

(No Model.)

G. R. FRENCH, Dec'd.

2 Sheets—Sheet 1.

S. A. FRENCH, Administratrix.

COIN CONTROLLED MECHANISM FOR GAS METERS.

No. 576,961.

Patented Feb. 9, 1897.

Fig. 1.

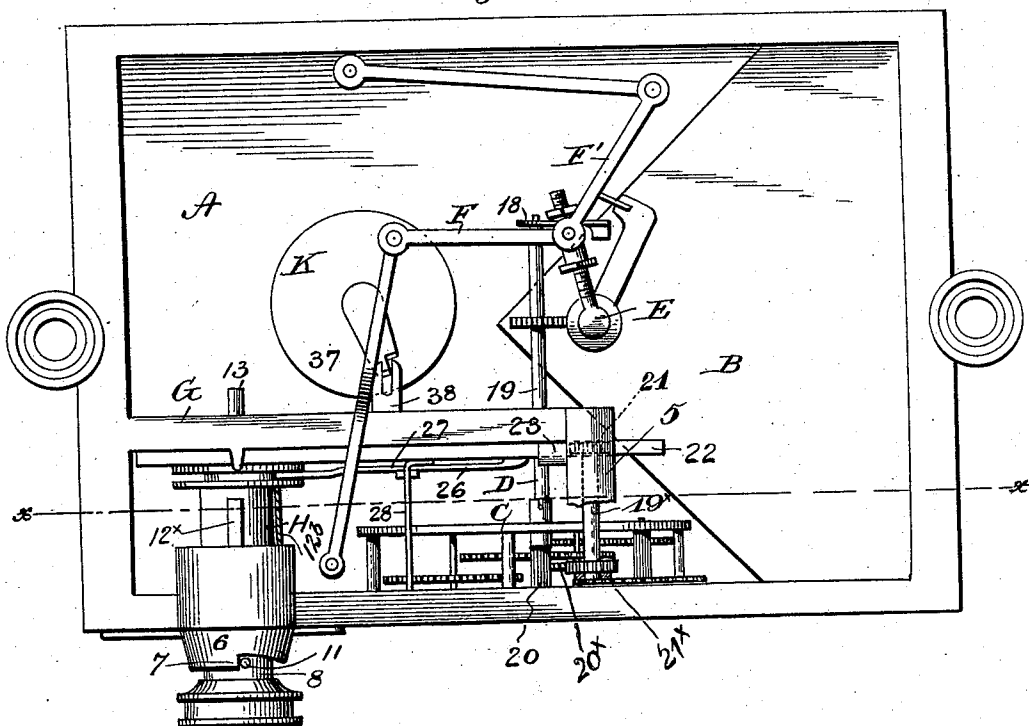
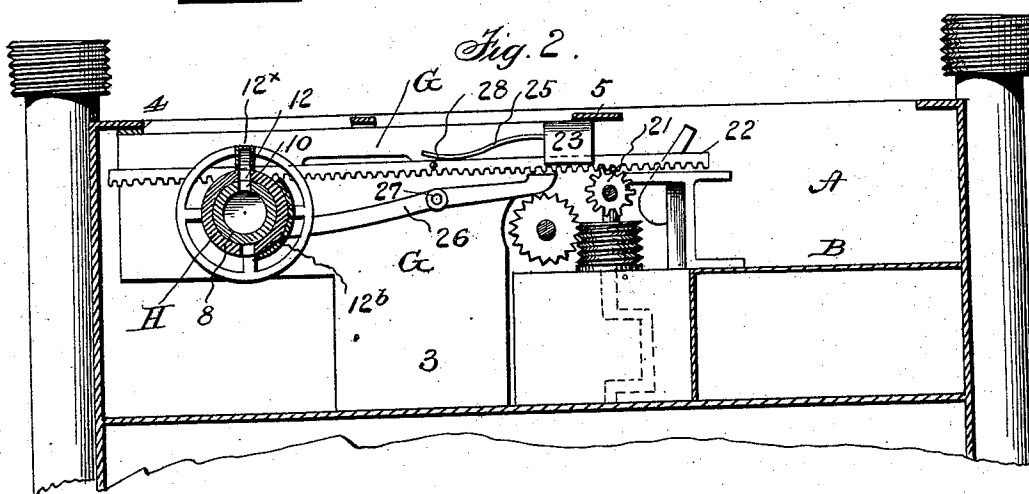


Fig. 2.



