

April 3, 1928.

W. F. DESTER
SAFETY GAS STOVE IGNITER

1,664,918

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Fig. 1.

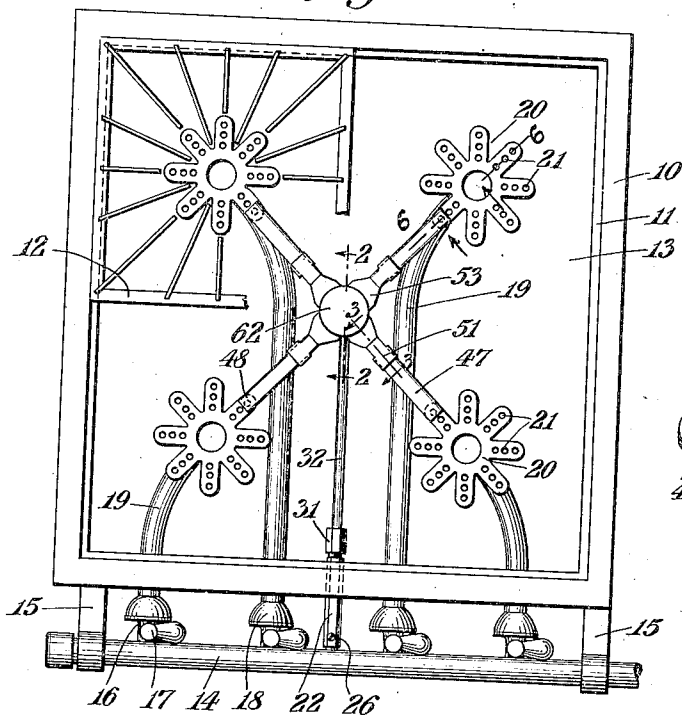


Fig. 4.

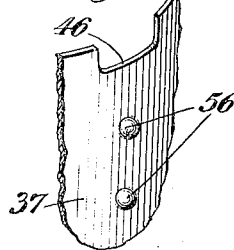


Fig. 5.

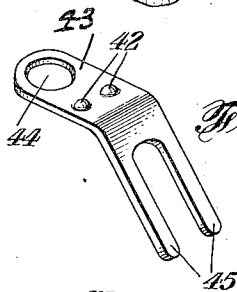


Fig. 6.

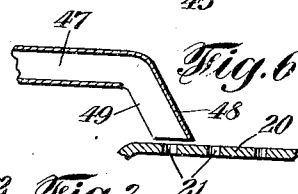


Fig. 2.

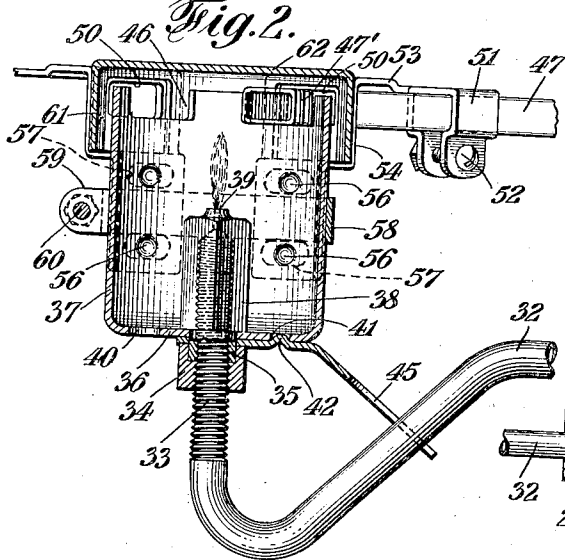


Fig. 3.

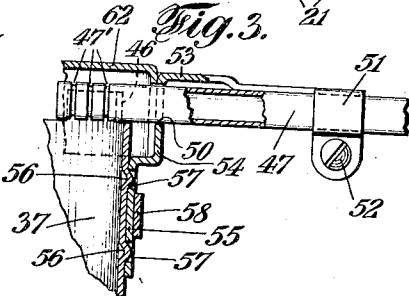
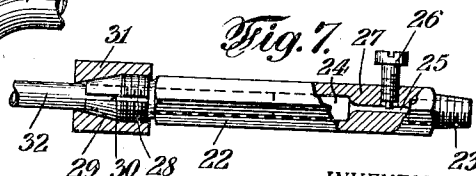


Fig. 7.



