No. 681,018. Patented Aug. 20, 1901.

C. D. CROCKER.

PILOT LIGHT.

(Application filed Apr. 20, 1901.)

(No Model.)

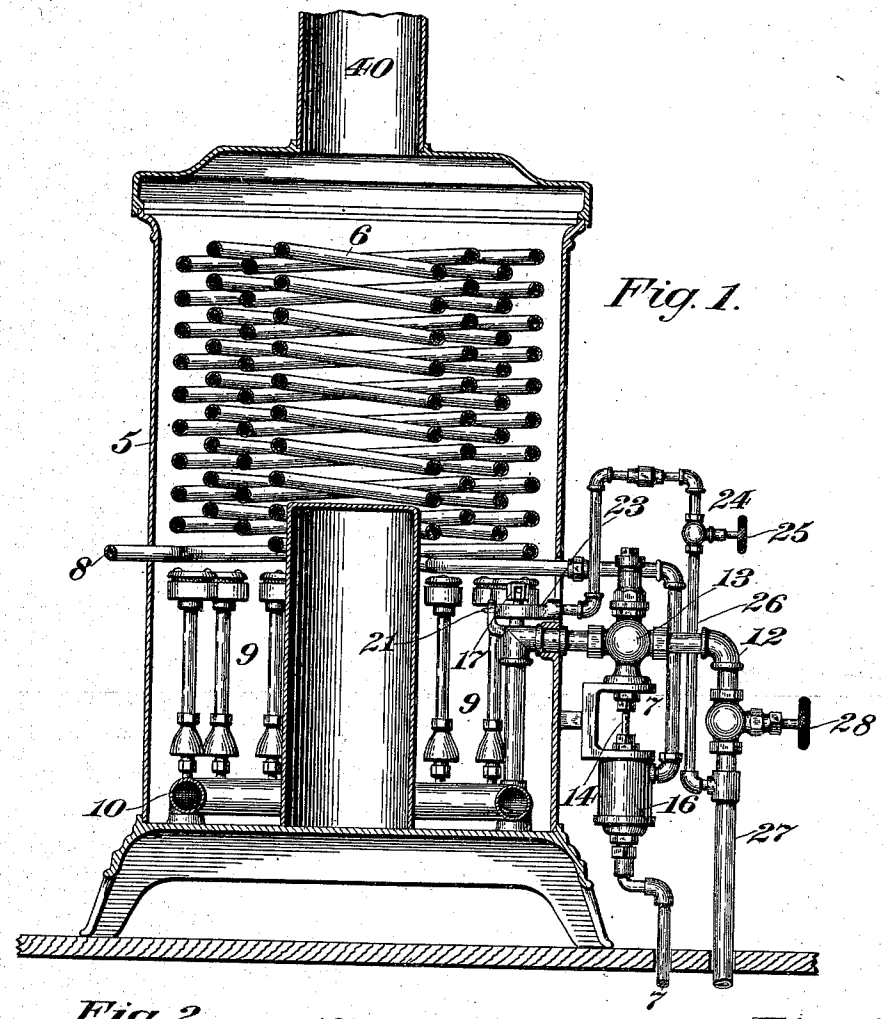


Fig. 1.

Fig. 2.

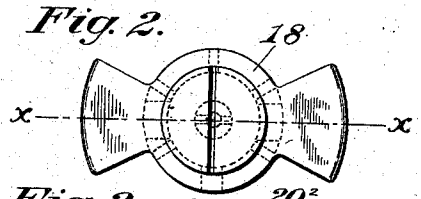


Fig. 3.

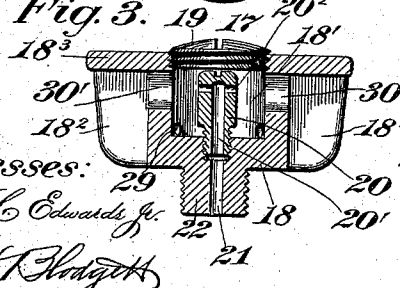


Fig. 4.

