Aug. 31, 1937. J. J. SLAVIN ET AL 2,091,530

LIGHTING DEVICE FOR GAS BURNERS

Filed Nov. 3, 1936

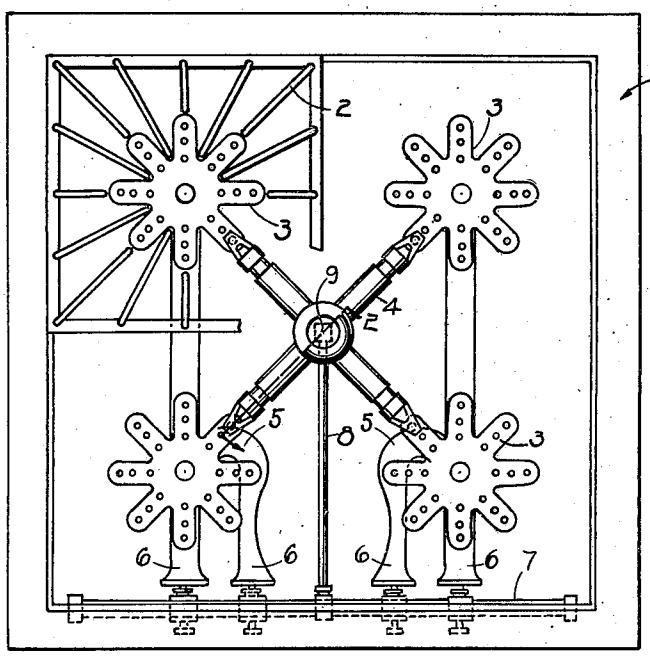


Fig-1

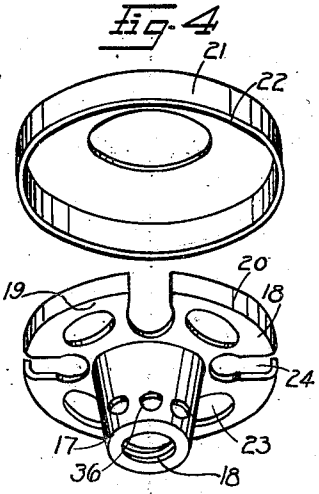


Fig-4

Fig-5

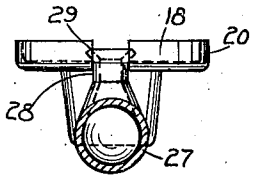


Fig-6

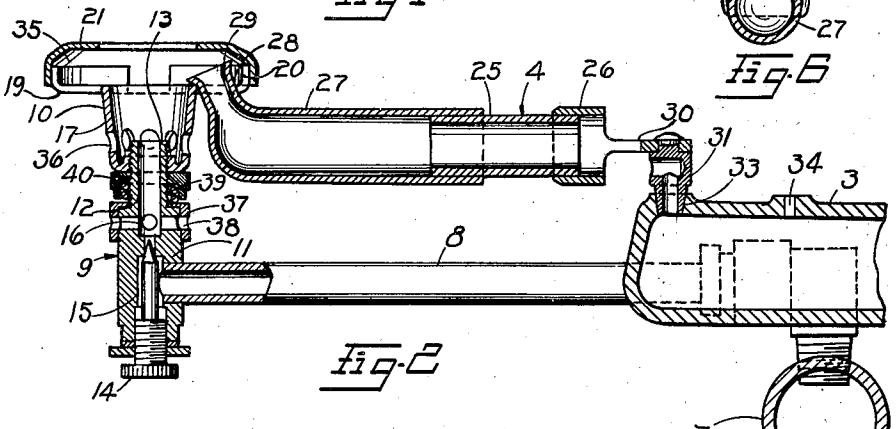


Fig-2

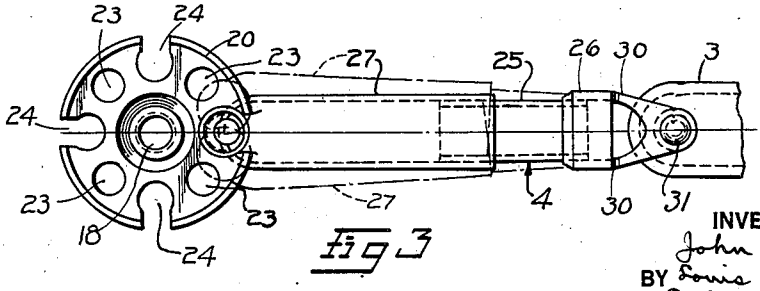


Fig-3

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Patented Aug. 31, 1937 2,091,530

