Sept. 30, 1952 E. H. MUELLER 2,612,218

LIGHTER STRUCTURE FOR GAS BURNERS

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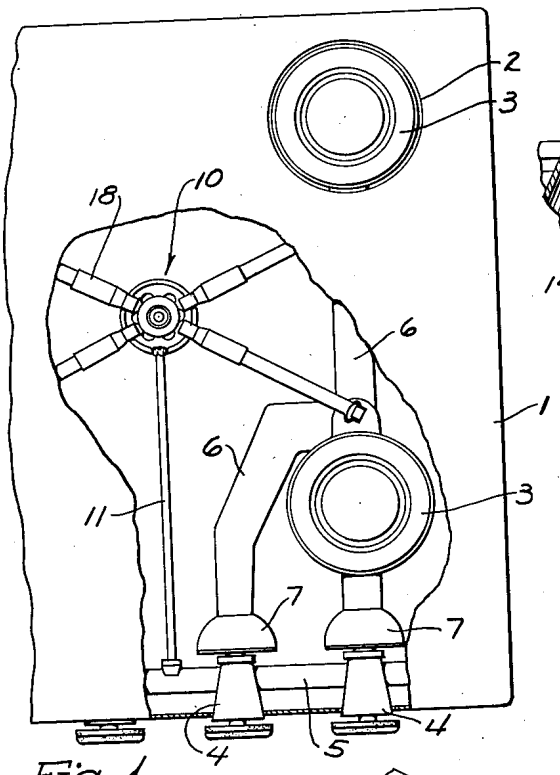


Fig. 1.

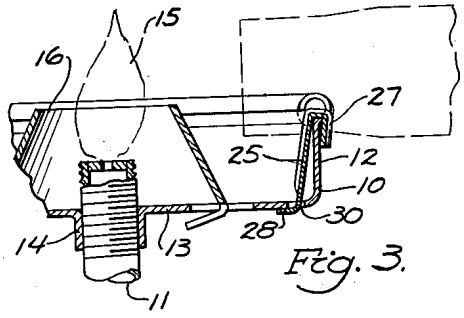


Fig. 3.

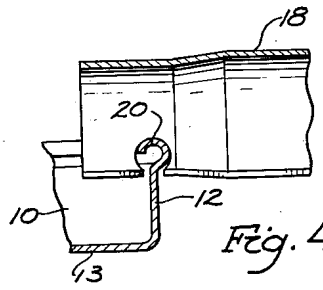


Fig. 4.

Fig. 2.

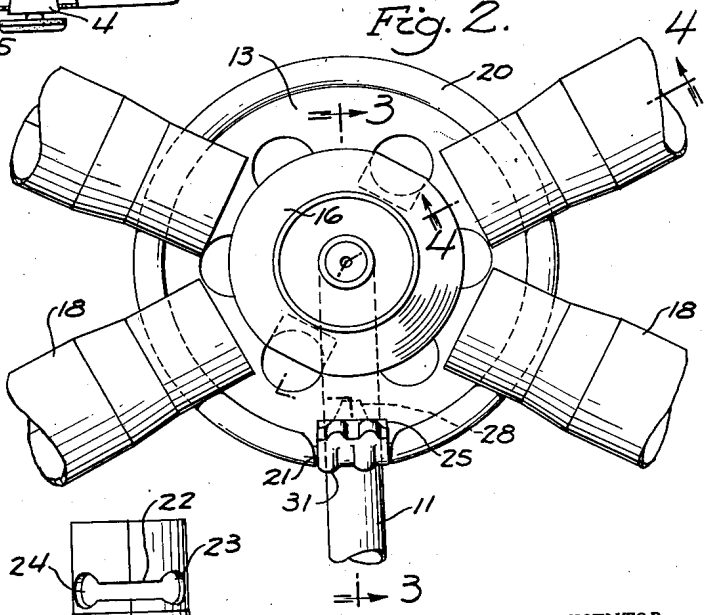
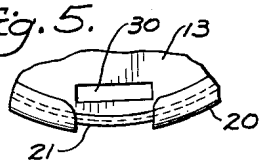


Fig. 5.



