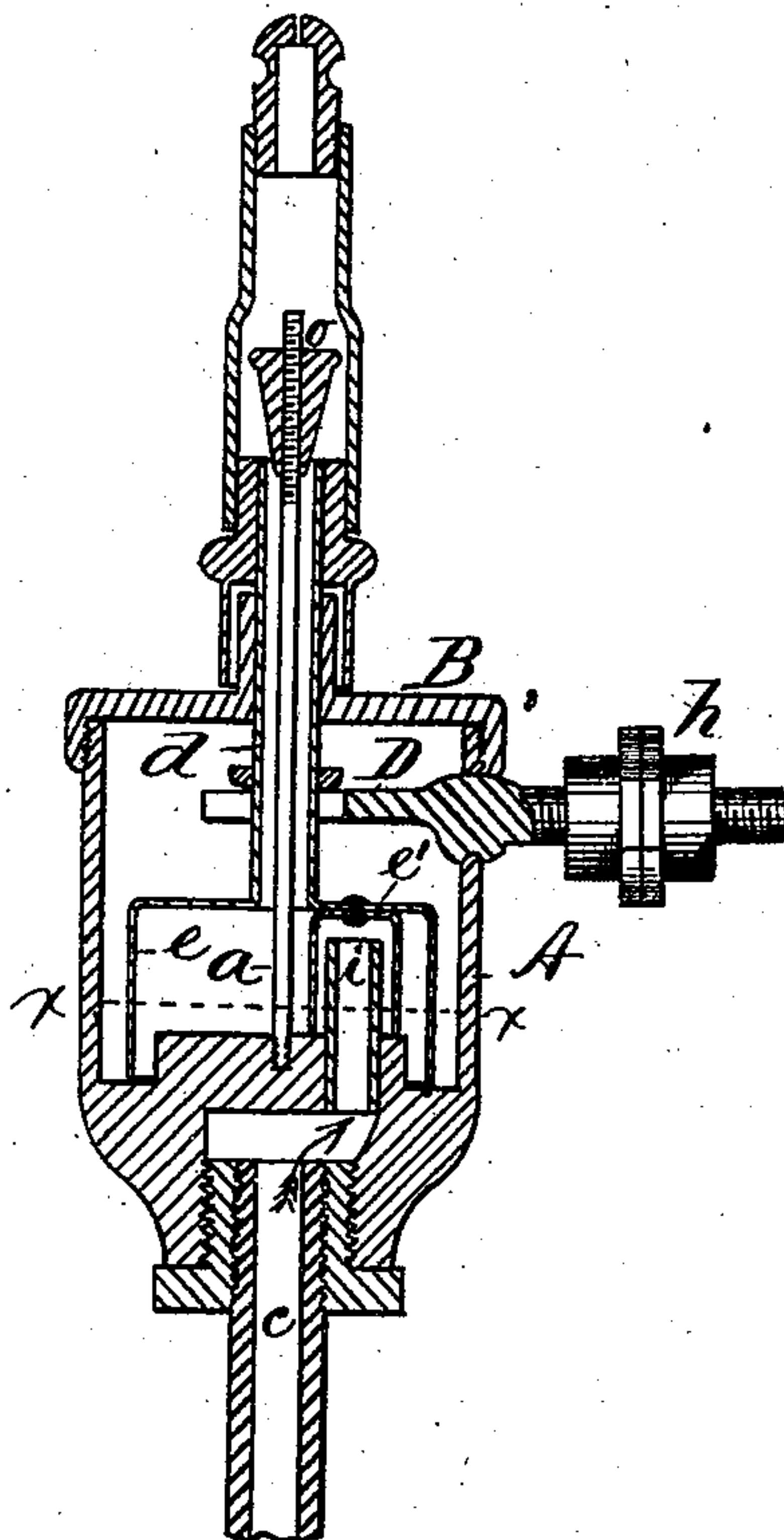


(No Model.)

W. H. HOVEY.
Self-Extinguishing Gas-Burner and Regulator.

No. 227,436.

Patented May 11, 1880.



Witnesses

Chas. May
Wm. H. Chapin.

Inventor
William H. Hovey.
By Henry A. Chapin
Atty.

UNITED STATES PATENT OFFICE.

WILLIAM H. HOVEY, OF SPRINGFIELD, MASSACHUSETTS.

SELF-EXTINGUISHING GAS BURNER AND REGULATOR.

SPECIFICATION forming part of Letters Patent No. 227,436, dated May 11, 1880.

Application filed March 15, 1880. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. HOVEY, a citizen of the United States, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Self-Extinguishing Gas-Burners and Burner-Regulators Combined, of which the following is a specification.

