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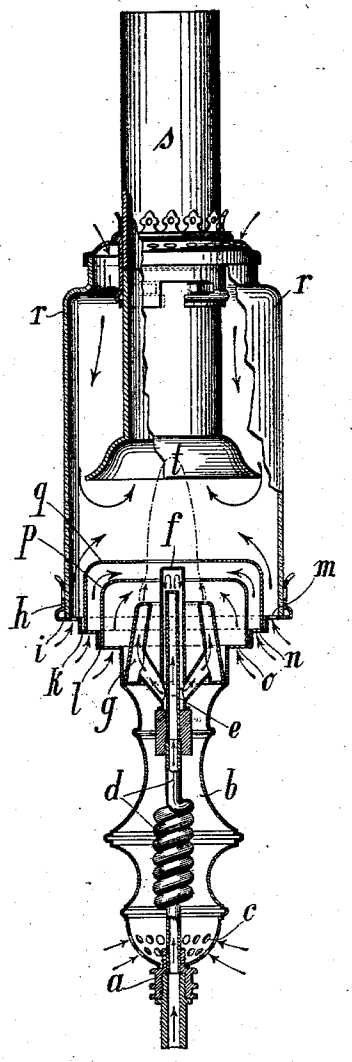
J. GUIMARÃES.

GAS BURNER.

APPLICATION FILED JUNE 3, 1903.

NO MODEL.



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No. 740,645. Patented October 3, 1903.

UNITED STATES PATENT OFFICE.

JULIO GUIMARÃES, OF HAMBURG, GERMANY.

GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 740,645, dated October 6, 1903.

Application filed June 3, 1903. Serial No. 159,938. (No model.)

To all whom it may concern:

Be it known that I, JULIO GUIMARÃES, merchant, a citizen of Argentina, and a resident of 16 Admiralitatsstrasse, Hamburg, Germany, have invented certain new and useful Improvements in or Relating to Gas-Burners; 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to an improved gas-burner which gives a flame similar to that produced by the incandescent mantle, only superior in illuminating power.

The accompanying drawing illustrates a construction of a burner according to this invention in longitudinal section.

A pipe *a* supplies gas to the burner, the supply-pipe being surrounded by a shell or casing *b*, into which air is admitted through perforations *c*, arranged at the bottom.

To the feed-pipe is connected a coiled pipe *d*, which terminates in a pipe *e*, perforated at the top above the burner-ring. A cap-tube *f*, closed at the top, is arranged over the top of the pipe *e* and supports a ring burner *g*. The casing *b* terminates in a cylindrical gallery *h*, it being increased to the required diameter by means of suitable step-shaped or similar enlargements *i k l*, provided with air-inlet holes *m n o*.

On the step *l* is placed a cap or inverted cup *p* and on the step *k* a second cap *q*. The top step *i* supports a glass cylinder *r*, in which depends a chimney provided at the bottom with a bell-mouth *t*, which assists to cause the flame to assume the shape of an "incandescent" flame.

The working of the device is as follows: Gas from the main enters the feed-pipe *a* and passes through the coil *d* into the upper pipe *e*, strikes the under side of the top of the cap *f*, and returns downward outside the tube *e* and passes up two branch pipes to the burner *g*. The flame is caused to assume a round conical outer shape by the openings in the caps *p* and *q*, its blue portion being thus covered. For the purpose of effecting complete combustion air is not only admitted from below through the perforations *c*, but also through the orifices *m*, *n*, and *o* in the steps *i k l*. The flame is compressed and condensed by the air entering between the step and the burner as well as between these steps and the chimney. The air is strongly heated, so that an intensely-white flame is obtained without any mantle.

Of special importance for the whole apparatus is the arrangement of the coiled pipe which contributes to a considerable heating of the gas, which is increased by the fact that the gas is forced to pass between the two pipes *e* and *f* before it reaches the burner, whereby also a reduction of the gas-pressure is effected.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent of the United States of America, is—

1. A gas-burner comprising a supply-pipe, a concentrically-arranged pipe covering the same, a burner surrounding said pipe and communicating with the lower part of the covering-pipe, and centrally-apertured caps surrounding said burner, substantially as and for the purpose specified.

2. A gas-burner comprising a supply-pipe having a perforated top, a concentrically-arranged pipe covering the same and closed at one end, a burner surrounding said concentric pipe, caps provided with central openings surrounding said burner, and air-inlets below said caps, substantially as described.

3. A gas-burner comprising a supply-pipe having a perforated top, a concentrically-arranged covering-pipe surrounding the supply-pipe and closed at the top, a ring burner surrounding the concentric pipes and communicating with the lower part of the covering-pipe, inverted caps having central openings surrounding said burner, and air-inlets below the caps, substantially as and for the purpose specified.

4. In a gas-burner, the combination with a supply-pipe, of a covering-pipe concentrically surrounding the upper portion of the supply-pipe and closed at the top, a burner surrounding the concentric pipes, a passage connecting the base of the burner with the base of the covering-pipe, perforated concentric caps surrounding the burner, and air-inlets be-

tween said caps and burner, substantially as described.

5. In a gas-burner, the combination with a supply-pipe having a perforated end, of a closed covering-pipe concentrically surrounding the upper portion of said supply-pipe, a converging ring burner surrounding both pipes, diverging connecting-passages leading from the base of the covering-pipe to the base of the burner, a surrounding casing terminating in a plurality of perforated supports, and centrally-apertured caps mounted on said supports and surrounding the burner, substantially as described.

6. In a gas-burner, the combination with a supply-pipe having a perforated end, of a closed covering-pipe concentrically surrounding the upper portion of said pipe, a converging ring burner surrounding said pipes, diverging connecting-passages leading from the base of the covering-pipe to the base of the burner, a casing surrounding the burner, a plurality of perforated steps supported by said casing, concentric caps having central apertures formed therein mounted on said steps and surrounding said burner, an inclosing casing surrounding the caps, and a chimney supported by said inclosing casing, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JULIO GUIMARÃES.

Witnesses:
E. H. L. MUMMENHOFF,
OTTO W. HELLMRICH.