

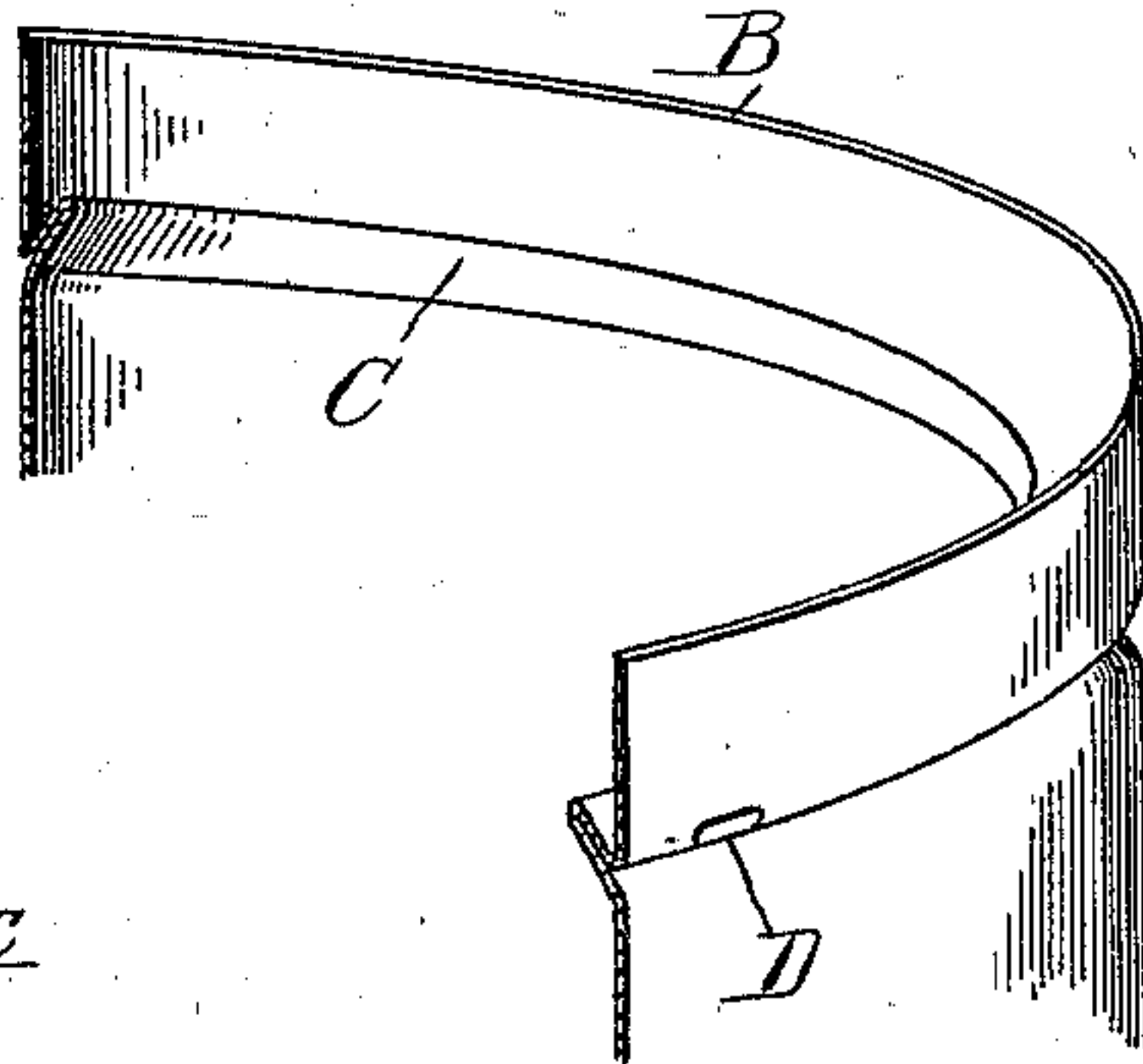