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UNITED STATES PATENT OFFICE.

WILLIAM F. DESTER, OF NEWARK, NEW JERSEY, ASSIGNOR TO U. S. TOOL CO., INC., OF EAST ORANGE, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SAFETY GAS-STOVE IGNITER.

Application filed December 19, 1925. Serial No. 76,411.

This invention relates to devices for igniting the burners of gas stoves and has as one of its objects to provide an appliance that is essentially safe, certain, and instantaneous in operation, completely avoiding the possibility of danger and loss due to the inadvertent or accidental opening of connections leading to the burners.

It is a further feature of the invention to produce an appliance adapted to be installed on substantially all of the several makes of gas stoves without any change being made in them whatever, merely substituting the device in place of the pilot light originally provided.

Another aim is in the provision of adequate adjustments whereby a single standard type of appliance may be used on stoves in which the burners are at varied distances from the center or pilot light location, which may be at different distances from the supply header.

These and other objects, such as practical design for economical quantity production by factory methods, the use of commercial parts wherever possible, and sturdy construction, are attained by the novel combination and arrangement of parts hereinafter described and delineated in the drawing hereto annexed, the same constituting an essential part of the instant disclosure, and in which:—

Figure 1 is a top plan view of a conventional type of gas stove having four burners and illustrating the application of an embodiment of the invention.

Figure 2 is an enlarged sectional view of the pilot light housing and associated parts, taken on line 2—2 of Fig. 1.

Figure 3 is a similar but fragmentary sectional view taken on line 3—3 of Fig. 1.

Figure 4 is a fragmentary perspective view of the pilot light housing wall.

Figure 5 is a perspective view of the pipe holding fork.

Figure 6 is a fragmentary sectional view of an accumulator tube and burner, the section being taken on line 6—6 of Fig. 1.

Figure 7 is a partial side elevational, partial sectional view of the inlet end of the pilot light feed connection.

Gas stoves of the type indicated in the drawing are usually provided with a rigid raised rim 10 having an inreaching lowered flange 11 on which is disposed skeleton

grills 12, one of which is shown in place, extending over a portion of the bottom plate 13.

At the front is a header or manifold 14, supported by brackets 15 extending from the stove and in which, at spaced intervals, are set nipples 16 controlled by cocks 17, these nipples entering controllable air inlets 18, the mixed air and gas passing through tubular conduits 19 to burners 20.

The burners shown are of the hollow multilobed type, each lobe having in its upper surface a plurality of fine perforations 21.

In installing the appliance, the original pilot is removed from the stove by unscrewing it from the header 14 and replaced in the header is a nipple 22 having a screw thread 23 at its outer end to fit the opening in the header.

The nipple 22 may be made of hexagonal rod and is of such length as to extend past the frame 10, into the chamber over the plate 13, as shown in Fig. 1.

The nipple contains an axial bore 24 extending in from both ends except for a short distance from the threaded portion 23 where the bores are connected by a smaller passage 25, controlled by a needle valve 26 passing into the thicker wall 27 of the nipple.

Near the opposite end of the nipple is a screw thread 28 terminating in a cone 29, both cone and screw threaded portion having slots 30 permitting contraction by reason of a nut 31 threaded on the element 28 and a conical inner portion to draw the split cone 29 inwardly.

A feed pipe 32 fits the bore 24 of the nipple to slide therein and can be clamped in adjustment by the nut 31 to become rigid with the nipple.

The inner end of the feed pipe 32 is bent angularly downward and then vertically upward at a right angle, as at 33, this element being provided with screw threads, as best seen in Fig. 2.

Fitted to the element 33 is a nut 34 having a cylindrical recess in the outer end adapted to receive an internally threaded boss 35 fixed on the lower side of a circular wall 36 forming the bottom of a cylindrical housing 37 for a pilot burner 38.

This burner is bored and threaded to receive the threaded end of the pipe 32 and acts as a lock nut when the same is adjusted

in the boss 35, the upper end of the burner having a small perforation 39 for the issuance of gas as controlled by the needle valve 26.

