G. E. PICKUP.

COMBINED GAS BURNER AND LIGHTER.

APPLICATION FILED FEB. 14, 1917.

1,233,702. Patented July 17, 1917.

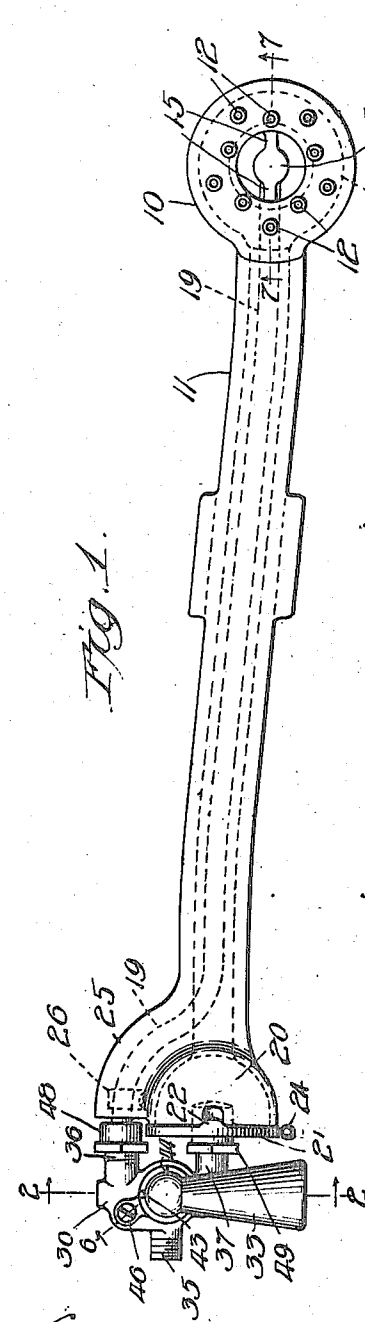


Fig. 1.

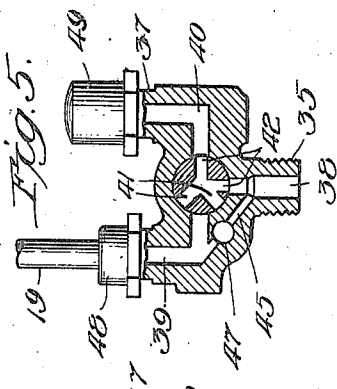


Fig. 5.

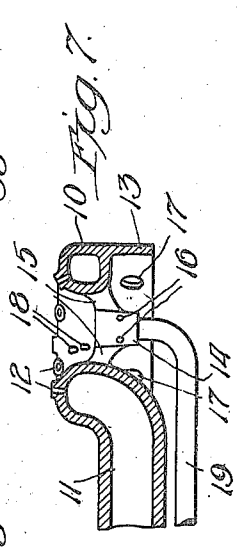


Fig. 7.

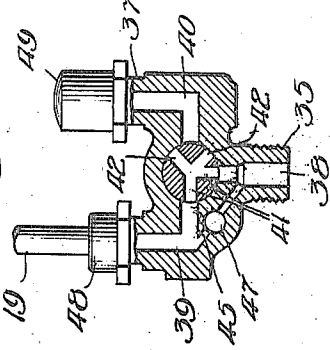


Fig. 4.

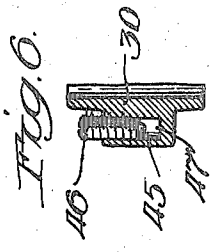


Fig. 6.

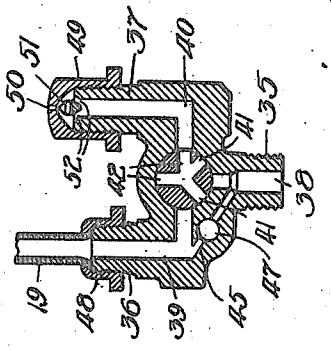


Fig. 3.

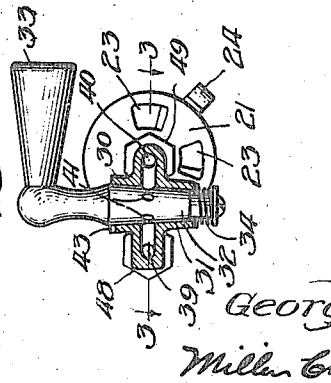


Fig. 2.

Witness:
H. S. Gaither

Inventor:
George E. Pickup
Miller Chisholm Parker
Attys

UNITED STATES PATENT OFFICE.

GEORGE E. PICKUP, OF NEWARK, OHIO, ASSIGNOR TO THE WEHRLE COMPANY, OF NEWARK, OHIO, A CORPORATION OF OHIO.

