G. A. HYDE.

GAS GOVERNOR.

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1,040,545. Patented Oct. 8, 1912.

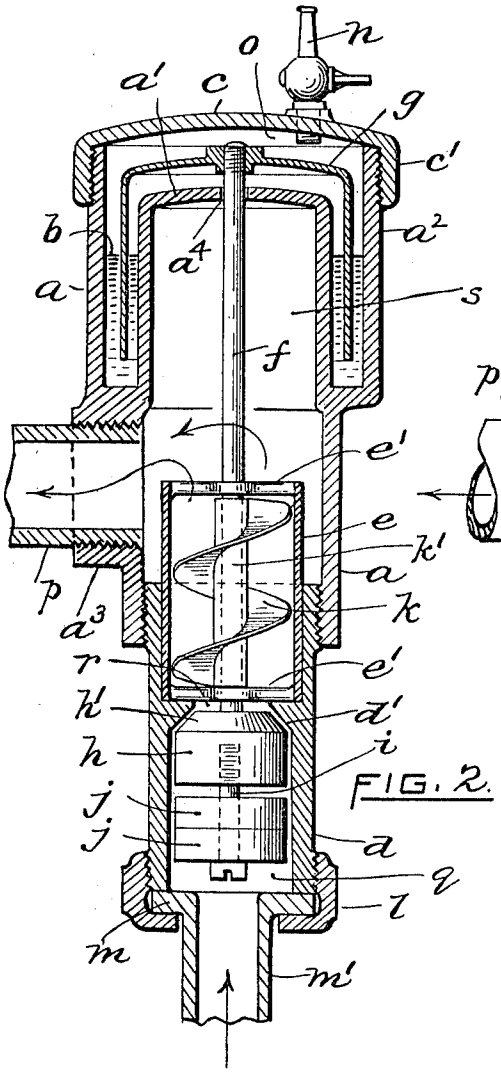

FIG. 2.

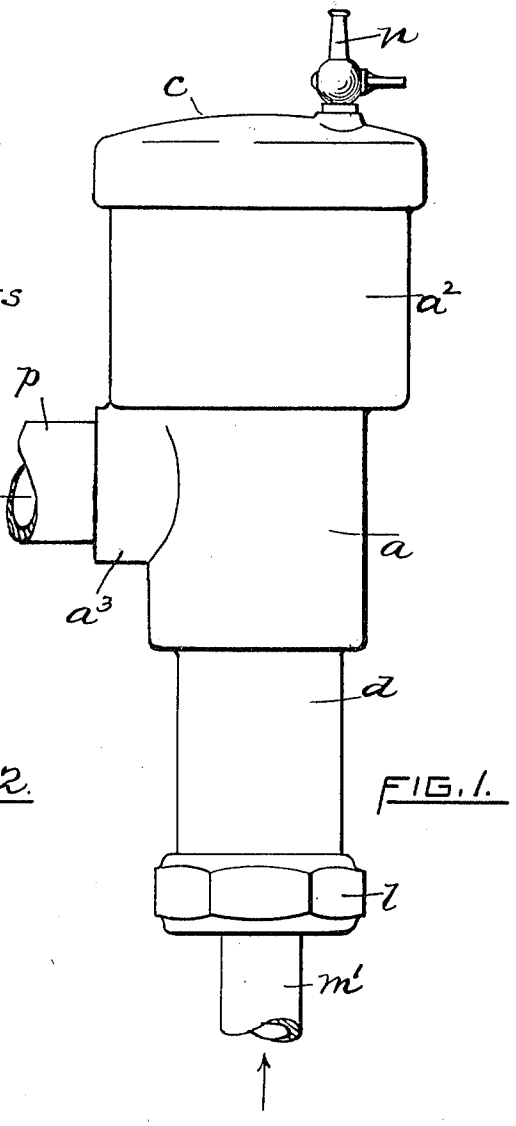

FIG. 1.

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GAS-GOVERNOR.

1,040,545. Specification of Letters Patent. Patented Oct. 8, 1912.

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To all whom it may concern:

Be it known that I, GEORGE A. HYDE, a citizen of the United States, residing at Lonsdale, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Gas-Governors, of which the following is a specification.

My invention relates to a device for regulating the force of gas supply as it comes from a meter; and the object in view is to provide a device of this character with means which is operated automatically by the ever varying initial or high pressure supply, to cause said initial or high pressure supply to become reduced to a proper degree of low pressure and thereby to obtain a perfect combustion at the burners or points of consumption for either illuminating or heating purposes.

My invention consists of the novel construction, arrangement, and combination of parts, as hereinafter described and claimed.

In the accompanying sheet of drawings, Figure 1 represents a side elevation of my improved gas governor, and, Fig. 2 is a sectional view of the device, as constructed in accordance with my invention.

