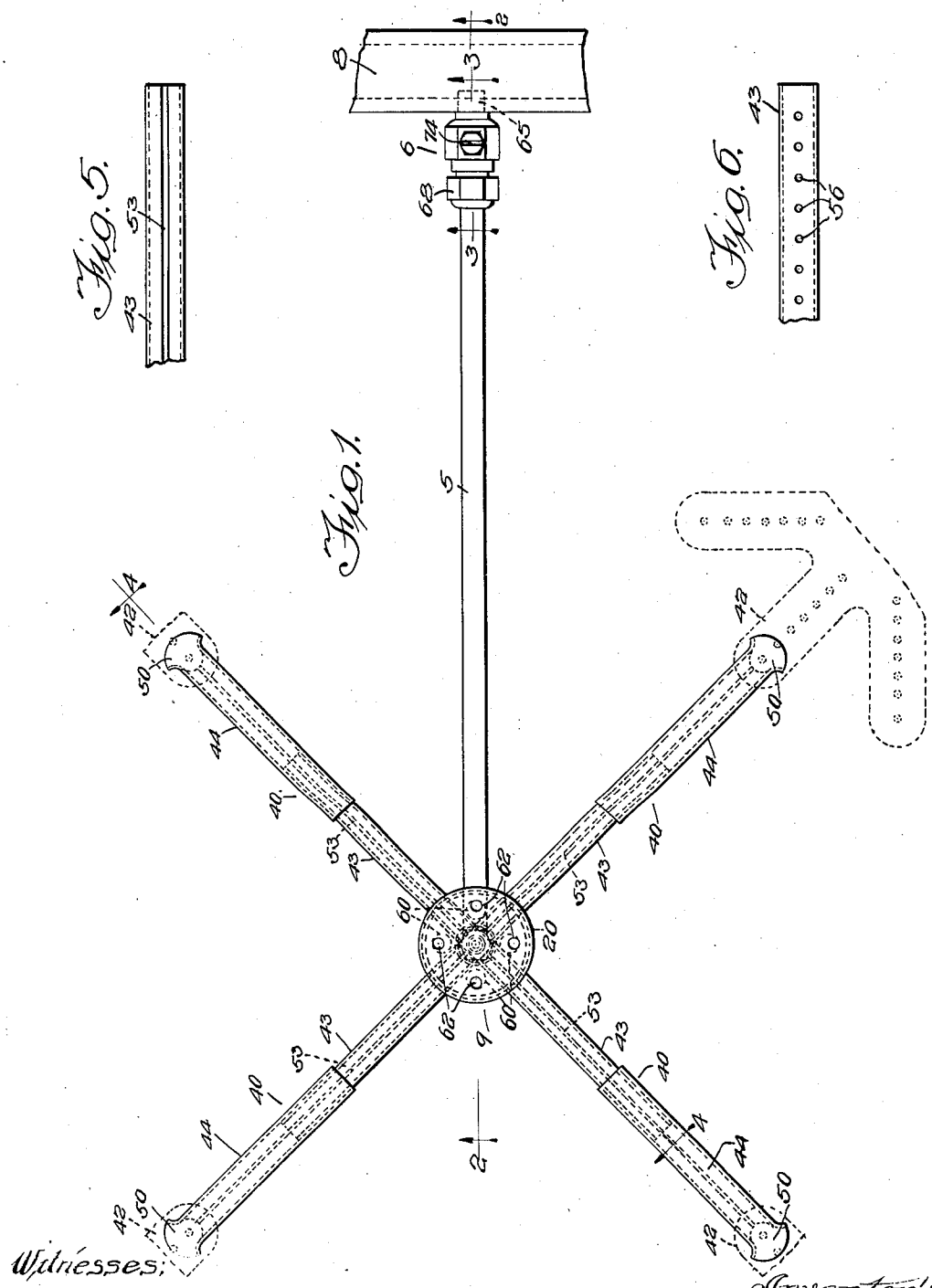
Feb. 11, 1930. O. J. LEINS 1,747,015

LIGHTING DEVICE

Filed May 14, 1926 2 Sheets-Sheet 1



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Fig. 2.

