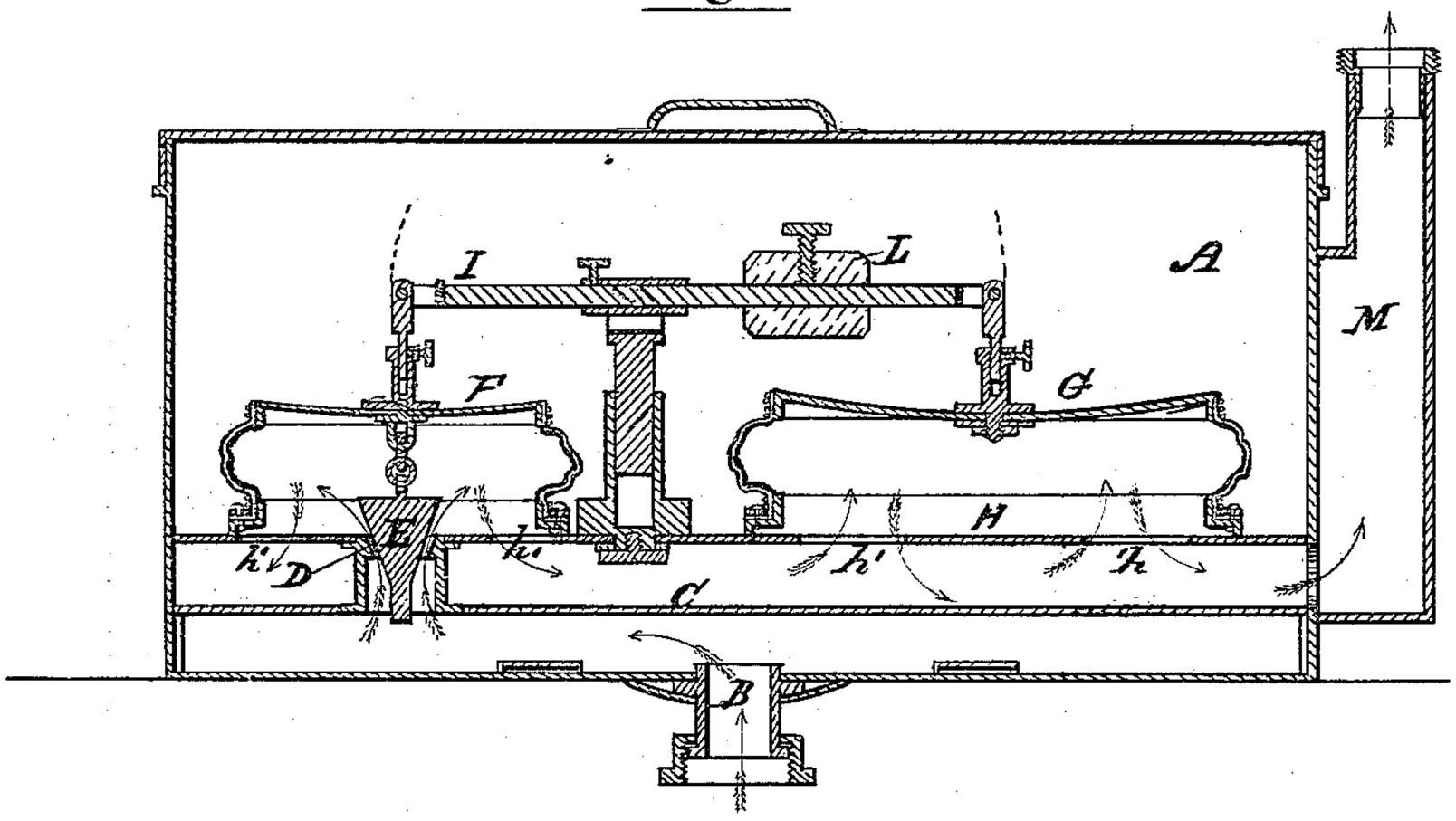
G. M. ELDRIDGE.

Gas Regulator.

No. 125,942. Patented April 23, 1872.

Fig. 1.



