Feb. 14, 1950 E. H. MUELLER 2,497,233

LIGHTER STRUCTURE FOR GAS BURNERS

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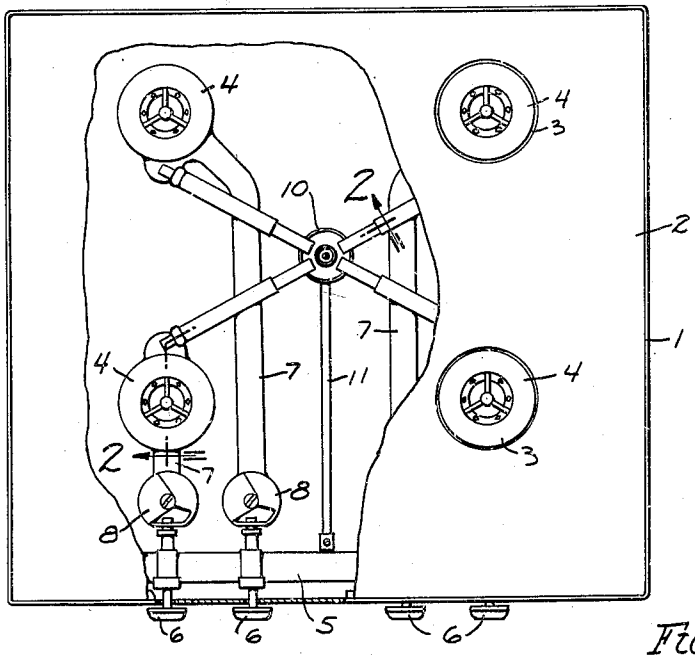


Fig. 1.

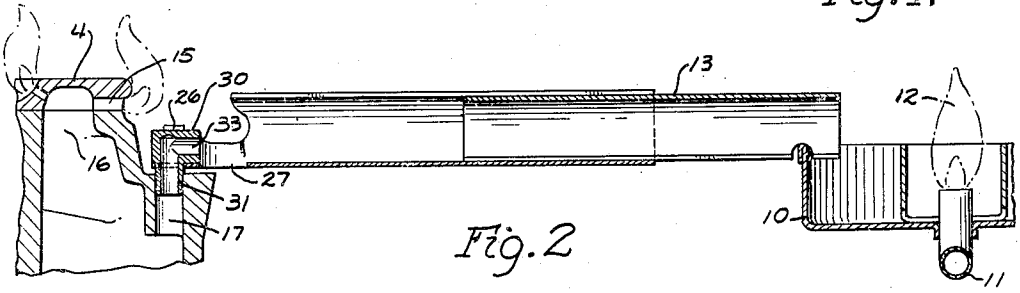


Fig. 2

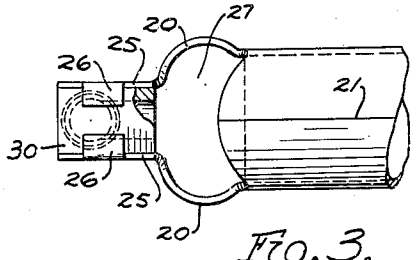


Fig. 3.

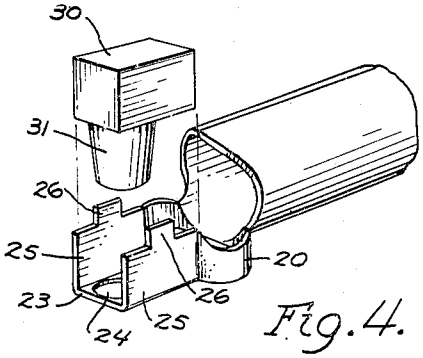


Fig. 4.

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LIGHTER STRUCTURE FOR GAS BURNERS

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1 Claim. (Cl. 158—115)

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This invention relates to a lighter structure for gas burners and it has to do particularly with the mounting of a flash tube tip to the flash tube.

In one form of an automatic means for igniting a gas burner when gas is supplied to the burner, there is provided a relatively remotely positioned pilot flame. A flash tube extends from a position adjacent the pilot flame to the burner and the end of the flash tube adjacent the burner is arranged to receive gas from the burner. This gas flows through the flash tube and is ignited by the pilot flame with a resultant flash-back which ignites gas flowing from the ports of the burner.

One manner of associating the flash tube with the burner is to employ a member or fitting, commonly termed a flash tube tip. This tip is connected to the flash tube and has a hollow extension arranged to fit into a charging port in the burner. The gas flows through the fitting or tip, the passageway in which is angular so that the gas is discharged into the flash tube.

The principal object of the present invention is to provide an improved and simplified construction for mounting the tip on the flash tube. The purpose in mind is to provide a structure which will make a strong connection but which can be made cheaply with a minimum of manufacturing operations with the result that the cost of production is lowered and which is reflected in the ultimate price to the benefit of the public and which, notwithstanding these facts, provides a connection which is stronger and more permanent than others heretofore known.

