

No. 861,904.

PATENTED JULY 30, 1907.

J. ROSIE.

AUTOMATIC GAS LIGHTER AND EXTINGUISHER.

APPLICATION FILED AUG. 18, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

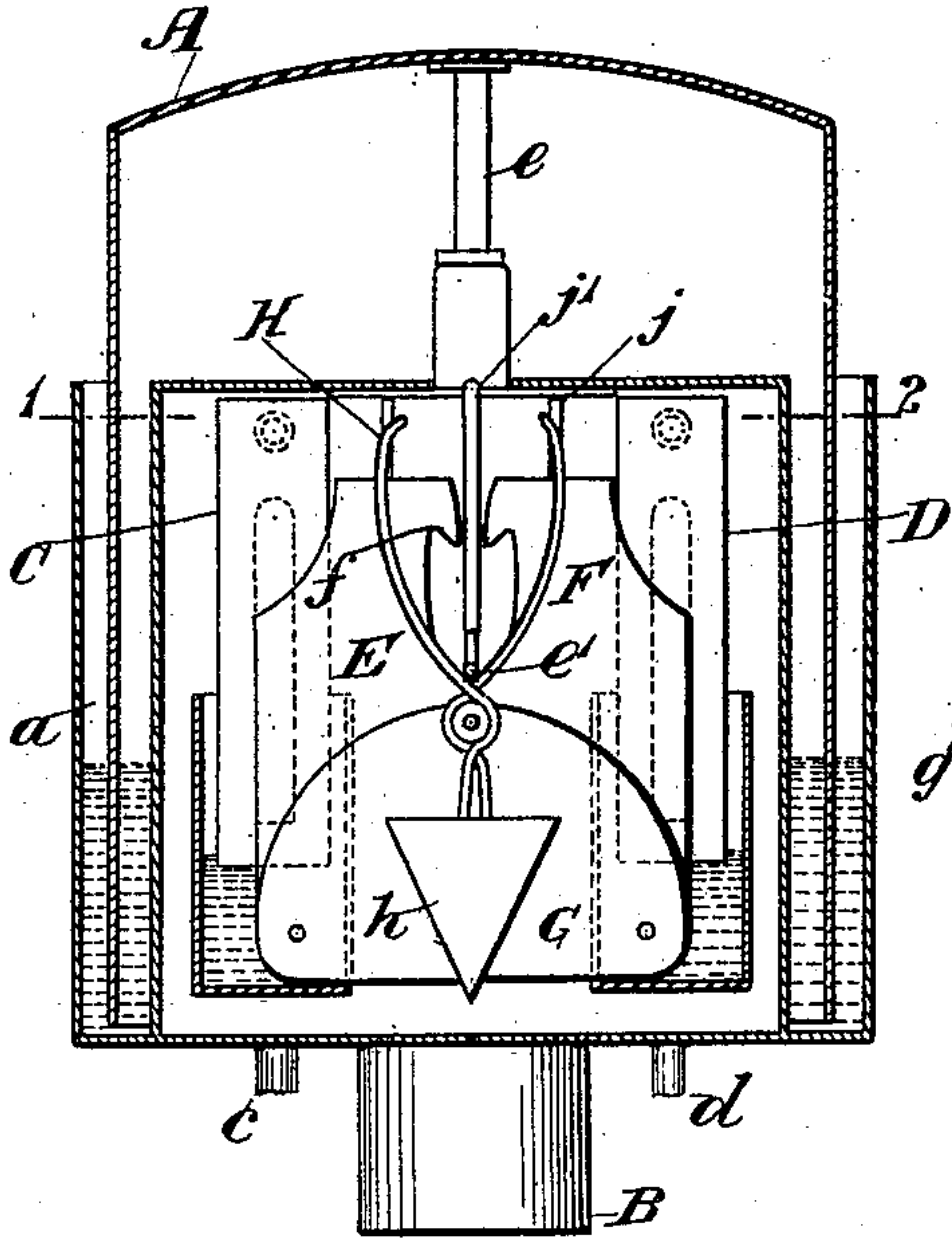


Fig. 3.