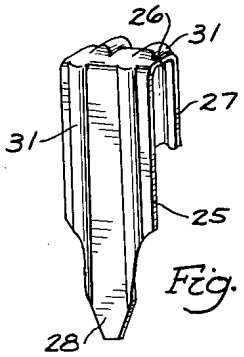


Fig. 6.

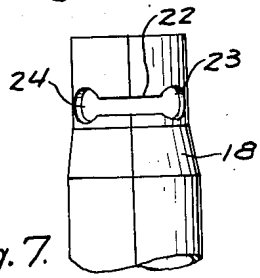


Fig. 7.

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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 lighters for gas burners and particularly to a lighter structure for use with a plurality of burners, such as the top burners of a gas range.

The invention is concerned particularly with improvements in a lighter structure of the type shown in my Patent No. 2,295,001 of September 8, 1942. In this patent the several flash tubes are mounted upon and connected to a cup-shaped center part, commonly called a housing, so that the tubes have great freedom of angular movement about the center of the housing, to the end that they may be adjustably positioned for variously positioned burners. The flash tubes have an aperture formation through which a bead or flange on the housing is threaded and the bead has a cut away part or notch through which the flash tubes may be assembled or disassembled.

The present invention aims to provide improvements in the type of lighter structure shown in said patent, so that while retaining the desirable features of the structure shown in said patent, the flash tubes may be mounted on the housing so that there is no chance of the flash tubes becoming detached or disassembled.

The present drawings show one form of lighter structure made in accordance with the invention and in these drawings:

Fig. 1 is a general view with parts cut away showing the top burner arrangement of a cooking range.

Fig. 2 is an enlarged plan view showing the housing and the flash tubes mounted thereon.

Fig. 3 is a sectional view taken on line 3—3 of Fig. 2 showing the device for permanently holding the flash tubes on the housing.

Fig. 4 is a sectional view taken on line 4—4 of Fig. 2 showing the normal position of a flash tube on the housing.

Fig. 5 is a detailed partial view showing the notch formation in the housing bead.

Fig. 6 is a perspective view of a clip member.

Fig. 7 is a view showing the structure of the flash tubes.

In Fig. 1, the top portion of a cooking range is shown at 1 and the top plate may have an aperture 2 therein for each burner, there being two burners shown at 3. These burners may be controlled individually by valves 4 so that gas may flow from the supply pipe or manifold 5 through the valves and into the mixing tubes 6 of the burners with primary air entering the bell-shaped portions 7 in the usual manner.

The lighter structure embodies a central support or housing generally illustrated at 10. A gas supply tube 11 connects to the manifold 5 and it has an upturned end as shown in Fig. 3 for receiving and supporting the housing 10 and which constitutes a pilot burner. This housing is of cup-shape having a peripheral side wall 12 and a bottom wall 13 with a central hub portion 14 mounted on the tube 11. A gas flame, as at 15, issues from the tube 11 and the housing may embody an additional guard 16 for protecting the flame.

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As shown in Fig. 4, the upper edge of the circumferential wall 12 is fashioned into a bead formation 20. This bead runs throughout the extent of the circumferential wall except at preferably one place where the bead 20 is cut away to provide a notch 21 (Fig. 5). The flash tubes 18, as shown in Fig. 7, are provided with an aperture somewhat in the shape of a dumbbell or a figure 8 having a restricted central portion 22 with enlarged ends 23 and 24. A flash tube is mounted on the housing by aligning the tube with the notch 21 and passing the restricted portion 22 over the wall 12. Then the flash tube may be shifted circumferentially so that the bead 20 is threaded through the enlarged apertures 23 and 24. The head may not be fashioned into completely closed form; it is sufficient that it provides a dimension which will not pass through the portion 22 of the slot. The tube and flash tube are then assembled, as shown in Fig. 4. The several flash tubes thus mounted on the housing have exceeding freedom of movement circumferentially on the bead so that they may be adapted to extend to variously positioned burners and also the flash tubes may be rocked on the bead, within limits, in a vertical plane.