Fig. 1 is a general view showing a gas range structure with burners and a lighter structure therefor.

Fig. 2 is an enlarged cross sectional view taken substantially on line 2—2 of Fig. 1.

Fig. 3 is an enlarged plan view of the flash tube and the tip mounted therein.

Fig. 4 is a perspective view illustrating the parts in separated relationship.

A gas range structure as generally illustrated in Fig. 1 may have a frame 1 with a plate 2 with apertures 3 therein for exposing the several burners 4. Each burner may be supplied with gas forming a manifold 5 by means of its controlling valve 6. Each burner has a mixing tube 7 and an air control 8.

The lighter structure includes a central housing 10 to which gas is supplied by a small tube 11 to provide a pilot flame 12, while a flash tube 13 has one end adjacent the pilot flame as shown in Fig. 2, and its opposite end adjacent the burner.

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The flash tube may comprise two telescoping tube members as shown in Fig. 2. Each burner 4 has ports 15 for the issuance of flame supporting gas and an interior chamber 16 for distributing the gas to the ports. Also, each burner has a charging port 17 which is arranged to receive gas when the same is supplied to the burner by manipulation of the controlling valve 6.

The flash tube is constructed at its end adjacent the burner with a pair of extending arms 20. These may be fashioned with an outward curve, as shown in Fig. 3, or may be otherwise formed. This flash tube is made of flat strip stock fashioned into tubular form and it may have an unsecured seam 21. Accordingly, this section of the flash tube may be formed by stamping and forming operations while in the flat.

Substantially at the ends of the arms 20 there is a cross piece 23 which is integral with the arms and serves to connect the same and this cross piece is provided with an aperture 24 positioned as close as feasible to the free end of the cross piece. Extending upwardly from the cross piece are side wall members 25. These side walls are integral with the cross member 23 and provided by bending the metal up substantially 90°. The upper edges of the wall 25 are provided with wings or tabs 26. It will be observed that the entire construction at this end of the tube is integrally formed from the sheet metal. The cross piece 23 lies substantially in the plane of the lower portion of the flash tube as Fig. 2 is viewed. The arm structure 20 provides a space 27 for the passage of secondary air therethrough.

The tip comprises preferably a single piece of metal having a body portion 30 which, in exterior form, is advantageously of rectangular shape and it has an extension 31 which preferably is of a tapered construction as indicated. An angular passageway is provided in the tip, a portion of which extends vertically through the extension 31 and a portion of which extends horizontally through the body 30, these portions meeting at substantially right angles. The passage is generally indicated at 33. It is to be appreciated that in the above description such words as "vertical," "upper" and "horizontal" are used in a relative sense, considering the drawings, and are words of description and not words of limitation.

In making the assembly, the parts may be related as substantially shown in Fig. 4, and the projection 31 is passed through the aperture 24. This is preferably a nice, snug fit. The relative proportions and dimensions of the parts are such

that the body **30** fits nicely between the walls **25** and the body seats on the cross piece **31**. Thus, the tip is held strongly against turning or twisting as it is engaged by the opposite walls **25** and it is held against axial displacement of the tube because of the passage of the extension **31** through the aperture **24**. To complete the assembly the wings **26** are fashioned or bent over so as to overlie the body portion **30** of the tip as illustrated in Figs. 2 and 3. This securely locks the tip in position seating upon the cross wall **23** and engaged on opposite sides by the walls **25** and held against axial displacement by the interengagement of the extension **31** and aperture **24**.

In use, the extension **31** is placed in the charging port **17** as shown in Fig. 2, and thus the burner end of the flash tube is supported and held in position. The tapered construction of the tip **31** may provide a wedge fit in the opening **17**.

I claim:

In a lighter structure for igniting gas issuing from a gas burner having a charging port from a relatively remotely positioned pilot burner, a flash tube having an inlet opening at one end adapted to be disposed adjacent the gas burner and an outlet at the other end adapted to be disposed adjacent the pilot burner, the inlet end of said tube having a pair of spaced arms extending outwardly beyond said inlet opening, a substantially flat cross member spaced outwardly beyond said inlet opening and connecting the outer end portions of said arms along corresponding longitudinal edges thereof, said cross member having an opening therein, said outer end portions

of said arms forming substantially parallel wall portions which extend from opposite ends of said cross member at an angle of substantially 90° to the plane of the cross member, a tip member having a substantially rectangularly shaped body portion and an extension member projecting from one face thereof, said body portion seating on said cross member and fitting snugly between said wall portions, said extension member extending through the opening in said cross member and being adapted for insertion into the charging port of the gas burner, said tip having an angular passage therethrough for directing gas from the charging port of the burner into the inlet opening of said flash tube, the longitudinal edges of said wall portions opposite the edges connected by said cross member having distortable winged parts extending therefrom, said wing parts being bent to overlie the face of said body portion opposite the face from which said extension projects.

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