COMBINED GAS BURNER AND LIGHTER.

1,233,702. Specification of Letters Patent. Patented July 17, 1917.

Application filed February 14, 1917. Serial No. 148,480.

To all whom it may concern:

Be it known that I, GEORGE E. PICKUP, a citizen of the United States, residing at Newark, in the county of Licking and State of Ohio, have invented certain new and useful Improvements in Combined Gas Burners and Lighters, of which the following is a specification.

This invention relates to the art of gas stoves and more particularly refers to a unitary device which comprises a small burner (commonly known as a simmering burner), a lighting burner, and valve means for controlling the flow of gas to said small burner and lighting burner.

One of the objects of the invention is to provide a novel and improved controlling valve means, and a special object is to produce a valve by which a restricted flow of gas to a lighting burner is permitted at all times to maintain a pilot-light burning; by which the pressure or flow of gas to such pilot-light may be increased so as to flash tongues of flame from the pilot-light a sufficient distance to light adjacent burners; and by which the flow of gas to the simmering burner may be completely controlled.

Another object is to provide a combined simmering burner head and lighting burner head of novel and improved construction.

The invention also refers to the details of construction which will be more fully pointed out in the following description.

In the accompanying drawings, Figure 1 is a plan view of a device embodying the features of my invention. Fig. 2 is a vertical sectional view through the controlling valve in the plane of line 2 of Fig. 1. Figs. 3, 4, and 5 are horizontal sectional views through said valve in the plane of line 3—3 of Fig. 2, said views showing the movable valve member in different positions. Fig. 6 is a fragmental vertical section on line 6 of Fig. 1. Fig. 7 is a central vertical section through the burner head on line 7—7 of Fig. 1.

In the preferred embodiment of my invention which is illustrated in the drawings, there is provided a tubular burner head 10 of annular form which is mounted on one end of a supply pipe or conduit 11. In the upper side of the head are discharge orifices 12 of suitable number and at the periphery of the head is a depending annular flange 13. A lighting burner, or unitary pilot-and-flashlight burner head 14 is positioned axially within the burner head 10 and is connected thereto by webs 15. Preferably the burner head 10, supply conduit 11, flange 13, pilot-and-flashlight burner head 14 and connecting webs 15 are formed in an integral casting. The pilot-light head 14 has a plurality of discharge orifices 16 (Fig. 7) in its sides corresponding in number and position to the main burners of the stove. It will be understood that in the embodiment of the invention herein shown, the simmering burner head 10 and pilot-light head are intended to be positioned centrally between four main burners of the stove, the discharge orifices 16 of the pilot-light head being positioned approximately 90° apart around a circle so that each of said orifices is arranged to direct a flame toward one of the four main stove burners. In the flange 13 are provided holes 17 registering with the orifices 16 and through which the tongues of flame when extended from said orifices pass into association with the main stove burners for lighting the latter. The burner head 10 preferably has one or more orifices 18 (Fig. 7) in its inner side between the horizontal plane of its main orifices 12 and that of the pilot-light orifices 16, for the purpose of insuring the lighting of the main burner head by "carrying up" the flame from the pilot-light head. The pilot-light head is supplied with gas by a pipe or conductor 19 which is in this instance separate from the main pipe 11.

The opposite end of the main pipe 11 is enlarged to provide an air inlet or mixing bowl 20 on the end of which is mounted a shutter valve 21 of suitable construction, there being in the present instance a stationary flanged cap which is secured to the bowl by interlocking lugs and recesses 22 and which incloses a rotatable disk shutter, the cap and shutter having openings 23 arranged to register to a greater or less extent determined by the position of the shutter which is arranged to be moved by a finger-piece 24. The admission of air to the pipe 11 may thus be regulated.

The supply pipe 19 for the pilot-light lies beneath the main pipe 11 for the greater part of its length, but the inlet end of said pipe 19 is laterally bent to position the end for attachment to one of the outlets of the gas-controlling valve. In the present instance

the main pipe 11 has a laterally extending curved guard flange 25 which overlies the bent end of the smaller pipe 19, the latter being secured to said flange by a suitable clamp 26.

The controlling valve in the preferred form herein disclosed comprises a body 30 having a vertical bore 31 therethrough in which fits a conical valve member or plug 32 having an operating handle 33 at its upper end, said plug being yieldably drawn downwardly to hold it tight in said bore by means of a coiled compression spring 34 surrounding a stud at the lower end of the plug and exerting its force against the plug on the one hand and the body on the other.

