(No Model.)

E. D. MITCHELL & J. HEARNE.

GAS METER.

No. 555,786. Patented Mar. 3, 1896.

Fig. 1.

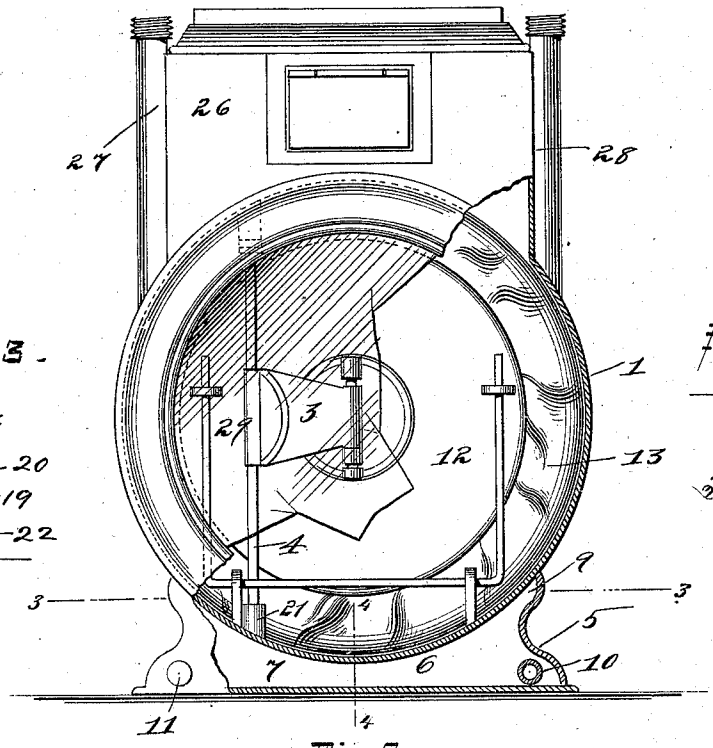


Fig. 3.

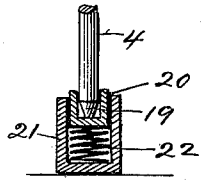


Fig. 4.

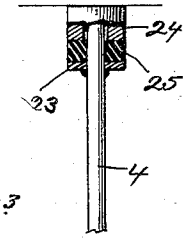
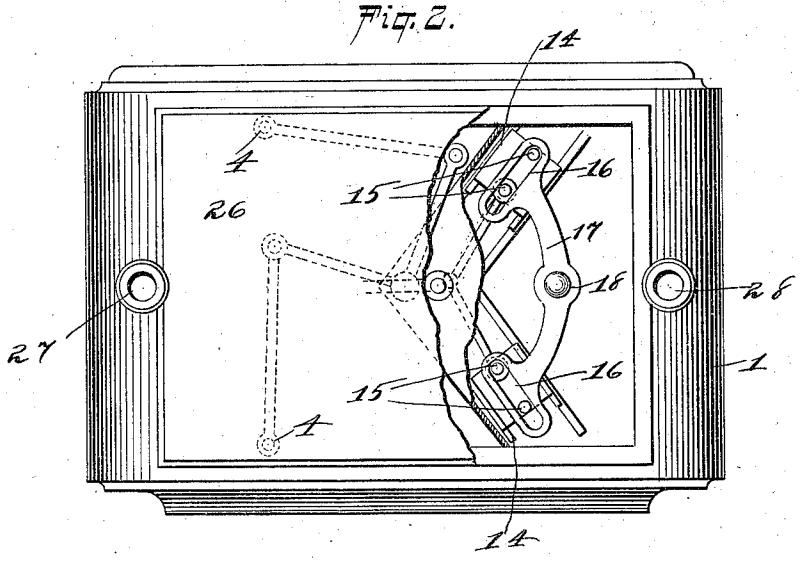


Fig. 2.



WITNESSES:

William Gaebel

J. L. Caplinger

INVENTORS

E. D. Mitchell

BY J. Hearne

Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

EDWARD D. MITCHELL, OF BROOKLYN, AND JOHN HEARNE, OF NEW YORK, N. Y.

GAS-METER.

SPECIFICATION forming part of Letters Patent No. 555,786, dated March 3, 1896.

Application filed May 8, 1895. Serial No. 548,527. (No model.)

To all whom it may concern:

Be it known that we, EDWARD D. MITCHELL, of Brooklyn, in the county of Kings, and JOHN HEARNE, of the city and county of New York, State of New York, have invented new and useful Improvements in Gas-Meters, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in gas-meters, and has for its object in part to provide certain improvements in the means employed in mounting the flag-wires, whereby the same are made capable of easy movement, while being thoroughly gas-tight; in part to provide certain improvements in the construction of the case wherein the mechanism of the meter is arranged, whereby said case is capable of being more economically made and is not liable to chafe or wear out the leathers, and in part to improve the means employed for mounting and guiding the valves of the meter.

The invention also contemplates certain novel features of construction and combinations of parts, whereby certain advantages are attained, all as will be hereinafter fully set forth.