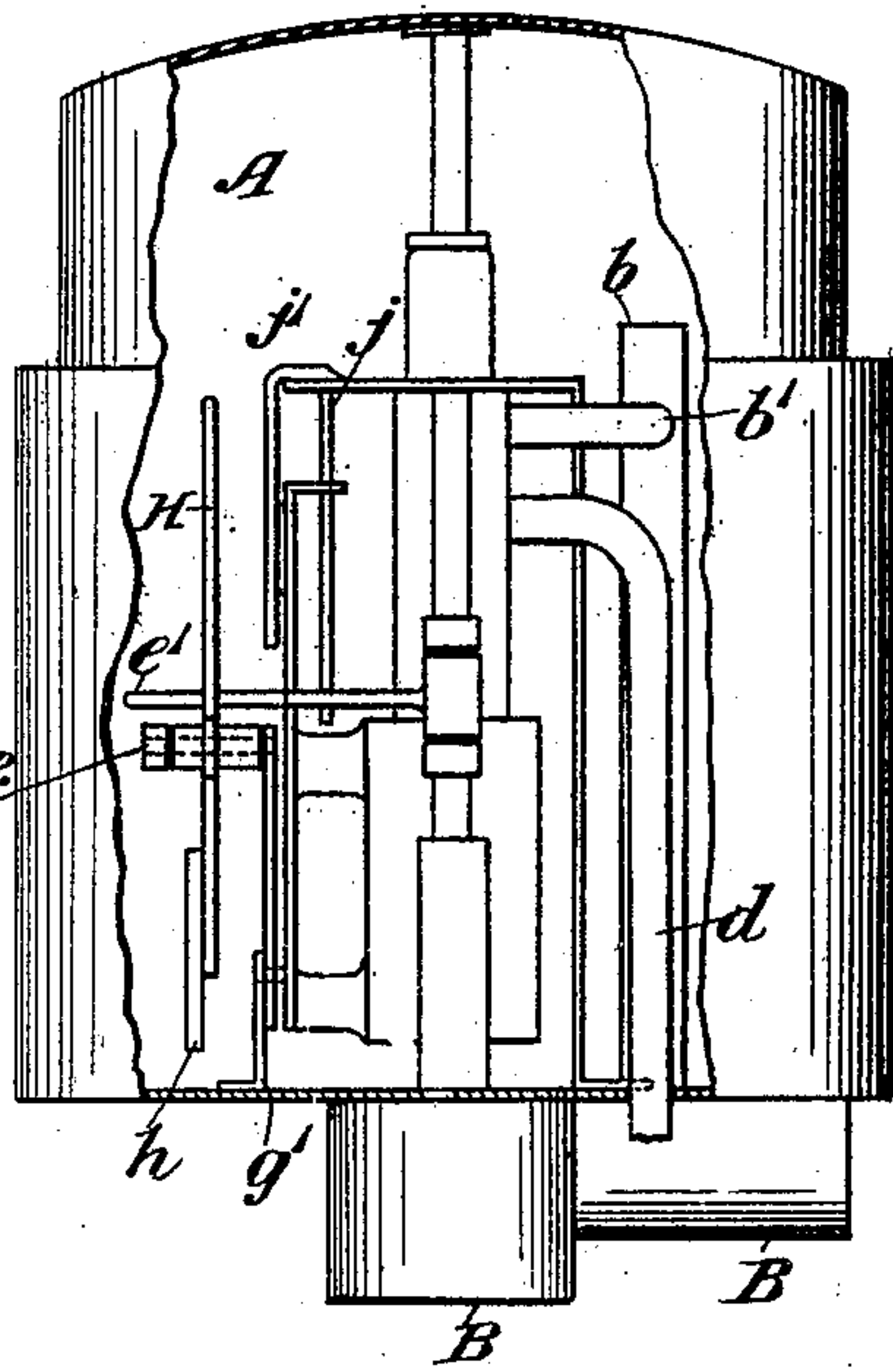


Fig. 2.