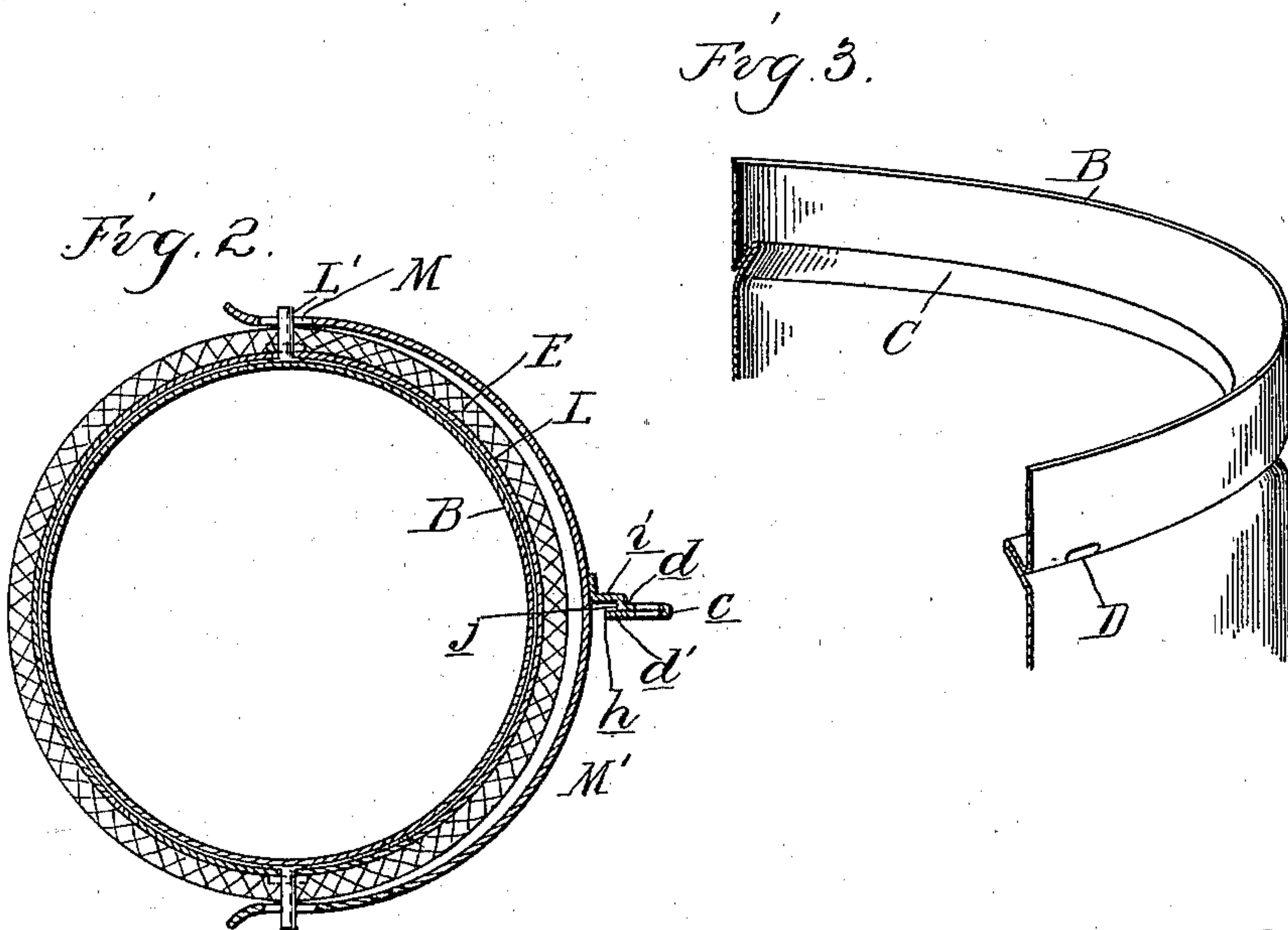
