

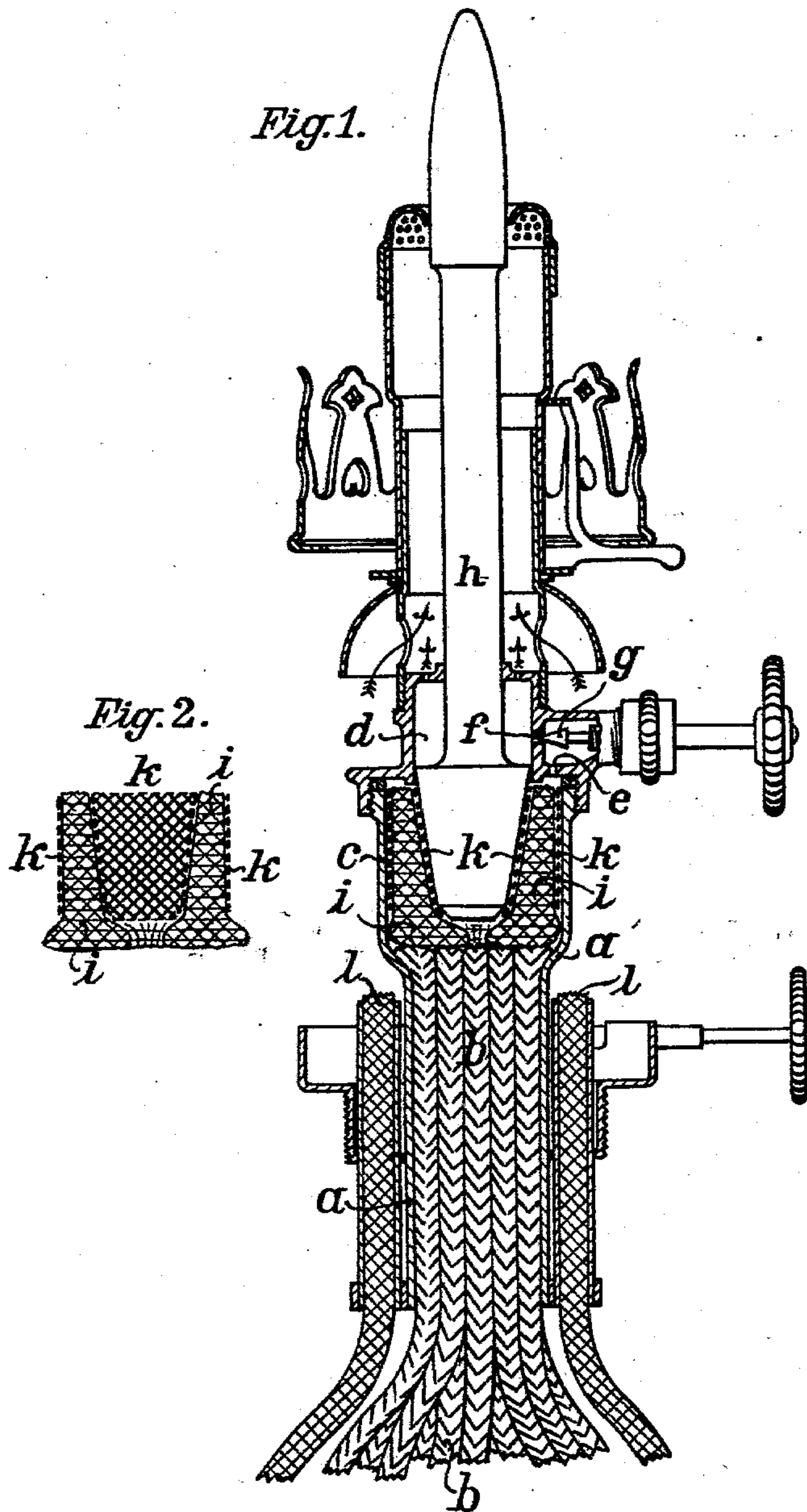
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R. E. WALTHER.  
INCANDESCENT LAMP FOR LIQUID HYDROCARBONS.

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NO MODEL.



Witnesses.  
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## UNITED STATES PATENT OFFICE.

ROBERT EMIL WALTHER, OF WERDAU, GERMANY.

## INCANDESCENT LAMP FOR LIQUID HYDROCARBONS.

SPECIFICATION forming part of Letters Patent No. 745,697, dated December 1, 1903.

Application filed February 9, 1903. Serial No. 142,471. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT EMIL WALTHER, a subject of the King of Saxony, and a resident of Werdau, Kingdom of Saxony, German Empire, have invented new and useful Improvements in Incandescent Lamps for Liquid Hydrocarbons, of which the following is a specification.