The novel features of the invention will be carefully defined in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a face view of a meter, showing the casing constructed in accordance with our invention, the lower part of said casing being shown in section to illustrate the form and arrangement of the inclosed chambers. Fig. 2 is a plan view of the meter, showing one side of the cap-plate of the casing broken away to illustrate the means employed for mounting the valves. Figs. 3 and 4 are detail views showing the means employed for mounting and packing the flag-wires.

The casing of the meter is formed of a circular central portion 1, having a central vertical partition 2, dividing it into two diaphragm-chambers, in each of which is mounted a diaphragm having a flag 3 and flag-wire 4, as seen in Fig. 1, and below said circular central portion 1 the casing is formed with a base 5, which is divided by a vertical partition 6 into two collecting-chambers 7, located under the respective diaphragm-chambers of the casing and provided at the central part of their roofs with inlet-perforations leading from the lowest points of the diaphragm-chambers above.

The roofs of the collecting-chambers 7 are curved, being lowest at their central parts, where the perforations are located, and by this construction and arrangement it will be seen that when the meter is standing in an erect position upon its base 5, as it will stand when in use, any oil or condensate collecting in the diaphragm-chambers will flow down the curved walls of said chambers and pass through the perforations into the collecting-chambers 7, while should the meter be inverted at any time the oil or liquid in chambers 7 cannot flow back through perforations into the diaphragm-chambers, but will flow down the curved roofs of the chambers 7 into the cavities or recesses 9 at opposite sides of chambers 7. In this way the diaphragm-chambers are kept practically free from condensed oils, &c., and the life of the diaphragms or leathers, as well as of the casing itself, is very considerably lengthened.

Each chamber 7 is provided at one side with an outlet-tube 10, extending through the front plate of the casing, as indicated in the drawings, said tubes 10 being located at opposite sides of the base 5 of the casing, respectively, and being provided each with a screw-cap or similar stopper 11, whereby the open ends of the tubes may be closed. By this arrangement the chambers 7 may at any time be freed from contained oil, &c., and when the meter is in use are made perfectly tight, so that no offensive odors may escape from the meter.

As shown in Fig. 1, the diaphragms 12 are centrally located in the circular diaphragm-chambers of the meter-casing, and the parts are so proportioned that at no time shall the leathers 13 attached to said diaphragms come in contact with the wall of said circular diaphragm-chambers, whereby the chafing of the leathers and casing and consequent wear of the parts is prevented, and the adhesion of the leathers to the walls of the diaphragm-

chambers, owing to the collection and solidification of the condensed oil in the diaphragm-chambers, is avoided.

The valves 14 of the meter are each provided with guide-pins 15, playing in slotted guides 16, and the said guides 16 of the respective valves are tied together by a curved tie-bar or brace 17, having a central perforation adapted to receive a screw 18, the lower end of which screws into a post suitably located within the meter-casing. By this construction a firm and substantial guide is provided for each valve, and at the same time the construction is of the simplest and most economical nature.

The means employed for mounting the flag-wires 4 are clearly shown in Figs. 3 and 4. The lower end of the wire 4 is coned, as seen at 19, and is seated in a cup-like step 20 mounted in a socket 21, located at the base of the diaphragm-chamber, said step 20 being supported on a coil-spring 22 of suitable tension located in the socket 21. At its upper end the flag-wire 4 is provided with a washer or flange 23 soldered or otherwise secured thereto, and between said flange or washer 23 and the lower end of the stuffing-box 24 at the top of the diaphragm-chamber through which said flag-wire passes a washer 25 of leather or similar material is held on said flag-wire 4. By this construction a certain degree of vertical movement of the wire 4 is permitted, and said wire is at the same time tightly packed and held against looseness resulting from wear.

The upper part 26 of the casing of the meter above the circular portion is of general rectangular form, as seen in Fig. 1, and at opposite sides thereof are arranged the vertical gas supply and discharge pipes 27 and 28 of the meter.

By the construction of the casing with the cylindrical or circular central portion 1 a considerable economy is effected in the material required in its construction as well as in the labor required in forming the gas-tight joints. As shown in Fig. 1, the circular portion 1 of the meter-casing is formed with a central perforation in its front face covered by a plate 29.

The construction of the casing with the circular central portion also facilitates and lessens the cost of repairing the meter very considerably, since there are no corners or angles to be reinforced and soldered, and there is much less length of joint to be soldered, as by taking out one of the heads of the circular central portion of the casing the entire interior of the diaphragm-chamber is exposed.

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

1. In a meter, the combination of a casing, a socket therein, a cup-like step vertically movable in the socket, a spring in said socket below the step, and a flag-wire having its lower end journaled in said step, substantially as set forth.

2. In a meter, the combination of a casing, valves therein, guides for said valves, a centrally-perforated brace-bar carrying said guides, and a screw passed through the central perforation of the brace-bar and serving to secure the same to the casing, substantially as set forth.

3. In a meter, the combination of a casing, a stuffing-box therefor, a flag-wire passing through said stuffing-box and having a flange below the same, a washer of soft material held on said flag-wire between said flange and the underside of the stuffing-box, a socket formed in the casing below the flag-wire, a cup-like step to receive the lower end of the flag-wire and vertically movable in said socket, and a spring in said socket below said step, as set forth.

EDWARD D. MITCHELL.
JOHN HEARNE.

Witnesses:
W. S. ARCHER,
Z. J. DE VOE.