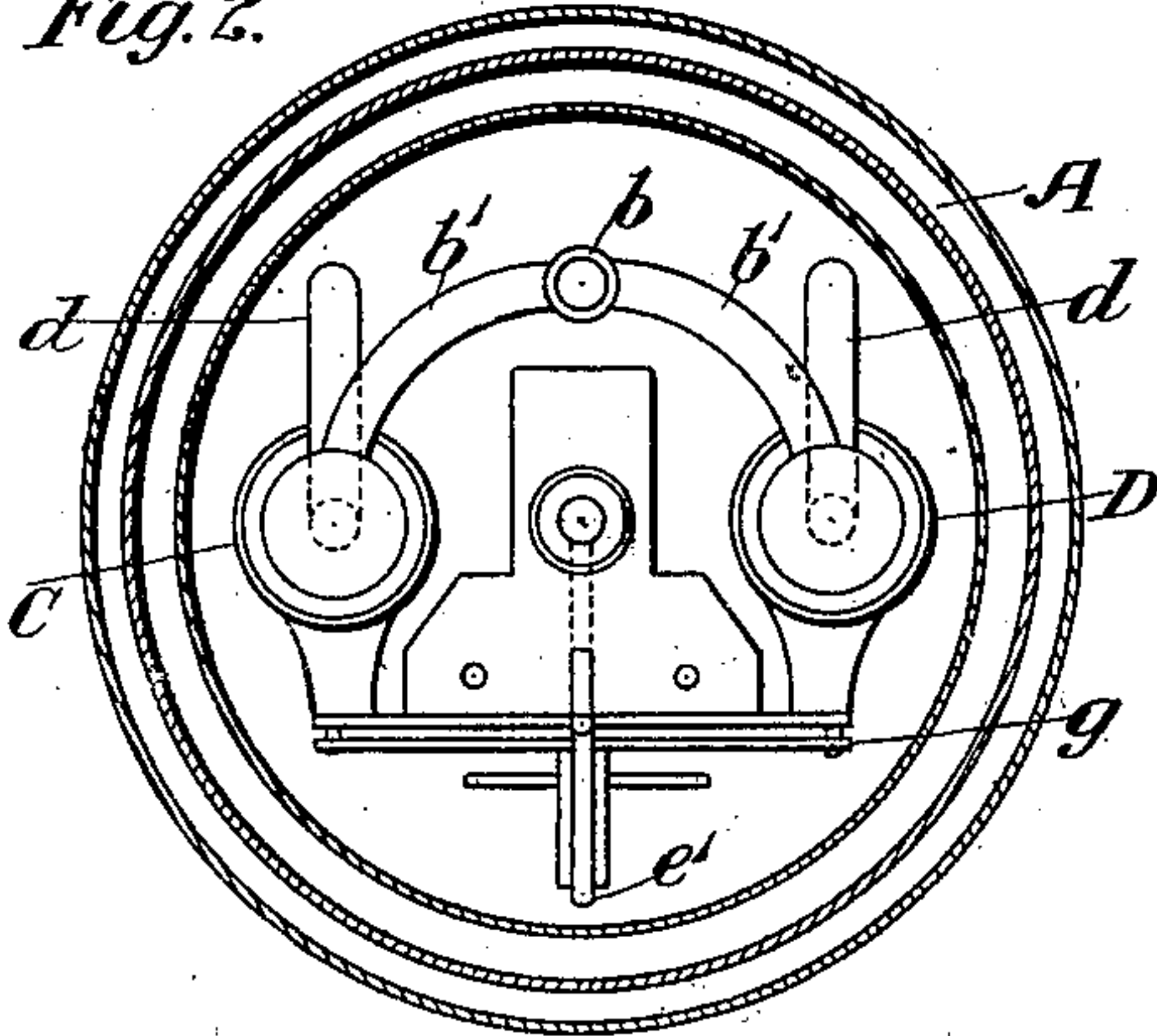


Fig. 5.