This invention relates to that class of lamps for liquid hydrocarbons in which the heat of the lamp is conducted by a metal conducting-post in the center of the burner through two superposed chambers in order to vaporize or gasify the liquid in the lower chamber and dry it in the upper chamber. In this type of construction it has been found advantageous to employ a suction or capillary device in the vaporizing or gasifying chamber, which capillary device may be applied in any convenient or well-known manner for the purpose of supplying the liquid to the vaporizing-chamber. The vaporization is mainly effected by the heat of the central conducting-post; but this heat is, however, at the same time so great that it acts destructively on the suction material, which rapidly becomes either resinified, burned, or otherwise destroyed, and so rendered incapable of raising the liquid. This destruction occurs in a lamp which is in constant use in about three months. The useless suction material has then to be removed from the lamp and replaced by a new one—a matter of some difficulty for the laity. An excellent means of obviating the evil, according to this invention, is to place in the vaporizing or gasifying chamber a removable filling, which may be composed of any desired material and which will wholly or partially withstand the comparatively high temperature of the central post. The most advantageous means I find is to form such filling of absorbent material, and it has also been found expedient to clothe both the inner and outer walls of this lining either wholly or partially with a metal gauze or other suitable metallic mantle in order to give the requisite form to the filling and to prevent the suction material from coming in direct contact with the heated metal walls of the chamber and the heat-conducting post. The purpose of this removable filling is to protect the suction mate-

rial beneath it from the injurious effects of the direct heat of the post, and so prevent carbonization or other destructive action on the suction material, which would tend to lessen or destroy its capillary powers. The absorbent material of the filling becomes worn out in course of time; but this is easily remedied by replacing the old filling by a new one, which can be done easily, simply, and quickly. The main suction material is never injured by the heat from the center post and does not, therefore, require to be renewed.

In the accompanying drawings is shown a type of construction of the lamp according to this invention, Figure 1 being a sectional elevation of the lamp, and Fig. 2 a section of the filling used in this lamp.

The tube *a*, which is screwed to the lamp-container or other liquid-reservoir, is filled up to its widened upper end with a suitable suction or capillary material *b* for the purpose of, firstly, supplying liquid from the reservoir to the gasifying-chamber *c*, and, secondly, preventing any back rush of gas into the liquid-reservoir. Above the chamber *c* is a gas-drying chamber *d*. These chambers communicate with each other through the openings *e* and *f*, which latter can be more or less opened or completely closed by means of the screw-valve *g*. Through the center of both chambers *c* and *d* passes the lower end of the post *h*, which conducts the heat of the flame to the chamber *c*, the bottom of the post not resting directly upon the suction material *b*. According to the present invention the base of the post is surrounded by a filling which is pushed into the chamber *c* after unscrewing the upper chamber *d*. This filling, as shown in Fig. 2, is composed of a suitable absorbent material *i* and two metal mantles *k*, of wire-gauze or other material, which wholly or partially inclose the filling which surrounds the lower part of the post *h*, heated by the flame. The lower part of the filling lies closely upon the suction material *b* in the tube *a*, but so that the end of the post *h* does not come in contact with the latter. By the heat of the post a vigorous raising of the liquid by the suction material *b* is set up and also a rapid gasification of the liquid in the chamber *c*. When the valve *g* is opened, gas passes from the chamber *c* to the chamber *d*



and escapes then into the mixing-tube and to the burner-head, above which the incandescent body is mounted in the usual way.

When the filling *i k* has become worn out after more or less use by the action of the highly-heated post, a new one is inserted in its place after unscrewing the upper portion *d*, so that after screwing the upper portion on again the lamp will be ready for use. To start the lamp, the wicks *l l*, which are raised and lowered by rack work, are lighted and allowed to burn until the further gasification is carried on by the post *h*, heated by the burning gas-flame.

15 Having now particularly described and ascertained the nature of the said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In an incandescent lamp for liquid hydrocarbons, the combination with the casing having two superposed gasifying-chambers and a post for conducting the heat downward from the burner to both of said chambers, a removable absorbent filling contained within 20 the lower gasifying-chamber, a wick the top of which engages said filling, and two wire-gauze mantles covering the inner and the outer surface respectively of the filling, to protect the same from direct contact with the

post and with the wall of the lower gasifying-chamber. 30

2. The combination of the burner body or casing having superposed gasifying-chambers and a conducting-post extending from the burner proper into both of said chambers, an absorbent material for feeding the liquid fuel to the lower gasifying-chamber, and a protector interposed between said absorbent material and the wall of the lower gasifying-chamber. 35 40

3. The combination of the burner body or casing having superposed gasifying-chambers and a conducting-post extending from the burner proper into both of said chambers, an absorbent material for feeding the liquid fuel to the lower gasifying-chamber, and a double protector interposed between said absorbent material on one hand and the conducting-post and the wall of the lower gasifying-chamber on the other hand. 45 50

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 23d day of January, 1903.

ROBERT EMIL WALTHER.

Witnesses:

E. C. MEYERS,

FREDERICK J. DIETZMAN.