W. H. HOVEY.

Gas Light Extinguisher.

No. 201,611. Patented March 26, 1878.

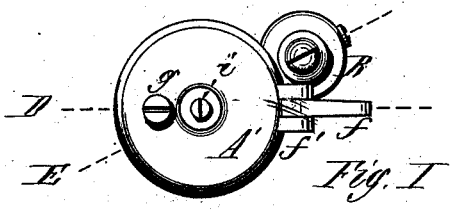

Fig. I

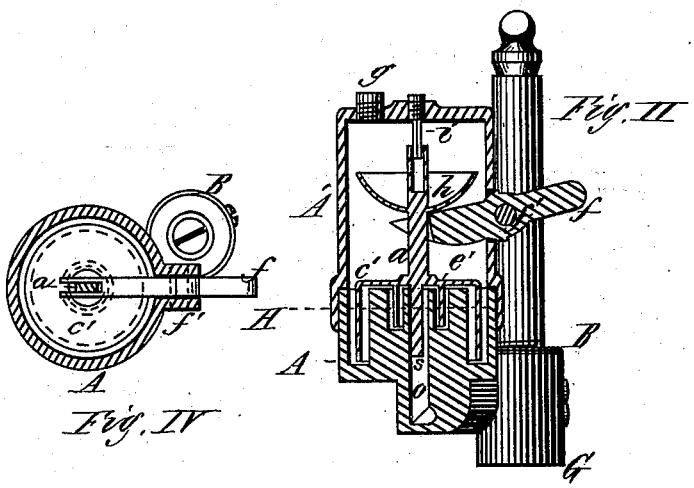

Fig. IV

Fig. II

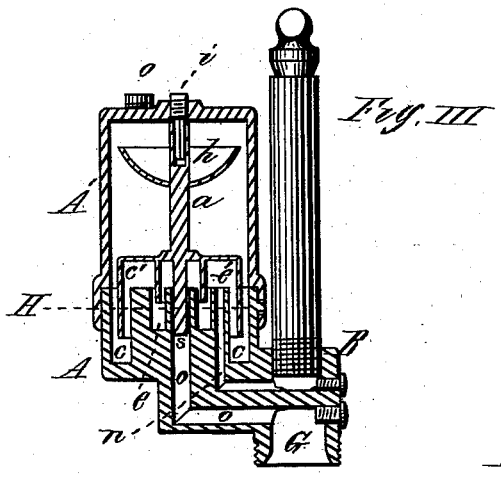

Fig. III

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WILLIAM H. HOVEY, OF SPRINGFIELD, MASSACHUSETTS.

IMPROVEMENT IN GAS-LIGHT EXTINGUISHERS.

Specification forming part of Letters Patent No. **201,611**, dated March 26, 1878; application filed January 10, 1878.

To all whom it may concern:

Be it known that I, WILLIAM H. HOVEY, of Springfield, in the State of Massachusetts, have invented a new and useful Improved Gas-Light Extinguisher; and that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, and to the letters of reference marked thereon.

My invention relates to a device for extinguishing gas-lights by changing the pressure of gas in the main pipe; and it consists of two inverted cups of different sizes arranged upon a stem, one within the other, to operate in corresponding cells containing quicksilver, which cups are raised by a lever pivoted to the inclosing-case, with an inlet-passage extending from the gas-pipe to the interior of one cup, and an outlet-passage extending from the interior of the other cup to the burner, the cups being so weighted as to be held up in a position with one cup out of the quicksilver, or dropped by a change of the gas-pressure in the main pipe into a position with both cups in the quicksilver, all of which will be more fully hereinafter described.

Figure I is a plan view of my invention with a burner attached. Fig. II is a vertical section at line D. Fig. III is a vertical section at line E, and Fig. IV is a horizontal section.

In the drawings, A represents the base, in which are made the two circular cells *c* and *e*, one inside the other, and also the central hole *o*, the latter communicating with the supply-pipe, connected with the device at G, and another orifice, *n*, in the top of the base A, extending down the base and thence opening into the burner B, so that gas from the supply-pipe below the burner must pass up through the base A before reaching the burner.

