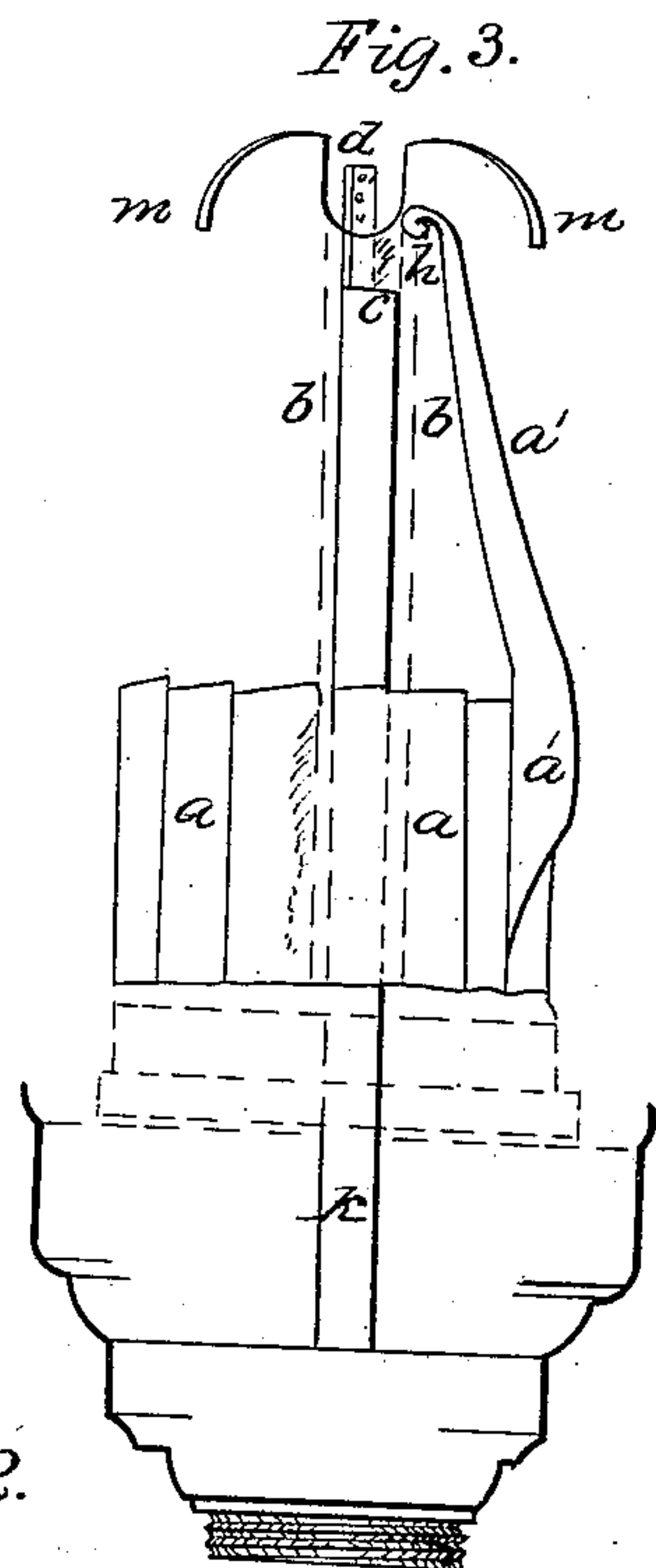
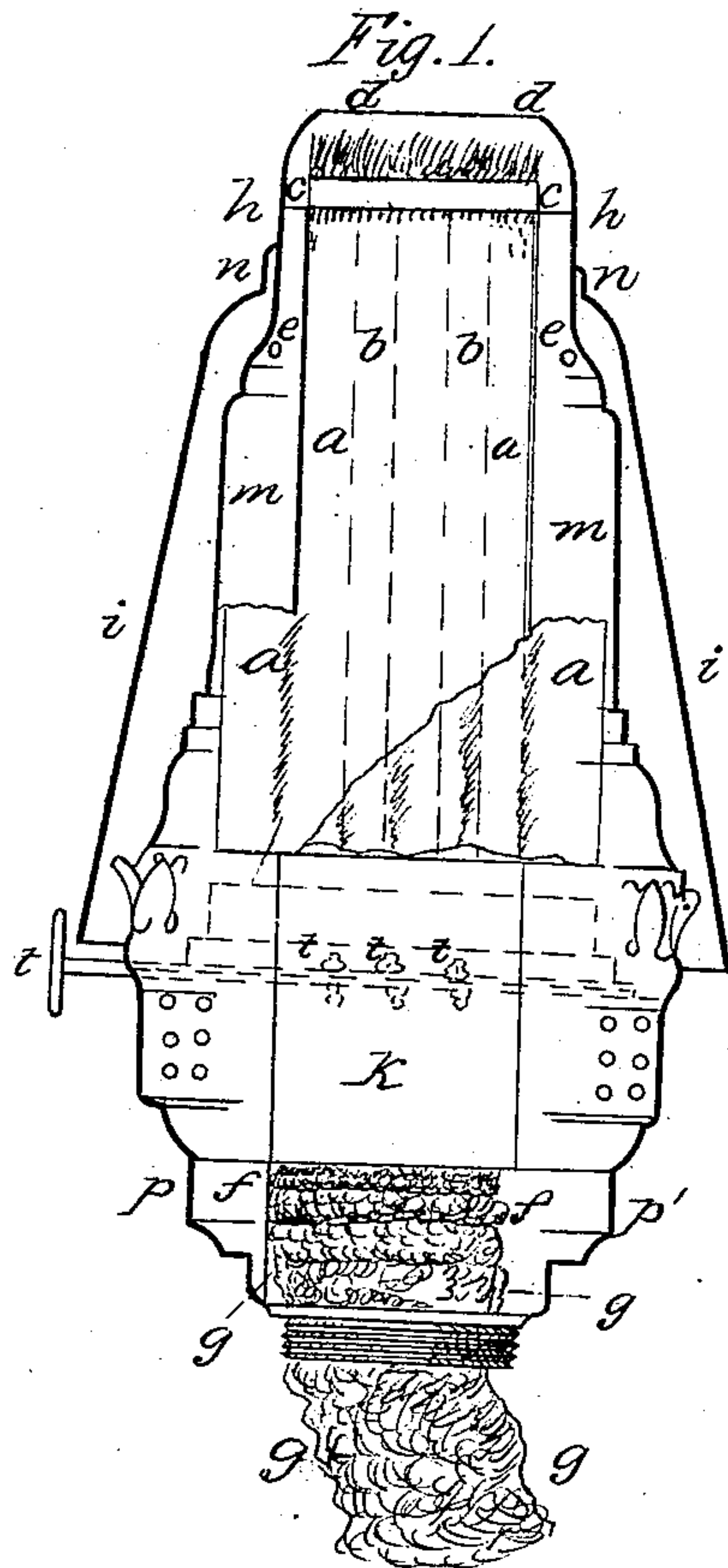


