H. & C. SCHNEIDER.

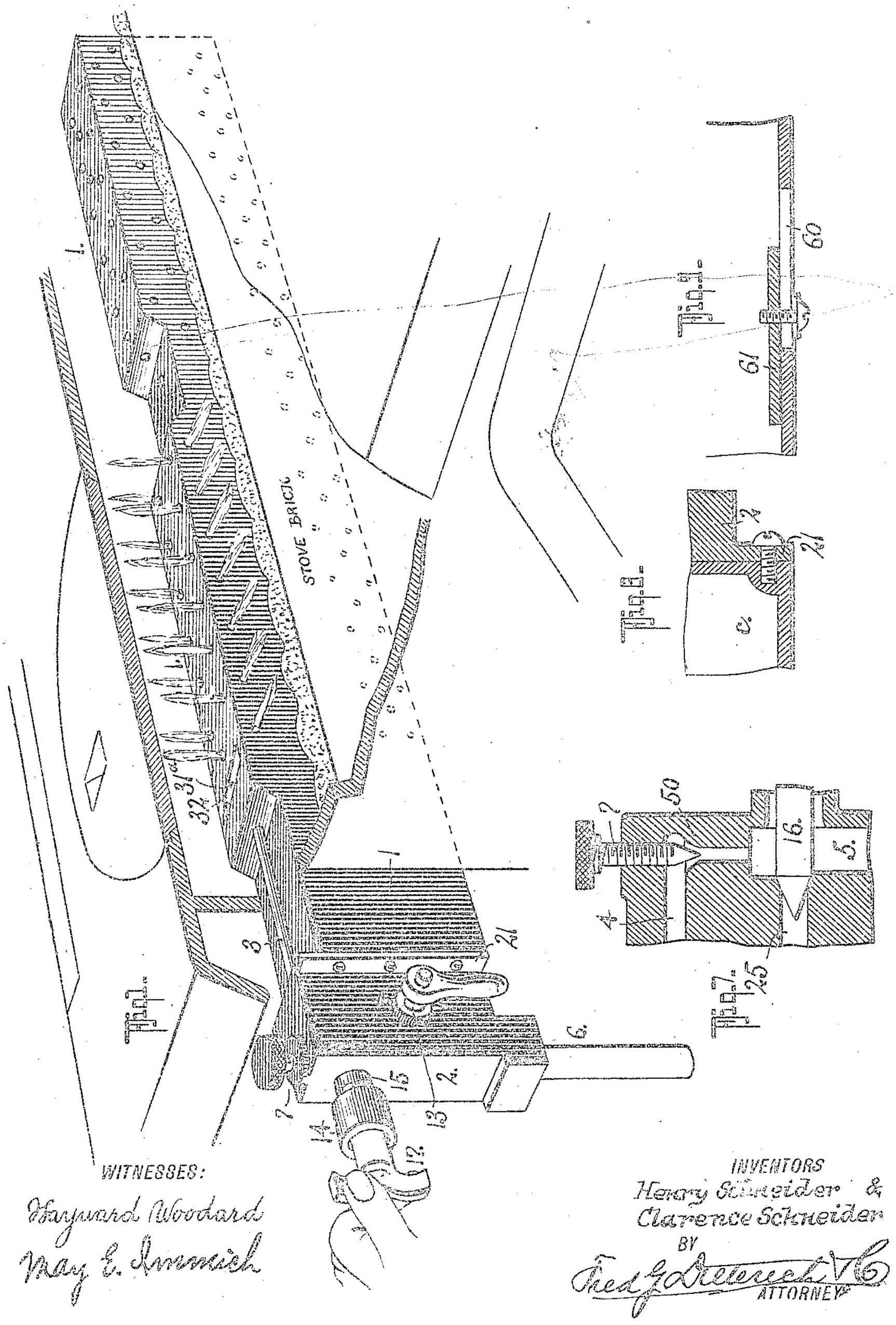
GASEOUS FUEL BURNER.

APPLICATION FILED DEC. 16, 1909.

962,472.

Patented June 28, 1910.

