

(No Model.)

3 Sheets—Sheet 1.

A. HOWAT.

LAMP FOR BURNING MINERAL OILS.

No. 472,056.

Patented Apr. 5, 1892.

Fig. 1.

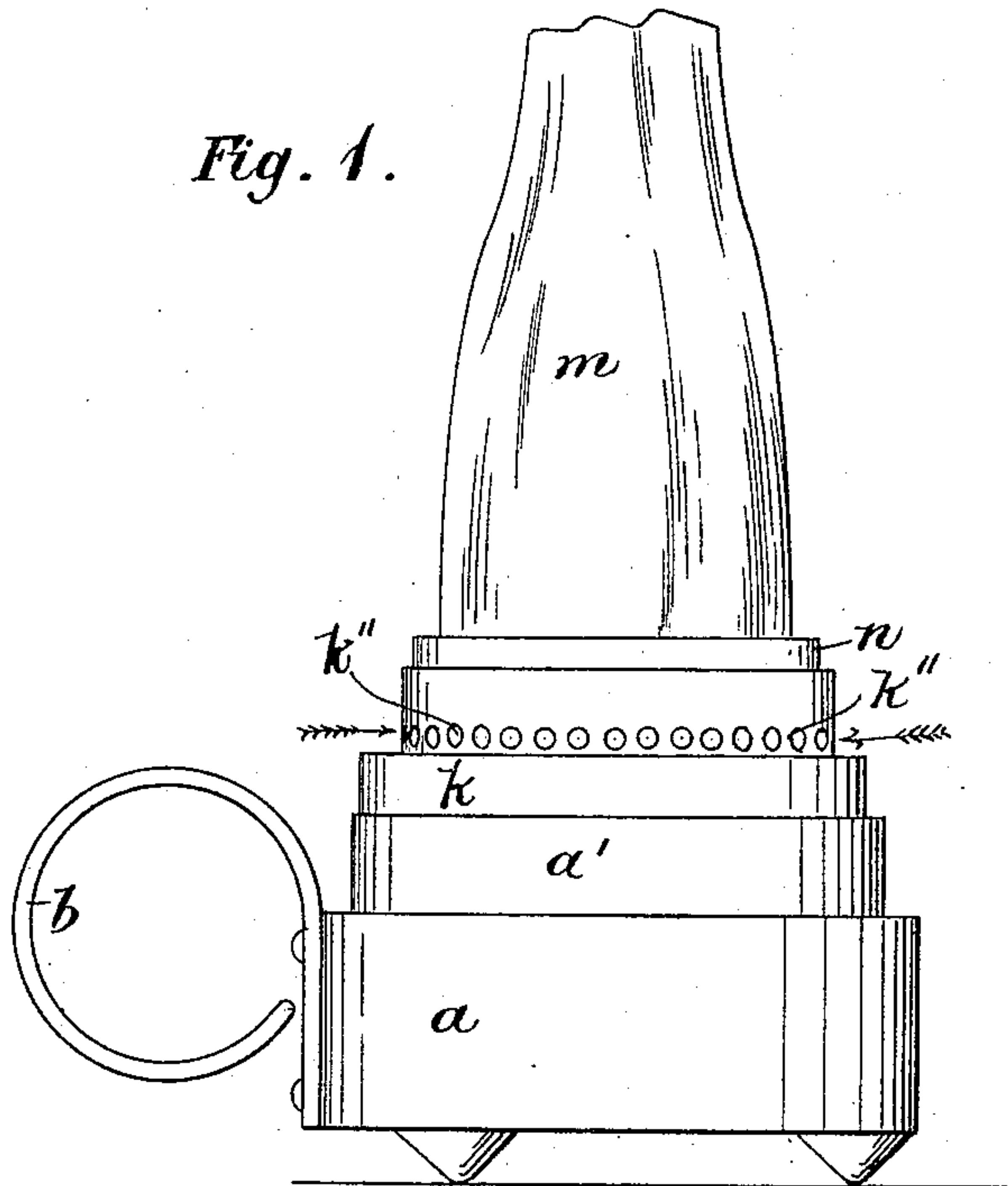
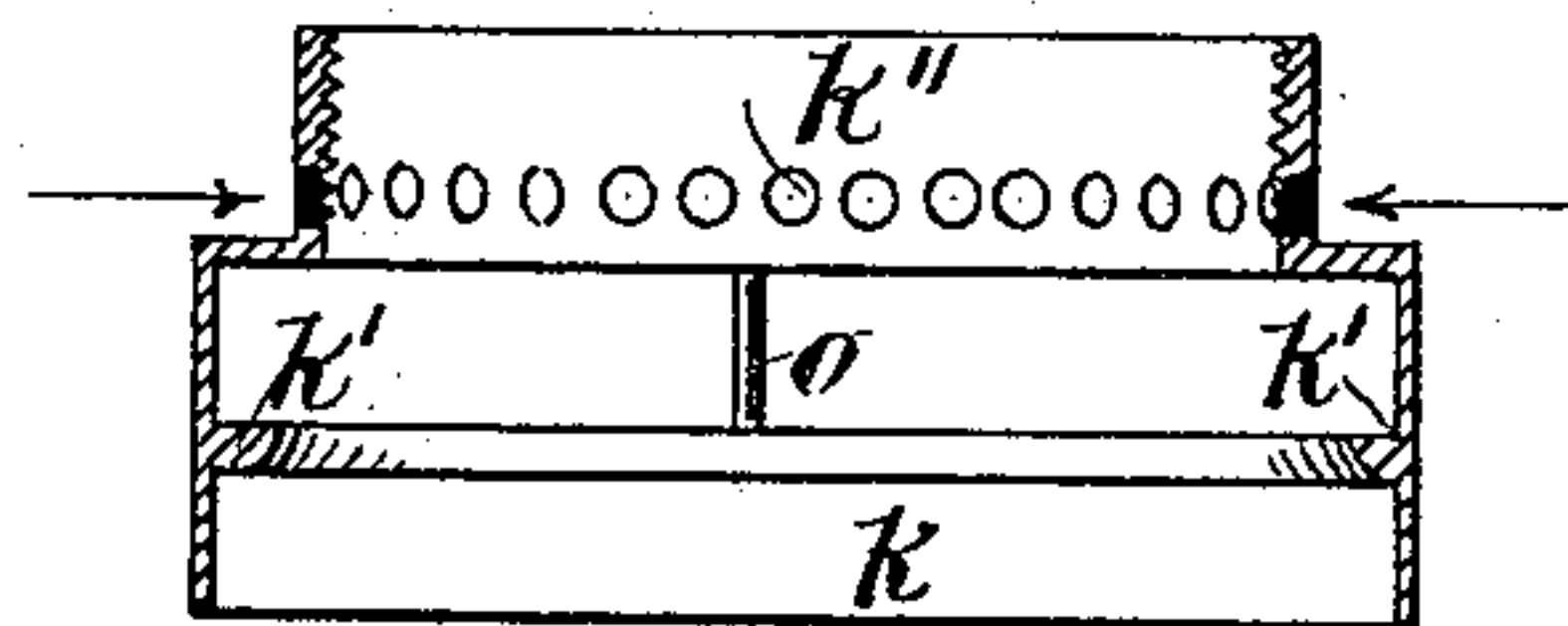