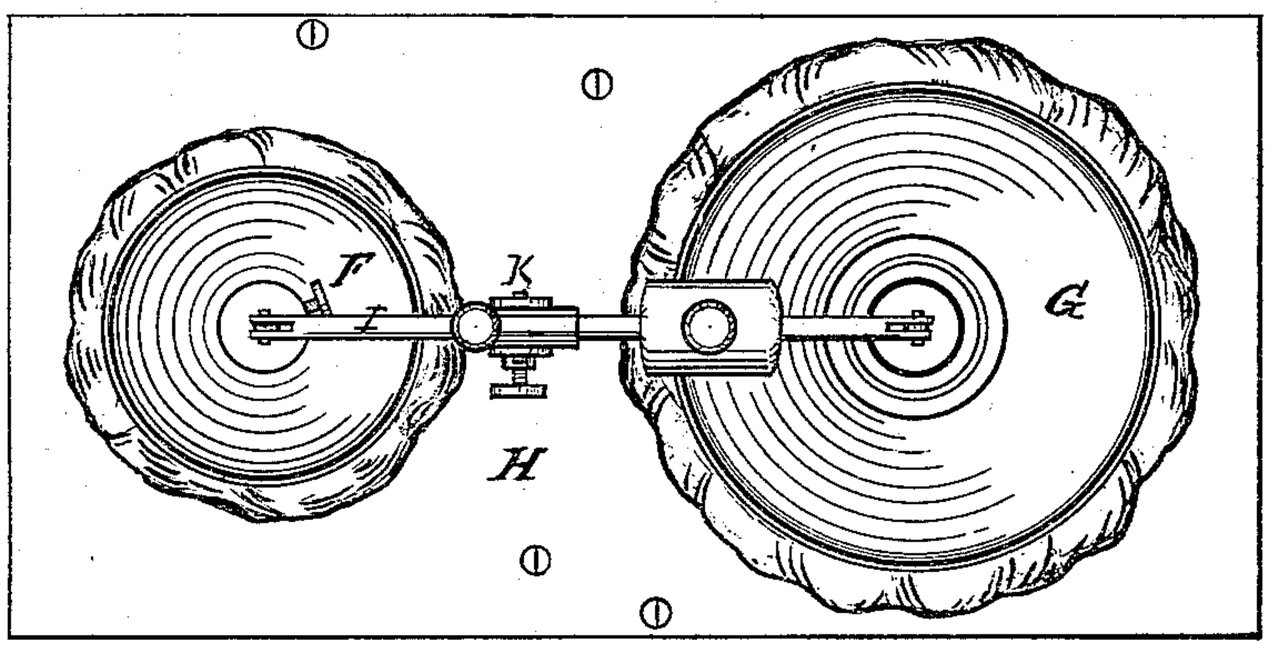


Fig. 2.