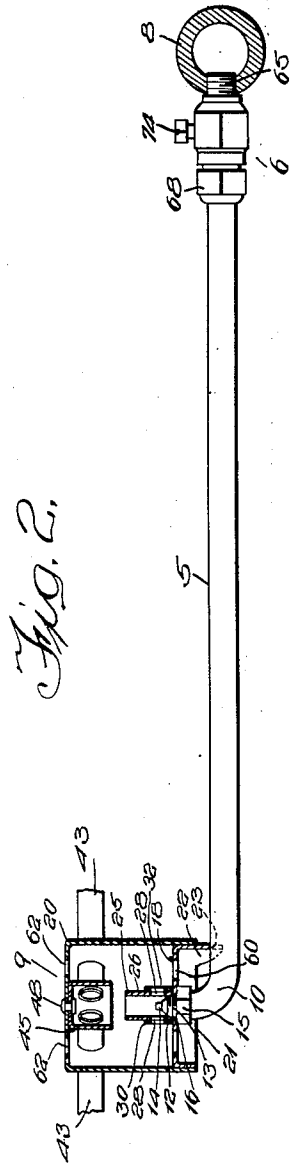


Fig. 4.

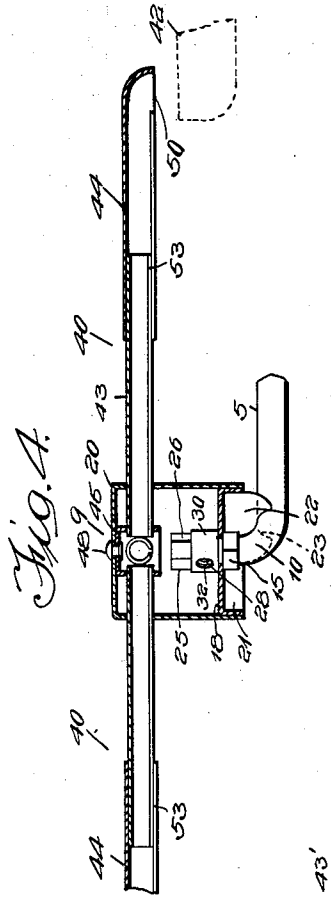


Fig. 1.

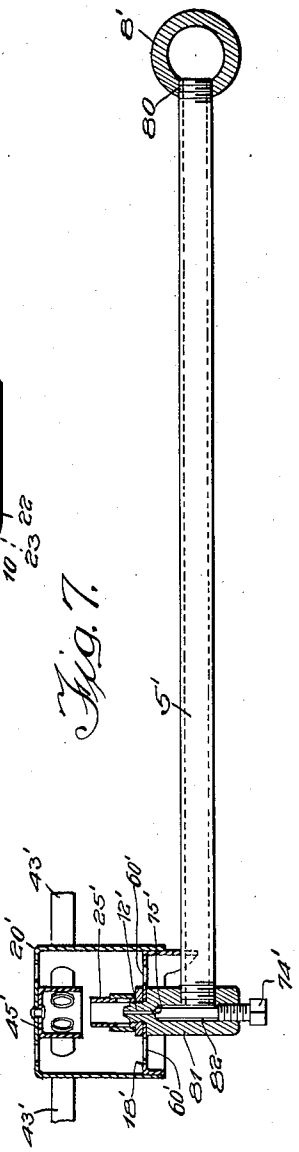
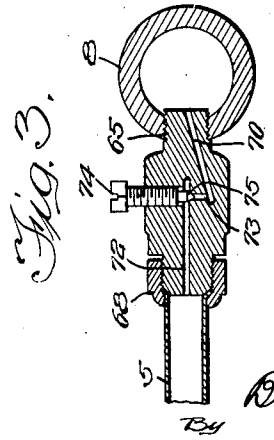


Fig. 3.



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UNITED STATES PATENT OFFICE

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LIGHTING DEVICE

Application filed May 14, 1926. Serial No. 109,012.

This invention relates to lighting devices and may be characterized as an improvement upon lighters of the general type disclosed in Schaetzel United States Letters Patent No. 1,036,727 of August 27, 1912.

The object of the present invention is the provision of a generally improved and simplified construction that may be economically produced, and which may be conveniently mounted and readily removed as a unitary structure and without taking it apart or requiring various unfastening operations at the burner.

The invention is illustrated in the accompanying drawings, in which:

Figure 1 is a top plan view of an embodiment of the invention;

Fig. 2 is a section taken on the line 2—2 of Figure 1 with the lighter tube in elevation;

Fig. 3 is a fragmentary detail section taken on the line 3—3 of Figure 1 through the control valve;

Fig. 4 is a sectional view taken on the line 4—4 of Figure 1;

Fig. 5 is a fragmentary bottom plan view of one of the radial lighter arms showing a longitudinal air admission slot;

Fig. 6 is a view similar to Figure 5 showing the bottom of the lighter arm provided with a plurality of apertures instead of slotted; and

Fig. 7 is a view similar to Figure 2 of a modification in which the regulating valve is disposed out adjacent the pilot tip of the lighter.

Referring to the drawings, the lighter of my present invention comprises a lighter tube 5 having means 6 at one end for connection with the fuel supply pipe 8, which may be the gas supply pipe of the stove or range, for example, and a lighter head 9 at the opposite end.