Fig. 2.



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By

Richard S. A.

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(No Model.)

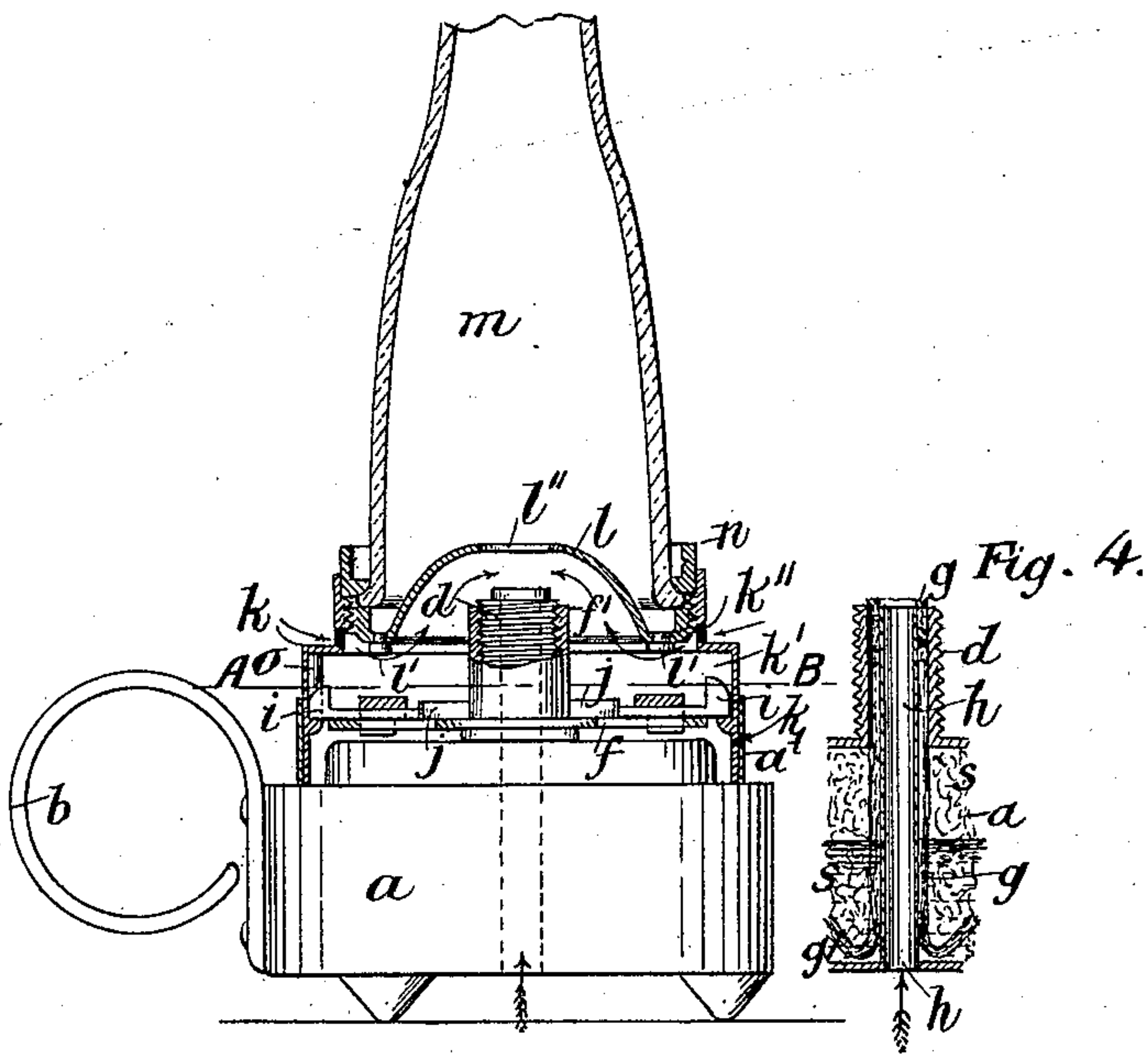
3 Sheets—Sheet 2.

