidly attached to the pallet. The said arm f^2 is formed at its upper end with a slot

or loop f^3 , which embraces the said crank or pin, and said arm is flexible, being made preferably of a spring or wire looped at f^4 , so that it will yield to the pressure of the pin b^5 and also to permit the rocking of the pallet when the escapement-disk E is turned by the insertion of the coins. The flexibility of the spring-rod f^2 and the rocking of the escapement or pallet F on its pivot f' afford sufficient play to permit b^5 to revolve around b' , while the compression of the spring f^2 stores power to assist in the rocking of the pallet F as b^5 revolves.

The end of the shaft d on which the escapement-disk E is secured reaches to the front of the plate A^2 , where it is provided with a pointer d^2 , which it operates in front of a dial d^3 , to indicate the number of coins placed at any one time in the machine and the number, if any, remaining to the credit of the purchaser at any time. Said shaft d is also provided with an arm d^5 , which, when the maximum number of coins which the machine is made to receive have been inserted, is carried to a point in front of the coin-chamber c^3 and closes the same, so that no more coins can be inserted until the equivalent in gas of one or more coins has been consumed.

The valve-rod e^2 is held gas-tight in a flexible diaphragm h , of india-rubber, leather, metal, or other suitable material. The flexibility of the said diaphragm permits the rod e^2 to be moved sufficiently to operate the valve, so that the mechanism has no work to perform in opening the valve except to move or lift the weight of rod and valve. When so lifted or moved to open the valve, a slight tension is put upon the diaphragm, which, together with the weight of the valve and pressure of gas, is sufficient to close the valve, so that in closing no load whatever is put upon the mechanism. The diaphragm is held gas-tight in the pipe-coupling by a screw-threaded ring or gasket h' or in any other suitable manner, as shown clearly in Fig. 3.

The coin-casing D is locked against rotation except in one direction by a ratchet and pawl g g' , applied to one end of the casing. Its opposite end is provided with a crank g^2 , to which a spring g^3 is applied for turning the casing through a portion of its revolution without the aid or hindrance of any outside agency. One end of said spring is attached to a stud or rod g^4 , as shown clearly in Fig. 3, and it serves normally to hold the coin-cylinder D and crank g^2 in the position shown in Fig. 7, that is, so that the slot c will be in position to discharge the coin into the cash-box. The crank g^2 is provided with a projection g^6 , with which a complementary projection g^7 of the outside crank D' engages, to enable the purchaser to turn the coin-cylinder and crank through about one-half of a revolution, against the tension of the spring g^3 , from the position shown in full lines to that shown in dotted lines in Fig. 7. Just before the crank g^2 aligns with and passes the

imaginary extended axis or line of pull of the spring g^3 the slot c in the casing will receive the coin from the slot c^4 , and when said projection passes the said imaginary extended axis or line of pull of the spring g^3 on its upward movement the spring g^3 , now fully extended, will operate to suddenly turn the coin-cylinder and crank g^2 , independently of the crank D' , to their original position, causing the coin to turn the disk E , as above described.

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

1. In a coin-controlled gas-vending machine, an escapement-disk arranged to control the flow of gas through the meter, a pallet or let-off device for said escapement-disk and a rod connected to and reciprocated by the mechanism of the meter for operating the said pallet or let-off device, substantially as described.

2. In a coin-controlled gas-vending machine, an escapement-disk arranged to control the flow of gas through the meter, a pallet or let-off device for said escapement-disk, a rod or connection reciprocated by the power of the meter, an intermediate wheel rotated by said rod, a crank or pin operated by said wheel and an arm connecting said crank or pin with the said pallet or let-off device for operating and permitting the same to operate substantially as described.

3. In a coin-controlled gas-vending machine, an escapement-disk arranged to control the flow of gas through the meter, a pallet or let-off device for said escapement-disk, a rod or connection reciprocated by the power of the meter, an intermediate wheel rotated by said rod, a crank or pin operated by said wheel and an elastic or yielding arm connecting said crank or pin with the said pallet or let-off device for operating and permitting the same to operate, substantially as described.

4. In a coin-controlled gas-vending machine, in combination with a coin-slot and a toothed wheel fixed on a shaft and arranged to be operated on the insertion of each coin into the machine, a radial arm affixed to said shaft and arranged to close said slot at a point of said wheel's rotation, substantially as described.

5. In a coin-controlled gas-vending machine, the combination with the meter mechanism and a rod reciprocated thereby of a flexible diaphragm to which said rod is connected, an outside section arranged to be reciprocated with said rod and diaphragm, and an intermediate reducing-wheel arranged to be revolved by said outside section, substantially as and for the purposes described.

6. In a coin-controlled gas-vending machine, the combination with the meter mechanism,

a rod reciprocated thereby, a flexible diaphragm, to which said rod is connected, and an outside section arranged to be reciprocated by said rod and diaphragm, of an intermediate reducing-wheel rotated by said outside section, an escapement-disk and a pallet or let-off device therefor and an arm connecting said pallet or let-off device with the said intermediate reducing-wheel, substantially as described.

7. In a coin-controlled gas-vending machine, an escapement-disk provided with a valve-operating projection in combination with a valve-rod and crank arranged to be acted upon by the said escapement-disk for opening and closing the valve, substantially as described.

8. In a coin-controlled gas-vending machine, an escapement-disk provided with a valve-operating projection in the form of a curved segment in combination with a valve-rod and crank arranged to be acted upon by the said escapement-disk for opening and closing the valve, substantially as described.

9. In a coin-controlled gas-vending machine, an escapement-disk provided with a stud or shoulder and a bent lever arranged adjacent to said disk, so that the said shoulder will operate the lever, in combination with a valve-rod arranged to be operated by the said lever and a flexible diaphragm held in the service-pipe, and which is secured to said rod, substantially as described.

10. In a coin-controlled gas-vending machine, an escapement-disk E , provided with a projection e , a pallet F , operated by the power of the meter, a crank e' , a valve-rod e^2 valve H and a flexible diaphragm h held in the coupling, in which diaphragm the said rod is held, substantially as described.

11. In a coin-controlled gas-vending machine, the coin-carrier D , formed with a slot c and provided with a crank g^2 in combination with a spring for partially turning said carrier and a crank or knob for partially rotating said carrier in opposition to the action of the spring, substantially as described.

12. In a coin-controlled gas-vending machine, a toothed gas-measuring wheel rotated exclusively in one direction by a pawl reciprocated by the mechanism of the meter, a toothed coin-counting and valve-operating escapement-wheel rotated in one direction on the insertion of a coin and in the other direction by a spring, a pallet or let-off device governing the running down of said wheel, and operated by means arranged to be operated by said gas-measuring wheel, substantially as described.

WESLEY WEBBER.

Witnesses:

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BERNARD HAHN.