2 SHEETS—SHEET 1.



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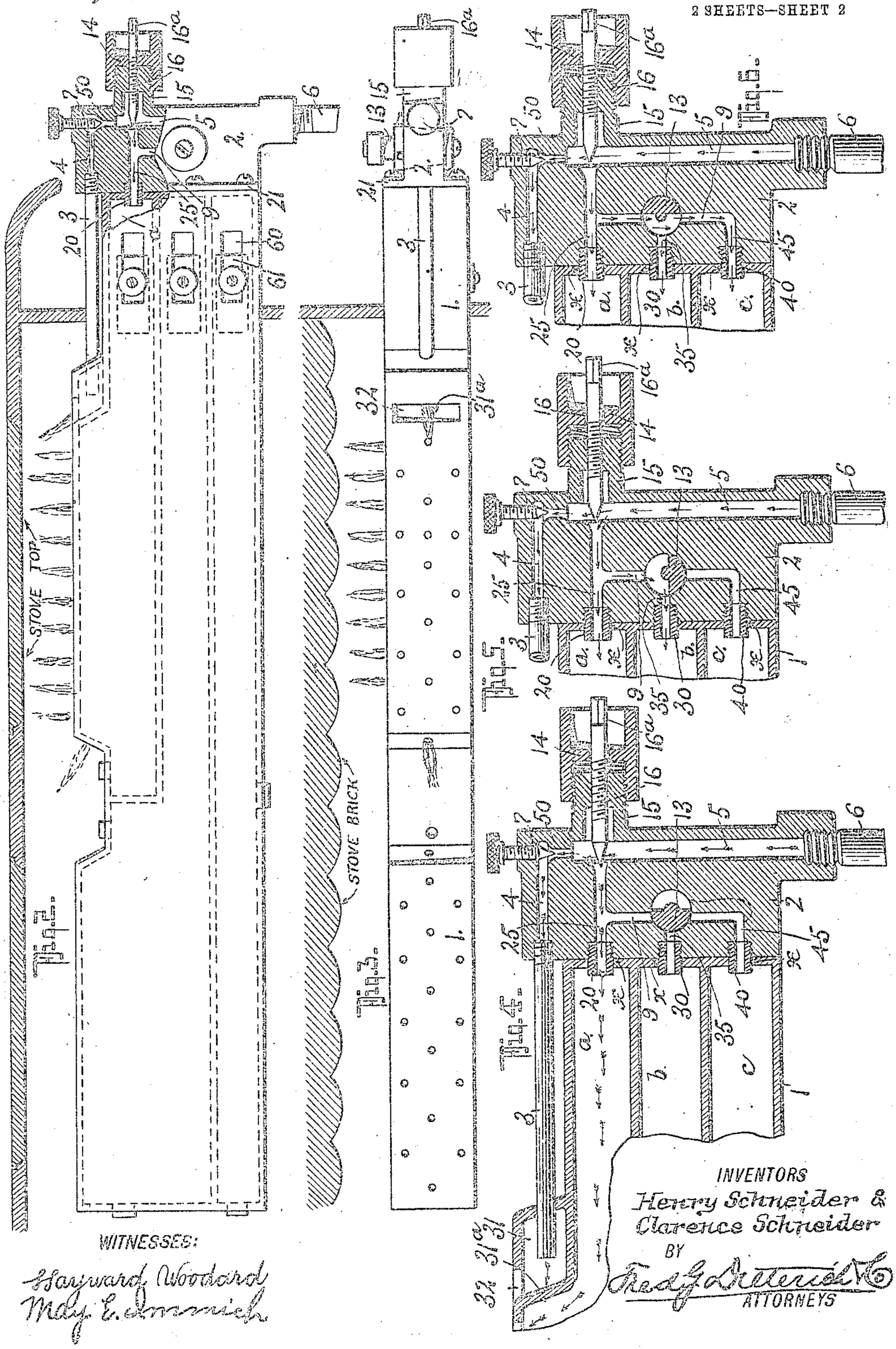

UNITED STATES PATENT OFFICE.

HENRY SCHNEIDER AND CLARENCE SCHNEIDER, OF LIMA, OHIO.

GASEOUS-FUEL BURNER.

