No. 616,914. Patented Jan. 3, 1899.

J. GEEN.

GAS VENDING MACHINE.

(Application filed Feb. 3, 1898.)

(No Model.) 2 Sheets—Sheet I.

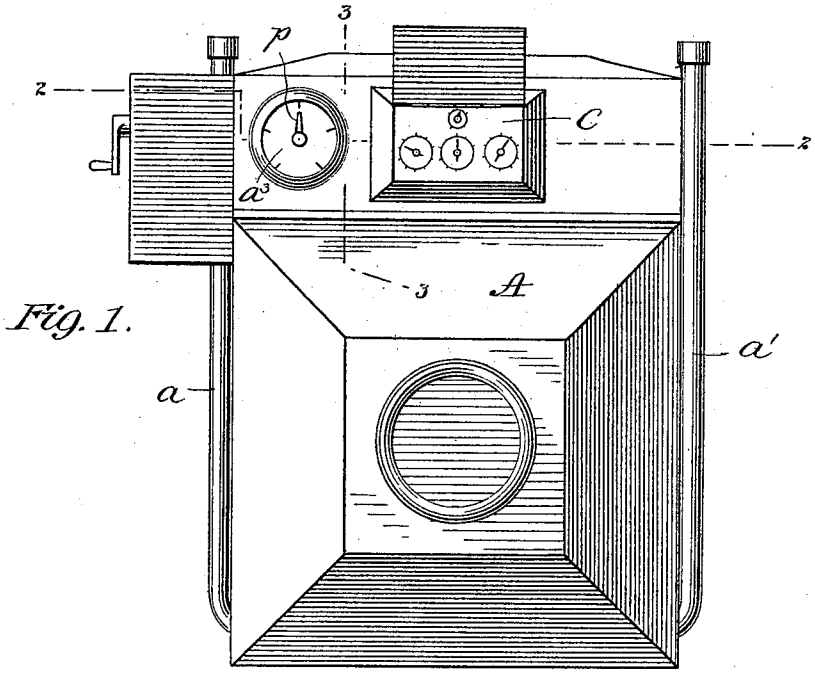
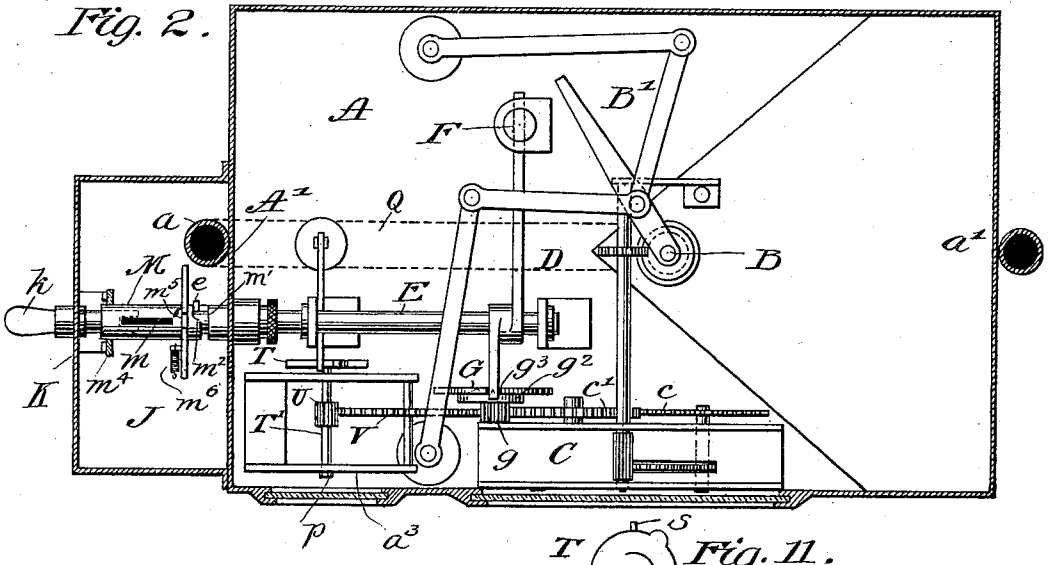


Fig. 1.

Fig. 2.



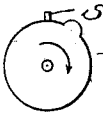


Fig. 11.

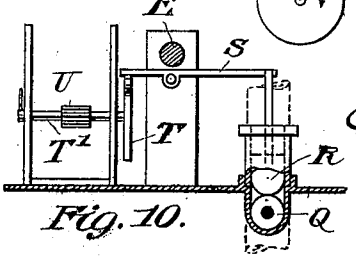


Fig. 10.