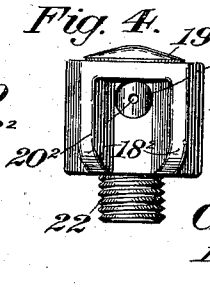
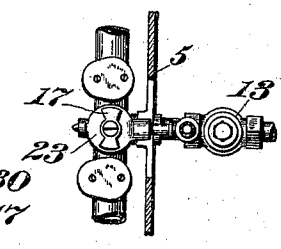


Fig. 5.



Witnesses:

John L. Edwards Jr.

Wm. H. Hodgett

Inventor:

Charles D. Crocker.

By his Attorney,

F. H. Richards.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES D. CROCKER, OF HARTFORD, CONNECTICUT.

PILOT-LIGHT.

SPECIFICATION forming part of Letters Patent No. 681,018, dated August 20, 1901.

Application filed April 20, 1901. Serial No. 56,715. (No model.)

To all whom it may concern:

Be it known that I, CHARLES D. CROCKER, a citizen of the United States, residing in Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Pilot-Lights, of which the following is a specification.

My invention relates to what are known as "pilot-lights," in which it is desired to keep a small supply of gas constantly burning, which will afford an igniting-flame for combustible fluid employed for heating water or for other purposes when said fluid is turned on. Heretofore much trouble has been caused in lights of this character by the clogging of the openings through which the gas passes and also by the extinguishment of the flame, due to drafts or the failure of the device to receive the supply, and in many of the old forms of lights provision has not been made for a free supply of air, and consequently the gas is imperfectly consumed and burns with a yellow flame.

Primarily the object of my invention is the provision of an improved pilot-light of such construction that the defects above set forth are obviated and one in which the necessary supply of air to afford perfect combustion may constantly be maintained, the result being a light burning with a clear blue flame.

A further object of the invention is the provision of a burner having a chamber in which the light may constantly be maintained, said chamber having ports or openings for the admission of air and other ports or openings through which the flame passes.

A further object of the invention is the provision of a burner having a chamber, a tip having lateral openings for the passage of gas into said chamber, openings in the wall of the chamber for the admission of air and the passage of flame from said chamber, and a hood or hoods covering and protecting the flame issuing from the tip.

In the accompanying drawings, Figure 1 is a longitudinal vertical section of a form of apparatus in which my improvement may be utilized. Fig. 2 is a plan view of the invention. Fig. 3 is a longitudinal vertical section on line *x x*, Fig. 2. Fig. 4 is an end view of the invention; and Fig. 5 is a detached plan view, partially in section, showing the location of the improvement with relation to the burners of the apparatus illustrated in Fig. 1.

Like numerals designate similar parts throughout the several views.

Referring to the drawings, the numeral 5 designates the casing of a water-heater in which are coils of pipe 6, through which water circulates by main connections 7 and an eduction-pipe 8. Below this coil is a series of gas-burners 9, communicating with a circular passage-way 10 and by connections 12 with a gas-supply pipe, and in a pipe of the connections 12 is located a valve-chamber 13, containing a valve having a stem 14, which works in a stuffing-box 15 of a cylinder 16, the construction being such that when the water is turned on the valve will be operated to permit a flow of gas to the burners 9 and when the water is turned off the valve will drop and prevent the further admission of gas to the burners.

The construction thus far described is well known and constitutes no part of my invention and is merely employed as illustrative of one common form of apparatus with which the invention may be employed.

Located adjacent to the circular row of burners 9 is my improved pilot-light, which is designated in a general way by the numeral 17 and is composed of a body 18, having a chamber 18′ and laterally-projecting arms or wings 18^2.

Threaded into the top plate or cover is a screw 19, closing the top opening of the chamber, and threaded or otherwise seated in the body of the casting is a tip 20, having a longitudinal perforation 20′ in communication with a passage 21 in an externally-threaded stem 22 of the burner, said stem being seated in a fixture 23 of the gas-supply system 24 and the quantity of gas supplied to said fixture and pilot-light burner being regulated by a valve 25 in a pipe 26, connected to a pipe 27, in connection with the gas-supply main. (Not shown.) A valve 28 in this pipe 27 regulates the supply of gas to the circular passage-way 10, and consequently the amount to be consumed by the burners 9.

In the body 18 are openings 29, which serve

to admit an ample supply of air to the burner, and in the walls of the chamber 18′ are diametrically-opposed openings 30 30′, through which the flame from the lateral openings 20^2 of the tip 20 passes, said flame being protected by the top 18^3 and the side flanges 18^2 against extinguishment by drafts of air.