962,472. Specification of Letters Patent. Patented June 28, 1910.

Application filed December 16, 1909. Serial No. 533,364.

To all whom it may concern:

Be it known that we, HENRY SCHNEIDER and CLARENCE SCHNEIDER, of Lima, in the county of Allen and State of Ohio, have invented a new and Improved Gaseous-Fuel Burner, of which the following is a specification.

This invention relates to gaseous fuel burners of that type more especially designed for use in the ordinary forms of cooking ranges and stoves, and it more specifically comprehends an improved construction of the general form of burner disclosed in the Patent No. 826,967 granted to Henry Schneider, July 24, 1906.

Our invention, in its generic nature, comprehends an improved arrangement of burner body having a plurality of gas distributing chambers, a pilot light, and an improved valve mechanism, adapted for controlling the feeding inflow of the gaseous fuel, the quantity of gas to the pilot light, and a valve device for directing the gas into one or more or all of the several distributing chambers.

Primarily, our invention has for its object to provide a burner of the general character stated, that shall be simple in construction, capable of being easily made and in which the valve controlling devices are all operable from outside the stove, and the effectiveness of the burner readily adjusted.

In its subordinate feature, our invention embodies certain peculiar arrangement and novel combination of parts, all of which will be hereinafter fully described, specifically pointed out in the appended claims and illustrated in the accompanying drawings, in which:—

Figure 1, is a perspective view of our burner, and shows how the same is applied for use. Fig. 2, is a side elevation of the same, part of the valve head portion being in section. Fig. 3, is a top plan view thereof. Fig. 4, is a vertical, longitudinal section of the valve head end of the burner, the main controlling valve being adjusted to direct the gas to one chamber. Fig. 5, is a similar view, the valve devices being adjusted to direct the gaseous fluid to two chambers. Fig. 6 is a similar view that shows the valve devices as directing the gas to three chambers. Fig. 7, is an enlarged detail section that shows the end of the needle valve and the valve for controlling the flow of gas to the pilot directing channel. Fig. 8, is a detail view hereinafter referred to. Fig. 9, is a detail section of one of the air inlet portions of the burner, and the adjustable gate or slide therefor.

In the practical arrangement, our invention consists of a vertically elongated body, adapted to be fitted edgewise in the fire box of the stove or range in the manner illustrated in Fig. 1, by reference to which it will be readily seen that the front end, hereinafter termed the valve or head portion, projects beyond the front wall of the fire box of the stove sufficiently to permit of readily manipulating the several adjusting valves hereinafter referred to.

The burner body consists of the main pot 1 that is cored out or otherwise formed into three vertically arranged compartments or chambers *a*, *b* and *c*, each of which is apertured as at *x* at the front end to readily slip over the short stud like tubes 20—30 and 40 that thread into the valve or head portion 2 of the burner, as best shown in Figs. 4, 5 and 6.

Head portion 2 of the body is a casing formed with lateral flanges 21 for bolting onto the outer end of the part 1 and the said portion 2 is of a greater height than part 1 to provide for conveniently joining therewith a pilot pipe 3 that threads into the part 2 and communicates with the passage 4 that leads from a main feed passage 5 to which the gas feed pipe 6 joins. The passage 5 where it joins with the passage 4 is reduced in cross-sectional area, as clearly indicated at 50 in Figs. 4, 5 and 6 of the drawings.

The pilot or "self lighter" pipe 3 extends inwardly and projects into a small chamber 31 that has a baffle wall 31ª against which pipe 3 discharges and which directs the gas flow through a transversely elongated burner opening 32, which I term the pilot burner, since from this burner or light, the other burner orifices in the several chambers *a*, *b* and *c* are self-lighted. The flow of gas through the feed passage 5 to passage 4 is

controlled by a needle valve 7 which, when adjusted up or down in the reduced end 50 of the feed passage 5, regulates the quantity of gas that passes to the pilot light.

25—35 and 45 designate short passages, one of which 25 connects with the feed passage 5 and the other two 35 and 45 communicate with a supplemental feed passage 9 that joins with the passage 25 and in which is journaled a two-way controlling valve 13 that is horizontally disposed and has its handle receiving end projected to one side of the head portion 2 of the burner, see Fig. 1.