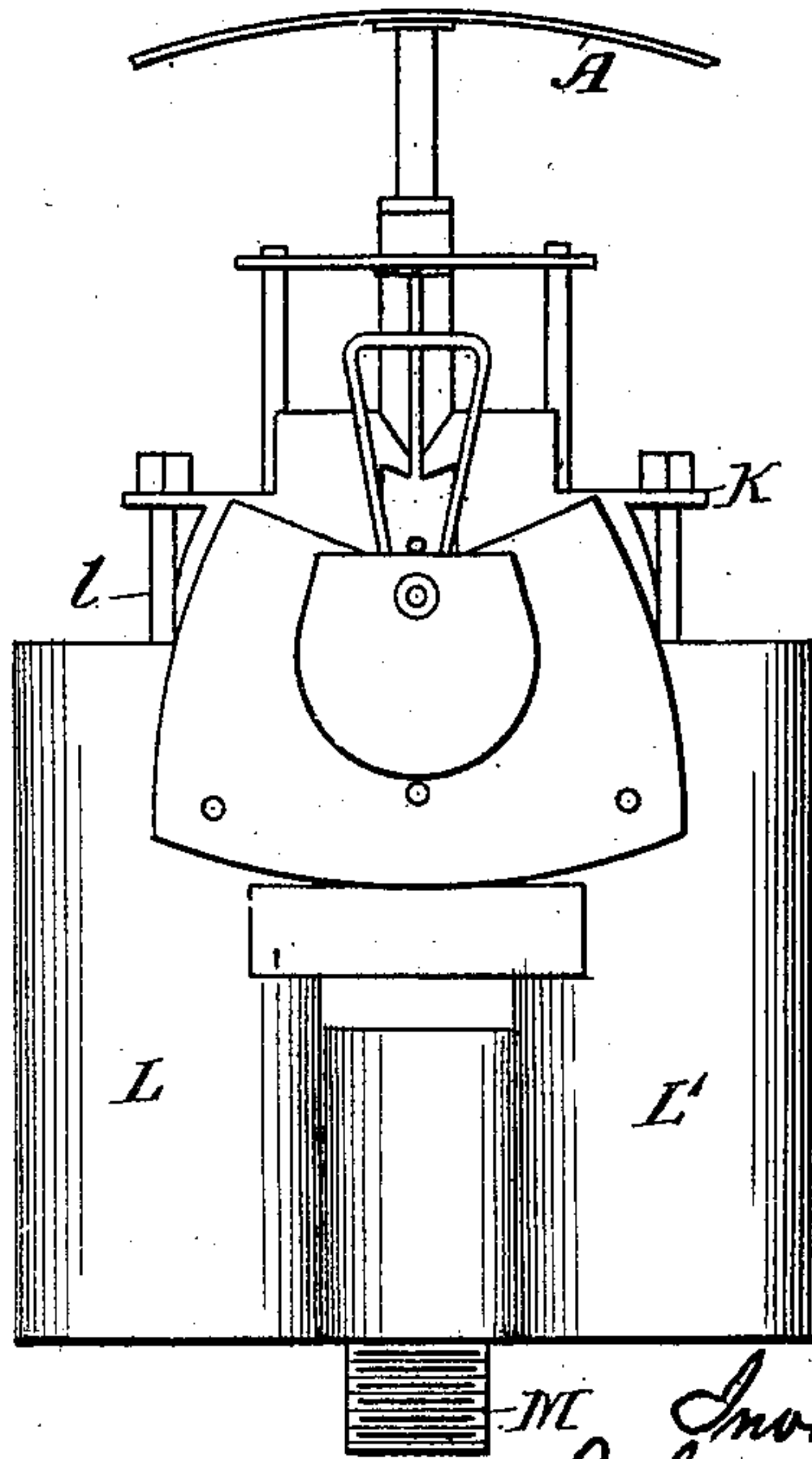