A. HOWAT.  
LAMP FOR BURNING MINERAL OILS.

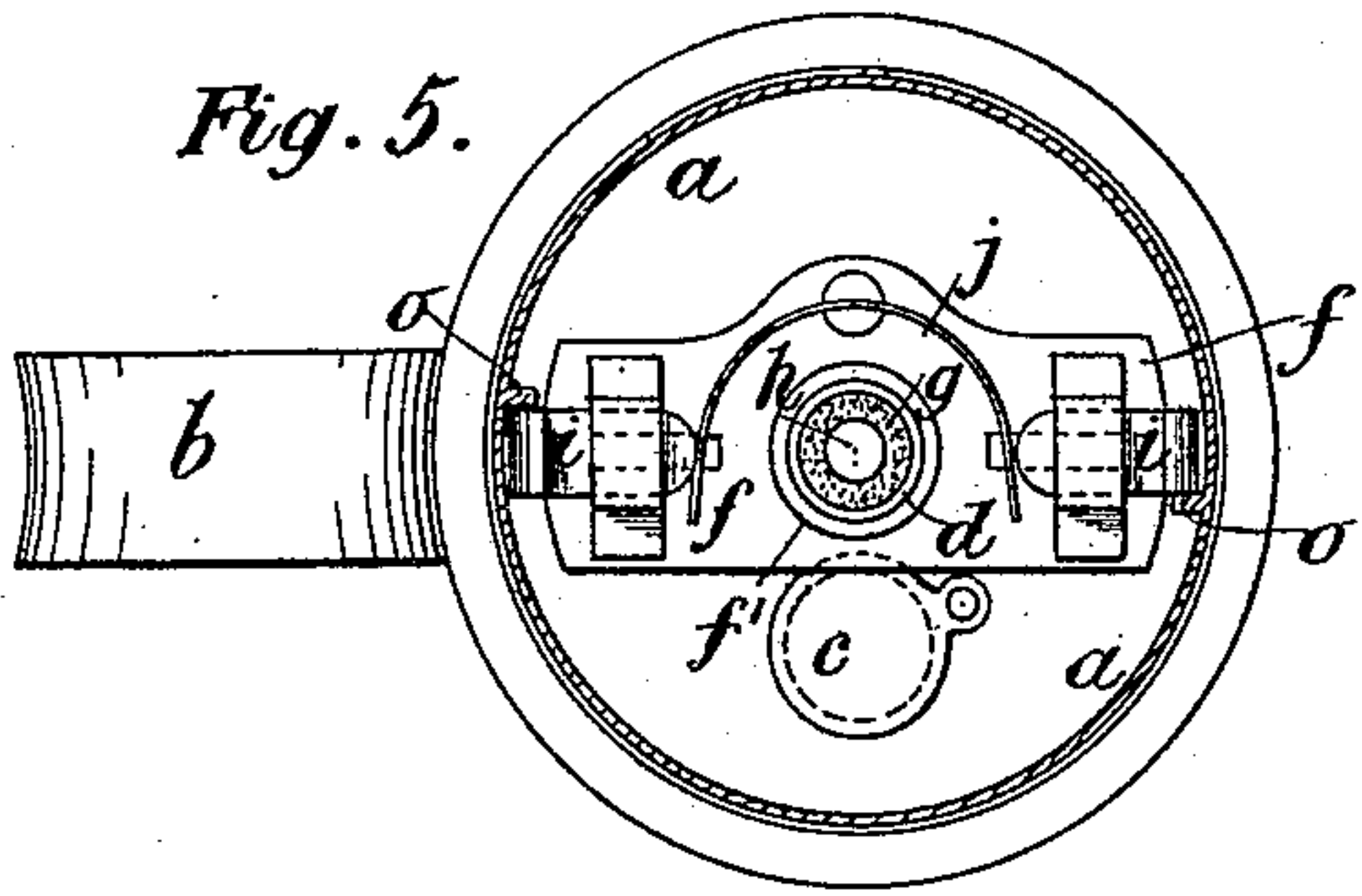
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*Fig. 3.*



*Fig. 5.*