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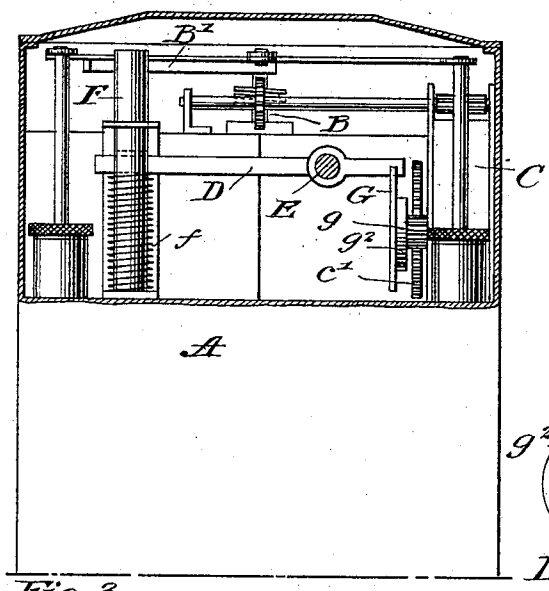


Fig. 3.

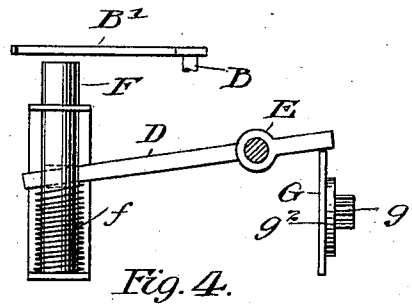


Fig. 4.

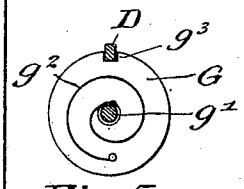


Fig. 5.

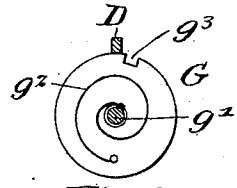


Fig. 6

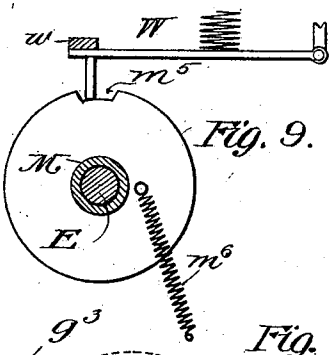


Fig. 9.

Fig. 7.

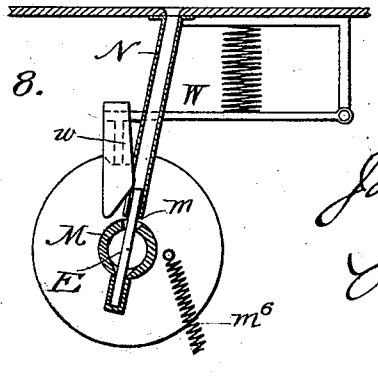


Fig. 8.

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UNITED STATES PATENT OFFICE.

JAMES GEEN, OF HOBOKEN, NEW JERSEY.

GAS-VENDING MACHINE.

SPECIFICATION forming part of Letters Patent No. 616,914, dated January 3, 1899.

Application filed February 3, 1898. Serial No. 668,932. (No model.)

To all whom it may concern:

Be it known that I, JAMES GEEN, a citizen of the United States, residing at Hoboken, Union county, New Jersey, have invented certain new and useful Improvements in Gas-Vending Machines, of which the following is a full, clear, and exact description.

This invention relates to toll apparatus for gas or other fluid meters in which a predetermined quantity of the fluid commodity may be procured by the insertion of a coin.

The object of the present invention is to produce a simple, cheap, and effective combination of parts constructed in such manner as to be readily attached, if desired, to gas-meters of known make and adapted to operate when controlled by a coin of proper denomination to turn on a supply of gas, entrap the coin, and automatically cut off said supply when a quantity of gas of the value of said coin has been consumed.

The invention consists of the construction and combination of parts hereinafter described, and illustrated in the accompanying drawings, in which—

Figure 1 is a front elevation of a gas-meter provided with my improved apparatus. Fig. 2 is an enlarged horizontal section of the same, taken on the line 2 2. Fig. 3 is a section, taken on the line 3 3 of Fig. 1, looking from left to right. Fig. 4 is a detail showing the position of certain parts when the gas is flowing. Fig. 5 is a detail showing the position of certain parts when the gas is cut off. Fig. 6 is a detail of same when the gas is flowing. Fig. 7 is an enlarged detail of the actuating-shaft and connected parts with a coin in operating position. Fig. 8 is a section on the line 8 8 of Fig. 7. Fig. 9 is a section on the line 9 9 of Fig. 7. Fig. 10 illustrates a signal attachment. Fig. 11 illustrates a detail thereof.