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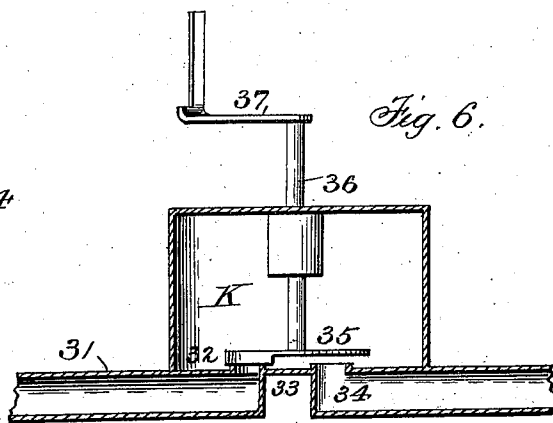
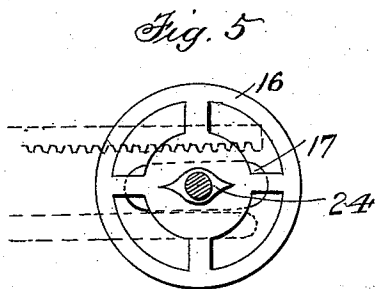
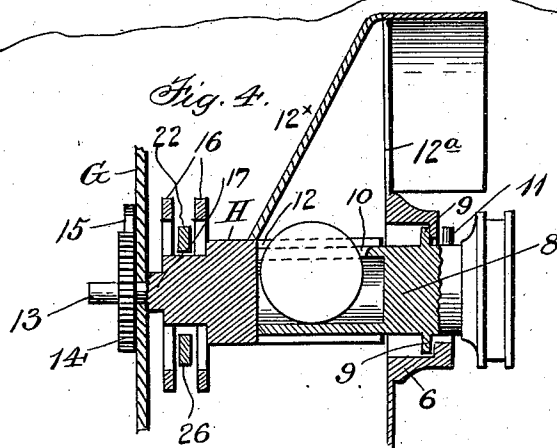
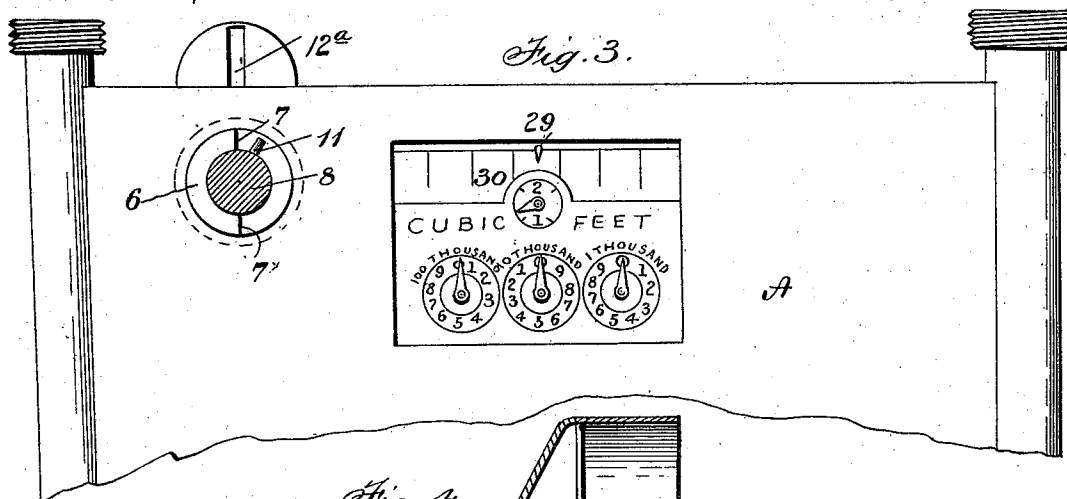
2 Sheets—Sheet 2.

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COIN CONTROLLED MECHANISM FOR GAS METERS.

No. 576,961.

Patented Feb. 9, 1897.



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UNITED STATES PATENT OFFICE.

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COIN-CONTROLLED MECHANISM FOR GAS-METERS.

SPECIFICATION forming part of Letters Patent No. 576,961, dated February 9, 1897.

Application filed December 17, 1895. Serial No. 572,442. (No model.)

To all whom it may concern:

Be it known that I, GEORGE ROSS FRENCH, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Coin-Controlled Mechanism for Gas-Meters; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has relation to coin-controlled mechanism particularly adapted for use in connection with gas-meters, and whereby on the deposition of a coin in the mechanism and requisite manipulation a certain quantity of gas may be used, and on the consumption of such predetermined quantity the flow of gas will be shut off, to be renewed only on the payment of another like quantity.

