E. G. OFELDT.

REGULATOR FOR GAS AND AIR MIXERS.

APPLICATION FILED JUNE 7, 1919.

1,316,504.

Patented Sept. 16, 1919.

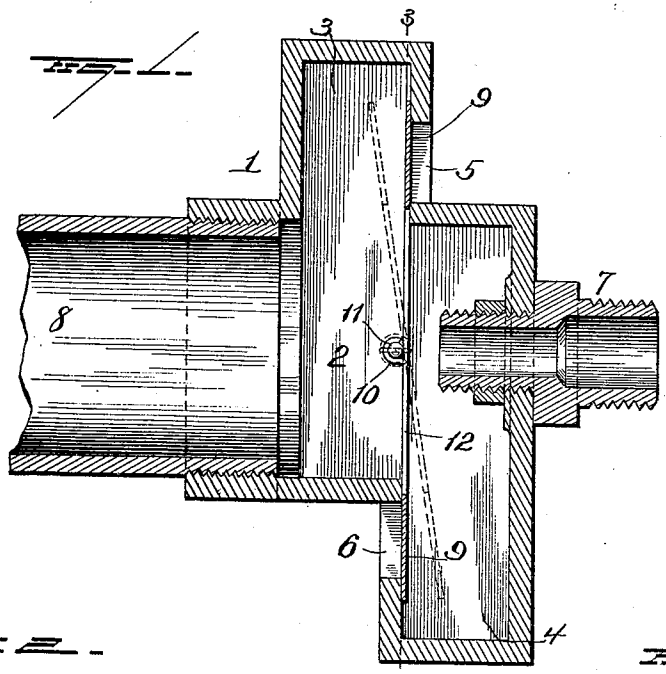


FIG. 2.

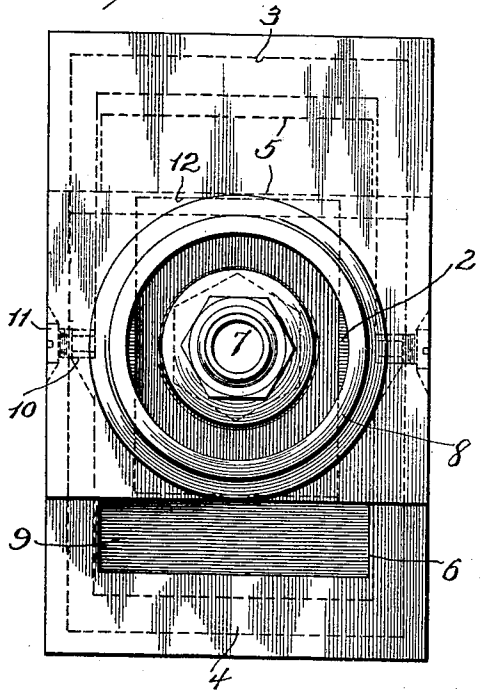
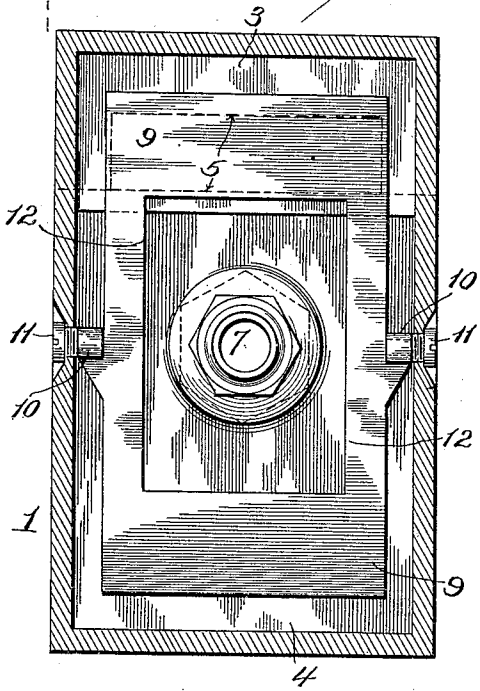


FIG. 3.



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REGULATOR FOR GAS AND AIR MIXERS.

1,316,504. Specification of Letters Patent. Patented Sept. 16, 1919.

Application filed June 7, 1919. Serial No. 302,527.