The manner in which such a lighter operates is well known to those versed in the art, and suffice it to say that the pilot light 15 burns constantly. When a valve 4 is manipulated to permit a combustible mixture of gas into a burner, some of this gas flows through the respective flash tube and is ignited by the pilot flame. There is a resultant flash back or small explosion which ignites the gas issuing from the burner.

Now, in order to insure permanent mounting of the flash tubes on the housing, means is provided for, in effect, closing the notch 21. This means is preferably in the form of a small clip-like device, one form of which is shown in Fig. 6. The clip illustrated is constituted by a piece of metal which may be relatively thin, as shown at 25, fashioned into U-shape so that it has a bight portion 26 and one arm 27 with the body portion

25 constituting the other arm of the U. The body portion 25 may be relatively long, as compared to the arm 27, and provided with an ensmalled end 28 for projecting through an aperture 30 in the bottom of the housing. Where the clip is made of very thin metal, the metal may be corrugated or ribbed, as shown at 31, to give the clip strength and also for effectively closing the notch 21. After the flash tubes are mounted on the housing, the clip may be assembled as shown in Fig. 3, with the bight portion 26 lying in the notch, the arm 27 lying outside the wall 12 and with the body part 25 lying inside the housing. The ensmalled end is passed through the aperture 30 and is bent so as to underlie the bottom of the housing, as shown in Fig. 3.

It will be appreciated that while the basic lighter structure is maintained, the versatility and flexibility of the structure is increased. The housing and the flash tubes may be manufactured and the housing and flash tubes packed compactly in separate containers for shipment to a user. The user referred to is ordinarily a gas range manufacturer. When the gas range manufacturer is assembling the range, the flash tubes may be threaded on the housing as above stated. On the other hand, the housing and the flash tubes may be assembled together and the holding clip applied so that the entire assembly may be shipped to a user. In this way, the range manufacturer need not bother with assembling the flash tubes and housing but receives the parts in permanent assembly. Yet, the basic structure is maintained and the flash tubes have the unchanged flexibility of circumferential movement and pivotal action in a vertical plane.

The clip which closes the slot 21 prevents a flash tube from moving circumferentially into alignment with the notch. In other words, the combined thickness of the metal measured through the arm 27 of the clip, the wall 12 of the body, and the body portion 25 of the clip, is greater than the width of the slot 22. Therefore, a flash tube cannot move past the slot. Ordinarily, the preferred arrangement is that the slot 21 be positioned substantially over the supply tube 11, as shown in Figs. 1 and 3, so there is no occasion for having a flash tube at the location of the slot and/or clip.

The structure of this invention, while embodying an essentially simple mechanical expedient, materially adds to the versatility, flexibility, and

usefulness of the basic lighter structure. Some range manufacturers prefer to have the lighters shipped in disassembled relationship. There is an advantage to this in that the flash tubes and the housing may be compactly packaged separately. Other range manufacturers desire the lighters to be shipped in completely assembled form. This can be done by assembling the tubes on the housing, applying the clip, and then shipping the entire assembly. When the lighter assembly is in the process of being mounted upon a range, which ofttimes requires some manipulation of the parts, the flash tubes cannot become detached from the housing. Thus, a manufacturer of ranges, who desires the lighter parts shipped separately can apply the holding clip in his own plant just before the lighter structure is assembled on a range. Accordingly, the same basic structure may be employed to satisfy these various desires of manufacturers who may all approve of the basic structure, but who may differ as to their ideas of shipment and assembly.

I claim:

In a lighter structure for a plurality of gas burners substantially as described, a support member having a circumferential supporting formation, said supporting formation having a notch therein, a plurality of flash tubes, each having an opening in its side wall so shaped and formed that the material of the side wall defining the opening may pass into the notch, the said supporting formation and the opening in each flash tube being so relatively shaped that the supporting formation slidably and non-detachably engages in said opening upon circumferential movement of the flash tube relative to the supporting member, and a clip having a portion inserted in the notch and attached detachably to the support member to thereby block the notch and hold the flash tubes assembled on the circumferential supporting formation.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,295,001	Mueller	Sept. 8, 1942
2,444,142	Mueller	June 29, 1948