The objects of my invention are to provide a mechanism of the kind named and for the purposes stated which is simple in construction, certain and accurate in results, neat in appearance, as having no cumbersome exterior attachments, and which can be used in connection with any valve or shut-off motion, and may be readily adapted to indicate any predetermined value of gas to be consumed. I have fully and clearly illustrated my invention in the accompanying drawings, wherein—

Figure 1 is a plan view showing the invention associated with a meter mechanism of the usual construction. Fig. 2 is a side view, partly in section, taken on the line xx of Fig. 1. Fig. 3 is a front view of that section of the meter-box containing the money-box and showing the turning-knob of the coin-receiving cylinder in dotted lines, the stop-pin in the cylinder, the coin-slot shell, and the indicators of the regular meter and that of the gas paid for. Fig. 4 is a longitudinal section of the coin-cylinders removed from their bearings. Fig. 5 is an end view taken from the inner end of the outer coin-cylinder and showing the cam button or piece connected thereto for operating the lever which lifts the rack from engagement. Fig. 6 is a detail of the valve which cuts off the flow of gas.

Referring to the drawings, A designates a

meter box or casing of the usual construction and having mounted therein the mechanism common thereto, comprising the valve-chamber B, the interior mechanism not being shown, the train of indicating mechanism C, provided with the shaft and gear connection D, in mesh with the gear on the valve-shaft E, and levers F F'. This mechanism being well known in the art and forming no part of my present invention does not require more definite or extended description.

It will be observed that my invention may be used in association with any improved meter mechanism, it being directly connected and combined with the measuring or indicating means of the meter.

G designates a plate of suitable material constituting the principal support for the mechanism involved in the invention. This plate is preferably provided with a standard or support 3 resting on the floor of the meter, and has one end suitably connected to the side of the meter, as at 4, and the other end connected to the casing by a cross-piece 5.

To the face of the casing is fixed by any suitable means a bearing-sleeve 6, formed with radial shoulders or stops 7 7', arranged on the same diametrical line, as shown. In this sleeve 6 is mounted a rotative cylinder 8, stayed against longitudinal displacement by means of a pin 9, traversing in a groove in the interior of the sleeve 6 or by any other common and suitable means. In the barrel of the cylinder 8 is formed a coin-slot 10, into which the coin is projected, and to limit and regulate the rotation of the cylinder a pin 11 is fixed in it, which lodges against the shoulders on the bearing-sleeve 6 and stops further rotation of the cylinder.

H designates the outer coin-cylinder, fitted in telescopic disposition on the cylinder 8 and provided with a coin-slot 12, adapted to register with the coin-slot of the inner cylinder. The coin is directed into the slots of the cylinders by means of a coin sleeve or guide 12', leading from the opening 12^a in the casing and standing with its open lower end in alinement with the slots in the cylinders. To prevent the coin from dropping out of the slots, a guard 12^b is arranged concentric to the perimeter of the cylinder, the ends of the guard being dis-

posed so as to not interfere with the passage of the coin into and from the slot at the vertical radii. The inner end of the coin-cylinder H is formed or provided with a journal 13, having its bearing in the plate G, and has mounted thereon a ratchet-wheel 14, which is engaged by a spring-actuated pawl 15 to prevent the backward rotation of the cylinder and to perform a similar function when the two cylinders are coacting in operation. On the journal 13 are fixed two guide-wheels 16, between which is secured a cam-piece 17. The wheels 16 serve as guides to direct the lifting-lever in its movements against lateral displacement, and the cam-piece is for the purpose of engagement with the lifting-lever when that element is acting to disengage the rack-bar.

In a suitably-supported arm 18 is journaled one end of a shaft 19, the other end of said shaft being journaled in a bearing formed in the frame of the train-gearing. On the shaft 19 is mounted a pinion 20, meshing with the proper gear-wheel, as 20^x, in the train of gearing constituting the measuring mechanism of the meter, and on a shaft 19^x is a gear-wheel 21^x, in mesh with the gear-wheel 20^x, and on the shaft 19^x is another gear-wheel 21, which is engaged by the rack-bar 22. The rack-bar 22 is guided in its longitudinal movements by a sleeve or flange 23 on the plate G, substantially as shown, and at the rear end, where it rests on the journal of the coin-cylinder, engages with a lug 24 on the journal 13, the engagement operating to push the rack-bar forward when the coin-cylinders are rotated. The rack-bar 22 is held in engagement with the gear-wheel 21 by means of a suitable spring, as 25, secured to the plate G and bearing with its free end on the rack-bar. The spring also serves to return the rack-bar to engagement with the gear-wheel after it has been lifted by means of the lever 26, fulcrumed on the plate G at 27 and arranged with its outer end in engagement with the cam-piece 17.