The outer end of the lighter tube 5 is turned up vertically at 10 and the upper end of this up-turned end 10 has a fuel outlet tip 12 threaded externally at 13 and provided with a reduced or restricted fuel or gas outlet 14. Threaded upon the up-turned end 10 into position just below the tip 12 is a stop nut 15, and the tip 12 above this top nut 15 extends through an opening 16 centrally through a plate 18.

The plate 18 forms the bottom of, and a mount or support for, a hood 20 which is adapted to be quickly and conveniently removed from and replaced upon the plate 18. Marginally the plate 18 is turned down at 21 to receive the lower open end of the hood 20, and this turned down margin 21 has a depending tongue 22 notched at 23 to straddle the tube 5 and hold the plate 18 against turning upon the up-turned end 10.

A sleeve 25 threaded at its lower end upon the tip 12 clamps the plate 18 firmly down upon the nut 15 and holds this plate 18 fixedly in place upon the up-turned end 10 of the tube 5. The sleeve 25 may be finished externally at its upper end at 26 (Figure 4) to be engaged by a wrench or other suitable tool for threading it upon and from the tip 12, and adjacent its lower end this sleeve 25 has air admission openings 28 giving in effect a "Bunsen" burner pilot in which the gas from the tip 12 is largely diluted with air just previous to burning at the upper end of the sleeve 25. This produces a highly efficient pilot. The air admission openings 28 may be controlled by a surrounding ring or sleeve 30 having openings 32 adapted to be moved into and out of register with the openings 28 by turning the ring 30 upon the sleeve 25.

The hood 20 and plate 18 may be formed of suitable gauge metal stampings, or otherwise, as desired. The lower open end of the hood 20 may have a quick detachable pressed or spring fit upon the depending marginal flange of the plate 18, and the lower edge of the hood 20 may be held upon the plate or support 18 by its telescopic engagement therewith. The fit may frictionally hold the hood against accidental turning, and is preferably such as to prevent too far downward movement of the hood. The margin of the plate 18 may be flared downwardly slightly for this purpose.

Mounted in and removable as a unit with the hood 20 are a plurality of tubes 40, one extending to each of the burners 42 of the stove or range with which the lighter is employed. Each of the tubes 40 comprises a

pair of telescoping sections 43 and 44. The inner sections 43 extend radially through the side wall of the hood 20 and through the depending side wall of an inner inverted cup 45 concentrically disposed within the hood 20 with its lower end opening downwardly over the pilot burner and its closed upper end secured at 48 to the top wall of the hood 20. The extension of the inner ends of the tubes 43 through the walls of the hood 20 and cup 45 holds the tubes firmly in place and the cup 45, in addition to its supporting function in combination with the hood 20, provides a common confined communication between the pilot burner and the inner ends of the tubes 40.

The outer end of each outer tube section 44 has a downwardly opening mouth 50 adapted to be positioned over the burners 42. Whenever the burners 42 are turned on or whenever gas leaks, or for any other cause issues from the burners, a portion of the same is received by the mouth 50 and conveyed through the associated tube 40 to the pilot burner where this gas becomes ignited and conveys the flame back to the burners 42 to ignite or light the same. The pilot burner may burn constantly and the burners 42 are ignited automatically by the issurance of gas therefrom and without flashing the pilot.

The outer sliding tubes 44 preferably have suitable friction fit upon the sections 43 to retain their proper position, and by extending or retracting the outer section the mouths 50 may be adjusted toward and away from the pilot burner to suit different distances between and arrangements of the burners 42. The friction fit of the lower end of the hood 20 upon the down-turned margin 21 of the plate 18 holds the hood and tubes in their proper angular position. At the same time the hood 20 is adapted to be removed simply by lifting or withdrawing it from the plate 18, and the tubes 40 and cup 45 are removed as a unit with it and without the necessity of removing fastening devices or taking the device apart before it can be removed from the tube 5. This permits convenient removal as for cleaning, or the like, and convenient replacing.

In the embodiment of Figures 1 to 5, the bottoms of each pair of tubes 43 and 44 are split longitudinally at 53. This provides a longitudinal slot for allowing the necessary circulation of air to supply oxygen into the tubes 40 so that the gas conveyed to the pilot will be ignited and the flame conveyed to the burner.

In the embodiment of Figure 6 the tube sections 43 and 44 are provided with a plurality of spaced apertures 56 in lieu of the longitudinal slots 53.

The base plate 18 has suitable air admission openings 60 and the top wall of the hood 20 has suitable air admission openings 62. These may, of course, be supplemented by additional openings in the side wall of the hood, or otherwise as desired.