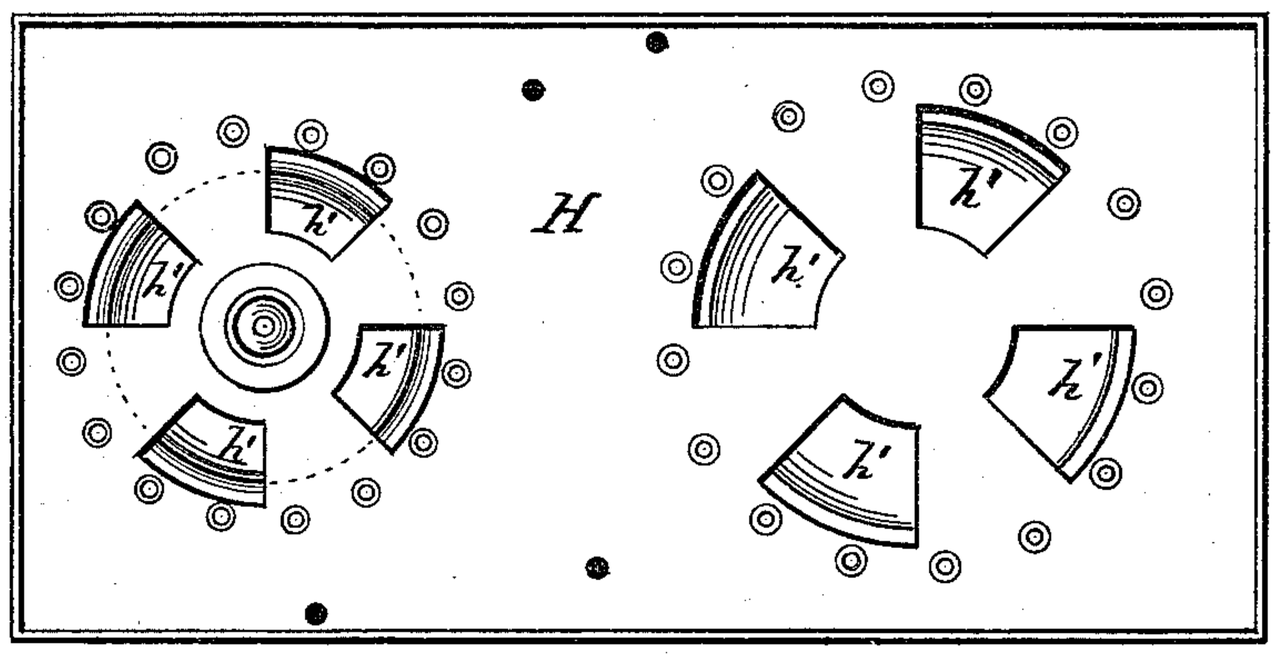


Fig. 3.

WITNESSES:

Wm Hobart Gale
Wm G Garrigues

INVENTOR:

G. Morgan Eldridge

AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS.)

UNITED STATES PATENT OFFICE.

G. MORGAN ELDRIDGE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF TWO-THIRDS OF HIS RIGHT TO THOMAS K. BROWN AND WILLIAM WALLACE GOODWIN, OF SAME PLACE.

IMPROVEMENT IN GAS-REGULATORS.

Specification forming part of Letters Patent No. 125,942, dated April 23, 1872.

I, G. MORGAN ELDRIDGE, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain Improvements in Gas-Regulators, of which the following is a specification:

Nature and Objects of the Invention.

My invention relates to the combination of two diaphragms or disks attached to the plate by bands of flexible material of different sizes, coupled together and acting against each other with a valve in such a manner that the gas or other fluid passing through shall control the operation of the valve, so as to secure a uniform and adjustable pressure at the place of discharge; the object of the invention being to maintain a pressure at the outlet of the fluid equable and subject to no variation, whether the outlet be increased or diminished, and unaffected by change in the pressure at the main. The apparatus described is designed for gas, but may be used for steam or water, or heavier pressures, by substituting for the light diaphragms or disks described pistons or other devices capable of resisting pressure.

Description of the Accompanying Drawing.

Figure 1 is a side elevation of a machine embodying my invention. Fig. 2 is a top view of the machine. Fig. 3 is a bottom view of the plate to which the disks are attached, showing the valve seat and the openings through which the gas passes.

General Description.

A is the frame or case of the machine which incloses the whole, open at the top, on which may be put a lid. B is the inlet-pipe. C is a partition preventing the escape of the gas except through the valve-seat D, in which plays the valve E, which hangs by a link from the center of the small disk F. The valve is suspended freely, that it may with certainty seat itself. At the other end of the case is a larger disk, G. The plate H, to which the disks are attached has suitable perforations *h'*, through which the gas may pass freely, and at all times act with its full pressure upon the disks. Both these disks are so constructed as to be pressed upward by the force of the gas within the case, and from the center of each rises a post adjustable as to height by screws. These posts are connected by a lever, I, moving upon its fulcrum K, and having upon it the movable weight, L. M is the outlet-pipe.

The pressure of gas within the case above the valve being everywhere alike, and the area of the disk G being greater than that of F, as soon as there is any pressure within the case the disk F, with the valve E, will be forced down and the valve closed, unless prevented by the weight L, whose force is determinable by its position, and which is so adjusted as to hold the valve slightly open at the desired outlet pressure. If a large number of burners be opened, and thus the pressure be slightly reduced, the weight L raises the valve and admits a larger flow of gas, and any increase of pressure tends to close the valve and check the supply. Extra weights may be placed upon the disk G to obtain an increased pressure, if desired.

Claims.

I claim as my invention—

1. The combination of the disks F G, acting together and operating the valve E, substantially as and for the purpose hereinbefore set forth.

2. The case A, with the plates C H, constructed as described, in combination with the disks F G and the valve E, substantially as and for the purpose hereinbefore set forth.

G. MORGAN ELDRIDGE.

Witnesses:

WM. HOBART GALE,

M. G. GARRIGUES.