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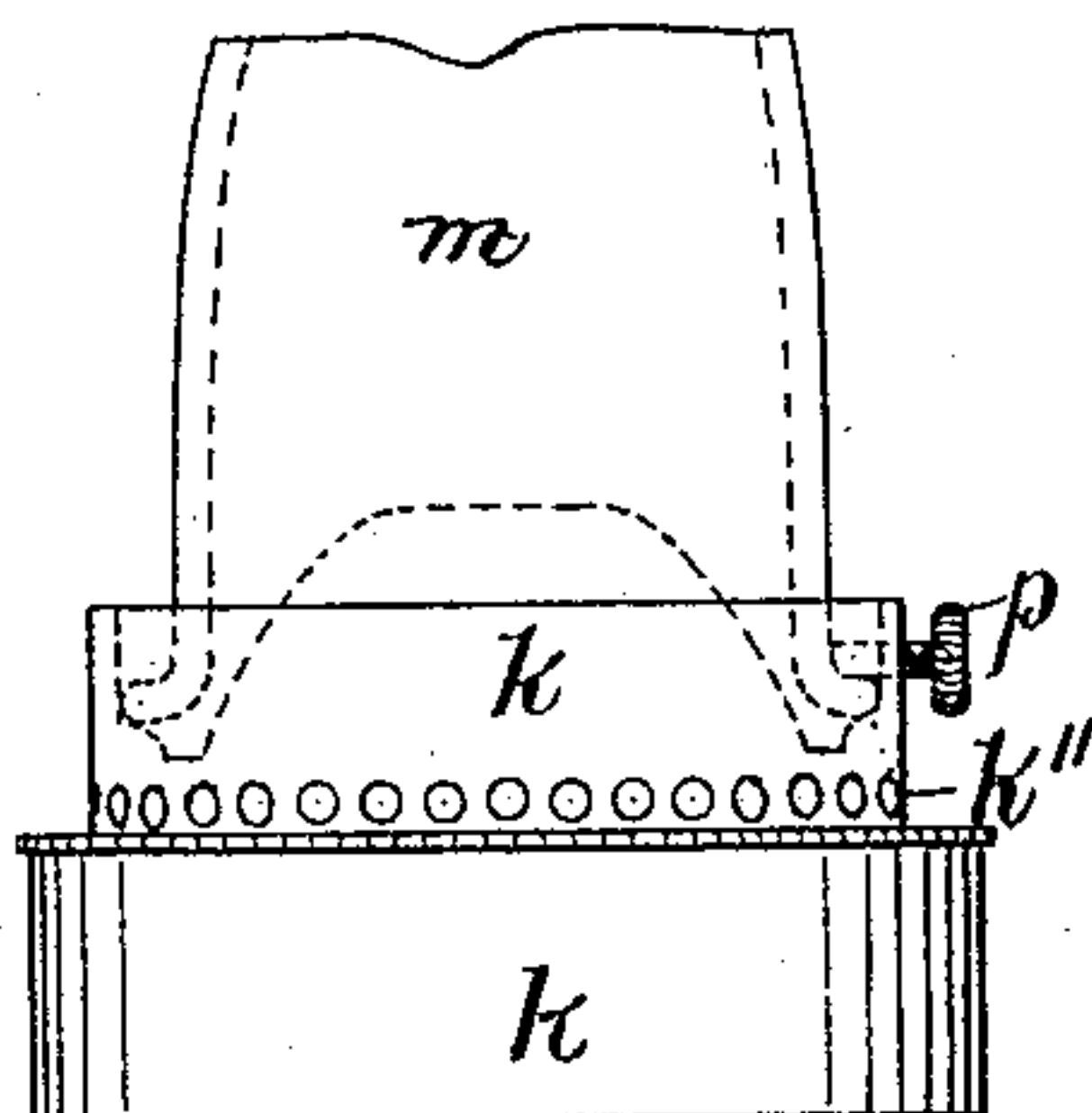
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LAMP FOR BURNING MINERAL OILS.

