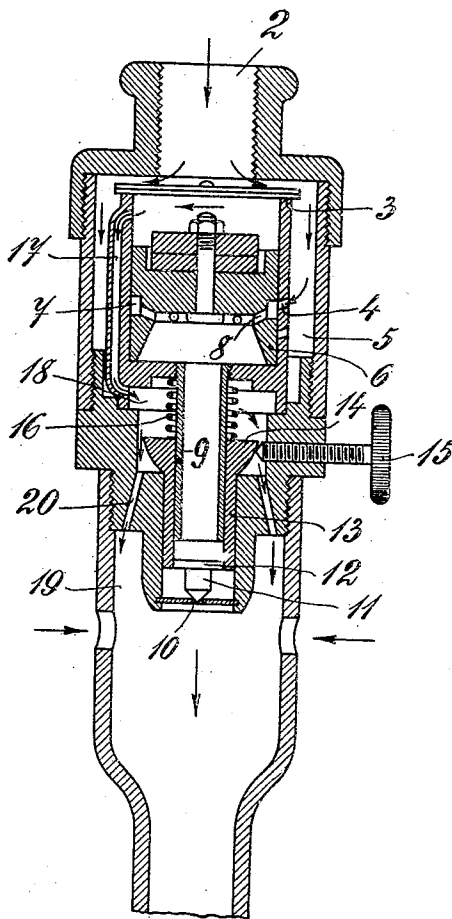


939,684.

M. GRAETZ.
GAS REGULATOR.
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Witnesses:
Alfred Lyons
Edith Lowenfeldt

Inventor:
Max Graetz.
by L. K. Böhm,
Attorney.

UNITED STATES PATENT OFFICE.

MAX GRAETZ, OF BERLIN, GERMANY.

GAS-REGULATOR.

939,684.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, MAX GRAETZ, a subject of the King of Prussia, and a resident of 92-93 Elsenstrasse, Berlin, Germany, have invented a certain new and useful Gas-Regulator, of which the following is a specification.

This invention relates to gas regulators and its object is to construct a regulator adapted to be placed within the burner tube. By means of this regulator it is possible to automatically control gas pressure so that changes of pressure in the gas mains do not affect the burner or interfere with its normal efficient working.

The invention is illustrated in one convenient form in the accompanying drawing which represents a burner tube in cross section with a form of regulator according to the present invention also shown in cross section arranged therein.

In carrying the invention into effect according to the form shown as applied to the burner tube of an inverted incandescent gas lamp, gas enters the tube by the opening at the end 2; within the tube there is arranged a casing 3. This casing is provided with ports 4 which lead from the annular space 5 to the interior of the casing. The casing 3 is circular in form and a regulating organ 6 is arranged therein. This regulating organ 6 is in the form of a piston movable within the cylinder. The piston 6 has a groove 7 which in the normal position of the piston illustrated leaves the ports 4 in the casing 3 open. From the groove 7 there lead ports 8 to the under side of the piston 6. The gas passing through the ports 8 to the under side of the piston 6 then passes through the tube 9 to the nozzle 10. The nozzle 10 is adapted to be regulated in a known manner by means of a pin 11 attached to a cross piece 12 carried by a tube 13. The tube 13 is slidable over the tube 9 and is provided at its upper end with a head 14. A screw 15 is adapted to engage the head 14 to move the tube 13 and pin 11 upward against the action of a spring 16.

From the upper end of the casing 3 above the piston 6 there leads a conduit 17 to the space 18 below the casing. This space is further connected to the mixing tube 19 of the burner by means of a conduit or port 20. It will be seen that the upper end of the casing above the piston 6 is by means of the conduit 17, space 18 and conduit 20 con-

nected to a point of lower pressure than that which exists below the piston 6 and within the tube 9. This difference in pressure is the pressure required to press the gas through the nozzle 10. In order to get efficient automatic control the pressure difference on opposite sides of the gas nozzle should remain constant. If the pressure exceeds a certain required amount the piston 6 rises, so that the lower wall of the groove 7 partly covers the ports 4 in the casing 3.

It has been found that with a gas regulator of this type exceedingly fine regulation is automatically obtained.

The invention is adapted to all burner tubes whether for inverted or ordinary incandescent gas. It is further wholly arranged within the burner tube and is exceedingly sensitive owing to the fact that the pressure on opposite sides of the nozzle is directly used for effecting the regulation of the piston 6 and therefore the control of the ports 4.

I claim:—

1. In combination with a burner tube, a ported casing, a movable piston within said casing controlling said ports, a nozzle, a fluid connection to said nozzle through said ported casing, said connection being also in communication with one side of said piston, and a connection from the space on the other side of said piston to a point external to the nozzle.

2. In combination with a burner tube, a ported casing in the path of the combustible, a piston movable within said casing to regulate said ports, said piston normally leaving said ports open to admit fluid to its under side, and a conduit leading from the casing above the piston and opening into the burner mixing chamber.

3. In combination with a burner tube, a ported casing in the path of the combustible, a grooved piston within said casing having its groove normally opposite the port in said casing and provided with a port leading from said groove to the under side of the piston, and a conduit leading from the casing above the piston and opening into the burner mixing chamber.

4. In combination with a burner tube, a ported casing in the path of the combustible, a grooved piston having its groove normally opposite the port in said casing and provided with a port leading from said groove to the under side of the piston, a nozzle through

which the fluid flows from the under side of
said piston and a conduit leading from the
upper side of said casing above the piston
and opening into the burner tube past said
5 nozzle.

5. In combination with a burner tube, a
nozzle, a casing, a movable member within
said casing and pressed upon by the fluid
passing to said nozzle, said member being
10 arranged to regulate the opening for the
passage of the fluid and a conduit leading

from the said casing at the opposite side of
the movable member to that which is pressed
by the fluid passing to the nozzle and open-
ing into the burner tube past the nozzle. 15

Signed at Berlin, Germany this 13th day
of March 1909.

MAX GRAETZ.

Witnesses:

WOLDEMAR HAUPT,
HENRY HASPER.