5 A plurality of openings 40 are formed through the bottom wall 36 of the housing to admit air, and also a pair of smaller openings 41 adapted to receive protuberances 42 extending from the flat portion 43 of a fork, having an opening 44 passed over the boss 35 and clamped between the plate 36 and nut 34, the prongs 45 of the fork engaging opposite sides of the pipe 32, thus holding the housing rigidly when in adjustment.

10 In the upper edge of the housing 37 are recesses 46 into which extend the inner ends of rectangular accumulator tubes 47, reaching outwardly to angularly down turned terminals 48 disposed directly over the outermost perforation 21 of the adjacent lobe of the burner 20, as may be seen in Fig. 6, the lower under wall of the tube being cut away as at 49.

The inner ends of these tubes are cut partially through on all four sides by spaced transverse grooves 47' to facilitate breaking off superfluous length in making adjustment to suit conditions.

25 These tubes are held in encircling clamps 51 provided with clamp screws 52, the clamps being formed on the outer ends of sheet metal arms 53, bent downwardly at right angles 54, formed with an opening 50 for passage of the tube, and then offset inwardly to blend into curved pads 55 suited to engage on the outer surface of the housing 37.

The housing is provided with spaced protuberances 56 engageable in transverse slots 57 in the pads to permit limited radial adjustment of the tubes 47 and the pads are clamped to the cylindrical housing by a band 58 having parallel outstanding ends 59 through which passes a clamp bolt 60.

30 Seated on the offset portions of the arms 54 to be retained therebetween is an annular flange 61 cut to pass over the tubes 47 and extending down from a flat circular cover 62 disposed over the housing 37, this cover permitting the escape of the products of combustion of the pilot burner 38, but effectually preventing an air current from blowing the flame out, and also the entrance of water or other droppings from interfering with the pilot flame.

35 From the foregoing it will be seen that the pilot light may be adjusted towards or from the front of the stove and also raised or lowered as may be required.

The accumulator tubes may be readily shortened and adjusted in their supporting clamps to extend closely over the nearest opening in each burner and provisions have been made to prevent accidental extinguishment of the pilot light.

40 It is to be noted that the tubes 47 com-

pletely enclose the gas entering from the main burner, delivering it to the pilot light, and thence reconducting the flame back to the main burner, causing ignition of all of the several burner perforations therein, the entire operation being automatically accomplished by merely turning on the cock controlling any desired burner.

Thus whether accidentally or intentionally one or more of the cocks be turned sufficiently to permit passage of gas, such burners will instantaneously become lit.

Although I have described my improvements with considerable detail and with respect to certain particular forms of my invention, I do not desire to be limited to such details since many changes and modifications may well be made without departing from the spirit and scope of my invention in its broadest aspect.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a safety lighter for gas stoves, the combination with a gas supply source, a burner in controlled communication therewith and a pilot, of a housing completely enclosing said pilot; tubular connections between said pilot and one of the openings in said burner, a valve controlled pipe between said gas source and said pilot, and means for adjusting the height of said pilot and housing relative to said burner.

2. In a safety lighter for gas stoves having a burner, a header, and valved connections therebetween, a pilot, a housing therefor, closed means for conducting gas from one of the jet openings in said burner to said pilot housing, a supply pipe for said pilot, means to adjust the operative length of said pipe, and means to adjust the height of said pilot and housing on said pipe.

3. The combination with a gas stove having a plurality of burners, a pilot burner inter-jacent, and a gas header in controllable communication with each of said burners, of a housing enveloping said pilot burner, said housing having a perforate bottom, a pipe leading from said header through the bottom wall of the housing, means for adjusting the pilot burner and housing up and down on said pipe, means for adjusting the length of said pipe, brackets adjustable on said housing, a clamp band encircling said brackets, said brackets having radially extending arms provided with clamp loops at their ends, rectangular tubes held in the loops, said tubes entering the housing at one end and being in open communication with one of the jet openings in each burner, and a cap removably engaged on said housing over the pilot.

This specification signed and witnessed this 18th day of December, 1925.

WILLIAM F. DESTER.