The gas supply to the several passages 25, 35 and 45 that feed the several chambers *a*, *b* and *c* is controlled by the common type of needle valve 16, the threaded part of which is mounted in a gland boss 15 that has a gland cap sleeve 14 threaded thereon in the front end of the burner body. The square end 16ª is arranged for receiving a key 17, see Fig. 1, for turning it, as described.

Valve 13 is a two-way valve and is so arranged that when set as in Fig. 4 the main flow of gas will be to chamber *a*, when set to position shown in Fig. 5 the flow of gas will be to chambers *a* and *b*, and when turned as in Fig. 6 the gas will flow to all three chambers. To cut off all of the chambers *a*, *b* and *c*, and to only let the pilot light burn, the needle valve 16 is screwed home as in Fig. 7, it being understood, to cut out the pilot light, the valve 7 is screwed down to close the passage. The walls of the several chambers are perforated to provide ample burner orifices and the several orifices or burners will readily light from each other and from the pilot light. Each chamber *a*, *b* and *c* has an air inlet 60 in one side and each of the said inlets has a slide valve or gate 61—61, see Fig. 9 for regulating the size of the said air inlet.

From the foregoing, taken in connection with the drawing, the complete construction, the general advantages and method of operation of our invention will be readily apparent.

By reason of arranging the several chambers as stated and shown, and combining with them the peculiarly constructed valve head, the heating capacity of the burner can be easily regulated, and the burner at all times maintained lighted by regulating the outflow to the pilot pipe, as desired.

Having thus described our invention, what we claim and desire to secure by Letters Patent, is:—

1. In a gas burner, a body having a firing chamber and a supplemental pilot light chamber, said chambers each having discharge orifices in close proximity to one another in virtue of which the ignited gas issuing from the pilot light chamber will ignite the gas issuing from the firing chamber, said body portion including a head portion having a single fuel infeed passage that communicates with the pilot light chamber and the firing chamber, and a needle valve that controls the passage of fuel to the firing chamber.

2. In a gas burner, a body having a firing chamber and a supplemental pilot light chamber, said chambers each having discharge orifices in close proximity to one another in virtue of which the ignited gas issuing from the pilot light chamber will ignite the gas issuing from the firing chamber, said body portion including a head portion having a single fuel infeed passage that communicates with the pilot light chamber and the firing chamber, a needle valve that controls the passage of fuel to the firing chamber, and a supplemental valve on said head for controlling the passage of fuel to the pilot light chamber.

3. In a gas burner, in combination with a body having a firing chamber and a pilot light chamber, said two chambers being in close proximity, said body having a fuel infeed passage that communicates with the pilot light chamber and the firing chamber, and which decreases in size where it leads to the pilot chamber, a needle valve for closing off the said passage to the firing chamber, and another valve that operates in the reduced portion of the infeed passage for regulating the flow to the pilot light chamber.

4. A gas burner comprising a body portion and a head portion, said body portion having a pilot light chamber and a firing chamber, the two chambers having discharge orifices, a discharge orifice in one chamber being in close proximity to a discharge orifice in the other chamber in virtue of which ignition of the gas issuing from one of said orifices will ignite the gas issuing from the other orifice, said head portion being detachably connected to said body portion, said head portion having a fuel infeed passage that has a lateral that communicates with said firing chamber in said body portion and has another lateral that communicates with said pilot light chamber, and a needle valve carried by said head portion for controlling the passage of fuel to the firing chamber.

5. In a gas burner, a body portion and a head portion, said body portion having a plurality of firing chambers in close proximity to one another, means whereby the fuel issuing from one chamber may be ignited by the burning fuel from an adjacent chamber, and a pilot light chamber in close proximity to one of the firing chambers, said head portion being detachably connected with said body portion, said head portion having a fuel infeed passage that has a

lateral in communication with one of said firing chambers, a branch from said lateral that communicates with the remaining firing chambers, a valve in said branch for controlling the flow of fuel to the said remaining firing chambers, a needle valve for closing off the flow to all the firing chambers, and another valve for controlling the flow to the pilot light chamber.

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