The circular cell *e* is made outside the central hole *o* and inside the passage *n*, and the cell *c* is made outside the passage *n*, and the larger inverted cup *c'* is made of such length as that its lower end may always remain in the quicksilver in the cell *c*, the smaller inverted cup *e'* being made considerably shorter than the cup *c'*—say half as long. Both the cups *c'* and *e'* are secured to the stem *a*, the lower end of which extends a little distance into the central hole *o*, forming a guide, *s*, to hold the stem central at the lower end, and the cups *c'* and *e'* concentric with their cells; and the stem *a* may be made hollow at the top, with a screw, *i*, turned down through the top of the case A' into the hole at the upper end of the stem, said screw serving as a guide to assist in keeping the stem in its vertical position.

The case A' may be attached to the base A by means of the ordinary bayonet-joint, or by any other convenient means, so that it may be easily removed when required; and a cup, *h*, is attached to the upper part of the stem *a*, and a hole may be made in the case immediately above the cup *h*, which hole may be closed with a screw-plug, *g*.

A lever, *f*, is pivoted to the case at *f'*, and its inner end is arranged to engage with the stem *a*, which may be done by making the inner end of the lever forked, and the stem *a* extending between the forks, with the cup *h* just above the lever; or the end of the lever may extend into a hole made in the stem, (I prefer the former,) so that by drawing down the outer end of the lever the stem and inverted cups will be raised.

The operation of the invention is as follows: Suppose the gas-pressure in the main pipe to be three inches while burning the lights, and it is desired to extinguish all the lights in a street or all the lights in all the streets of a city by reducing the gas-pressure in the main pipe to two inches. The small plug *g* is removed, and a sufficient number of shot dropped into the cup *h* through the hole so that the stem and inverted cups *c'* and *e'* shall drop promptly when the gas-pressure in the main is reduced to two inches, but as long as the pressure remains above two inches the weighted stem and inverted cups shall be held up. Quicksilver is poured into both cells *c* and *e*—say up to the line H—and the lower end of the large cup *c'* is always in a position below this line, and is immersed in the quicksilver; but the lower end of the smaller cup *e'* is only immersed in the quicksilver in the cell *e* when the stem and cups are held down by the weights in the cup *h*, and is held above the quicksilver when the stem is held up by the pressure of the gas. The latter, flowing in from the sup-

ply-pipe through the passage *o*, is free to pass up into the space inside the inner cup *e'*, and out between the lower end of said cup and the quicksilver in its cell into the space inside the larger cup, and thence down through the passage *n* into the burner, where it is consumed at the tip. When the gas-pressure, in the above example, is at three inches in the main, such pressure is not sufficient to raise the stem and cups, owing to the small area of its pressure in the smaller cup *e'*; but when the stem and cups are raised, and the gas is admitted into the larger cup *c'*, the area of gas-pressure is so largely increased that it is quite sufficient to overcome the weight above, and the cups are held in their elevated position until the gas-pressure in the main is reduced to two inches—the point to which it was adjusted—when, the weighted stem instantly dropping, the lower end of the cup *e'* is immersed in the quicksilver in the cell *e*, and the flow of gas through from the passage *o* to the passage *n* is instantly and completely shut off and the lights extinguished.

Different gas-posts in the different streets of a city provided with this device may be extinguished at different times by adjusting the weights to different pressures. For example, suppose the gas-pressure in the main to be four inches, the lights in one street could be adjusted to be extinguished by reducing the pressure a half inch, those of another street to be extinguished by a reduction of one inch in pressure, while still another set by a reduction of an inch and a half. By these respective reductions in pressure at different times the lights will be extinguished at different times in as many sets.

It is evident that, instead of the cup *h* on the stem, the latter may be weighted by placing small disks thereon until it is suitably balanced or adjusted to the desired pressure, when it would operate in precisely the same manner as above described.

It is also obvious that, instead of the lever *f*, I may extend the stem up through the top of the case to guide it, and out at the side of the case, as shown in dotted lines in Figs. II and III, so that instead of pulling down on the outer end of the lever *f*, I might raise the cups by pushing up the extension upon the stem, and thus dispense with the lever, and accomplish the same result of admitting the gas to the burner.

Having thus described my invention, what I claim as new is—

1. An improved gas-light extinguisher, consisting of the base A, having the cells *c* and *e*, arranged to contain quicksilver or other sealing-fluid, and the passages *o* and *n* made therein, combined with the inverted cups *c'* and *e'*, the stem *a* arranged to be suitably weighted, and the lever *f*, all substantially as described.

2. In a gas-light extinguisher, the base A, provided with the cells *c* and *e* and with the passages *n* and *o*, in combination with the inverted cups *c'* and *e'* and the stem *a*, arranged to be weighted and adapted to be raised by a force applied outside the case, substantially as described.

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Witnesses:
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