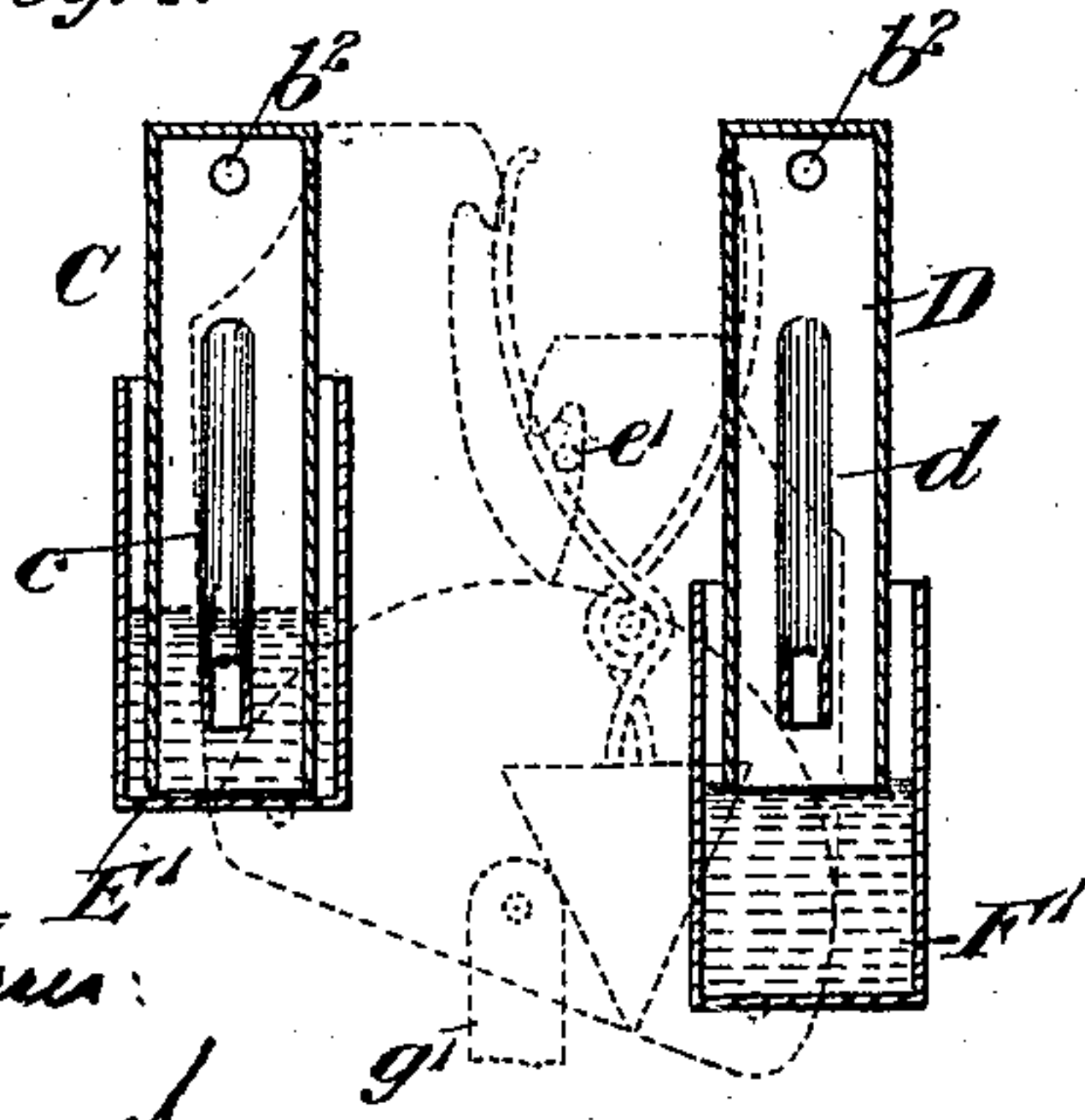