UNITED STATES PATENT OFFICE

2,091,530

LIGHTING DEVICE FOR GAS BURNERS

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Application November 3, 1936, Serial No. 109,039

3 Claims. (Cl. 158—115)

Our invention relates to a lighting device for gas burners and particularly to a device for use in connection with the burners of gas stoves.

Heretofore it has been common practice to convey gas from the main burners of a gas stove to a centrally disposed pilot burner by means of telescopic tubes, the opposite ends of which are supported adjacent the main and pilot burners respectively, gas from the outlet ends of the tubes being forced directly toward and across the pilot flame. This arrangement has proven unsatisfactory due to the fact that the pilot light was frequently blown out or smothered by the velocity and directional flow of the gas or by the volume of gas discharged by the tubes.

One of the objects of the present invention is to provide a lighting device which delivers gas to the pilot housing at a point remote from the pilot flame and in a direction substantially parallel to the axis of the pilot burner.

Another object of the invention is to provide a lighter in which gas is delivered from a main burner to a chamber remote from the pilot light from where it flows and is deflected towards the pilot flame.

A further object of the invention is to provide a lighting device with means for delivering a stream of gas from a plurality of main burners, in an unvarying direction to a fixed point in the pilot housing, regardless of irregularities in the positioning of the main burners with respect to the pilot burner or housing.

A still further object of the invention is to provide a lighting device having means for connecting the gas delivery tubes or conduits to the pilot housing which will permit of fixed and accurate directional delivery of gas to the pilot light regardless of the position of the housing on the pilot burner tip.

Other and further objects and advantages of the invention will be understood as this specification is considered with the accompanying drawing, in which:

Figure 1 is a top plan view of a gas stove partly broken away showing the improved lighting device applied thereto;

Figure 2 is a longitudinal cross sectional view through the lighter and one of the burner tubes;

Figure 3 is a top plan view of the lighter and one of the burner tubes, the top member or cap of the lighter being removed;

Figures 4 and 5 are perspective views of the top and bottom members of the lighter housing respectively; and

Figure 6 is an end view of the bottom member of the housing showing one burner tube assembled.

Referring more particularly to the drawing, the numeral 1 denotes the top frame of a stove, including the usual grilles 2, beneath which are mounted conventional star burners 3. Gas is supplied to the burners 3 through tubes 5 provided with air mixers 6 and connected with a valved manifold or header 7, in turn leading to a suitable source of gas supply, not shown. As the burner construction and arrangement just described is old and well known in the art further description of these parts is deemed unnecessary. It might be noted that while star burners have been illustrated, my invention is equally adaptable for use with round or other types of burners.

Generally speaking, the lighter of the present invention comprises a lighter tube 8 connected at one end to the manifold 7, and at its other end communicating with and supporting a Bunsen type of pilot burner 9. Mounted on the upper end of the pilot burner, in a manner hereinafter described, is a hood 10. Telescopic tubes 4, one for each main burner 3, leading from the hood 10 to the main burners convey gas from the latter to the pilot burner 9 where the gas becomes ignited and conveys the flame back to the burners 3 to ignite or light the same. The pilot preferably burns constantly and the main burners are ignited by the issuance of gas therefrom and therefore without flashing the pilot.

The pilot 9 comprises a chambered body portion 11 having a hollow upstanding extension 12 terminating in a tip or stem portion 13. A needle valve 14 controls the flow of gas through the chamber 15 in body portion 11, while transverse openings 16 through the walls of hollow extension 12 supply the necessary air to the gas stream.