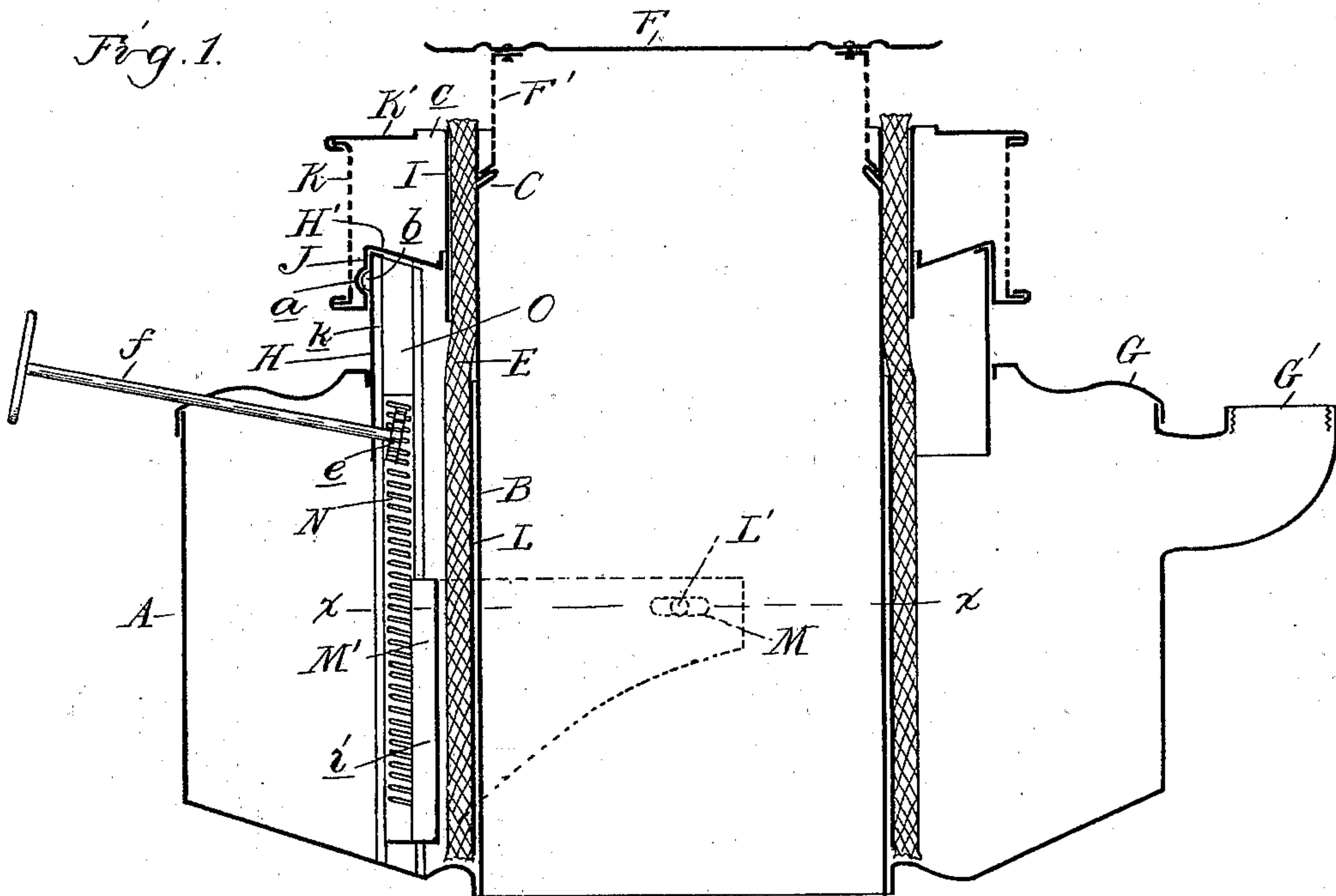
(No Model.)

