No. 786,292. PATENTED APR. 4, 1905.

H. S. HUMPHREY.

FLASH PILOT FOR GAS BURNERS.

APPLICATION FILED JULY 22, 1904.

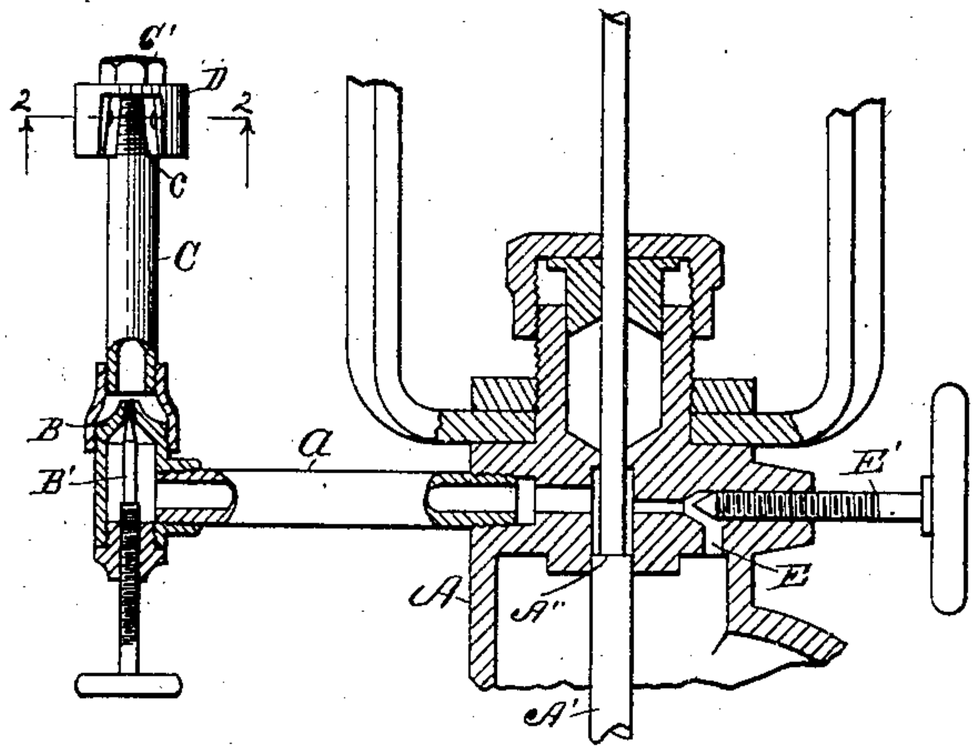

Fig. 1.

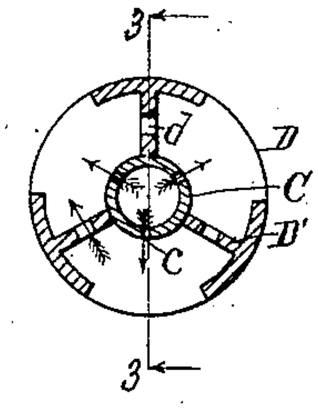

Fig. 2.

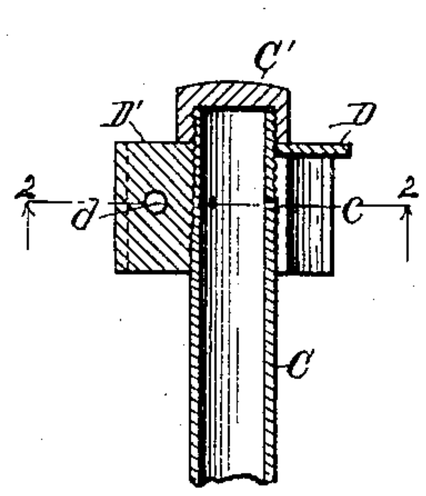

Fig. 3.

Witnesses:
Ethel A. Teller
Otis R. Earl

Inventor,
Herbert S. Humphrey
By Fred L. Chappell
Att'y.

PHOTO-LITHOGRAPHED BY SACKETT & WILHELMS LITHO. & PTG. CO. NEW YORK.

No. 786,292. Patented April 4, 1905.

UNITED STATES PATENT OFFICE.

HERBERT S. HUMPHREY, OF KALAMAZOO, MICHIGAN, ASSIGNOR TO HUMPHREY COMPANY, OF KALAMAZOO, MICHIGAN.

FLASH-PILOT FOR GAS-BURNERS.

SPECIFICATION forming part of Letters Patent No. 786,292, dated April 4, 1905.

Application filed July 22, 1904. Serial No. 217,619.

To all whom it may concern:

Be it known that I, HERBERT S. HUMPHREY, a citizen of the United States, residing at the city of Kalamazoo, county of Kalamazoo, State of Michigan, have invented certain new and useful Improvements in Flash-Pilots for Gas-Burners, of which the following is a specification.

This invention relates to improvements in pilots for gas-burners. It is particularly adapted for use as a flash-pilot for cluster gas-burners such as are used in instantaneous water-heaters, although it is very desirable for use in other relations.

The objects of this invention are, first, to provide an improved flash-pilot for gas-burners, which although the jets in their normal condition may be left very small is not likely to become extinguished by drafts of air; second, to provide an improved flash-pilot for gas-burners embodying the above advantages which is simple and economical in structure and easy to adjust.

Further objects and objects relating to structural details will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined, and pointed out in the claims.