Pilot hood or housing 10, previously referred to, preferably formed of suitable gauge metal stampings, comprises a cup-shaped bottom member 17, the bottom wall of which is formed with a centrally disposed threaded opening 18, adapted to threadedly receive the pilot tip portion 13. The hood is thus rigidly supported on the stem 13 for freedom of rotary movement thus permitting the hood to be adjusted relatively to the pilot flame in order to get best results. The cup-shaped bottom member 17 is formed with a peripheral flange 19 at its upper end terminating in an upstanding peripheral rim 20. A centrally apertured upper or top member 21 having a depending flange 22 adapted to be sleeved snugly

over the upstanding rim portion 20 of the bottom member 17, completes the hood.

The peripheral flange 19 of bottom member 17 is formed with secondary air openings 23 and with substantially U-shaped slots 24 which extend or open outwardly through the rim 20, for supporting one end of the tubes 4 in the pilot housing. Thus the tubes 4 consist of an intermediate section 25, a main burner tip section 26 and a pilot burner section 27, sleeved together for relative longitudinal adjustment as best disclosed in Figure 2. Tube section 27 is formed with an upwardly and forwardly restricted extension 28 terminating in a flared or enlarged mouth 29. The reduced extension or neck portion 28 of tube section 27 is of slightly less diameter than the width of slots 24 so that the neck portion can be inserted through the mouth of the slots, but the flared extremity 29 of the neck portion extends beyond the confines of the slots and prevents the tubes 4 from dropping therethrough. The swiveled fit of the neck 28 in the slots is such that the tubes can be freely swiveled or oscillated something more than one hundred and eighty degrees in a substantially horizontal plane. When the top or cover member 21 of the pilot housing is assembled on the bottom member 17 thereof the burner-tubes are effectually locked against accidental removal from the housing. The cover member also cooperates with the bottom member 17 in forming a gas chamber at a point considerably above the pilot tip 13, and to which gas is conveyed by tubes 4.

The tube section 26 has two arms 30 to the outer ends of which a nipple 31 of conventional design is secured, as by a pin or rivet 32. The lower end of this nipple is preferably beveled to snugly but removably fit in a correspondingly shaped opening 33 formed in each main burner 3 by enlarging one of the burner holes 34 thereof.

From the foregoing it will be noted that even considerable variation in the position of the main burners with respect to the pilot does not interfere with convenient assembly of tubes. Furthermore, that due to the extensive swiveling movement which the tube sections are capable of, the housing can be adjusted to any desired height on the pilot burner. In other words it is not necessary to accurately align the slots 24 in the housing with the enlarged main burner holes 33 to facilitate assembly.

Gas from the main burners is delivered to the ring shaped gas chamber 35 substantially parallel to or at a very slight angle to the axis of the pilot burner tip 13. Consequently there is little danger of the pilot flame being either blown out by cross streams of gas or smothered by excessive volume of gas. An adequate supply of air is admitted to the housing through openings 36 in the wall of cup-shaped housing member 17 and through secondary air openings 23 in the peripheral flange 19 of this member.

The size of the pilot burner air openings 16 can be regulated or entirely closed by means of a sleeve washer 37, which is provided with openings 38 adapted to be moved into or out of alinement with the openings 16. This washer 37 also serves as a stop for a nut 40 adapted to hold the washer in place and also provide a stop for the housing. Preferably a coil spring 39 is inserted between the washer 37 and the nut 40 for an obvious purpose.

Having thus described our invention, what we claim is:

1. In a lighter, the combination with a plurality of main burners, a source of fuel supply therefor, a pilot burner, a housing rotatably mounted on said pilot comprising a flanged bottom member having slots in the flange thereof, burner tubes each communicating at one end with said burners and at their opposite ends loosely mounted in said slots for delivering gas from said main burners to the pilot housing substantially parallel to the axis of the pilot burner, and a cap member for preventing accidental withdrawal of the tubes through the open ends of said slots.

2. In a lighter having a body portion and a tip portion, a housing comprising a bottom member mounted on the tip portion, said bottom member having a horizontally disposed peripheral flange formed with an opening therein, a burner tube having an offset portion projecting upwardly through said opening, and removable means on said housing for preventing accidental withdrawal of said offset portion from said opening.

3. In a lighter having a body portion and a tip portion, a housing comprising a bottom member mounted on the tip portion, said bottom member having a horizontally disposed peripheral flange formed with an opening therein, a burner tube having an offset restricted portion projecting upwardly through said opening, and removable means on said housing for preventing accidental withdrawal of said offset portion from said opening.

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