2 Sheets—Sheet 1.

A. R. WELCH.
OIL BURNER.

No. 560,875.

Patented May 26, 1896.



Witnesses
A. L. Hobby
L. J. Whittemore.

Inventor
Alvie R. Welch.
By Wm. S. Spague
Attys.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 4.

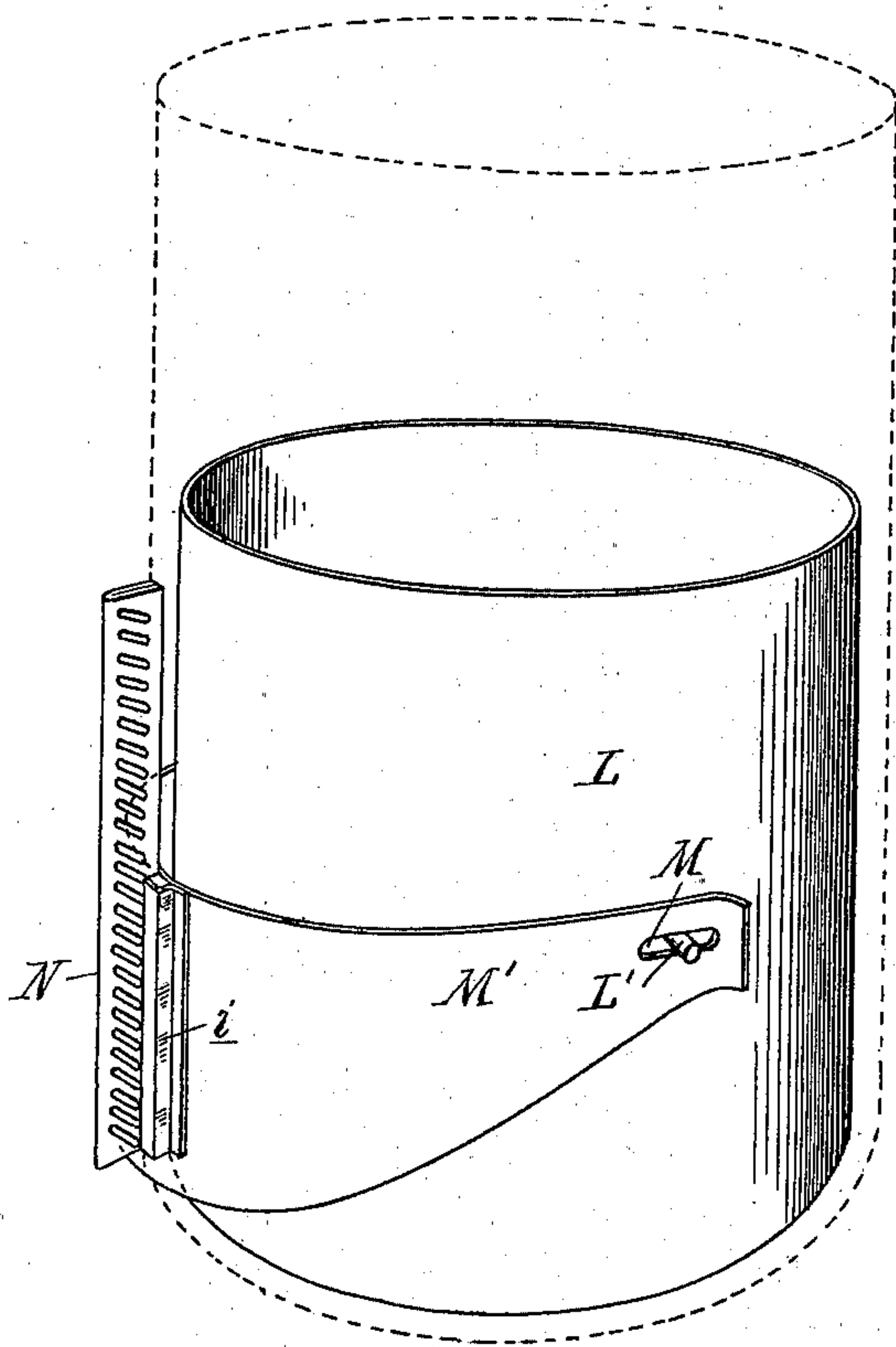


Fig. 5.