M. L. CALLENDER.

Lamp Burner.

No. 33,773.

Patented Nov. 26, 1861.



Witnesses:

J. B. Salisbury
Edw. Perce

Inventor:

Mills L. Callender

UNITED STATES PATENT OFFICE.

MILLS L. CALLENDER, OF NEW YORK, N. Y.

IMPROVEMENT IN VAPOR-LAMPS.

Specification forming part of Letters Patent No. 33,773, dated November 26, 1861.

To all whom it may concern:

Be it known that I, MILLS L. CALLENDER, of the city, county, and State of New York, have made certain Improvements in Hydro-carbon-Burners; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in heating metallic surfaces to rarefy a column or body of air to produce a draft of air into and around the illuminating-flame without the aid of a chimney.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

My burner is constructed in the form shown in Figure 1 of the accompanying drawings, or in any other manner that will answer the same purpose. The wick-tube *k* is surrounded by the sliding, polished, corrugated protector *s s'*, (shaped as shown in Fig. 2 of the accompanying drawings, and corrugated as shown by the dotted lines *b b'* in Figs. 1 and 3 of the accompanying drawings,) for the purpose of protecting the wick-tube from excessive heat by allowing currents of air to ascend through the corrugations between it and the wick-tube, which may be slotted or serrated at the top for the purpose of regulating the shape and size of the flame and prevent its heating the tube by presenting few points of contact to the flame, and by reflecting the heat back from its polished surface. The wick-tube is provided with the two wicks *d d'* and *c c'*, as shown in Figs. 1 and 3 of the accompanying drawings, and is so arranged that the wick *d d'* is set higher than the wick *c c'*, and both wicks can be elevated or depressed by the action of the ratchet-wheel *t*.

The top of the wick-tube at *d*, Fig. 3, has one side higher than the other, so that one side of the wick is protected from the flame, while the opposite side has a large vertical surface exposed to the flame and ascending heated current of air from below.

The cone *m m'* is provided near the top with the copper-wire heater *h h'* extending

through the cone *m m'* from side to side just above and a little to the right of the wick *c c'*, as shown in Figs. 1 and 3 of the accompanying drawings. From the wire heater *h h'* is suspended the corrugated metallic heater *a a'*, which extends downward from the wire heater *h h'* on one side of the wick-tube *k*, while its lower part surrounds the wick-tube without touching it. The heating-wire *h h'* and the heater *a a'* receive heat from the flame which burns from the wick *c c'*, and the heat thus received is extended throughout the whole part of the corrugated metallic heater *a a'*, and rarefies the air within the cone *m m'*, producing a draft of air which is forced upward through the burner to the points of combustion.

The cone *m m'* is provided with the shield *i i*, which is secured to said cone by the zinc band *n n'*, or by a metallic connection of little heat-conducting power, or by a non-conducting connection. The interior and exterior surfaces of the shield *i i* are polished to reflect back the rays of heat and confine them within the burner, and to prevent their external radiation. The shield *i i* also serves to increase the draft, the air being drawn into it from below and forced upward through the air-holes *e e'* into the interior of the cone *m m'* and upward to the points of combustion. The supply-wick *g g* draws the oil into the reservoir *p p'*, into which the wick *g g* is folded. The wicks *d d'* and *c c'* are supplied with oil from the reservoir *p p'*, being laid in folds *f f* in said reservoir in close contact with the folds of the supply-wick *g g*.

What I claim as my invention, and desire to secure by Letters Patent, is—

The relative arrangement of the two burning wicks *d d'* and *c c'*, by which the wick *d d'* is set to burn higher than the wick *c c'*, and two or more wicks can be simultaneously raised or depressed in by one ratchet-wheel in one wick-tube, in the manner and for the purpose above specified.

MILLS L. CALLENDER.

Witnesses:

ELBERT PEREE,

J. B. SALISBURY.