Referring to the drawings by letter, A represents a gas-meter in which the gas in passing therethrough from inlet-pipe *a* to outlet-pipe *a'* imparts rotary motion to a vertical shaft B. I do not consider it necessary to describe or illustrate the manner in which said shaft is actuated, as meters operating in this fashion are in common use and are well-known. It should be understood, however, that when said shaft is held stationary no gas can pass through the meter. The registering device also may be of any desired construction, and it and the meter mechanism coöperate in the usual manner to control and measure the flow of gas whenever the necessary steps to secure said flow have been taken.

A wheel *c*, driven by the registering mechanism C, is geared to idler *c'*, which in turn meshes into a pinion *g* on a short shaft *g'*, Fig. 3. A disk G is loosely mounted on this shaft, but is connected thereto by the spring g^2, and when the gas is flowing rotates with the registering mechanism at a speed determined by the ratio of gear between the several transmitting-wheels. A notch is cut in the periphery of the disk, as indicated at g^3.

Normally the gas is cut off by a device which at once serves to lock the registering mechanism as well as the shaft B. This locking device consists of a lever D, mounted intermediate its extremities on a horizontal shaft E, the short end of said lever standing within the notch g^3 and the longer end engaging the vertical bolt F, normally projected by spring *f*, Figs. 3 and 4, into the path of movement of an arm B', carried by and extending at right angles from shaft B.

The shaft E extends through the wall A' of the meter and projects a short distance into a box or receptable J, fixedly secured to the side of the meter, and mounted directly in line with the projecting end of shaft E is a rotatable stud K, actuated by a crank or handle *k*. The stud K and the end of shaft E form bearings or trunnions for another shaft or oscillating body M, having a slot or recess *m* therein located directly under a chute N and constituting a coin-receiver. The inner end of the stud K is bifurcated, as shown, and forms (in dotted lines, Fig. 2) a continuation of said recess *m* when the crank is in the position shown in Figs. 1, 2, and 7, which position it normally assumes by gravity. The inner end of the oscillating receiver M is provided with a lateral slot *m'*, formed with a beveled shoulder m^2, which is adapted under conditions hereinafter explained to contact with a pin *e*, projecting from shaft E, and transmit motion from the receiver to said

shaft. The shoulder further provides for a slight longitudinal movement of the receiver on its bearings against the tension of spring m^4.

Normally the receiver M is locked against oscillatory motion by a pivoted detent or latch W, engaging notch m^5, which is located so that when the detent is in engagement therewith the slot in the receiver M will be in such a position as to receive the coin from the chute N. An extension w on said detent projects closely adjacent chute N and recess m. With the receiver thus locked the crank may be turned around and around without affecting any of the other working parts.

When it is desired to procure a supply of gas, a coin, such as a twenty-five-cent silver piece, is dropped into the chute N, and thereby directed into the recess m and bifurcated end of stud K, locking said stud and receiver together. This done, the crank is turned, forcing the edge of the coin against the extension w, raising the same and disengaging the detent from the notch m^5. On further rotation of the crank the extension rides up over the edge of the coin and drops behind the same, thus preventing the coin being returned to alinement with the chute to be withdrawn after having performed its functions. The receiver is turned to the position described—that is, with the coin entrapped—without affecting the shaft E; but continued motion of the receiver will be transmitted to said shaft, the shoulder m^3 being brought in contact with the pin e and causing the receiver and shaft E to move together. This rocks lever D, releasing disk G and withdrawing bolt F from path of movement of arm B', as indicated in Fig. 4. The lever D having reached the limit of its rocking movement, the effect of further movement of the receiver against the now stationary pin acts on the receiver itself and causes the same to move longitudinally until the beveled shoulder passes the pin and brings the open or unobstructed portion of the slot in line therewith, whereupon the receiver may be turned still farther independently of shaft E until the coin drops therefrom into the receptacle J. The connection between the stud K and the receiver now being broken, spring m^6 acts and returns the latter to its former locked position. After the shoulder m^2 passes the pin e spring f tends to restore the normal position of lever D and shaft E. This is prevented, however, by the fact that the moment disk G is freed spring g^2, which has been held under slight tension, retracts and rotates the disk G sufficiently to carry the notch out of line with the lever D, thus causing said lever on dropping to rest upon the unbroken periphery of the disk and retain the bolt F in its withdrawn position until the disk G makes a complete revolution and the notch g^3 again comes in line with the lever. After the disk has been relocked the meter will still work until the arm B' is positively stopped by the bolt F. The arm B' moves much faster than the registering mechanism, so this extra motion as transmitted to shaft g' is slight, but is sufficient when taken up by spring g^2 to react on disk G, when it is freed from the detaining-lever D and operates the same in the manner as above described.