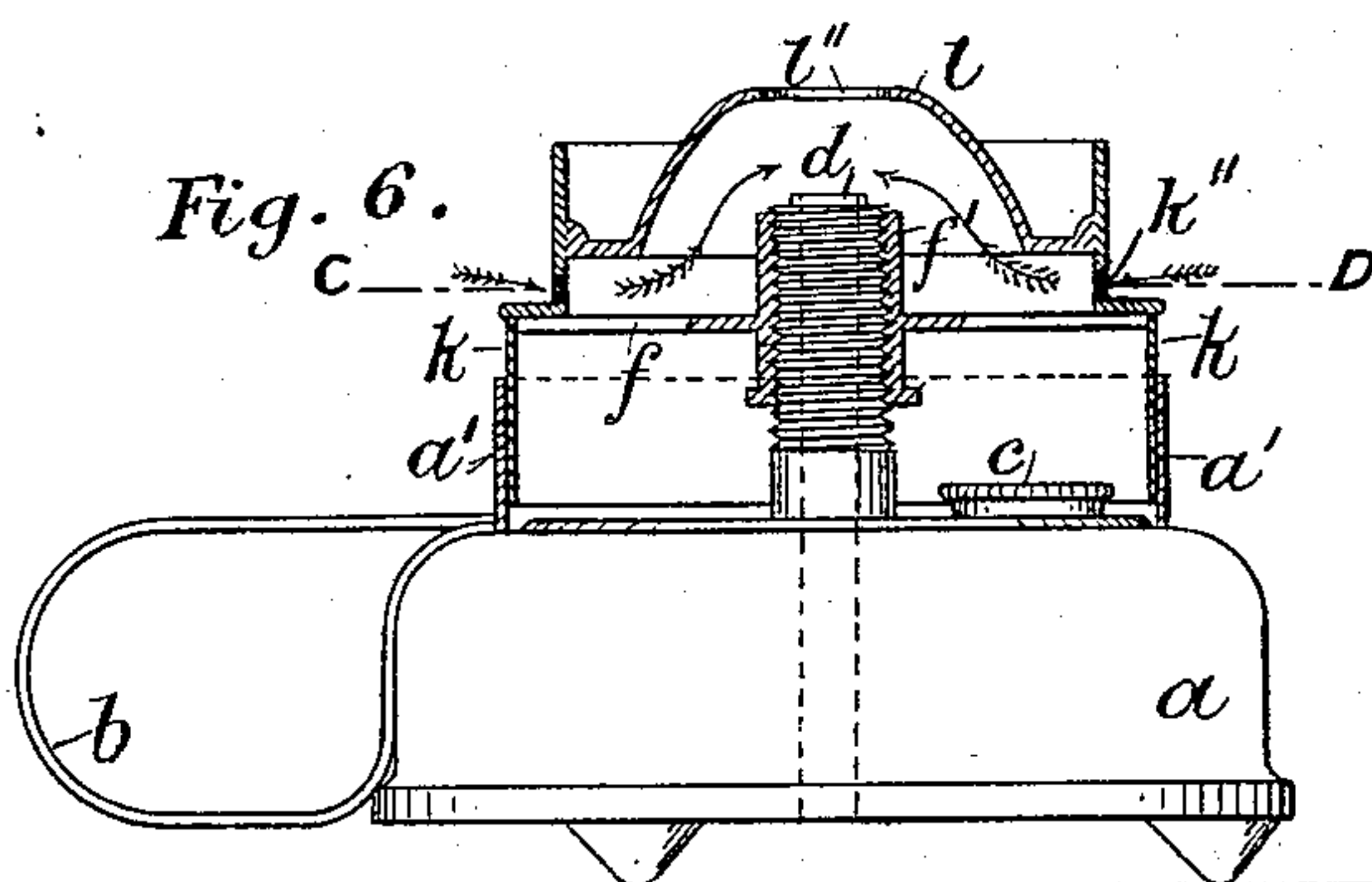
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