A structure embodying the features of my invention is clearly illustrated in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a detail elevation view of a structure embodying the features of my invention, partially in section to show the arrangement of the valve parts. Fig. 2 is an enlarged transverse sectional view taken on a line corresponding to line 2 2 of Figs. 1 and 3, showing the details of the pilot-burner head. Fig. 3 is a detail sectional view taken on a line corresponding to line 3 3 of Fig. 2.

In the drawings the sectional views are taken looking in the direction of the little arrows at the ends of the section-lines, and similar letters of reference refer to similar parts throughout the several views.

Referring to the drawings, A represents the gas-valve casing for the main burners in connection with which the pilot-burner is used. The structure illustrated is that of my automatic gas and water valve illustrated in my application for Letters Patent, filed the 25th day of April, 1904, Serial No. 204,776. The main valve-stem A′ serves also as a valve for the pilot-burner. This is preferably accomplished by reducing the upper portion A″ of the stem, so that when the stem is in its normal position, as shown in Fig. 1, it cuts off the passage *a*. When the valve-stem A′ is forced downwardly to open the main burner-valve, the gas is admitted to the pilot-burner to flash the same. A by-pass E is provided to keep the pilot normally ignited, and a needle-valve E′ is provided to control this by-pass.

The tube-like pilot-burner C is mounted upon the nozzle B, to which the delivery-pipe *a* is connected. A needle-valve B′ is provided for controlling this nozzle. The burner-tube C is screw-threaded on its upper end to receive the hood D, which has openings in its sides adapted to be adjusted opposite the laterally-opening jet-orifices *c* of the burner. A cap C′ is provided for the upper end of the burner, and this cap also serves as a lock-nut for holding the hood D in its adjusted position. The hood D is provided with a radial partition D′ between each pair of jet-orifices *c*. These partitions are perforated at *d*, so that in case one of the jets should be extinguished by a current of air or the like it is readily ignited from the adjoining jets. With the parts thus arranged the jet-orifices *c* are so protected that although normally only a very small jet is left burning they are not likely to become extinguished, and should one be extinguished it is relighted from the remaining jets.

In operation the actuation of the main-burner valve-stem A′ turns on an additional supply of gas to the pilot, which causes the jets to flash or shoot out and ignite the main burners. When the supply of gas to the main burners is again cut off, the pilot-light resumes its normal condition.

As before remarked, the jets of the pilot-burner may be very small, and at the same time they are not likely to become extinguished, no matter what the direction of the air-current, whether it be up or down or lateral.

I have illustrated and described my improved pilot-light device in the form preferred by me on account of its structural simplicity and economy and the ease with which it may be assembled and adjusted. I am, however, aware that it is capable of considerable structural variation without departing from my invention.

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

1. The combination with a cluster gas-burner, of a tube-like pilot-burner having laterally-opening jet-orifices; a hood therefor having radial partitions between said jet-orifices, said partitions having perforations therethrough, said hood being screw-threaded upon said pilot-burner; a delivery-nozzle upon which said pilot-burner is mounted; a needle-valve for said delivery-nozzle; a main burner-valve adapted to serve as a valve for said pilot-burner, whereby the same is flashed when the main valve is operated; a by-pass for said pilot-burner; all coacting for the purpose specified.

2. The combination with a cluster gas-burner, of a tube-like pilot-burner having laterally-opening jet-orifices; a hood therefor having radial partitions between said jet-orifices, said partitions having perforations therethrough, said hood being screw-threaded upon said pilot-burner; a main burner-valve adapted to serve as a valve for said pilot-burner, whereby the same is flashed when the main valve is operated; and a by-pass for said pilot-burner, all coacting for the purpose specified.

3. The combination with a cluster gas-burner, of a tube-like pilot-burner having laterally-opening jet-orifices; a hood therefor having radial partitions between said jet-orifices, said partitions having perforations therethrough; a delivery-nozzle upon which said pilot-burner is mounted; a needle-valve for said delivery-nozzle; a valve for said pilot-burner; and a by-pass therefor, all coacting for the purpose specified.

4. The combination with a cluster gas-burner, of a tube-like pilot-burner having laterally-opening jet-orifices; a hood therefor having radial partitions between said jet-orifices, said partitions having perforations therethrough; a valve for said pilot-burner; and a by-pass therefor, all coacting for the purpose specified.

5. The combination with a gas-burner, of a pilot-burner having laterally-opening jet-orifices; a hood therefor having radial partitions between said jet-orifices, said partitions having perforations therethrough; a main burner-valve, adapted to serve as a valve for said pilot-burner, whereby said pilot is flashed when the main valve is actuated; and a by-pass for said pilot-burner, for the purpose specified.

6. The combination with a gas-burner of a pilot-burner having laterally-opening jet-orifices; a hood therefor having radial partitions between said jet-orifices, said partitions having perforations therethrough; and a main burner-valve adapted to serve as a valve for said pilot-burner, whereby said pilot is flashed when the said main valve is actuated, for the purpose specified.

7. The combination with a gas-burner of a pilot-burner having laterally-opening jet-orifices; a hood therefor having radial partitions between said jet-orifices, said partitions having perforations therethrough; a valve for said pilot-burner; and a by-pass therefor, for the purpose specified.

8. The combination with a gas-burner, of a pilot-burner, having a plurality of jet-orifices; a hood therefor, having radial partitions between said jet-orifices, said partitions having perforations therethrough; and a valve for said pilot-burner, for the purpose specified.

9. The combination with a gas-burner, of a pilot-burner, having a plurality of jet-orifices; and a hood therefor, having radial partitions between said jet-orifices, said partitions having perforations therethrough, for the purpose specified.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

HERBERT S. HUMPHREY.

Witnesses:

ETHEL A. TELLER,

OTIS A. EARL.