Like reference characters indicate like parts.

My improved gas governor has a casting in the form of a tubular body a whose top is closed, as at a^1, and a cup-shaped receptacle a^2 which surrounds and extends from the middle portion of said body to a point above its said closed top.

The receptacle a^2, of the body a, is designed to contain a quantity of mercury, as b. A cap c has an annular flange c^1 which is interiorly screw-threaded to engage an exterior screw-thread formed on the upper portion of the receptacle a^2. Beneath the receptacle a^2 the body a has a threaded hub a^3 to engage the end of the gas discharge-pipe p which leads to the burners.

The bottom of the body a is interiorly screw-threaded to engage the threaded end of a tubular member d. This member d has, at its middle part, a circular beveled valve-seat d^1, and above this seat is mounted a thin cylinder e which fits in the upper portion of the bore of the member d and of a height to have its top face come in a plane with the center of the gas discharge-pipe p.

Each end of the cylinder e has an integral bar, as at e^1, e^1, extending diametrically across said cylinder and each bar is provided with a central opening to loosely receive therethrough a valve-rod f. This rod f passes loosely through an opening a^4 formed in the closed top of the body a, and on the upper end of said rod is made fast a bell g whose sides are submerged in the mercury b. A circular valve h is made fast on the bottom of the rod f, and said valve has a bevel face h^1 designed to come in contact with the seat d^1 of the member d. The valve h loosely fits within the lower bore of the member d and is provided with a depending screw i to act as a support for disk-weights j, j. Within the cylinder e is a spiral fan k having a central integral hub k^1 loosely surrounding the valve-rod f and of a length to extend between the bars e^1, e^1 of said cylinder. The lower end of the member d is exteriorly screw-threaded to engage thereby with a coupling nut l, for securing the flange m of the gas inlet-pipe m^1 to the device.

A pet cock n is mounted on the cap c to permit the escape of whatever gas there may be within the chamber o surrounding the bell g prior to operation of the device.

Assuming the device to be in operation: The high pressure gas comes from the meter through the inlet-pipe m^1 thence through the valve-chamber q, through the port r, thence against the spiral fan k and causing the latter to revolve, but only at a speed relatively to the varying degree of existing high pressure, thus when the gas has passed from the fan into the chamber s, the pressure will have become reduced to a proper low degree to pass through the discharge-pipe p to the burners or points of consumption.

As the pressure from the meter is constantly varying the fan k acts as a governor to control this pressure, by simply revolving fast or slow, in accordance to the amount of pressure passing through said fan. This fan k also acts as a mixer to agitate and enrich the volume of gas from the meter and bring said gas to a reduced state for a perfect combustion at the burners.

Whenever the low pressure in the chamber s reaches a high degree it passes through the opening a^4 and causes the bell g to rise and thereby closes the valve h upon its seat.

The mercury *b* acts as a seal to prevent any excessive pressure of gas from the opening a^4 to surround the exterior of the bell *g*.

The weights *j*, *j* aid to keep the gas pressure steady and at the same time prevent chattering of the valve upon its seat.

By my construction and arrangement of parts I provide a device that is very effective for the purpose intended, and at the same time a device that is simple, durable, and not liable to get out of order.

What I claim and desire to secure by Letters-Patent, is—

1. In a device of the character described, the combination of a vertical tubular casing provided with a side outlet and having a top, a cup-shaped receptacle carried by said casing adapted to contain mercury, a cap secured on the receptacle and provided with a vent, a vertical tubular member having its upper end secured in the lower end of said casing, said member having a beveled valve-seat surrounding a port, a valve rod extending loosely through the top of said casing and through the port in said tubular member, a bell secured on the upper end of said rod between the cap and the top of the casing and having its sides submerged in the mercury in said receptacle, a valve secured on the lower end of said rod and having a beveled face to contact with said beveled valve seat, a weight suspended from said valve, a gas inlet pipe in open communication with the lower end of said tubular member, and pressure reducing means in said casing through which said rod extends.

2. In a device of the character described, the combination with a vertical tubular casing provided with an outlet intermediate its ends and having a top, a cup-shaped receptacle carried by and surrounding the upper portion of said casing and adapted to contain mercury, a cap secured on the receptacle and provided with a vent, a vertical tubular member having its upper end secured in the lower end of said casing and provided intermediate its ends with a valve seat surrounding a port in said member, a valve rod extending through the top of said casing and through the port in said tubular member, a bell secured on the upper end of said rod between the top of said casing and the cap on said receptacle and having its sides submerged in the mercury in said receptacle, a valve secured to the lower end of said rod to close the port in said tubular member, a weight suspended from the valve, and pressure reducing means arranged within the casing and tubular member above the port in the latter.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE A. HYDE.

Witnesses:
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JOSEPH A. DALTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."