

## Locomotive Head-Light.

Patented Nov. 23, 1869.

FIG. 2.

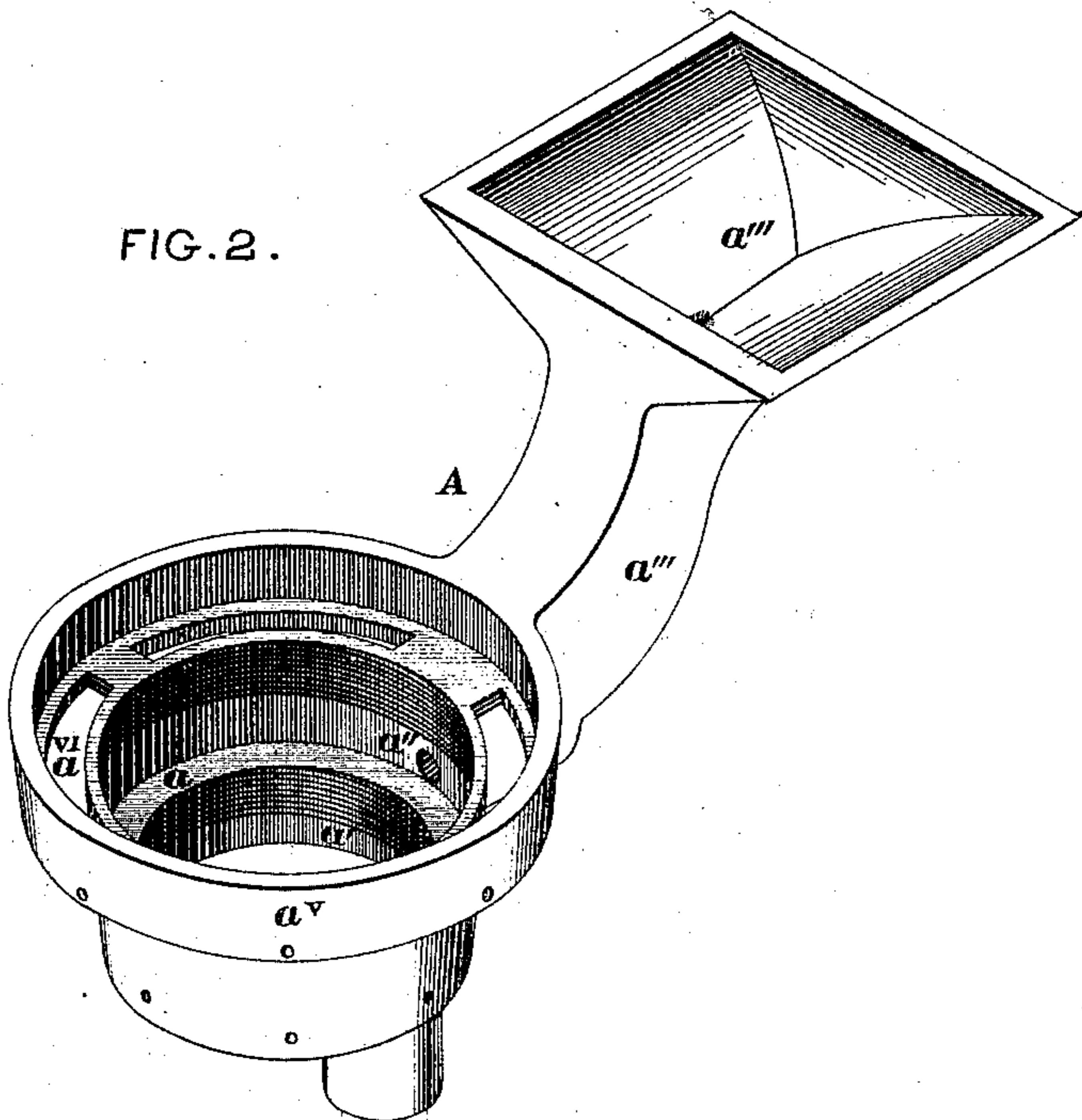