In the operation of my invention the pilot-light is always left burning with a low flame, the degree of which may be regulated by the valve 25, and should gas be turned on in the burners 9 by the valve 28 in pipe 27 the flow of such gas to the burners will be arrested by the valve in chamber 13; but when said valve is lifted by the piston in cylinder 16, due to the turning on of any hot-water faucet in the system, gas will flow into circular chamber 10 and from thence into burners 9, and as it issues from said burners will be immediately ignited by the flame from the constantly-burning pilot-light 17. In this way the flame from the burners 9 quickly heats the water in coil 6 and furnishes the necessary supply of hot water to the basin, bath-tub, or sink where the hot-water faucet is open. After the necessary supply of hot water has been obtained, by turning off the faucet the pressure in cylinder 16 ceases and the valve therein immediately closes and shuts off the flow of gas to the burners. It will of course be understood that the casing 5 will ordinarily be equipped with doors, (not shown,) by which access may be had to the interior thereof for the purpose of igniting the pilot-light or inspecting, cleaning, or repairing the coil 6 and burners 9, and when these doors are open strong drafts, due to the inrush of air to said casing and its passage therefrom through the stack or eduction-flue 40, are produced, which have had a tendency in the old styles of pilot-lights to extinguish the flame. By my improvement, however, the pilot-light flame is protected by the hood 18^3 and side plates 18^2 against the possibility of extinguishment under ordinary conditions, and owing to the full supply of air through the ports or openings 29 constantly burns with a clear blue flame in readiness immediately to ignite the gas as it issues from the burners 9.

While my invention is shown in a particular heating system, it is distinctly to be understood that this is merely for purposes of illustration, for, as is obvious, it may be employed in various devices and apparatus different from that shown without departure from the scope of the invention.

The invention is not limited to the precise details shown and described, for variations may be made without departure from the scope and intent thereof.

Having thus described the invention, what I claim is—

1. A pilot-light consisting of a body having a closed chamber provided with air-inlet and flame-emission ports; a burner within said chamber; and laterally-projecting, covered wings for protecting the flame as it issues through the port from the burner.

2. A pilot-light consisting of a body having a central chamber provided with air-admission and flame-emission ports, laterally-projecting, covered wings integral with the body, and serving to protect the flame; and a burner located within the central chamber of said structure.

3. A pilot-light consisting of an integral casting having a chamber provided with air-inlet and flame-outlet ports; a burner within the chamber; and a pair of covered wings projecting from the chamber, and serving to inclose and protect the flame against the action of drafts.

4. A pilot-light consisting of a casting having laterally-projecting covered wings integral therewith, and also having a central closed chamber provided with ports for the admission of air and other ports for the passage of flame, and a burner within said central chamber.

5. A pilot-light consisting of a casting having a central chamber and a pair of laterally-projecting, covered wings integral with the casting and projecting from one side of said chamber, the wall of said chamber being perforated to form air-inlet and flame-outlet ports; and a burner within the chamber.

6. A pilot-light consisting of a burner having a central chamber provided with air-admission ports, and with an opening for the passage of flame; means for supplying fuel to said chamber; laterally-projecting side wings flanking the flame-passage; and a hood projecting from the chamber and uniting said wings.

7. A pilot-light consisting of a burner having a central chamber having air and flame ports; a tip having a passage for the admission of fuel to said chamber; wings, in a passage between which the flame issues, said wings projecting laterally from the chamber; and a top uniting said wings and covering said flame-passage.

8. The combination, with gas-supply means, of a pilot-light consisting of a body having a central chamber in communication with said gas-supply means, said chamber having air-admission and flame-emission ports; a pair of covered wings projecting laterally from each side of the chamber; and a burner, the gas from which is ignited by said pilot-light.

9. A pilot-light consisting of a chambered body provided with air-supply and flame-emission ports; laterally-projecting, covered wings on and integral with said body; a tip for the supply of gas within the chamber of the body; and a screw closing the top of said chamber.

CHARLES D. CROCKER.

Witnesses:
J. L. EDWARDS, Jr.,
WM. H. BLODGETT.