The body is provided with an inlet nipple 35 and two outlet nipples 36 and 37, the inlet nipple being adapted for attachment to a gas supply pipe (not shown). The passages 38, 39, 40, within said nipples all communicate at their inner ends with the bore 31. The valve plug 32 is provided with transverse ports 41 and 42 therethrough, which are angularly disposed and so arranged that by turning the plug to different positions the inlet passage in the body may be placed in communication through said ports with either one of the outlet passages singly or with both of such outlet passages at the same time. Rotation of the valve plug 32 is limited to a quarter-turn by suitable means which in the present instance comprises a pin 43 fixed to and projecting from the valve plug and arranged to abut against opposed shoulders 44 formed by a notch in the upper end of the body.

The body is also provided with a by-passage 45 leading from the inlet passage 38 to the outlet passage 39, said by-passage permitting a constant though small, supply of gas to the pilot light for maintaining the latter lighted at all times. The amount or rate of flow of the gas through the by-passage may be controlled by suitable valve means herein shown as in the form of a screw 46 (Fig. 6) threaded in a socket 47 which extends across the by-passage 45 so that by adjusting the screw any desired fractional portion or all of the by-passage may be left open.

The pilot light supply pipe 19 may be connected to the nipple 36 in any common or preferred way, the means herein shown for that purpose comprising a gland 48 which surrounds said pipe and engages the flared end thereof, said gland being threaded upon the nipple 36 whereby a gas-tight joint is provided.

The outlet nipple 37 which supplies the main gas pipe 11 is provided with individual valve means for controlling the flow of gas, said valve means in the present instance comprising a cap 49 threaded onto said nipple and provided with a central aperture 50 (Fig. 3) which is arranged to coöperate with a conical valve member 51 carried by the nipple 37. In the present instance, this valve member is integral with the nipple, the latter having ports 52 at the sides of said valve member leading from the passage within. The cap 49 and nipple project into the air inlet or mixing bowl 20 through a central opening in the shutter valve 21.

The operation of the device is as follows: The normal position of the valve is that shown in Figs. 1 and 3, wherein the ports in the valve plug are out of register with the inlet and the two outlets of the body. To open the valve the handle 33 is swung to the left, as seen in Fig. 1, which rotates the valve plug in a clockwise direction as viewed in Figs. 3, 4 and 5. During such rotation the port 41 in the plug is first brought into position (as shown in Fig. 4) to establish communication between the inlet 38 and the outlet 39. This places the full pressure of the gas upon the pilot light and causes the tongues of flame from the discharge orifices 16 to extend themselves into proximity to the main burners of the stove so that any one of the said main burners may, if desired, be lighted by merely turning on its controlling valve.

Continued rotation of the valve plug brings the port 42 into position (as shown in Fig. 5) to connect the inlet passage 38 with the outlet passage 40 which supplies the simmering burner, so that gas will flow to the latter.

In a position of the plug intermediate those shown in Figs. 4 and 5, both of the ports 41 and 42 in the plug will simultaneously register or partially register with the inlet passage 38 and with both of the outlet passages 39 and 40. In this latter position, the full gas pressure is supplied to the pilot light to project the tongues of flame and at the same time gas is allowed to flow to the simmering burner head. The latter will then be lighted from the flames of the pilot light, the auxiliary orifices 18 on the inner side of the burner head facilitating or insuring the transmission of flame from the pilot light discharge orifice to the top orifices of the burner head. In this intermediate position of the valve plug 32, it will be seen that the simmering burner and all of the main top burners of the stove may be lighted at once, providing the valves for the aforesaid main top burners are opened.

By further turning the valve plug to the limit allowed by the pin 43, the port 41 will be carried out of register with the passages 38 and 39 and the port 42 will be placed in complete register with the passages 38 and 40. Gas under full pressure will then be supplied to the simmering burner head, and the pilot light head will then be supplied with only a small amount of gas which flows

through the by-passage 45 so that only small or short tongues of flame are maintained at the pilot light head.

It will be noted that all of the functions above enumerated are accomplished by simply giving the valve handle 33 a quarter turn which is the usual amount of movement provided for corresponding valves in stoves now known. Thus the novel and improved features of my device are provided without changing, from outward appearances, the normal operation of the controlling valve, and this conduces to simplicity and ease of understanding on the part of the person operating the valve. It is further to be noted that the novel and improved functions are accomplished with a single valve structure and without the addition or complication of parts.

While I have herein shown and described the preferred embodiment of my invention in considerable detail, I recognize that the essential features of my invention may be made use of without the employment of the specific details herein disclosed. The foregoing description and drawings, therefore, are to be understood as explanatory and not limiting in their character. The scope of the invention is pointed out in the appended claims.