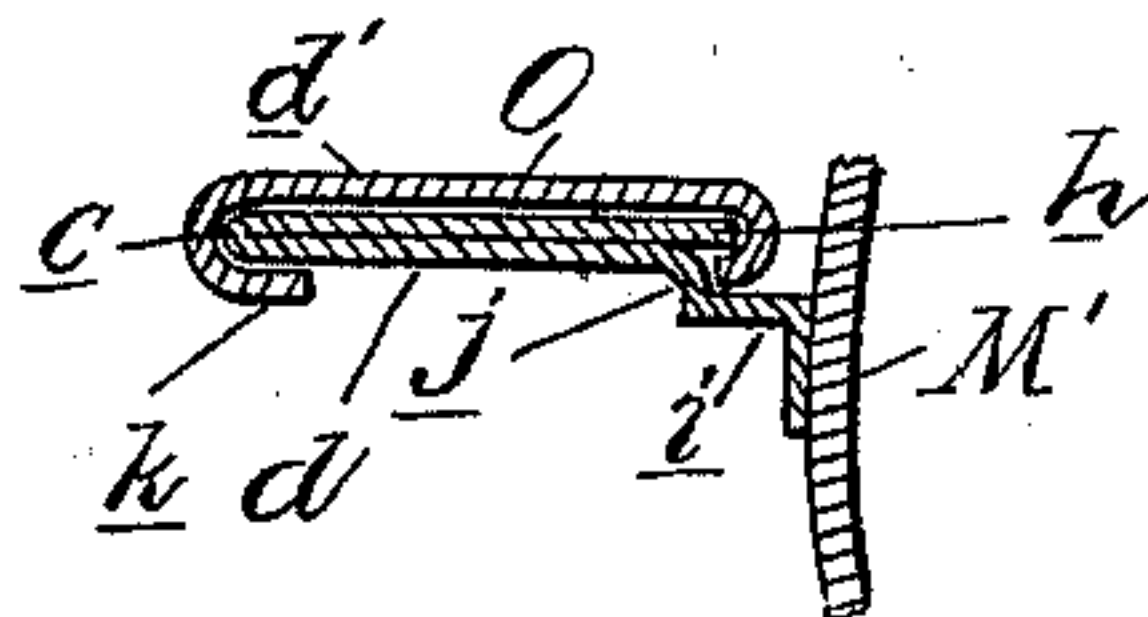