Fig. 4.



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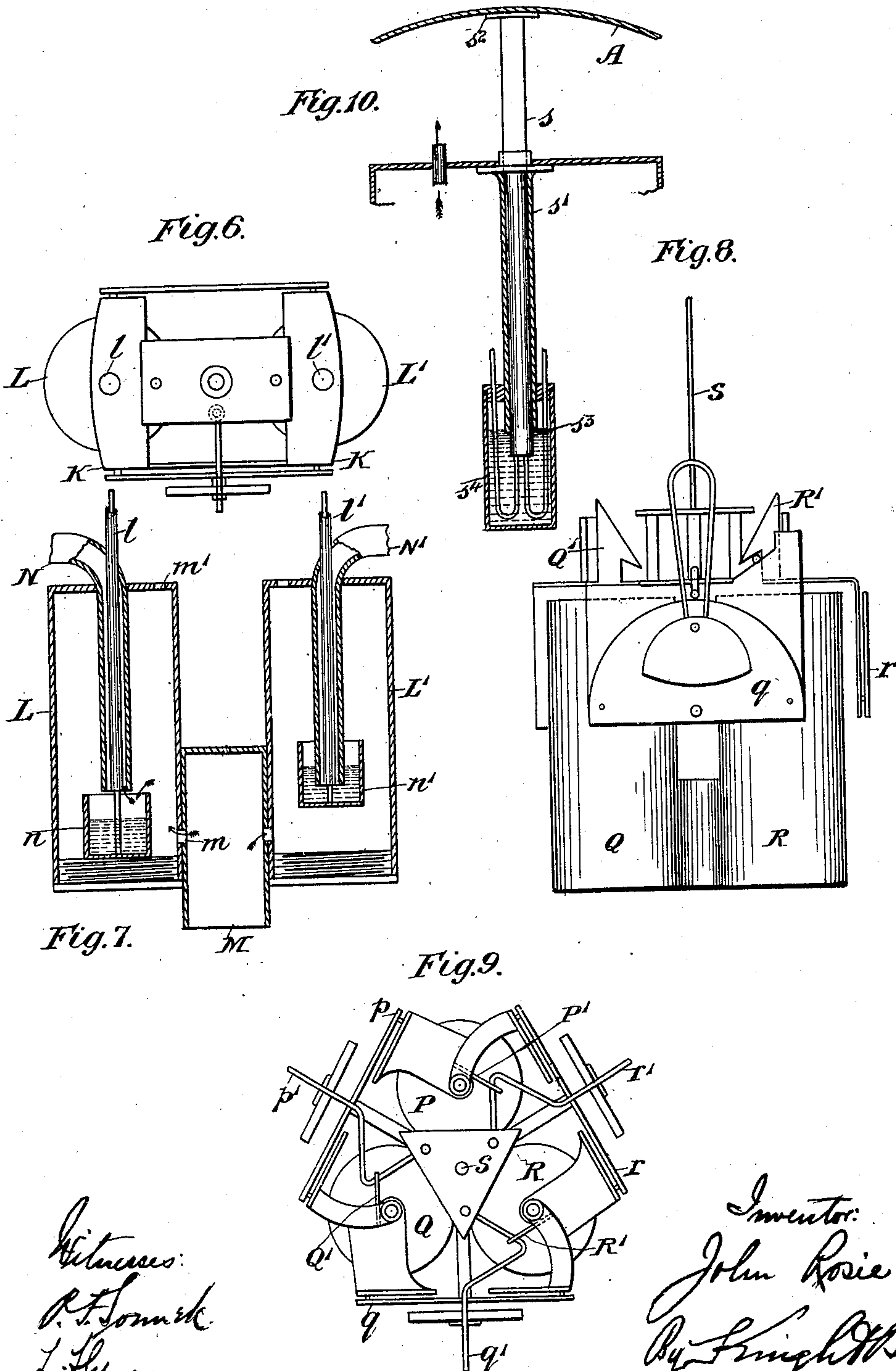
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

JOHN ROSIE, OF EDINBURGH, SCOTLAND.

AUTOMATIC GAS LIGHTER AND EXTINGUISHER.

No. 861,904.

Specification of Letters Patent.

Patented July 30, 1907.

Application filed August 18, 1906. Serial No. 331,187.

To all whom it may concern:

Be it known that I, JOHN ROSIE, a subject of the King of the United Kingdom of Great Britain and Ireland, and a resident of 66 Albert street, Edinburgh, in the
5 county of Midlothian, Scotland, gas-engineer, have invented new and useful Improvements in Automatic Gas Lighters and Extinguishers, of which the following is a specification.

This invention relates to improved means for automatically lighting and extinguishing gas lights, by
10 varying the pressure in the mains.

In the case of a single burner, I conduct near thereto a pilot burner from which the burner proper is ignited; the pilot light also being ignited from the burner proper
15 that is to say that simultaneously with the extinguishing of the gas burner the pilot burner is lighted and simultaneously with the extinguishing of the pilot burner the gas burner is ignited.