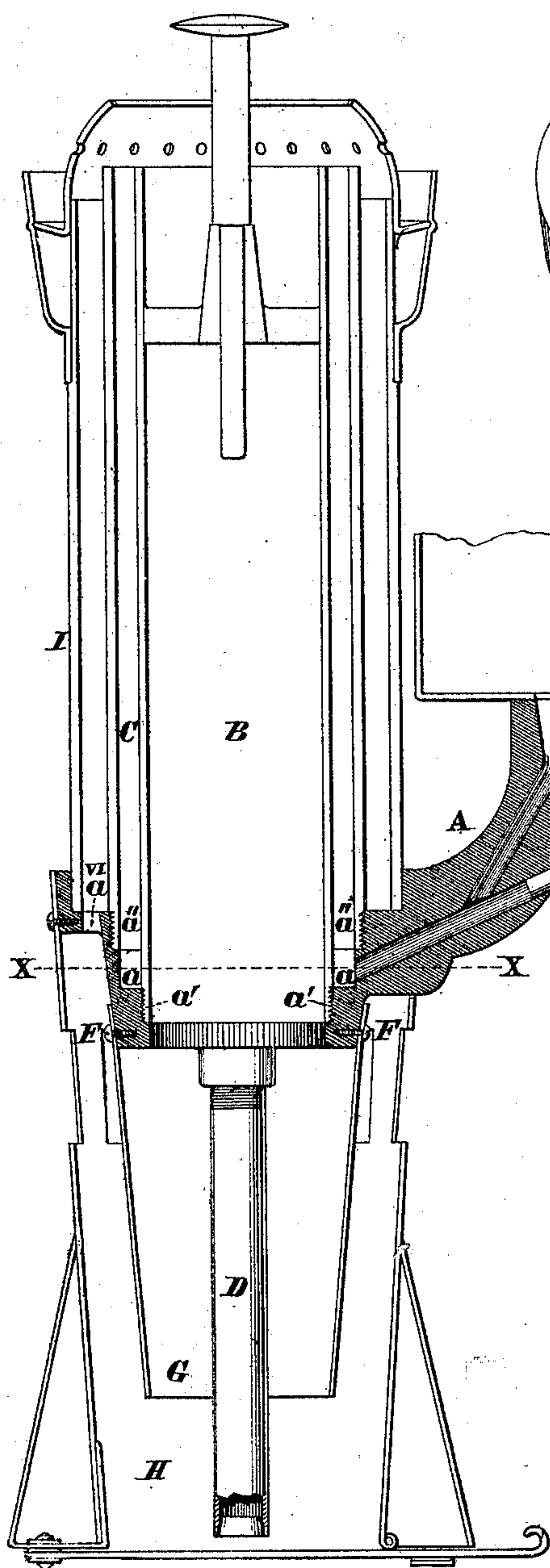
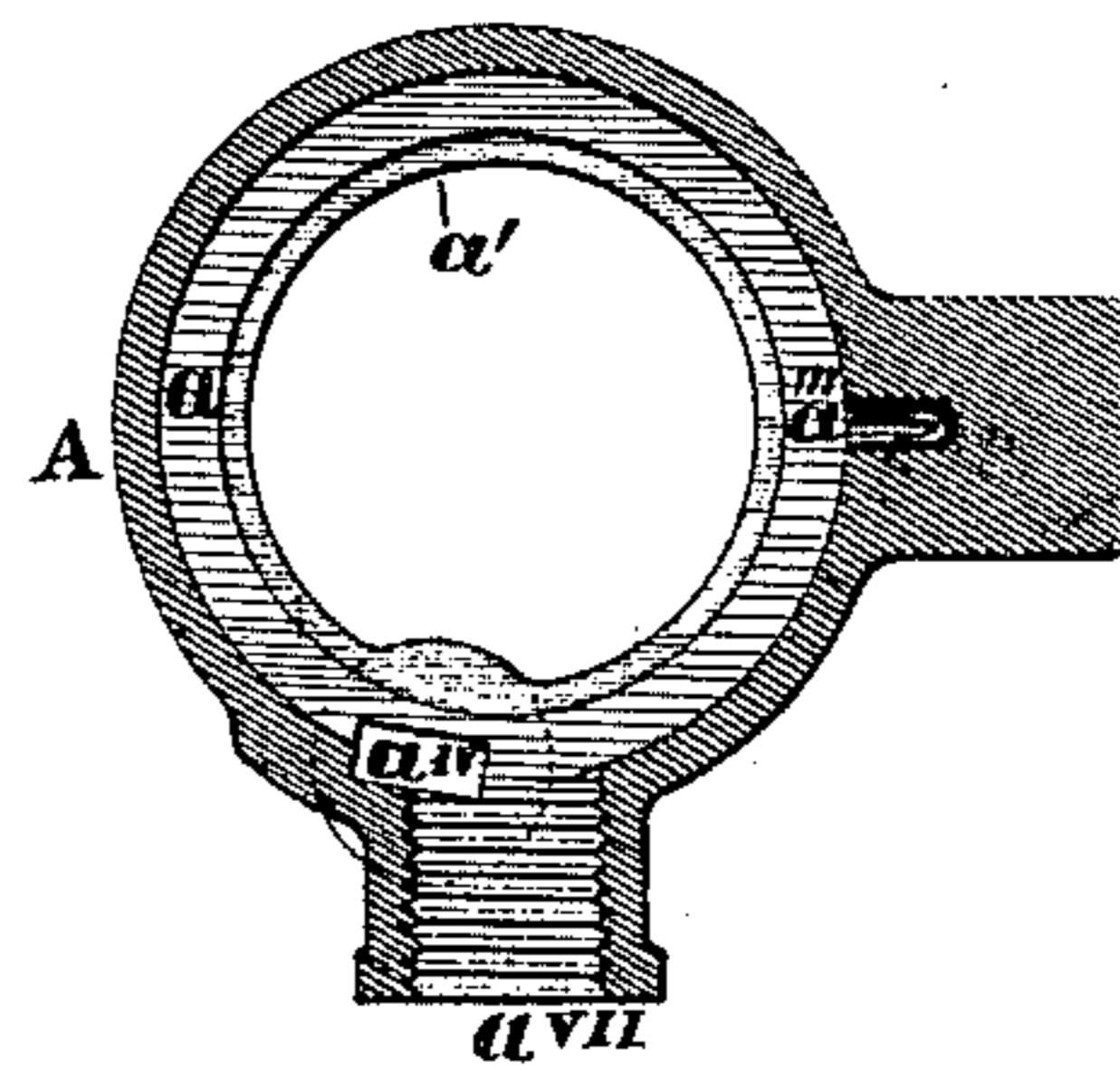


