PATENT SPECIFICATION

697,828

Date of Application and filing Complete Specification Aug. 20, 1951.

No. 19562/51.

Application made in Germany on May 22, 1951.

Complete Specification Published Sept. 30, 1953.

Index at acceptance:—Class 75(i), H(1d:3b), H5f(1:5).

COMPLETE SPECIFICATION

An improved Vaporiser 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:—

The majority of vaporisers used on high-candle-power lamps consists of a vertical tube provided at its upper end with a coil made from tubing which has the purpose of extending the path of the fuel from the lower end of the vaporiser to the fuel discharge jet.

Since the vaporisers of such lamps are pre-heated by methylated spirit or an atomiser-preheater, the further heating of the vaporiser is left to the burner or the incandescent mantle. In vaporisers of this type the mantle is located in the coil, arranged concentrically to the coil, so that, while it heats the coil relatively unformly, it heats only one side of the vertical tube of the vaporiser.

The distance between mantle and coil is relatively large, whereas the distance between the mantle and the vertical tube is small. In the case of a mantle fixed at an angle it may even happen that the mantle almost touches the vertical vaporiser tube. This causes considerable overheating of the vertical vaporiser tube which, in such a case, tends to twist and bend while the lamp is burning. It may even happen that, if the mantle has a hole on the side which faces the vertical vaporiser tube, a spurt of flame from the mantle may strike the vertical tube making the latter distend and even melt.

To prevent the bending of the vaporiser under the action of excessive heat it has been suggested to provide its vertical tube with a reinforcing rib on the vertical tube, outside the coil, in the vicinity of but on the opposite side of the tube from the mantle. Though such a rib is able to prevent to a large extent the bending of the vaporiser, it has the disadvantage that it dissipates a great deal of heat so that vaporisers provided with such ribs are in many cases unable to attain that temperature which is necessary for their functioning.

It is the purpose of the present invention to obviate the disadvantages of known constructions without losing any of their advantages.

According to the present invention a vaporiser tube for a high-candle-power lamp burning vaporised liquid fuel is provided with one or more external ribs located on that side of the vaporiser tube which is under the action of the greatest heat, said rib or ribs being so shaped as to be adapted to stiffen the vaporiser tube.

The or each rib may be arranged parallel or substantially parallel to the longitudinal axis of the vaporiser, and it may be located partially or wholly in a groove in the vaporiser. Further, the or each rib may either be soldered to the vaporiser or it may form an integral part thereof. Again it may be bevelled over the whole or a part of its length, and, if desired, it may be of T-shaped section or substantially T-shaped section.

The accompanying drawings represent one constructional form of vaporiser according to the invention:—

Fig. 1 being a front view;

Fig. 2 being a side elevation; and

Fig. 3 a sectional plan view of a detail.

In Fig. 1 a vertical vaporiser tube 1 carries at its upper end a coil 2. The vaporiser tube 1 has a recess 3 into which a rib 4 is inserted. The rib 4 is rigidly fixed to the vertical tube 1. Fig. 2 likewise represents the vertical vaporiser tube 1 and the coil 2, as well as the recess 3 and the rib 4. In addition, Fig. 2 shows a rounded part 5 at the lower end of the rib 4. Fig. 3 shows the vertical vaporiser tube 1, the coil 2, and the recess 3. In

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the recess 3 a rib 6 of T-section is inserted.

The vaporiser of the invention functions in the same manner as do vaporisers of known construction, except that the vaporiser of the invention, while having the same mechanical strength, has the advantage that the heat generated by the burner or mantle is transmitted more efficiently to the vaporiser because the rib is located on the side nearest the mantle whereby the metallic mass of the vaporiser is brought up closer to the mantle. It is a further advantage of the vaporiser of the invention that, in contradistinction to vaporisers with the rib arranged externally, there is no dissipation of heat from the vaporiser towards the external—and therefore cold—portion of the lamp. It is, furthermore, of advantage that the rib is located partially in a groove of the upper or stronger portion of the vertical vaporiser tube. This arrangement simplifies the manufacture of the vaporiser because it makes it possible to dispense with additional means of fixation when the rib is soldered in place.

According to the present invention the rib may be of T-section or of approximately T-section. This is of special advantage in the case where the mantle is damaged and has a hole from which a spurt of flame issues and hits the vaporiser. In such a case the T-shape section of the rib positively prevents the burning or softening of the vertical vaporiser tube. According to the present invention the lower portion of the rib may be rounded to prevent it touching the bulbous lower end of the mantle.

The present invention is not restricted to vaporisers having a vertical tube and a coil; the distinguishing feature of the invention being to provide at least one reinforcing rib on that side of the vaporiser which is exposed to the greatest heat. The invention can be equally well applied to vaporiser tubes of other constructions with advantage.

What we claim is:—

1. A vaporiser tube for high-candle-power lamps burning vaporised liquid fuel, wherein the vaporiser tube is provided with one or more external ribs on that side of the vaporiser tube which is exposed to the greatest heat, said rib or ribs being so shaped as to be adapted to stiffen the vaporiser tube.

2. A vaporiser tube as claimed in Claim 1, wherein the rib or ribs is or are arranged parallel or substantially parallel to the longitudinal axis of the vaporiser tube.

3. A vaporiser tube as claimed in Claims 1 and 2, wherein the or each rib is partially or wholly lodged in a groove in the vaporiser tube.

4. A vaporiser tube as claimed in any of Claims 1 to 3, wherein the or each rib is soldered on to the vaporiser tube.

5. A vaporiser tube as claimed in Claim 1 or Claim 2 wherein the or each rib forms an integral part of the vaporiser tube.

6. A vaporiser tube as claimed in any of Claims 1 to 5, wherein the or each rib is bevelled along the whole or only part of its length.

7. A vaporiser tube as claimed in Claim 6, wherein the lower part of the or each rib has a rounded surface.

8. A vaporiser tube as claimed in any of Claims 1 to 7, wherein the or each rib is of T-shape section or of substantially T-shape section.

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Leamington Spa: Printed for Her Majesty's Stationery Office, by the Courier Press.—1953.
Published at the Patent Office, 25, Southampton Buildings, London, W.C.2, from which copies may be obtained

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