If desired, an indicating-hand p may be geared to disk G and used in connection with a simple dial, as a^3, to show at a glance at any time after starting a flow the amount of gas consumed and the amount to credit of customer.

By preference I provide each meter with a signaling means, whereby the consumer of the gas is warned at a suitable time, just before the toll apparatus operates to automatically shut off the supply when a quantity of gas of the value of the coin previously inserted has about been consumed. By this means the user is enabled to reach the meter before the gas is shut off and by the insertion of another coin thereby purchase another quantity of gas of the predetermined amount. By the means shown the coin should be inserted just as the apparatus locks, so that the interval between the locking and the unlocking of said meter will be so short that the gas, if lighted at any point in the pipe system, will not go out, by reason of the fact that there will be enough gas in the pipes beyond the meter to feed the flame until the pressure is again turned on. It is of course manifest that by a slight modification the apparatus may be modified, so that the coin may be inserted before the vending apparatus locks rather than at the very moment, as above indicated. This warning is given to the consumer by a lowering in the flame, and the said warning is accomplished by the following means.

Q, Figs. 2 and 10, illustrates in dotted lines the channel that is provided in all ordinary gas-meters. R is a suitable valve of any desired form adapted to partially cut off at a suitable time the flow of the gas through said channel. As shown, this valve R is a slide-valve and is operated by means of a lever S, pivoted on a suitable standard and operated by means of a cam T, Fig. 11. This cam T is secured upon a shaft T', which also carries a pinion U, meshing with the gear V, which in turn meshes with the pinion g in the train of wheels previously described. Thus the cam will operate to partially shut off the flow of gas through the channel Q once in each revolution of the indicating-hand p, and by setting the cam so that it will move said valve just before the said indicating-hand p completes its revolution the gas will be lowered, giving to the consumer the desired warning.

What I claim is—

1. In toll apparatus for fluid-meters, the combination with a rotating member driven by the passage of fluid through said meter, a stop normally standing in the path of movement of said member, whereby the flow of fluid is checked, a rocking lever mounted on

a shaft and engaging with said stop and also at intervals with a second stop moved through said passage of fluid, and means controlled by a proper coin, whereby said shaft is engaged and said lever rocked to withdraw the stop and release the registering mechanism, as and for the purpose set forth.

2. In toll apparatus for fluid-meters, in combination a rotating member driven by the passage of fluid through said meter, a stop normally standing in the path of movement of said member, whereby the flow of fluid is checked, an arm engaging said stop and also engaging a stop on a wheel rotating with the registering mechanism, whereby movement of said mechanism is checked and a spring for rotating said wheel slightly when released by said lever, a coin-chute, a manually-operated device, for releasing said rotating member, normally disconnected therewith but adapted to be operatively connected by the passage of a coin through said chute, as and for the purposes set forth.

3. In toll apparatus for fluid-meters, the combination of a rotating part operated by the passage of the fluid, a normally free and independently-moving operating-handle, an operated shaft adapted to turn and supporting a stop to engage said rotating part, and a movable intermediate part or receiver, adapted to receive a coin and connected with said operated shaft by a coupling providing for a certain amount of slip or lost motion, and means, whereby a connection between the receiver and said handle is provided by the insertion of said coin, substantially as described.

4. In toll apparatus for fluid-meters, the combination of a coin-receiver normally locked against movement, a handle normally disconnected therewith, controlling mechanism for starting and checking a fluid flow through said meter, and connected with said receiver by a coupling providing for a certain amount of slip or lost motion, and means controlled by the insertion of a proper coin whereby said receiver may be unlocked, and by which coin an interlocking connection between said receiver and handle is established.

5. In toll apparatus for fluid-meters, the combination of a movable coin-receiver, normally locked, an operating-handle or actuator adapted to be connected therewith by an inserted coin, a latch controlled by said coin and adapted to release the receiver and entrap the coin, a shaft-controlling mechanism for starting and checking a fluid flow, and a coupling between said receiver and shaft whereby the shaft is operated after the coin has been entrapped, substantially as described.

6. In a fluid-meter in combination, a part rotated by and controlling the passage of the fluid, means operated thereby to automatically stop the rotation of such part and the passage of the fluid, separate automatic signaling means operated by said rotating part for partially preventing the passage of said fluid before said stoppage and coin-controlled means to control said apparatus.

Signed at New York this 28th day of January, 1898.

JAMES GEEN.

Witnesses:
R. C. MITCHELL,
JAMES S. OSWALD.