My invention relates to that class of self-extinguishing gas-burners which are caused to operate to shut off the gas from the burner by a reduction of the gas-pressure in the street-mains, and is in the nature of an improvement upon my United States Patent No. 224,539, dated February 17, 1880; and the object of my improvements is to adapt to the devices and construction shown in my said patent certain devices whereby the quantity of gas flowing to the burner may be regulated according to the pressure of the gas upon the street-mains. I attain this object by the construction and application of the devices illustrated in the accompanying drawing, in which is shown a vertical sectional view of my apparatus.

In the drawing, A is the case, the gas-inlet to which is at *c*, and this gas-passage diverges to one side of the center above said inlet, as shown, and has a tube, *i*, inserted therein.

The dotted line *x x* represents the surface of a body of mercury, with which case A is partially filled, and into which the inverted cups *e e'* dip to seal their bottom edges, cup *e'* being located one side of the center of cup *e*, and secured within and to it, as shown, and is arranged to shut down over the upper end of tube *i*, leaving an annular space between it and the sides of said tube.

Attached to the top of cup *e* centrally is a tube, *d*, which serves to convey the gas from under said cup up through the cover B of case A and the burner-supporting devices thereon, said tube *d* being adapted to have a free vertical movement, governed by the motions of cup *e*, through said cover and devices.

A standard, *a*, is secured centrally in case A, extending therefrom up through cup *e* and tube *d*, above the upper end of the latter, and has a screw-thread cut on it, as shown. A valve, *o*, is screwed onto the upper end of said standard *a*, of an inverted conical form, and is adapted to be adjusted by turning it on said

standard, to rest at any desired distance from the upper end of tube *d*, into the upper end of which the lower end of valve *o* projects slightly.

A lever, D, provided with adjustable weights *h*, and engaging under a collar on tube *d*, is hinged on one side of case A, whose functions and operation are fully described in my said patent.

The location of street-lamps in cities and towns at points of varying elevation renders it desirable that a self-extinguishing device operating by gas-pressure, as aforesaid, should be provided with suitable means for causing it to deliver to the burner-tip a given number of cubic feet of gas per hour under the different pressures to which it may be subjected by reason of said varying elevations; but combined with my devices shown in said patent there are no means by which such regulation can be accomplished; but by locating the inner inverted cup, *e'*, to one side of the center of cup *e*, and adapting the gas-inlet to such change, I am enabled to fix the standard *a* centrally up through the tube *d* and place the regulating-valve *o* thereon, and so constructed my apparatus operates to regulate the flow of gas to the burner as follows, viz: For the operation of the inverted cups, the gas-passage leading therefrom, and the weighted lever D, to extinguish the light by change of gas-pressure, reference may be had to my said patent.

After said parts have been adjusted so as to operate, the normal or burning position of the upper end of tube *d* is determined, after which nut or valve *o* is screwed toward or from the end of said tube, thereby reducing or enlarging the gas-passage between it and the adjoining sides of said valve until said gas-passage shall be adjusted to such dimensions as will allow only the requisite amount of gas per hour to pass to the burner.

Heretofore the quantity burned has been determined by the size of the gas-tip or by the devices of some specially-constructed regulating-burner; but my improvements enable me to use an ordinary burner and regulate the gas-flow independent of it. Thus it will be seen that an increase of pressure will lift cup *e* and tube *d*, diminishing the gasway up by the sides of valve *o*, and preventing any excess of gas from passing to the burner by

reason thereof, and a slight reduction of the pressure operates in the opposite way. Although cup *e'* be located to one side of the center of cup *e*, no inconvenient effects result therefrom, as the small cup is very light, and the lever *D*, with its adjustable weights, affords ample means for controlling the movement of the cups and tube *d*.

In changing the position of cup *e'* and the gas-passage leading into it, it became desirable to deliver the gas into said cup and provide for properly sealing its bottom edge in the mercury without forming in case *A* a circular mercury-cell, as the formation of the latter in that location would be attended with some inconvenience; therefore I employ the tube *i* to conduct the gas into the cup above the level of the mercury.

It will be seen that the gas first enters cup *e'*, and after it and cup *e* have been lifted by bearing down on the end of lever *D* the gas then flows under the edge of cup *e'* into cup *e*, and thence up tube *d* to the burner.

What I claim as my invention is—

1. The extinguisher-case *A*, provided with the cover *B*, and constructed with its gas-inlet passage adapted to deliver the gas therein at one side of the center, as shown, in combination with the cup *e*, having the tube *d* attached thereto, and the cup *e'*, attached to the under side thereof and on one side of its center, substantially as and for the purpose set forth.

2. The combination, with the case *A*, provided with the cover *B* and having its gas-inlet passage leading to one side of the center thereof, of the cup *e'*, the cup *e*, provided with tube *d*, and the standard *a*, provided with the adjustable valve *o*, substantially as and for the purpose described.

WILLIAM H. HOVEY.

Witnesses:

WM. H. CHAPIN,
CHAS. MAYR.