To all whom it may concern:

Be it known that I, ERNEST G. OFELDT, a citizen of the United States, and a resident of Nyack-on-the-Hudson, in the county of Rockland and State of New York, have invented certain new and useful Improvements in Regulators for Air and Gas Mixers; 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.

This invention relates to improvements in regulators for air and gas mixers, such as employed with burners, especially those of the Bunsen type,—one object of the invention being to provide simple and efficient automatically operable means whereby the inflow of air to the mixing chamber in proper proportion to the gas entering said chamber shall be insured.

With this and other objects in view, the invention consists in certain novel features of construction and combinations of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings; Figure 1 is a sectional view illustrating an embodiment of my invention; Fig. 2 is a view in elevation, and Fig. 3 is a sectional view on the line 3—3 of Fig. 1.

1 represents a casing providing a mixing chamber 2 and extensions 3 and 4 of said mixing chamber,—the extension 3 having a rearward port 5 and the extension 4 having a forward port 6.

A nipple 7 passes through the rear wall of the casing and is adapted for the reception of a gas pipe from a suitable source of supply. A burner mixing tube 8 is connected with the casing 1 in line with the gas supply inlet nipple 7 and communicates with the mixing chamber 2.

An overbalanced butterfly valve 9 is disposed within the casing between the gas inlet nipple 7 and the mixing tube 8 and is pivotally supported centrally between its ends. The valve 9 may be made of comparatively thin metal provided at diametrically opposite edges with bosses 10 which are offset to one side of the valve and mounted on screws or pintles 11 passing through walls of the casing 1. By providing the hinge or pivotal mounting for the butterfly valve so that it will be offset from one face of the valve at the center of the latter, said valve will be so overbalanced when disposed in an upright position that it will tend to turn in a direction toward the parts of the casing in which the ports 5 and 6 are located and to abut against these portions of the casing, thus normally closing said ports.

The valve 9 is provided with a central opening 12 to permit the gas to flow from the nipple 7 through said valve and through the mixing chamber to the mixing tube.

Normally, when no gas is flowing through the nipple 7, the slightly overbalanced butterfly valve 9 will be in position to close the air ports 5 and 6. When gas is permitted to flow from the nipple, through the valve and mixing chamber to the mixing tube, a suction will be created in the extensions of the mixing chamber, especially in upper extension 3, and operate to move the valve on its pivotal mounting and open the air ports 5 and 6,—thus admitting air to the mixing chamber and permitting some of the air so admitted to flow with the gas through the opening in the valve and other portions to pass into the mixing chamber in front of the valve. The degree of opening of the air valve will be in direct proportion to the quantity of gas passing through the device, and hence the admission of air in proper proportion to the gas passing to the burner will be automatically controlled by the automatic operation of said valve.

Various changes might be made in the details of construction of my invention without departing from the spirit thereof or limiting its scope and hence I do not wish to restrict myself to the precise details herein set forth.

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

1. In a device of the character described, the combination with a casing providing a mixing chamber and provided with a gas inlet and air inlet ports, and with a gas and air outlet, of an overbalanced butterfly valve pivotally mounted between its ends intermediate of the gas inlet and the gas and air outlet and between the air inlet ports and operable automatically to control the inflow of air through said air inlet ports in proportion to the gas entering through the gas inlet.

2. In a device of the character described, the combination with a casing providing a

mixing chamber and two air inlet ports, said casing having a gas inlet and a gas and air outlet opposite the gas inlet and communicating with the mixing chamber, of a butterfly valve pivotally mounted centrally between its ends within said casing between the gas inlet and the gas and air outlet and having a central opening in line with the gas inlet, the pivotal mounting of said valve being offset from one face thereof, and said valve being operable automatically to control the inflow of air through both of said air inlet ports.

3. In a device of the character described, the combination with a casing providing a mixing chamber having upper and lower extensions, said upper extension having a rearward air port and said lower extension having a forward air port, said casing provided with a gas inlet and a gas and air outlet opposite said gas inlet, of a butterfly valve located between the gas inlet and gas and air outlet and having an opening in line with both, and a pivotal mounting for said butterfly valve located centrally between the ends of said valve and offset from one face thereof, said valve being operable automatically to control the inflow of air through both of said air ports in proportion to the quantity of gas entering through said gas inlet.

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

ERNEST G. OFELDT.

Witnesses:
M. U. BRYANT,
WALTER LAKE.

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