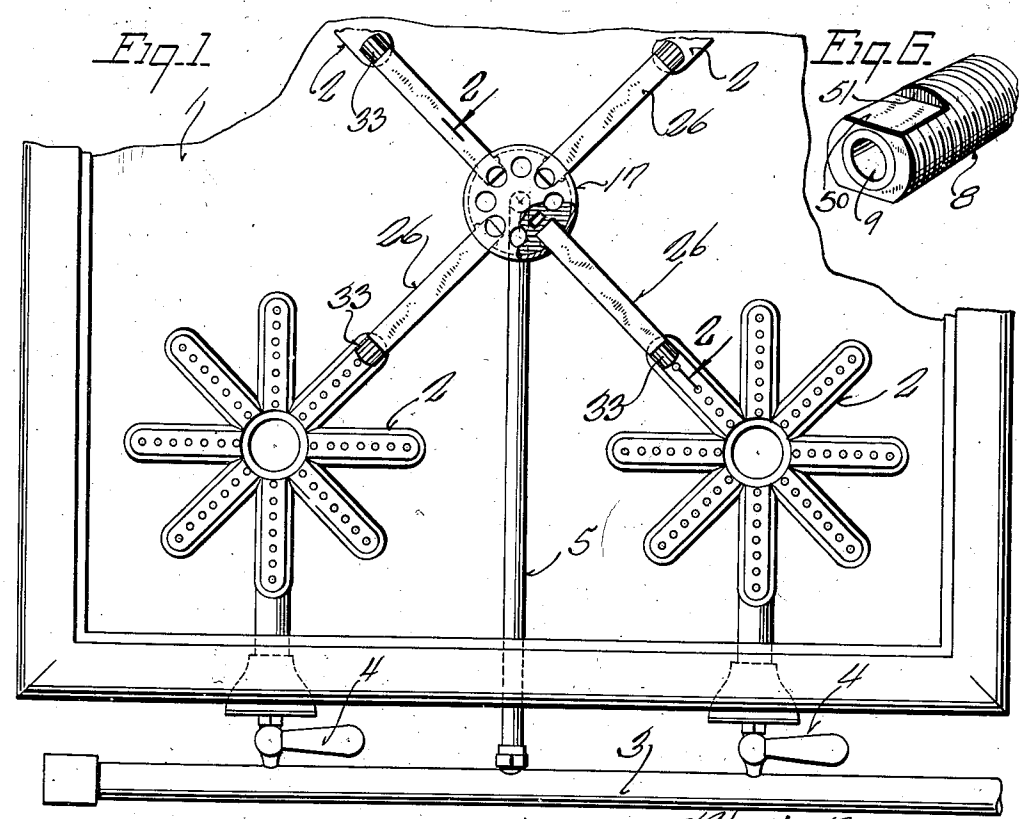
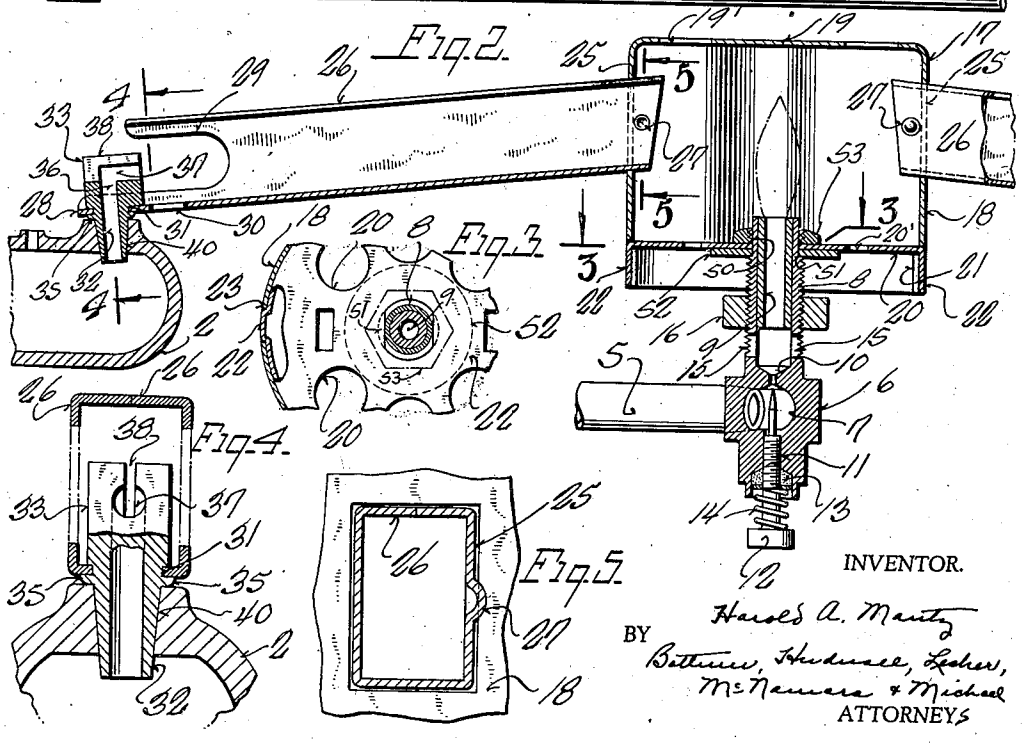
Sept. 14, 1937. H. A. MANTZ 2,093,152

