(No Model.)

L. BOORE.

GAS REGULATOR OR GOVERNOR.

No. 454,706. Patented June 23, 1891.

Fig. 1.

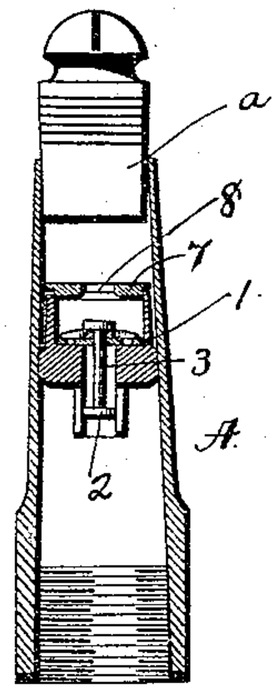


Fig. 2.

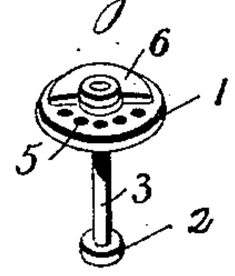


Fig. 3.

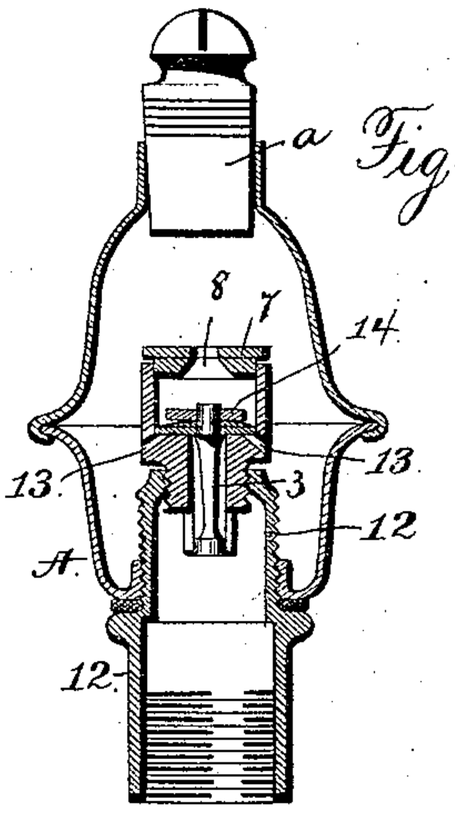


Fig. 4.

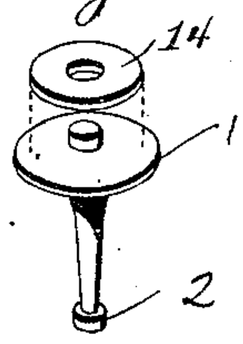


Fig. 5.

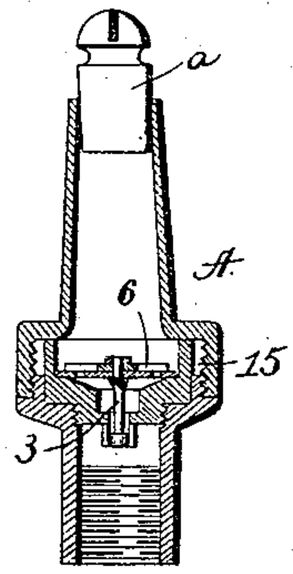


Fig. 6.

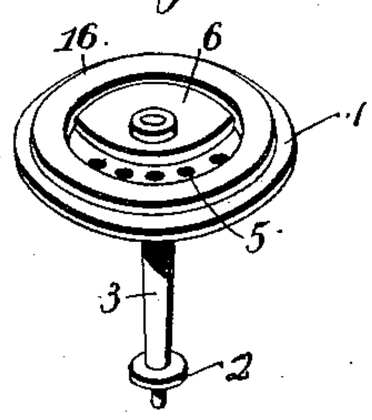


Fig. 7.

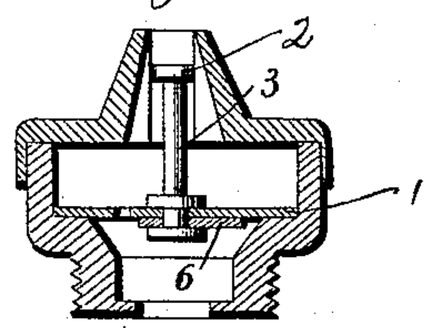
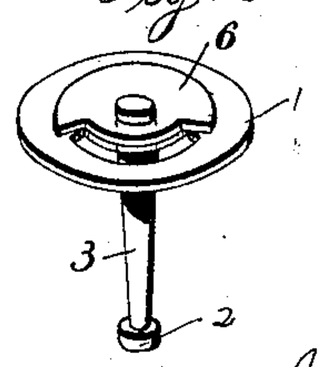


Fig. 8.



Witnesses:
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S. S. Nottingham

Inventor.
Lewis Boore.
By H. A. Seymour
his atty.

UNITED STATES PATENT OFFICE.

LEWIS BOORE, OF BUFFALO, NEW YORK.

GAS REGULATOR OR GOVERNOR.

SPECIFICATION forming part of Letters Patent No. 454,706, dated June 23, 1891.

Application filed August 14, 1890. Serial No. 361,953. (No model.)