I claim as my invention:

1. A device of the character described, comprising a gas burner and a unitary pilot-and-flashlight, said burner and said light each being provided with an independent conducting passage leading to the same, and a valve having an inlet and having two outlets discharging into said two passages, said valve having a movable valve member rotatable through but a quadrant and provided with ports arranged to connect said inlet with either of said outlets, and the valve having a passage independent of said valve member connecting said inlet with the outlet which discharges into the pilot-and-flashlight passage.

2. A device of the character described having, in combination, a burner, a unitary pilot-and-flashlight, and valve means having an inlet and having outlets communicating with both said burner and said pilot-and-flashlight, said valve means having a passage which allows the flow of gas to the pilot-and-flashlight when the valve is closed and having a movable valve member arranged to place said inlet in communication with said pilot-and-flashlight outlet when rotated through an octant and with said burner outlet when rotated through an additional octant.

3. A device of the character described having, in combination, a burner, a unitary pilot-and-flashlight, and valve means comprising a casing and a movable valve member therein, said casing having an inlet and having two outlets communicating with said burner and said pilot-and-flashlight, the casing further having a passage therein which at all times connects the inlet to the outlet for the pilot-and-flashlight, and said movable valve member having communicating ports whereby said inlet may be placed in communication with either of said outlets.

4. A device of the character described comprising, in combination, a burner, a unitary pilot-and-flashlight, and valve means comprising a casing and a rotatable valve member, said casing having an opening for said valve member and having two outlets located at approximately opposite sides of said opening and connected respectively to said burner and said pilot-and-flashlight and said casing having an inlet substantially midway between said outlets and a passage maintaining said inlet in communication at all times with the outlet for the pilot-and-flashlight, said movable valve member being arranged to place said inlet in communication with either of said outlets.

5. A gas cock having, in combination, a body provided with a bore, a rotary valve plug fitting in said bore, said body having at opposite sides of said bore two outlet passages and an inlet passage substantially midway between said outlet passages, said plug being rotatable through a quadrant and having ports arranged to establish communication between said inlet passage and either one of said outlet passages.

6. A gas cock having, in combination, a body, a movable valve device therein having ports communicating with each other, said body having an inlet passage and two outlet passages, said valve device being arranged to establish communication between said inlet passage and either one of said outlet passages, and said body having a by-passage directly connecting said inlet passage with one of said outlet passages only, the by-passage being independent of said valve device.

7. A gas cock having an inlet and two outlets, and having valve means movable through a quadrant and arranged to establish communication between said inlet and either one of said outlets independently, or both of said outlets simultaneously, the cock further having a passage connecting said inlet with one of said outlets only independently of said movable valve means.

8. A combined gas burner and pilot-light comprising an annular conduit constituting the head of a burner and having outlet orifices at its upper side, a supply conduit leading to one side of said head, an annular flange depending from said head, said head, flange and supply conduit being formed in an integral casting, and a lighting burner

head positioned within the inner circumference of said annular burner head and having webs integral therewith and with said first mentioned burner head, said lighting burner head having a plurality of discharge orifices in its sides and said flange having holes therethrough registering with said discharge orifices.

9. A combined simmering burner and lighter comprising an annular tubular burner head, a lighting burner head located axially of said tubular burner head and supported therefrom by connecting webs, a supply conduit for said first mentioned burner head, and an annular flange depending from said first mentioned burner head, said burner head, lighting burner head, webs, conduit and flange being formed in an integral casting.

10. A combined gas burner and lighter having, in combination, an annular burner head, a lighting burner head located axially of said burner head, and radial supporting webs cast integral with said heads, said lighting burner head having a discharge orifice in its side and said first mentioned burner head having discharge orifices in its top wall and further having discharge orifices in its inner wall arranged to facilitate or insure ignition of gas at said top orifices from the orifice in the lighting burner head.

11. As a new article of manufacture, a gas burner and lighter comprising a pipe having at one end an enlarged bowl and having at its other end a burner head and an axially positioned lighting burner head, all formed in an integral casting.

12. As a new article of manufacture, a gas burner and lighter comprising a pipe having at one end an enlarged air inlet bowl and having at its other end a burner head, an axially positioned lighting burner head, and a depending annular flange on the first mentioned burner head, the whole being formed in an integral casting.

13. As a new article of manufacture, a gas burner and lighter comprising a pipe having at one end a communicating burner head and an axially positioned lighting burner head, all formed in an integral casting, and a second smaller pipe extending parallel with and fixedly secured to the first pipe and communicating at one end with said lighting burner head.

In testimony whereof, I have hereunto set my hand.

GEORGE E. PICKUP.