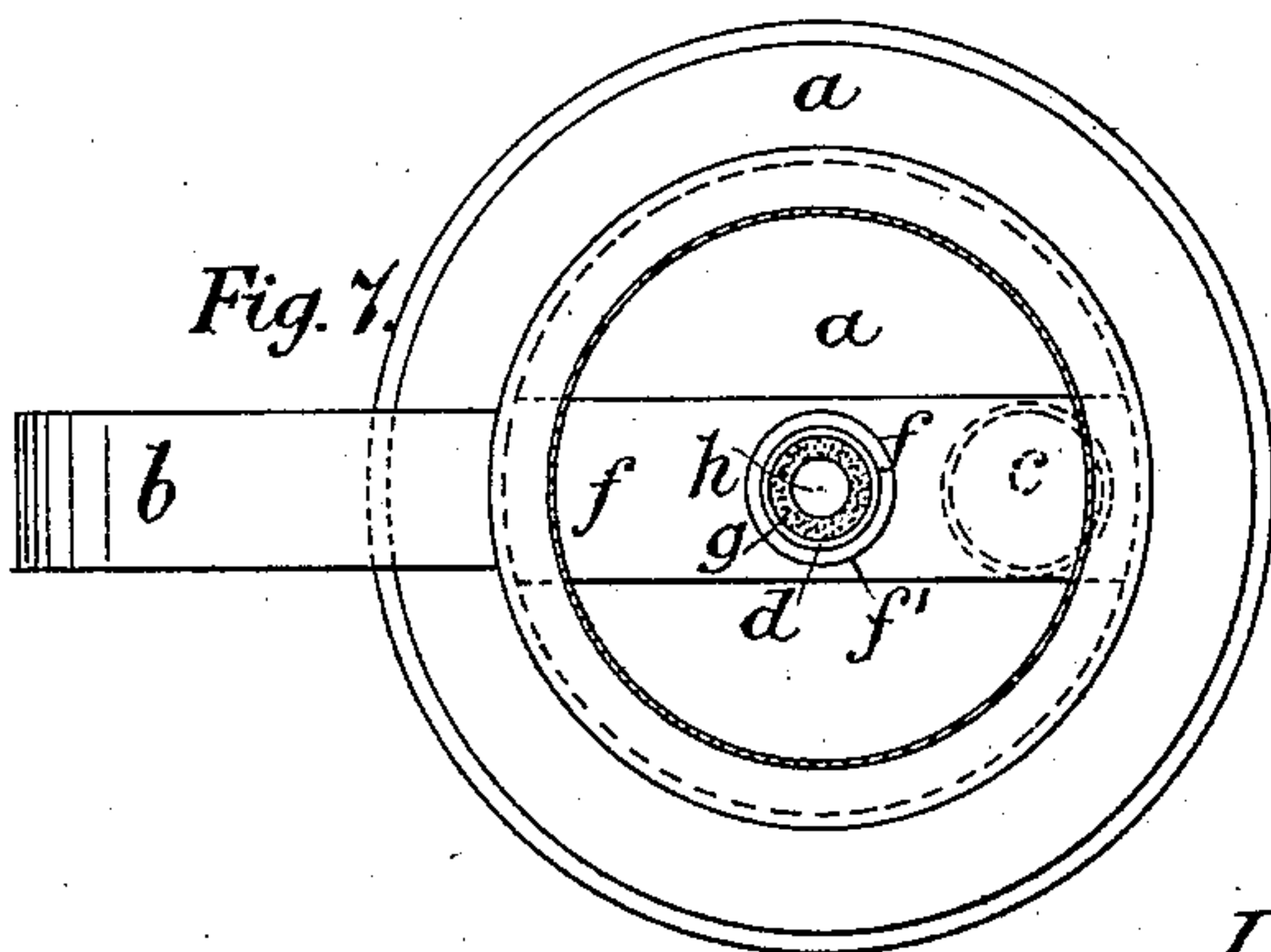
*Fig. 8.*



