

C. BLANKENBURG.
 ROUND VAPOR BURNER FOR HEATING AND LIGHTING PURPOSES.
 APPLICATION FILED SEPT. 16, 1907.

1,015,988.

Patented Jan. 30, 1912.
 3 SHEETS—SHEET 1.

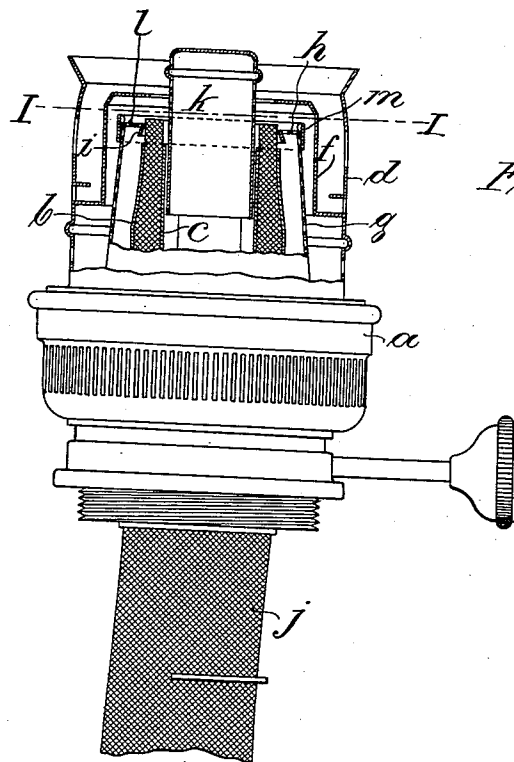


Fig. 1.

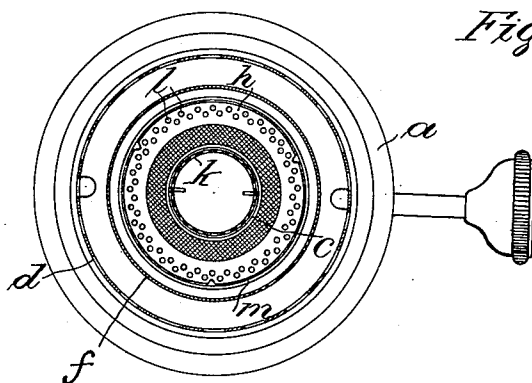


Fig. 2.

Witnesses:
Carl Blankenburg
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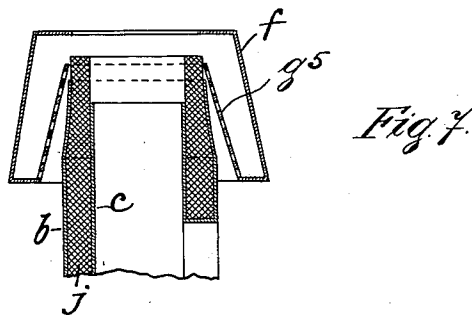
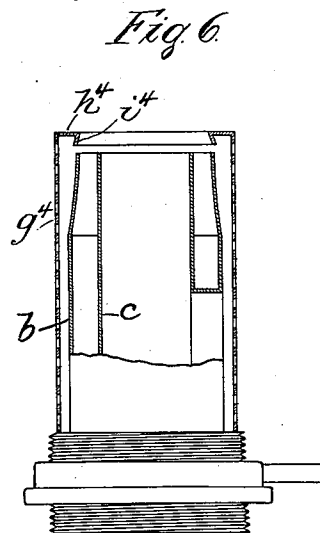
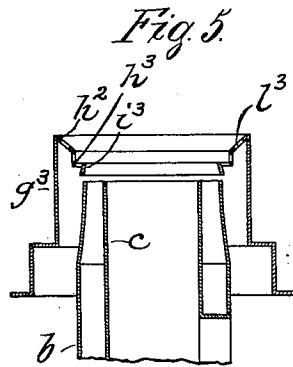
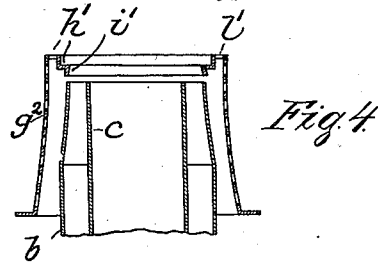
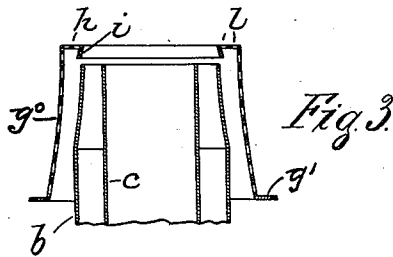
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 8.