Figure 1 is a sectional elevation of my improved
20 means for automatically lighting and extinguishing gas lights. Fig. 2 is a sectional plan taken on line 1, 2 of Fig. 1. Fig. 3 is a sectional elevation of Fig. 1, at right angles thereto. Fig. 4 is a detail hereinafter referred to. Fig. 5 is an elevation of another form of my im-
25 proved means for automatically lighting and extinguishing gas lights; certain portions being broken away. Fig. 6 is a plan of Fig. 5. Fig. 7 is a sectional elevation of a portion of Fig. 5. Fig. 8 is an elevation of another form of my improved means for automatically
30 lighting and extinguishing gas lights. Fig. 9 is a plan of Fig. 8. Fig. 10 is a detail, hereinafter referred to.

Referring to Figs. 1 to 4 of the drawings, the apparatus consists of a small gasometer A, the dome of which is
35 weighted to remain down with normal pressure in the main and by increasing the pressure in the main, the gas is lighted or extinguished. The gasometer is provided with an annular space *a* into which the depending portion of the gasometer A is inserted; the said annular space *a* being provided with a mercurial or other
40 seal. Gas is conducted through the pipe B upwards into the gasometer A and also into the gas sealing chambers C and D as shown more particularly in Fig. 4 which is a section of the said sealing chambers.

When the gas enters the gasometer A through the
45 pipes B and *b*, it is also conducted into the branch pipes *b*¹ shown more particularly in Fig. 2, the said branch pipes communicating with the sealing chambers C and D at *b*² Fig. 4 and the arrangement is such that the pressure of gas entering the gasometer A from the mains,
50 causes the dome thereof to ascend. In so doing, one or other of the supply pipes *c*, *d* are unsealed and gas is allowed to flow out of one of the sealing chambers C, D,—thence through the pipes to either the pilot light or the gas light proper. The pipes *c*, *d* depend within
55 the sealing chambers C D shown more particularly in

Figs. 1 and 4. It will be observed that in Fig. 4 the opening of the pipe *c* is sealed, therefore there is no gas supply there-through; gas however is being supplied through the pipe *d* by reason of the end of the said pipe being unsealed. When the sealing cups are in the half
60 position, gas for the moment enters both pilot pipe and gas light pipe so as to allow one light to ignite the other before cutting off the supply to either of the two pipes.

To effect the actuation alternately of the sealing and unsealing of the pipes *c*, *d*, I connect to the dome of the
65 gasometer A the rod *e* which is elevated and lowered by the action of the dome of the gasometer. This rod has attached to it a radial arm *e*¹ which is caused to rise and fall with the rod *e*. In so doing it engages with one or other of the arms E, F at their hook-shaped ends *f*.
70 These arms are connected to the sealing cups E¹ and F¹ so that they are capable of raising and lowering the said sealing cups which are provided with a mercurial or other seal. Attached to the bottom of the arms E and F is the half disk G pivoted to the said arms at *g*. This
75 half disk is pivoted to the bracket *g*¹ secured to the bottom of the gasometer and shown more particularly in dotted lines in Fig. 4.

Secured to the top of the half disk G is a pin *g*² projecting out from the face of the said half disk and
80 loosely pivoted to the said pin is the wire tumbler H which is provided with a counter-balance *h* below the pivot or pin *g*² and the arrangement of the counter-balance *h* and tumbler H is such that the counter-balance
85 always keeps the tumbler in a perpendicular position irrespective of the position of the half disk G by which it is carried.

Fig. 4 shows the relative position of this tumbler and counter-balance with the half disk G.

Depending from the fixed bracket *j*, as shown in
90 Fig. 1 and more particularly in Fig. 3, is the guide rod *j*¹ to keep the radial rod *e*¹ in position while the said rod is elevating one of the arms E or F. The tumbler H performs the function of altering the position of the radial rod *e*¹ so that it engages with the hook-shaped
95 portion *f* of one or other of the arms E, F that is to say the bottom of the tumbler where the rod *e*¹ is resting in, as shown in Fig. 1, is transferred to immediately below the hook-shaped portion *f* of one of the arms E, F, or in other words the rod *e*¹ as it descends follows
100 the contour of the inside of the tumbler H. This alteration in the position of the tumbler being effected as hereinbefore referred to, by altering the position of the half disk G by which it is carried.

