PATENT SPECIFICATION

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COMPLETE SPECIFICATION

Improvements relating to Chimneys for High Candle Power Lamps Burning Vaporized Liquid Fuel

We, FRITZ GRAETZ and ERICH GRAETZ, both German Citizens, personally responsible partners of GRAETZ KOMMANDIT-GESELLSCHAFT, of Altena, Westphalia, Germany, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement :—

This invention relates to high candle power lamps that burn vaporized liquid fuel of the kind having an internal chimney structure comprising a cylindrical member which supports a mixer tube, which member is equipped with an external annular flange that rests upon a carrier ring of the lamp, and which member is surrounded by a hood whereby an annular space is formed through which the primary air for combustion is drawn.

In prior chimney structures for lamps of the kind set forth the cylindrical member and the external annular flange were formed as two separate parts, the former being rolled, and were spot welded together. This construction has certain disadvantages. For example the rolled cylindrical member could never be made exactly circular, so that gaps were liable to occur at the junction of the interior edge of the annular flange and the bottom of the cylindrical member, through which gaps the products of combustion could escape in to the primary air.

The present invention consists in an internal chimney structure for a high candle power lamp of the kind set forth, of which structure the cylindrical member and the external annular flange are formed integrally with one another by a deep drawing process, and in which one or more openings are formed at the end of the cylindrical member remote from the external annular flange.

Preferably a bridge extends across the end of the cylindrical member remote from the annular flange, this bridge having slots for accommodating means for adjustably securing the mixer tube. This bridge may be, and preferably is, integral with the cylindrical member. The slots in the bridge preferably extend in a vertical direction parallel to the axis of the structure.

An air chamber may be fixed to the interior of the cylindrical member and may communicate with the exterior thereof through an opening. A distance piece for supporting the mixer tube may be mounted on this air chamber.

The accompanying drawings show one example of carrying out the invention, in which :—

Fig. 1 represents a section through the upper portion of the lamp ;

Fig. 2 is a front elevation of the internal chimney ; and

Fig. 3 is a plan view of the internal chimney.

Referring to the drawings an internal chimney 1, comprising a cylindrical member and an external annular flange rests on a carrier ring 2. A hood 3 rests on the upper edge or rim of the internal chimney structure at 4, whereby an air-tight seal between the cylindrical member 1 and the hood 3 is obtained. In addition, the hood 3 is concentric with respect to the carrier ring 2. The internal chimney structure is formed from a sheet or plate deep drawn in one piece, so that the cylindrical member and the annular flange are formed integrally, the top of the member then being pierced in such a manner that two parts 6 on the sides of a middle part 7 can be bent upwardly, the part 7 forming a bridge and the parts 6 side walls thereto. Two apertures 5 are thus formed in the top of the structure. Two holes are also formed in the bridge 7 for the passage of the two legs of the mixer tube 11. In the lateral walls 6 vertical slots 8 are provided for screws 9 which are screwed into tapped holes 10 in the mixer tube 11. One leg of the mixer tube 11 extends into an

air chamber 12 fixed to the interior of the cylindrical member in a lateral aperture therein. Through a hole in the bottom of the air chamber 12 extends a vaporizer tube 13 having a jet 14. The other leg of the mixer tube 11 is supported by a distance piece 17 from the wall of the air chamber 12 and carries at its bottom end a gas chamber 18 with a ceramic collar 19 screwed to it. An incandescent mantle 20 is attached to the said collar 19. At its bend the mixer tube 11 has a set screw 21 which enables the mixture to be varied by throttling the mixture tube. Below the bend of the mixer tube 11 there is a venturi waist 22. In the hood 3 there are apertures 23 for the primary air. An annular air space 24 is formed between the hood 3 and the internal chimney 1.

When the screws 9 on the bridge 7 are unscrewed the mixer tube 11 can slide vertically within the limits of the slots 8 in the lateral walls 6, making it easy to regulate the distance between the end of the mixer tube 11 and the jet 14. The primary air entering through the apertures 23 into the annular space 24 and thence into the air chamber 12 flows into the mixer tube 11 below the venturi-waist 22 where it mixes with fuel vapour issuing from the jet 14.

The internal chimney structure with adjustable mixer tube according to the present invention has the following advantages :—

In contradistinction to hitherto known designs, which, as mentioned above, consisted of an annular flange and a cylindrical member spot-welded to it, the internal, chimney structure of this invention is formed from a member deep-drawn in one piece, which ensures accuracy of size, circular shape and renders possible very close working limits between the internal chimney structure and the hood, which, in turn, ensures a tight seal between the internal chimney structure and the hood resting on the latter.

The internal chimney structure of the present invention further makes it possible to dispose the bridge 7 near the top of the cylindrical member, approximately at the level of the rim 4, because the deep-drawing of the chimney structure and the subsequent provision of the apertures 5 automatically produce this bridge. Further by this bridge the rigidity of the upper portion of the internal chimney structure is increased. Further the adjusting means described ensure an accurate axial adjustment of the mixer tube relatively to the jet 14, and this easy adjustability of the mixer tube is also a considerable advantage of the invention.

What we claim is :—

1. In or for a high candle power lamp of the kind set forth, an internal chimney structure of which the cylindrical member and the external annular flange are formed integrally with one another by a deep-drawing process, and in which one or more openings are formed at the end of the cylindrical member remote from the annular flange.

2. An internal chimney structure according to Claim 1, wherein a bridge extends across the end of the cylindrical member remote from the annular flange, this bridge having slots for accommodating means for adjustably supporting the mixer tube.

3. An internal chimney structure according to Claim 2, wherein the bridge is integral with the cylindrical member.

4. An internal chimney structure according to Claim 2, or according to Claim 2 and Claim 3 wherein the slots extend in a vertical direction parallel to the axis of the structure.

5. An internal chimney structure according to any one of the preceding claims wherein an air chamber is fixed to the interior of the cylindrical member and communicates with the exterior thereof through an opening, and wherein a distance piece for supporting the mixer tube is mounted on the air chamber.

6. In or for a high candle power lamp of the kind referred to, the combination of an internal chimney structure, hood and adjustably supported mixer tube substantially as described with reference to and as shown in the accompanying drawings.

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