*Fig. 6.*



*Fig. 7.*



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# UNITED STATES PATENT OFFICE.

ANDREW HOWAT, OF MANCHESTER, ENGLAND, ASSIGNOR TO THE DEFLECTOR SAFETY LAMP AND MINER'S APPLIANCE COMPANY, LIMITED, OF SAME PLACE.

## LAMP FOR BURNING MINERAL OILS.

SPECIFICATION forming part of Letters Patent No. 472,056, dated April 5, 1892.

Application filed May 19, 1891. Serial No. 393,367. (No model.) Patented in England July 21, 1890, No. 11,348.

*To all whom it may concern:*

Be it known that I, ANDREW HOWAT, a subject of the Queen of Great Britain, and a resident of Manchester, in the county of Lancaster, England, have invented certain new and useful Improvements in Lamps for Burning Mineral or other Suitable Oils, (for which I have obtained a patent in Great Britain bearing date July 21, 1890, No. 11,348,) of which the following is a specification.

My invention relates to improvements in lamps for burning mineral or other suitable oils; and the chief object of my improvements is to produce at low cost a lamp which will give a very brilliant and pure light with a low class of oil, such as petroleum or paraffine.

In constructing according to my improvements a hand or table lamp for domestic purposes, I employ a suitable oil-reservoir for the mineral oil or other illuminant provided with a central-draft wick-holder and with another air-inlet, as hereinafter specified. The burner-tube is threaded on the outside, and upon this is screwed the threaded boss of a circular disk or plate provided with, say, two spring-clips or sliding bolts which engage an annular groove or recesses in the upper portion or body of the lamp, by turning which the screwed boss can be adjusted on the burner-tube to regulate the height of the flame. The upper portion or top of the lamp consists of a metal cap or bell with a central hole coinciding with the position of the burner to permit the passage of the flame. A chimney, made wholly or partially of glass, is secured upon the upper side of the cap or bell concentrically with the central hole therein. The top of the cap or bell is preferably provided with a separate piece screwed or fitted to the main portion, in order that it may be removed whenever it is required to clean the chimney.

In order that this invention may be fully understood and readily carried into effect, I will describe the accompanying three sheets of drawings, reference being had to the letters marked thereon.

Figure 1 is an elevation of a hand or table lamp for domestic purposes constructed according to my improvements. Fig. 2 is a detail view of part of the same. Fig. 3 is a sec-

tional elevation of the lamp. Fig. 4 is a sectional elevation of the burner or wick-holder and part of the oil-reservoir, and Fig. 5 is a plan on the plane of the line A B, Fig. 1. Fig. 6 is a sectional elevation of a modified or alternative construction of my improved lamp. Fig. 7 is a plan on the plane of the line C D, Fig. 6, and Fig. 8 is an elevation of the top part of the lamp.

Similar letters refer to similar parts throughout the several views.

Referring first to Figs. 1 to 5, in these views *a* is the body forming an oil-reservoir for the mineral oil or other illuminant. *a'* is an annular flange thereon. *b* is the handle secured to the body *a*. *c* is a hinged cap covering an aperture through which the oil can be poured to fill or replenish the reservoir *a*. *d* is the outer wick-tube, which is threaded on the outside to receive the screwed boss *f'* of the flame-regulating plate *f*. *g* is the circular wick, which is slipped into its place over the central-draft wick-tube *h* and inside the outer wick-tube *d*. *i i* are the two clips or sliding bolts, which are fitted upon the plate *f* and are held normally in the position shown in Figs. 3 and 5 by the plate-spring *j* to engage an annular groove or recess *k'* in the upper portion *k* of the body of the lamp. The top of the lamp is formed by the metal cap or bell *l*, which is provided with two projections *l'*, by which it is screwed into a threaded portion of the part *k*. The cap *l* has a central hole *l''*, coinciding with the position of the outer wick-tube *d*, and the glass chimney *m* is secured upon the upper side of the cap *l* concentrically with the central hole therein, the chimney in this instance being shown flanged at the base and confined between the cap *l* and a fixed or screwed ring *n*.