FIG. 3.



ATTEST.  
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*L. Michaels*  
INVENTOR.  
*By his Attys.*  
*Knicker Bros.*

# United States Patent Office.

LEWIS MICHAELS, OF CINCINNATI, OHIO.

Letters Patent No. 97,211, dated November 23, 1869.

## IMPROVEMENT IN LOCOMOTIVE HEAD-LIGHTS.

The Schedule referred to in these Letters Patent and making part of the same.

I, LEWIS MICHAELS, of Cincinnati, in the county of Hamilton, and State of Ohio, have invented a certain Improvement in Hydrocarbon Lamps for Locomotive Head-Lights, of which the following is a specification.

My invention has especial reference to the class of hydrocarbon lamps employed in locomotive head-lights, and is designed to relieve such lamps of their present serious liability to melt down and give out, sometimes, on very critical occasions, involving the safety of the train itself.

Figure 1 is an axial section of a lamp embodying my invention.

Figure 2 is a perspective view of the combined collar and oil-funnel, with the rack-sheath shown detached.

Figure 3 is a horizontal section at X-X.

The most distinguishing feature of my improvement is a single casting, A, which takes the place of some six separately-soldered pieces in the customary head-light lamp, which pieces are liable to become detached, either by constant mechanical agitation, or by the action of heat, when the lamp takes fire.

The piece or casting A is composed essentially of the following parts, to wit:

An annular pit, *a*, which constitutes the bottom of

the wick-chamber; two female screw-threads, *a*<sup>i</sup> *a*<sup>ii</sup>, for the respective attachment of the inner and outer wick-tubes B and C; a screw-threaded orifice in its bottom, for the rack-sheath D; and projecting obliquely from one side, a duct or funnel, *a*<sup>iii</sup>, which conveys oil from a customary reservoir, E.

The piece A also has screw-holes, for the screws F, which take the place of solder in the attachment of the waste-spout G and receptacle H.

*a*<sup>iv</sup> is a slot in the casting A, to receive and confine the rack.

*a*<sup>v</sup> is a rim for the outer air-tube I.

*a*<sup>vi</sup> are air-inlets.

*a*<sup>vii</sup> is a screw-threaded socket, for the box of the pinion-shaft, by which the wick-rack is operated to raise or lower the wick.

I claim, as my invention—

As a new article of manufacture, the piece or casting A, *a* *a*<sup>i</sup> *a*<sup>ii</sup> *a*<sup>iii</sup> *a*<sup>iv</sup> *a*<sup>v</sup> *a*<sup>vi</sup> *a*<sup>vii</sup>, for the purpose herein designated.

In testimony of which invention, I hereunto set my hand.

LEWIS MICHAELS.

Witnesses:

GEO. H. KNIGHT,  
JAMES H. LAYMAN.