It will be perceived that when the coin is inserted in the registered slots of the cylinders the cam-piece 17 will be rotated with the cylinders, and that in the movement the lever 26 is tilted to lift the rack-bar from engagement with the gear in connection with the indicating mechanism of the meter, and that during such disengagement the rack-bar is carried forward without movement of the registering-dials, but simply indicates by the pointer or finger the amount of gas paid for in advance. To indicate this measurement, a rod 28 is projected from the rack-bar and on the outer and free end a finger 29 is fixed, which moves with the bar and indicates on a measure or scale 30 the amount of gas paid for in advance.

In the casing of the meter is an opening wherein is fitted to slide a money box or drawer, the face of which is flush with the face of the case, and the drawer is provided

with suitable locking means accessible to the owner or manager of the meter.

K designates the valve-case, wherein is located the valve which regulates the supply to the meter. This valve mechanism comprises the inlet-pipe 31, leading to the ordinary valve-chamber in the meter. To incorporate my improvement in this connection, I lead the inlet-pipe through the floor of the valve-case K, as at 32, and interpose a bridge-piece 33 adjacent thereto and continue the inlet-pipe from the valve-case, as at 34, leading to and opening into the main valve-chamber of the meter. In the valve-case K is a valve 35, which is mounted on a stem 36, projecting above the valve-case and having an arm 37 secured thereto, the outer end of which is directed upward and engages loosely in a slotted arm 38, projecting from and secured to the rack-bar 22, so that when the arm is moved by the movement of the rack-bar the valve will be moved or opened and the gas then pass on to the meter in the ordinary manner.

The operation of my improved device or apparatus may be stated as follows: The handle-knob is turned until the stop-pin is lodged against the upper shoulder of the sleeve-bearing, when a coin can be inserted in the slot and passed into the same, locking the cylinders for the time together, so that they may be rotated in unison. They are then turned to the right one-half revolution. The rotation of the cylinders through the connecting mechanism lifts the rack-bar from engagement and carries it forward a distance intended to register the amount of gas the deposit pays for. At the forward movement of the rack-bar the arms of the valve are also carried forward and at the limit of each movement the rack-bar engages the gear in connection with the indicating mechanism, so that when the amount of gas paid for is consumed the rack-bar acts as a brake or stop to further movement, and the pressure closes the valves and the gas is stopped until a further payment is made and the mechanism thus released for another determined and limited use.

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

1. In a gas-meter, a coin-controlled mechanism, comprising independently-journaled telescoping cylinders provided with coin-slots, a rack-bar operatively connected thereto, a meter indicating mechanism, gearing between the meter indicating mechanism and the rack-bar, and an indicating-finger 29 on the rack-bar, substantially as described.

2. In a gas-meter, a coin-controlled mechanism, comprising independently-journaled telescoping cylinders provided with coin-slots, a metric indicating mechanism, a rack-bar operated by the rotation of the cylinders, gearing connecting the rack-bar and the metric mechanism, a lever actuated by the rotation of the

said cylinders to throw the rack-bar out of engagement, and a valve opened by the movement of the rack-bar.

3. In a gas-meter, a coin-controlled mechanism, comprising a valve mechanism mounted in the inlet-tube of the meter, a rack-bar, connections between the rack-bar and the valve, rotative telescoping coin-slotted cylinders to move the rack-bar a predetermined distance, and a metric indicating mechanism connected to the rack-bar, substantially as and for the purpose set forth.

4. In combination with the meter and the meter mechanism, of the rotative telescoping coin-slotted cylinders, a rack-bar connected to the cylinders and arranged to be moved a determined distance thereby, a lever actuated by the rotation of the cylinders to lift the rack-bar, a metric mechanism, a gearing connecting the rack-bar and the metric mechanism connected to the rack-bar.

5. In a gas-meter, a coin-controlled mechanism, comprising the telescoping coin-slotted cylinders, a cam-piece on the journal of the outer of the cylinders, a rack-bar, a lever in engagement with the said cam-piece to lift the rack-bar, a metric mechanism, a gearing be-

tween the rack-bar and said mechanism, an indicating-finger on the rack-bar, and a valve operated by the movement of the rack-bar, substantially as and for the purpose specified.

6. In combination, the inner rotative cylinder provided with a coin-slot, means to limit the rotation thereof, an outer rotative cylinder having a coin-slot and fitted over the first-named cylinder, and adapted to rotate therewith when a coin is disposed in the slots of both cylinders, a cam-piece on the journal of the outer cylinder, a lug or pin on the said journal, a rack-bar adapted to be moved by the lug or pin, a valve connected to the rack-bar, a lever adapted to lift the rack-bar by engagement with the cam-piece on the journal of the cylinder, a registering-arm on the rack-bar, a meter mechanism, and gearing to connect the rack-bar and the meter mechanism, substantially as and for the purpose specified.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

GEORGE ROSS FRENCH.

Witnesses:

JOHN J. MCGIVNEY,
EDWARD G. MILLS.