LIGHTER

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LIGHTER

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This invention relates generally to lighting devices, and more particularly to lighting devices for gas burners, and is in the nature of an improvement in that type of lighting device disclosed in the Schaetzel U. S. Letters Patent No. 1,134,350 of April 6, 1915, and Leins U. S. Letters Patent No. 1,747,015 of February 11, 1930.

Among the objects of the present invention are to simplify and compact the structure of a lighting device of this character and to render the same susceptible of easy and economical manufacture from materials and by means of facilities ordinarily available.

Another object of the invention is to provide a lighting device which insures the admixture of a sufficient amount of air thereby insuring efficient action and precluding the generation of carbon monoxide.

Another object of the invention is to provide a lighting device having these advantages and which is easily and conveniently adjusted and regulated and which, when installed, is efficient, safe and reliable in its action.

Other objects and advantages reside in certain novel features of the construction, arrangement and combination of parts which will be hereinafter more fully described and particularly pointed out in the appended claims, reference being had to the accompanying drawing, forming a part of this specification, and in which:

Figure 1 is a fragmentary plan view showing the lighting device embodying the present invention installed on a gas stove;

Figure 2 is a fragmentary sectional view taken in the plane of line 2—2 of Figure 1, with parts shown in elevation for the sake of simplicity in illustration;

Figure 3 is a fragmentary view in horizontal section taken on line 3—3 of Figure 2;

Figures 4 and 5 are fragmentary views in transverse vertical section taken on lines 4—4 and 5—5, respectively, of Figure 2; and

Figure 6 is a fragmentary perspective view illustrating the tip end of the pilot burner.

Referring to the drawing, the numeral 1 designates generally a gas stove having the usual burners 2 supplied with gas or fuel from a fuel supply pipe 3 and valve controlled branches 4.

The lighting device embodying the present invention comprises a pipe 5 having one end threadedly connected with the fuel supply pipe 3 and having its other end threadedly connected with the body 6 of a pilot burner. The pipe 5 serves to support the pilot burner as well as to supply fuel to the chamber 7 thereof. The body 6 of the pilot burner has a tubular extension 8 lined for a portion of its extent by a bushing 9 (see Figure 2) and having its open end constituting the tip or flame end of the pilot burner. Between the body 6 and the extension 8 there is provided a ported partition 10 with which a needle valve 11 coacts to regulate the amount of fuel flowing to the tip of the burner. The needle valve extends down through the lower end of the body 6 and is provided with an operating knob 12. Packing 13 is provided for the needle valve. In order to hold the needle valve in adjusted position, a spring 14 is mounted on the shank thereof and engages the knob 12 at one end and the packing 13 at its other end. This spring 14 is under compression and sets up sufficient frictional resistance between the threads of the needle valve and the threads of the body 6 and also sufficiently compresses the packing 13 to hold the needle valve in any of its various adjustments. The spring also enhances the action of the packing. The pilot burner is of the Bunsen type and hence is provided with air admission openings 15 in the tubular extension 8. A collar 16 is threaded on the tubular extension 8 and may be turned down to partially block the air admission openings 15 and thereby aid in regulating the proportions of air and fuel in the combustible mixture.

A hood designated generally at 17 is provided for the pilot burner and is in the form an inverted cup having its peripheral wall 18 of cylindrical form and its top in the form of a flat plate 19. The lower end of the cup-shaped hood is closed by a bottom plate 20 having a flange 21 snugly or frictionally fitted in the lower end of the body portion of the hood and having lugs 22 pressed outwardly therefrom and engaged in corresponding notches 23 provided therefor in the body 18 of the hood. The friction or press fit of the flange of the bottom plate in the hood is sufficient to retain the parts assembled while the lugs 22 coact with the notches 23 to limit the extent to which the bottom plate can move into the hood. Both the top plate 19 and the bottom plate 20 are formed with openings 19' and 20', respectively, of sufficient size and number to insure an adequate supply of air to the pilot burner thereby precluding the generation of carbon monoxide and providing for the full support of combustion at the pilot burner.

The hood 17 is supported on the tubular extension 8 near its flame end and in such manner that the knob 12 and collar 16 are disposed exteriorly of the hood and thereby accessible

for convenient adjustment. For this purpose, the extension 8 adjacent its upper end is formed with flats 50 and with shoulders 51 at the lower ends of these flats. A washer 52 having an opening corresponding in cross section to the upper end of the tubular extension 8 is fitted thereon and engages the shoulders 51. The portion of the tubular extension 8 above the washer 52 projects through an opening provided therefor in the bottom plate 20 and of a shape corresponding to the cross sectional shape of the upper end of the tubular extension 8. The portion of the extension 8 which extends into the hood has a nut 53 threaded thereon, the nut clamping the bottom plate against the washer 52 and thereby supporting the hood in position.