Fig. 5 is another arrangement with all the various
105 motions as described with reference to Figs. 1 to 4, but instead of employing side arms such as E and F hereinbefore described and having cups such as E¹ and F¹, I provide arms K which are mounted over the top of the sealing chambers L and L¹, Figs. 5, 6, and 7, 110

the actuating rods l , l^1 being inserted through the top of the said arms K and being carried thereby.

Referring to Fig. 7, the gas enters through the main into the pipe M thence through the small ports m into the sealing chambers L, L^1 —thence out through the ports m^1 into the gasometer so as to actuate the rising and falling dome thereof. The left hand side of Fig. 7 shows the pipe N unsealed by its sealing cup n , the other pipe N^1 being sealed by its cup n^1 .

Referring to Figs. 8 and 9 which shows an arrangement for allowing one of two gas burners to be lighted and with the pilot light extinguished—either one or other of the two burners may be lighted and the apparatus is capable of effecting a round of motion.

As shown in Fig. 9, I employ the three cylinders P, Q and R and I provide three half disks p , q and r each of which has a counter-balance arrangement similar to that shown in Fig. 5 and each of the said counter-balance arrangements are provided with the actuating rods p^1 , q^1 and r^1 as shown. These rods are caused alternately when elevated, by means of the central rods S, to engage with one of the hooked arms P, Q or R to which the rods for sealing and unsealing are attached (these rods are not shown in this arrangement; the sealing cups or rods being similar to those shown in Fig. 7.)

In the detail Fig. 10, which is a sectional elevation of central actuating rod connected to the dome, I employ a seal as shown so that gas cannot get access to the works.

The rising and falling rod s is provided with the sleeve s^1 , the flange s^2 of which is secured to inside of the dome of the gasometer and with the lower portion s^3 dipping into the seal cup s^4 and being sealed thereby; the rod s rising and falling within the said sleeve.

In each and everyone of the appliances the actuation of the rods for lifting the arms is effected and governed by the canting of the half disks and tumblers.

Claims

1. In an automatic gas lighter and extinguisher, the combination with an outer vessel having an annular space inside adapted to contain sealing liquid, a gas-holding dome suitably fitted into said annular space and in communication with the main and sealed by the liquid, adapted to rise and sink by means of the pressure of gas supplied to said dome, two vessels open at the bottom and closed at the top disposed within said dome and suitably fastened to the outer vessel and permanently connected with the gas main, two individual sealing cups for said vessels, a suitably shaped body bearing pivotally fastened one of said sealing cups on each end being rockably supported between by the outer vessel and sealing said two vessels permanently, a pipe connecting one of said vessels with the pilot-light and a pipe connecting the other one of said vessels with the main light of the gas lamp, of catches fastened on said sealing cups and a pin fastened to said dome, adapted to engage alternately in said catches to rock said cup bearing body when the dome rises, and means controlled by said cup bearing body to guide said pin into the catch of the cup to be lifted.

2. In an automatic gas lighter and extinguisher, the combination with an outer vessel, having an annular space inside adapted to contain sealing liquid, a gas holding dome suitably fitted into said annular space and in communication with the main and sealed by the liquid, adapted to rise and sink by means of the pressure of gas supplied to said dome, two vessels open at the bottom and closed at the top disposed within said dome and suitably fastened to the outer vessel and permanently connected with the main, two individual sealing cups for said vessels, a suitably shaped body bearing pivotally one of said sealing cups on each end and being rockably supported between the outer vessel and sealing said two vessels permanently, a pipe connecting one of said vessels with the pilot-light and a pipe connecting the other one of said vessels with the main light of the gas lamp, of catches fastened on said sealing cups and a pin fastened to said dome adapted to engage alternately in said catches to rock said cup bearing body when the dome rises and a wire tumbler pivotally fastened to and controlled by said cup bearing body to guide said pin into the catch of the cup to be lifted.

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Witnesses:

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