In addition to the air-supply to the flame through the center of the wick-tube *h* there is a second supply admitted through a series of perforations *k''* around the portion *k* of the body of the lamp and below the glass *m*. The cap *l* is suitably curved and formed, as shown, to guide the air entering at *k''* to the flame, and the under side of the cap *l* (or it may be a separate part secured thereto) may be further curved or formed, so as to divert



or deflect the air entering through these perforations  $k''$  and prevent it impinging directly on the flame.

Before lighting the lamp the plate  $f$  by means of its boss  $f'$  is screwed onto the outer wick-tube  $d$ . The wick  $g$  is then lighted and the upper portion of the lamp, with the chimney  $m$ , attached to the reservoir or lower portion  $a$  by pressing down the part  $k$  inside the annular flange  $a'$  until the spring-clips  $i$  engage the annular groove  $k'$ , whereby the upper and lower portions of the lamp-body are united.

The height of the flame can be regulated by adjusting the position of the boss  $f'$  on the outer wick-tube  $d$ , and this is effected by turning round the part  $k$  and bringing the clips  $i$  against stops  $o$  in the annular groove  $k'$ , and so by continued turning screwing the boss  $f'$  either up or down, as required.

After the lamp has been lighted and the upper portion of the body attached to the lower portion by means of the spring clips or bolts  $i$ , as above described, the only mode of detaching the body is by unscrewing it with the intermediate plate or flame regulator  $f$ , which action insures the extinguishing of the lamp, provided that the length of the boss  $f'$  be properly proportioned to the diameter of the wick-holder.

On looking at Fig. 4 it will be seen that the wick  $g$  is in two pieces, as indicated by the upper portion being shaded differently from the lower and longer part. My object in this is to dispense with the ordinary pinion or rack-and-pinion motion, whereby the wick is raised and the charred portion cut off to trim the lamp. Instead I propose to permanently retain the lower and longer portion of the wick in the position shown in Fig. 4, and whenever required to remove the charred short piece and replace it by a new piece of the same length.

I propose to pack the reservoir  $a$  with fragments of sponge  $s$  or other suitable material in order to absorb the oil or other illuminant and as much as possible to prevent any possibility of accident in the event of the lamp being upset.

Referring now to Figs. 6, 7, and 8, the chief

points of difference between the lamp illustrated by Figs. 1 to 5 and the modified or alternative construction illustrated by these views are that the intermediate plate or flame regulator  $f$  is in this case soldered or otherwise fixed to the part  $k$  and the cap or bell  $l$  is also secured thereto, so that the upper and lower portions of the lamp-body are simply connected and disconnected by means of the screwed boss  $f'$ , fitted on the threaded outer wick-tube  $d$ . The chimney  $m$  is shown fastened in its place by a screw  $p$ , so that in this case it is only necessary to remove the chimney  $m$  in order to light the lamp. Instead of the screw  $p$ , a spring-clip or other well-known means may be employed to hold the chimney firmly in position and yet allow it to be removed when required.

Another small point of difference is that the metal cap  $c$  is screwed onto the oil-reservoir instead of being hinged, as in the preceding arrangement.

I wish it to be clearly understood that certain variations or modifications in both forms of my improved lamp (illustrated by the drawings) may be made without departing from the nature of the invention, as described, and as hereinafter pointed out and defined by the claim. For example, the form and shape of the lamp may be changed, the handle may be dispensed with, and the reservoir may be supported in a suitable stand or holder.

Having now particularly described the invention, what I claim, and desire to secure by Letters Patent of the United States, is—

In a hand or table lamp, the combination, with a central-draft wick-tube, of a flame-regulator consisting of a plate or disk with a screw-threaded boss fitting upon the outside of the threaded wick-tube, said disk serving to connect the upper to the lower portion of the lamp-body, substantially as herein set forth.

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

ANDREW HOWAT.

Witnesses:

H. B. BARLOW,  
S. W. GILLET.