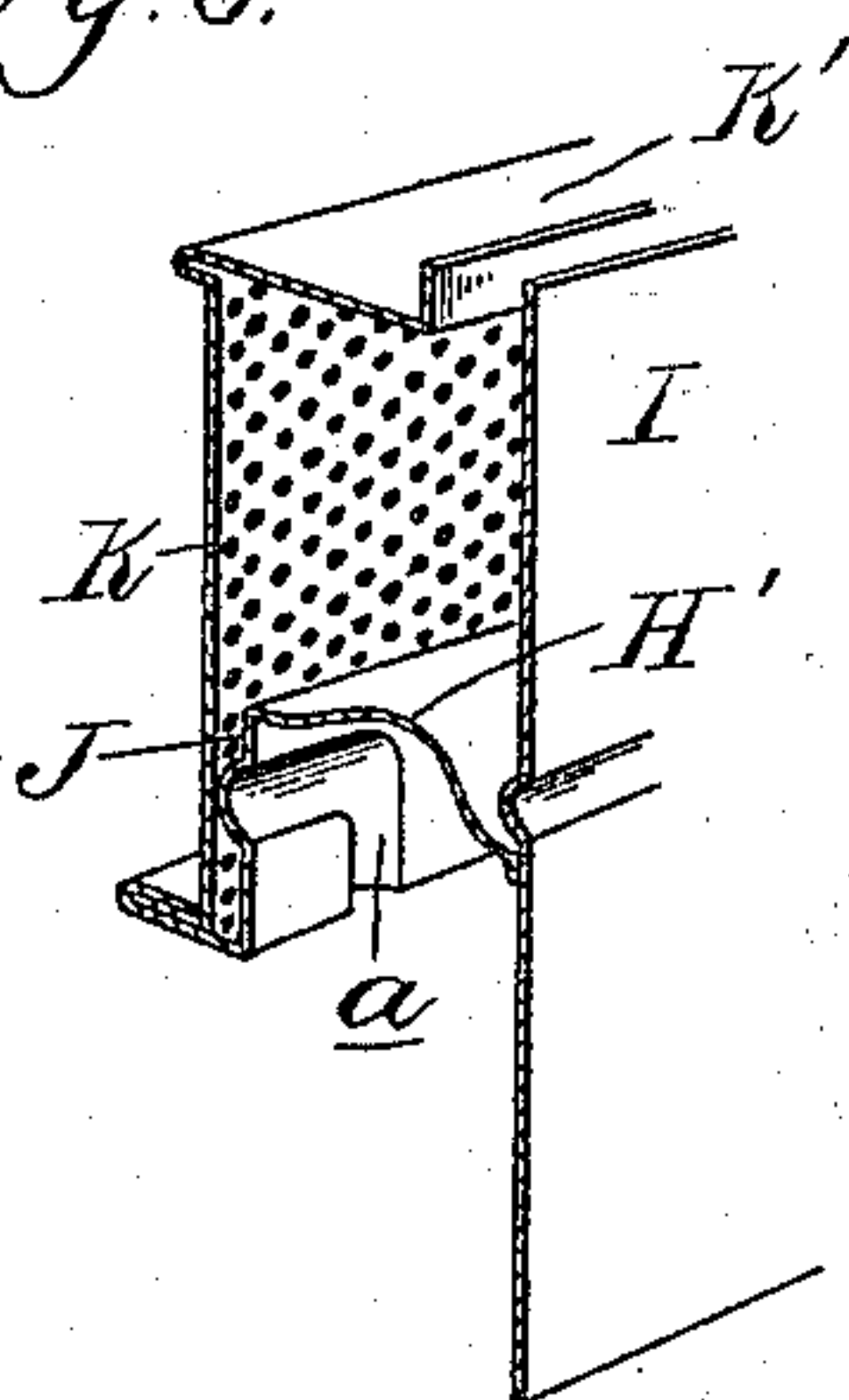