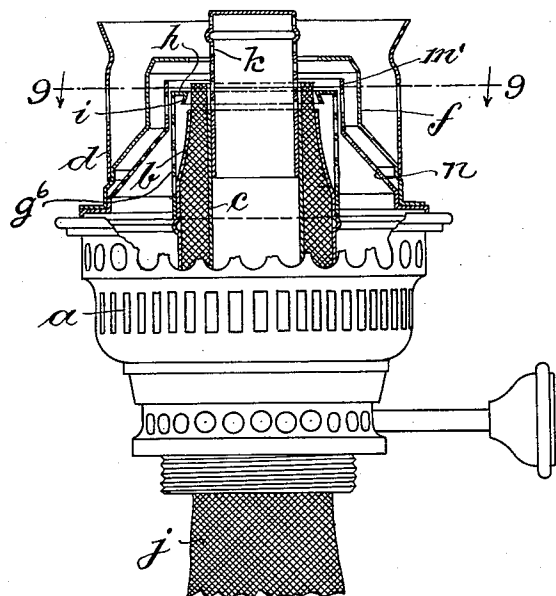
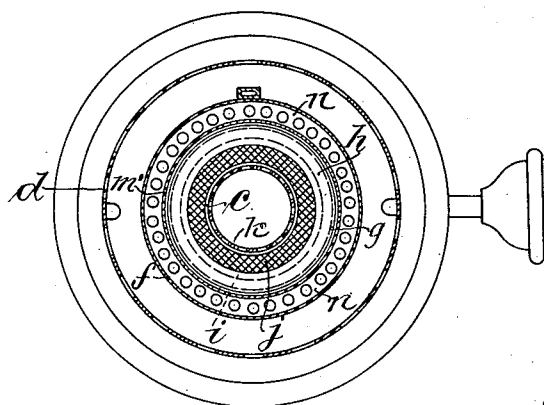


Fig. 9.



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UNITED STATES PATENT OFFICE.

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ROUND VAPOR-BURNER FOR HEATING AND LIGHTING PURPOSES.

1,015,988.

Specification of Letters Patent.

Patented Jan. 30, 1912.

Application filed September 16, 1907. Serial No. 393,031.

To all whom it may concern:

Be it known that I, CARL BLANKENBURG, a subject of the King of Prussia, and resident of 13 Schützenhausstrasse, Leipzig-Sellershausen, in the Kingdom of Saxony, German Empire, have invented certain new and useful Improvements in Round Vapor-Burners for Heating and Lighting Purposes, of which the following is a specification.

The present invention relates to improvements in the construction of round vapor burners principally for use in incandescent oil lamps. In lamps of the kind a noticeable objection is that the tubes surrounding the wick become unduly heated after the lamp has been burning for a time.

The object of the present invention is to provide effective means for preventing the transmission of heat from the flame to the wick tubes. This result is accomplished by providing a perforated tube disposed outside of the outer wick tube so that air can freely circulate between this perforated tube and the outer wick tube while the upper edge of this perforated tube is bent inward close to the exterior cylindrical surface of the wick to come in contact with the wick a short distance above the ends of the wick tubes. By this arrangement the flame is prevented from creeping down the external surface of the wick and contacting with the wick tubes. The arrangement of the perforated protecting tube described is such that transmission of heat from this protecting tube to the outer wick tube is practically prevented.

The invention is illustrated in the accompanying drawings by way of example.

In these drawings Figure 1 is a vertical sectional elevation, Fig. 2 is a sectional plan on the line I—I of Fig. 1, Figs. 3-7 are vertical sectional elevations showing modified arrangements of the protecting tube according to the present invention, Fig. 8 is a vertical partially sectional elevation of a slightly modified form of vapor burner and Fig. 9 is a section on the line 9-9 of Fig. 8.

In carrying the invention into effect according to the form shown the burner body *a* is arranged to carry the two concentric wick tubes *b* and *c* and the outer perforated gallery *d*. Within the gallery *d* there is supported the usual burner cap *f* which is provided at its upper end with a circular opening through which there projects the per-

forated spreader *k*. The wick *j* is arranged between the concentric wick tubes *b* and *c* and the upper end of the wick after it leaves the wick tubes *b* and *c* is guided by a flange *h* carried on a perforated tube *g* which forms the protecting tube according to the present invention. The flange *h* in the form illustrated is produced by bending inwardly the perforated tube *g* and this flange is provided also with perforations *l*. On the outside of the tube *g* there is arranged a ring *m* which projects above the plane of the flange *h* and forms a gage for determining the highest point to which the wick *j* should be screwed. The flange *h* is preferably provided with a frusto-conical wick guide *i* widening downward so as to facilitate the entrance of the wick *j* when it is screwed upward.