To all whom it may concern:

Be it known that I, LEWIS BOORE, a resident of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Gas Regulators or Governors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in gas-regulating burners or governors, the object being to automatically maintain a uniform flame and consumption of gas under varying pressure caused by uneven surface of town or city or as a result of being placed at different altitudes in buildings; and it consists in two cylinders of suitable size, one above the other and of different diameters, the smaller one being slotted perpendicularly and the larger cylinder perforated or not at its side near the base, in combination with a cap when perforated or with a piston or compound piston having holes therein and means for closing one or more of the holes.

It further consists in certain novel features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of the common pillar, showing one form of gas regulator or governor therein. Fig. 2 is a detached view of the double piston. Fig. 3 is a sectional view through a modified form of pillar. Fig. 4 is a detached view of the governor-piston. Fig. 5 is a sectional view through still another style of governor; and Figs. 6, 7, and 8 are views of different forms of governors and pistons.

A represents the pillar, which, as indicated in Fig. 1, is the one most commonly used, it being provided with a lava tip *a* and having screw-threads at the base by which it is screwed to the burner. The governor or regulator is secured inside of this pillar, so that the gas passes through it on its way to the tip. This governor or regulator consists of a large and small cylinder, the two being integral with each other and the larger one preferably located above the smaller one. The smaller one is split or slotted longitudinally, as shown in Fig. 1. A large and small piston 1 and 2 is located in the larger and smaller cylinder, respectively, and these are connected at suitable distances apart by means of a stem 3. The larger piston I term the "actuating-piston," because it is the seat of power of upward movement of the combined pistons, the weight of the pistons by gravity causing downward movement. The smaller piston I term the "equalizing" or "cut-off" piston, it being neutral as far as actuating power is concerned, for the reason that the gas strikes edgewise through the slots in the smaller cylinder in which it moves, and is the medium of the adjustment of desired or economic pressure in chamber of burner before combustion. The larger or actuating piston is provided with several perforations 5 5 and has a disk or segment 6 loosely mounted on the protruding end of the stem, which is adapted to be swung around to different positions to close one or more of the holes to regulate the amount of gas which passes to the tip to be consumed. These holes are supposed to allow one foot of gas to pass per hour and as many feet as holes are left open. In this way the amount of gas is regulated, but the pressure is made uniform at the jet by the action of the pistons. It may be mentioned in this connection that the working principles of the pistons, when the governor or regulator is in operation, is like that of a hydrometer, the only difference being in the substance passed. In both instances the discharge is made uniform by the rising and falling of the pistons. The normal position of the pistons is down on a suitable rest near the bottom of the large cylinder. The governor is opened to pass the desired-sized flame under the lowest pressure that the supply may be furnished to the consumer—namely, one-inch pressure. As the pressure varies the pistons rise and fall in the cylinders and in this manner the pressure is regulated. The larger cylinder is provided with a cap or plug 7, by means of which it is closed, and this cap has a central hole 8 therein for the escape of gas. On its exterior this larger cylinder is provided with an annular rim adapted to fit the inner wall of the pillar and hold the governor or regulator in place.

In the modification shown in Fig. 3 a slightly-different pillar as well as governor is employed.

This pillar has an enlarged center and the lower end is in the nature of a removable section adapted to be screwed in and out of the other section, and the governor or gas-regulator screws into the upper end of this lower section 12. This governor is very similar to the other one except that instead of holes being formed in the large piston, holes 13 13 are formed at points diametrically opposite each other near the base of the larger cylinder. In this style of governor a small disk 14 is placed loosely on the protruding end of the stem.

In the modification shown in Fig. 5 the burner is also made in two sections screwed together at or near the center, where an enlarged chamber 15 is formed. The governor or gas-regulator in this instance is screwed into the lower section. This governor is in all essentials like the first one described, except that it has no cap.

In the modification shown in Fig. 6 the only essential difference is that a rim 16 is formed on the larger piston for the disk or segment which opens or closes the holes to work in.

In the form shown in Fig. 7 the pistons are reversed—that is, the smaller one is the upper one and the larger one is the lower one. The stem and smaller piston extend between guides in the cap, and in place of the smaller cylinder used in the other construction a cone is employed, the same having an opening therein for the passage of gas.

In Fig. 8 the large piston has a curved slot therein in lieu of the holes, and a segment or disk is arranged, as before, to regulate the size of this slot.

It is evident that other slight changes might be resorted to in the form and construction and arrangement of the several parts without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the exact construction herein set forth; but,

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a gas-burner, of a governor consisting of a large and small cylinder adapted to be secured in the burner, and piston-heads connected together by a stem, said stem protruding through the larger piston and a disk mounted on this protruding end, and said piston-heads fitted to the inner walls of the cylinders and constructed to move up and down therein with the varying pressure of gas, substantially as set forth.

2. A governor or regulator constructed to fit inside of a gas-burner, the same comprising a pair of cylinders of different sizes, a pair of connected pistons fitted, respectively, to the inner walls of the cylinders and adapted to move up and down therein with the varying pressure of the gas, one of said pistons having an opening or openings therein, and means for regulating the size of the opening or openings, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

LEWIS BOORE.

Witnesses:
BERNARD KENNEY,
P. J. WEIMAR.