In the embodiment of Figures 1 to 5, the connection means 6 comprises a valve case having at one end a nipple 65 adapted to be threaded directly into the gas supply pipe 8, which may also supply the burners 42. The opposite end of the valve case 6 is connected through a union 68 with the adjacent end of the tube 5. A passageway or duct 70 enters the inlet end of the valve case 6, and a passageway or duct 72 extends from the outlet end of the case 6 into the tube 5. These passageways are connected by a connecting duct 73 which is regulated by a valve pin 74 threaded into the case 6. The outer end of the screw 74 has a head adapted to be engaged by a screw driver, for example, to adjust the needle inner end 75 in or out for the purpose of adjusting the fuel supply through the tube 5 and thereby the size of the pilot flame.

In the embodiment of Figure 7, the lighter tube 5′ is threaded at 80 directly into the gas supply pipe 8′ and the pilot regulating valve 81 is disposed at the outer end of the tube 5′. In this case the pilot tip 12′ is formed integral with the valve case 81, which is bored at 82 and has the axial duct or passageway opening up from the bore 82 through the tip 12′. The valve pin 74′ is threaded in the case 81 and has a needle end 75′ for regulating the gas flow from the tip 12′ and thereby the size of the pilot flame.

In this case the outer end of the tube 5′ is threaded into the case 81 and opens laterally into the bore 82, and the hood mounting plate 18′ is clamped directly to the case 81 by the burner tube 25′. The hood 20′ is, as before, quickly and conveniently removable from the plate 18′, and the tubes 43′ and inverted cup 45′ are removed and replaced as a unit with it, and without removing fastening devices or taking the device apart.

I claim:—

1. In a lighter, the combination of a burner, a source of fuel supply therefor, a pilot connected to said source of fuel supply, a hood support adjacent said pilot, a removable hood held upon said support by telescopic engagement therewith, a tube carried by and removable with said hood, said tube opening at one end into the hood and at its opposite end opening to the burner to receive fuel therefrom, and means within the hood for supporting the inner end of the tube.

2. In a lighter, the combination of a burner, a source of fuel supply therefor, a pilot connected to said source of fuel supply, a hood support adjacent said pilot, a removable hood held upon said support by telescopic engagement therewith, and a tube carried by and removable with said hood, said tube opening at one end into the hood and at its opposite end opening to the burner to receive fuel

therefrom, said support constituting a bottom for the hood and said support, hood, and tube having air admission openings therein.

3. In a lighter, the combination of a plurality of burners, a source of fuel supply therefor, a pilot connected to said source of fuel supply, a hood for said pilot, a cup in said hood and opening downwardly over said pilot, and a plurality of tubes extending through the hood and through said cup and adapted to receive fuel from said burners.

4. In a lighter, the combination of a plurality of gas burners, a source of fuel supply therefor, a pilot connected to said source of fuel supply, a hood for said pilot, said hood having a top wall, a cup concentrically disposed within the hood and having an open bottom directed downwardly over said pilot and a top secured to the top wall of the hood, and a plurality of tubes extending through the hood and through said cup and adapted to receive gas from said burner.

5. In a lighter, the combination of a burner, a source of fuel supply therefor, a pilot connected to said source of fuel supply, a hood support adjacent said pilot, a removable hood held upon said support by telescopic engagement therewith, a cup in said hood and opening downwardly over said pilot, and a tube extending through the hood and through said cup and adapted to receive fuel from said burner.

6. In combination, a gas supply pipe, a burner, a lighter tube connected with said pipe at one end, a pilot at the opposite end of said tube, means for regulating said pilot, a hood support adjacent the pilot, a removable hood held upon said support by telescopic engagement therewith, a tube carried by and removable with said hood and opening to said burner to receive gas therefrom and convey same to the pilot, said tube extending into the hood and means within the hood for supporting the inner end of the tube.

7. In a lighter, the combination of a burner, a source of fuel supply therefor, a pilot connected to said source of fuel supply, a pilot tube for said pilot, a hood support adjacent said pilot and supported solely by said pilot tube, a downwardly opening generally cup-shaped hood held upon said support solely by telescopic engagement therewith, and a tube carried solely by said hood and removable as a unit therewith, said tube opening at one end into the hood and at its opposite end opening to the burner to receive fuel therefrom, and said hood support constituting a bottom for the lower open end of the hood.

8. The combination with a gas burner of a pilot, a hood enveloping said pilot, a conduit having one end extending into the hood and its opposite end leading from the hood and opening to said burner for receiving gas therefrom, means within said hood for supporting the end of the conduit within the hood and for directing the gas from the conduit to the pilot, said hood having a wall supporting the conduit outwardly of said first conduit supporting means.

In witness whereof, I hereunto subscribe my name this 11th day of May, 1926.

OSCAR J. LEINS.