Fig. 6.



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UNITED STATES PATENT OFFICE.

ALLIE R. WELCH, OF CHELSEA, MICHIGAN, ASSIGNOR OF ONE-HALF TO
FRANK P. GLAZIER, OF SAME PLACE.

OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 560,875, dated May 26, 1896.

Application filed October 29, 1894. Serial No. 527,138. (No model.)

To all whom it may concern:

Be it known that I, ALLIE R. WELCH, a citizen of the United States, residing at Chelsea, in the county of Washtenaw and State of Michigan, have invented certain new and useful Improvements in Oil-Burners, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention consists in the construction of the burner, the wick-tube, and the devices for raising and lowering the wick of an oil stove or lamp, all as more fully hereinafter described.

In the drawings, Figure 1 is a vertical central section through an oil-tank and burner embodying my invention. Fig. 2 is a horizontal section on line *xx*. Fig. 3 is a sectional perspective view of the air-tube. Fig. 4 is a detached perspective of the wick-tube, the raising-yoke, and rack-bar. Fig. 5 is a horizontal section through the rack-bar and the standard in which it is guided; and Fig. 6 is a sectional perspective through the cap-ring, illustrating the locking means.

A is an oil-tank substantially ring-shaped.

B is a cylinder which forms its inner wall and within which is the central air-draft for the burner. This tube I call the "air-tube." It is preferably made of seamless tubing (although it may be made from sheet metal formed into a cylinder) secured at the lower end to the tank-bottom, and at a point a short distance below the top is formed the upwardly-inclined flange C, which is made by forcing in a section of the tubing and crimping together, as plainly shown in Figs. 1 and 3, forming above this flange a trough all around the air-tube. At the bottom of the trough at suitable distances apart are the apertures D. Thus any oil which may feed over from the wick E (which surrounds the air-tube) will be caught in the trough, and will feed through the apertures D into the wick below or into the tank.

F is the spreader-plate, supported on the perforated ring F', which fits into the top of the air-tube and rests on the flange C, as shown in Fig. 1.

G is the top of the tank, having the usual fill-opening G'. This top at its inner edge has the vertical ring or wall H, concentric to the tube B, but separated therefrom.

H' is a cap-ring resting on top of the wall H, carrying at its inner edge the short tube I, adapted to fit around the outer face of the wick, the upper edge extending to at or near the top of the air-tube B.

The ring-cap H' has a depending locking-flange J, adapted to fit over the outer face of the wall H and to be locked thereon by the L-shaped grooves *a* in the flange J engaging projections *b* on the wall H.

K is an apertured ring on the outer edge of the ring-cap, having a top ring-shaped plate K', extending in proximity to the tube I to leave an annular air-passage *c* outside the wick.

L is the wick-tube, fitting over the air-tube and sliding thereon. At diametrically opposite points of this wick-tube are the pins L', which pass through the wick, and thus prevent it from vertical movement thereon. These pins L' project far enough through the wick to engage through the slots M, formed in the ends of the semicircular yoke M', preferably of spring sheet metal, such as brass, extending half-way around the wick-tube. Centrally of this yoke and rigidly secured thereto is the rack-bar N. This rack-bar is formed of thin sheet metal doubled by bending it at *c*, the two plates *d d'* being apertured to form spaces for the engagement of the teeth of the pinion *e*, which is secured to a shaft *f*, extending to the side of the tank, provided with a suitable hand-wheel. The plate *d'* has the extension *h* on its inner edge.

i is a securing-flange at one side, preferably formed integral with the plate *d* and having the offset portion *j*. This securing-flange is brazed, welded, soldered, or riveted to the yoke M'.

O is a vertical standard secured in the tank at its lower end and at its upper end secured to the wall H. At each edge this standard is provided with hook-shaped guide-flanges *k*. The extension *h* engages in one of these flanges and the opposite edge of the rack-bar formed by the bend *c* engages within the other of these flanges. Thus the standard forms the support and guide for the rack-bar and yoke, and the yoke being connected to the pins L' exactly in the middle of the wick-tube carries the wick evenly up and down by turning

the shaft *f*. This construction of yoke and rack-bar I deem of especial advantage, not only from the evenness with which it feeds the wick, but also from the simplicity of construction and cheapness of manufacture.

It is evident that air will be supplied to the inner side of the flange through the air-tube and the perforated ring *F'*, and to the outside through the perforated ring *K* and through the passage *c*.

What I claim as my invention is—

1. In an oil-burner, the combination with the oil-tank, the central air-tube therethrough, the wick-tube sliding thereon, pins fixedly secured on and projecting outwardly at diametrically opposite points therefrom, a wick surrounding the wick-tube and through which the pins extend, a yoke in the tank engaging said pins with its ends, a rack rigidly secured at the middle of the yoke, a fixed vertical

guide in which said rack slides, and a pinion for operating the rack, substantially as described.

2. In an oil-burner the combination with a wick-raising device, of a rack-bar formed of a single piece of metal having the lateral projection *i* secured to the raising device an offset *j* on the rack, the return bend or plate *d'* of a width greater than that of the bar between the offset and outer edge and extending beyond the offset, and the vertical guide having its edges overlapping the outer edges of the rack and inner projecting edge of the plate *d'*, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

ALLIE R. WELCH.

Witnesses:

F. P. GLAZIER,
R. JOLY.