The peripheral wall of the pilot burner is provided with a plurality of openings 25, one for each main burner 2. Slidably and tiltably fitted in each opening 25 is the inner end of a tube designated at 26. Each tube 26 is rectangular in cross section and may be formed up of sheet metal as shown. While, as indicated, each tube has its inner end slidably and tiltably fitted in its opening 25, complete withdrawal of the inner end of any of the tubes from the hood accidentally is precluded by the provision of a boss 27 struck out from one wall of each tube and engageable with the adjacent marginal edge of its opening 25 to prevent such withdrawal. The tubes 26 being constructed of sheet metal have some resiliency and this property is utilized in assembling in that the walls on which the bosses 27 are formed may be sprung or flexed sufficiently to permit the bosses 27 to be forced in through the openings 25 when assembling the tubes 26 with the hood 17. The outer end of each tube 26 has its lower wall extended beyond its upper wall as indicated at 28, has its side walls cut away or formed with openings 29 and its lower wall inwardly of its outer end formed with an opening 30. Beyond the opening 30 the lower wall is provided with a second opening 31 which receives the nipple 32 of a flashing tip designated generally at 33. The nipple 32 of the flashing tip has portions upset or struck out as indicated at 35 to secure it to its tube 26. The bore or opening of the nipple 32 communicates at its inner end with a similar opening 36 formed in the body of the flashing tip and communicating with a horizontal opening 37 extending out through the inner end of the nipple and also with a slot 38 extending through the top and both ends of the tip.

When the lighting device is assembled with the stove the nipple 32 of each flashing tip is fitted down into an opening 40 provided therefor in the burner 2 which it serves. Such assembly of the nipples with the burners is facilitated by the free sliding and tilting mounting of the tubes on the hood. When so assembled the flashing tips are located in igniting relation to the jet or flame openings of the main burners. As illustrated in Figure 2 the tubes 26 are preferably inclined upwardly from the main burners to their hood 17 so that with the pilot burner lighted there is a natural draft up through these tubes 26. With the lighting device of the present invention the pilot burner is constantly lighted, its flame being conveniently adjusted by manipulating the knob 12 and collar 16. Hence, when the valve controlling the supply of fuel to any of the main burners is opened, gas will flow through the flashing tip 33 associated with said main burner and issuing from the opening 37 thereof will pass up through this tube 26 into the hood wherein it will be ignited by the pilot burner and flash back to such tip 33, thereby igniting the gas issuing from its slot 38 and opening 37 and consequently igniting the associated main burner. Any irregularities in the spacing of the main burners from the hood 19 are readily taken care of by virtue of the sliding and tilting interfit of the tubes 26 with the hood 17. The pilot burner may be conveniently regulated since the means controlling the supply of fuel and of air thereto are located exteriorly of its hood and yet the provision of the hood precludes extinguishment of the flame of the pilot burner. The construction of the outer ends of the tubes 26 insures the supply of sufficient air to preclude the generation of carbon monoxide. Further, the slanting or inclining position of the tubes together with the construction of the flashing tips enhances the action of the device and insures quick ignition of the main burners. The flashing tips being permanently interconnected with the tubes 26 are not liable to be dropped or lost and yet due to the mounting of the tubes may be conveniently assembled with the main burner.

While I have shown and described one construction in which the present invention may be embodied, it is to be understood that this construction has been selected merely for the purposes of illustration, and that various changes in the size, shape and arrangement of the parts may be made without departing from the spirit of the invention or the scope of the subjoined claims.

The invention claimed is:

1. In a lighter of the character described, the combination of a main burner, a source of fuel supply therefor, a pilot burner connected to said source of fuel supply, a hood for said pilot burner, an open ended tube having one end interfitted with the hood for free sliding and tilting movement, and a flashing tip secured to the outer end of the tube and having a nipple extending downwardly therefrom and interconnected with said main burner, said flashing tip having a flame slot extending through the top and ends thereof and having an opening extending out through the end thereof adjacent said tube.

2. An automatic igniting device for the burners of a gas stove, comprising a pilot hood, a plurality of flash tubes extending from said hood toward the burners, and nipples carried by the outer ends of said tubes for engagement in outlet openings formed in said burners, said nipples having elongated slots to project a flame from the exterior of the nipple.

3. An automatic igniting device for the burner of a gas stove, comprising a torch head, a flash tube extending from said torch head toward the burner, and a nipple carried by the outer end of said tube for engagement in an outlet opening formed in the burner, said nipple having an elongated slot to project a flame from the exterior of the nipple.

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