According to the arrangement described the flame starting from the wick is prevented from coming into contact with the wick tube *b* because the flange or ring *h* prevents the flame from creeping downward owing to the said ring *h* contacting with the outer surface of the wick below its upper edge and above the upper edge of the outer wick tube *b*. Further by providing the tube *g* with perforations air which is fed to the burner circulates through the perforations of the tube *g* and the perforations *l* in the ring or flange *h* and thereby the ring and tube are kept cool. Experiments with this construction of burner have shown that by providing a ring *m* the vaporization of the oil proceeds much more quickly than if the ring *m* is dispensed with. This is probably owing to the amount of heat adapted to be accumulated and given up by the ring *m*.

In Fig. 1 the form of the protecting tube *g* is clearly shown and, as will be seen, it is of frusto-conical form, tapering toward its upper end, and is turned inwardly to form the flange *h* which carries the frusto-conical wick-guide *i*, the tube *g* being secured to the burner body by means of screws or the like passing through a flange (not shown) on the lower end of the tube *g*.

Fig. 3 shows a slightly modified form of the protecting tube, which latter is there designated by *g'* and is shown of slightly curved tapered form with a flange *g'* on its lower end by means of which it may be fastened by screws to the burner body. This

construction may, however, be considerably modified, as, for instance in Fig. 4, where a protecting tube g^2 is shown formed with a stepped upper flange h' perforated at l' and carrying the wick guide i' . As shown at Fig. 5, the protecting tube g^3 may, if desired, be of stepped formation and the upper flange be formed with a bevel h^2 perforated at l^3 and a step h^3 carrying the wick guide i^3 . Furthermore, as shown in the modification in Fig. 6, a cylindrical protecting tube g^4 may be provided having a turned-in flange h^4 and wick-guide i^4 , the lower flange of the tube being dispensed with and the tube g^4 being brazed or otherwise secured to the burner body.

In the modification shown at Fig. 7 the protecting tube g^5 is shown in one with the burner cap f and is tapered upwardly, but in this case the upper flange and wick-guide are dispensed with, the upper edge of the tube g^5 forming the wick-guide and contacting with the wick j .

A modified form of the burner according to the present invention is illustrated in Figs. 8 and 9. In these figures the ring m in Figs. 1 and 2 is replaced by a tube m' which is supported on a conical part n held between the gallery d and the burner body a . The ring m' is supported clear of the outer surface of the perforated protecting tube g^6 . The upper end of the hood m' forms a ring around the upper end of the protecting tube g and projects above the flange h so as to form the gage for the highest position to which the wick should be screwed. It will be seen in Fig. 8 that the conical part n is perforated so as to permit the passage of the air for supporting combustion within the cap or air suction cover f . The hood m' in Figs. 8 and 9 differs from the ring m in Figs. 1 and 2 by being separated from the tube g by an air space. In this way the heating of the upper end of the hood m' does not interfere with the cooling of the protecting or isolator tube g .

I claim:—

1. A vapor burner comprising an inner and outer wick tube, a vertically adjustable wick between said tubes, a frusto-conical

guide for said wick, said guide terminating above the upper edge of said outer wick tube and being adapted to contact with the external periphery of the wick below the upper edge of the wick, and a perforated tubular support for said guide.

2. A vapor burner comprising an inner and outer wick tube, a vertically adjustable wick between said tubes, a frusto-conical guide for said wick, said guide terminating above the upper edge of said outer wick tube and being adapted to contact with the wick, and a perforated supporting tube having an inwardly turned flange at its upper end carrying said guide, so as to provide an insulating air-space between said tube and outer wick tube and deliver air to the wick between the upper edges of said guide and outer wick tube.

3. A vapor burner comprising an inner and outer wick tube, a wick between said tubes, a frusto-conical guide for said wick above the level of the top of said outer tube, having as a support a perforated tube so that an insulating air space is provided between said guide and said outer wick tube, in which the upward flow of air is throttled and diverted in the flaming portion of said wick, and a ring projecting above the said perforated tube and forming a gage for the wick.

4. A vapor burner having in combination, an outer and an inner wick tube, a wick between said tubes, a perforated isolator tube disposed around the outer wick tube and through the perforations in which the air for combustion passes, a flange on said perforated tube projecting inwardly and adapted to contact with the outer cylindrical surface of the wick at a point below the upper end of the wick and above the upper end of the outer wick tube and a ring projecting above the level of the said flange and encircling the exposed part of the wick.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

CARL BLANKENBURG.

Witnesses:

ERNST BODENBERGER,
RUDOLPH FRICKE.