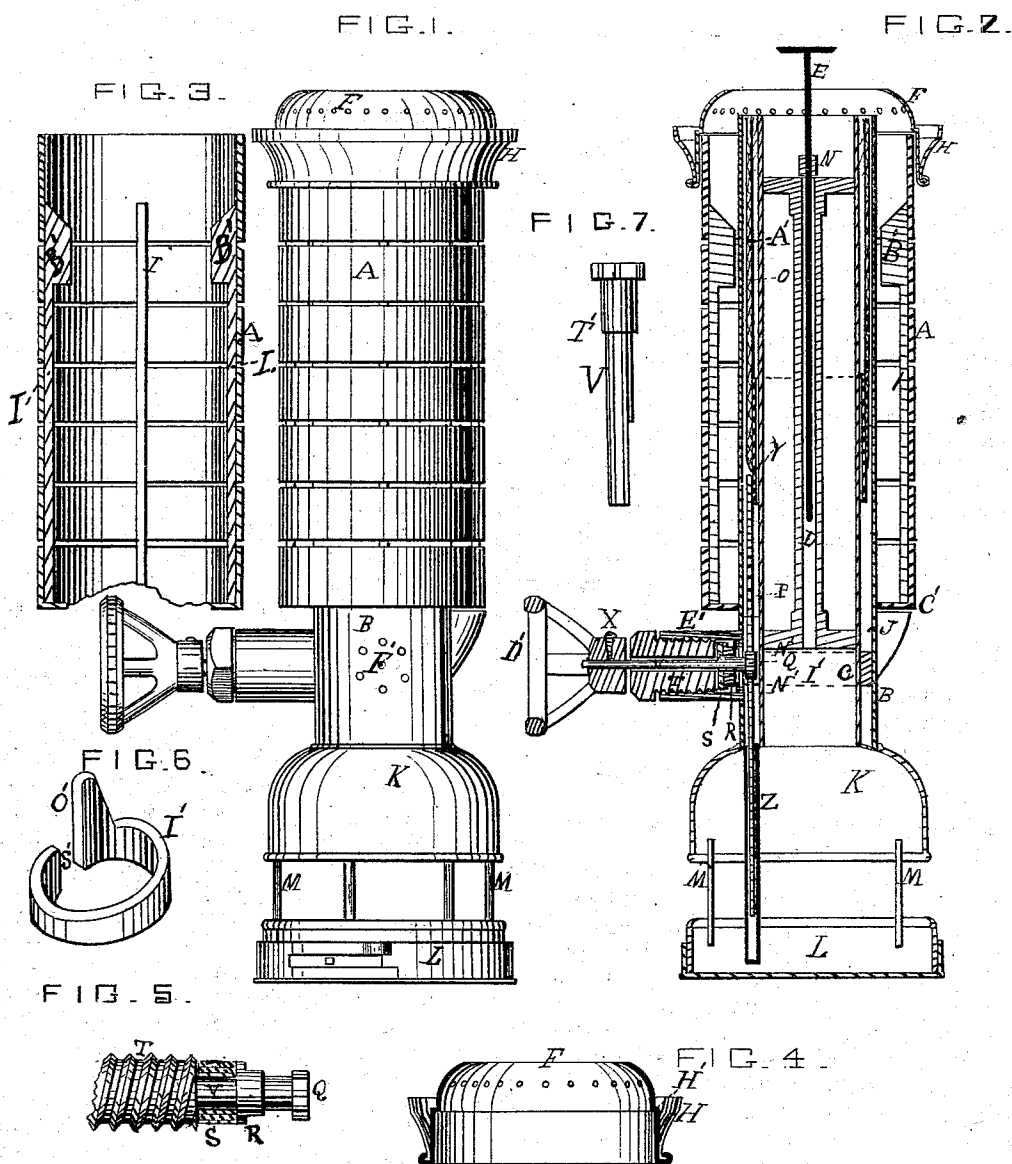


S. M. DAVIES.
Locomotive Head-Light Burners.

No.154.172.

Patented Aug. 18, 1874.



WITNESSES

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SAMUEL M. DAVIES, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN LOCOMOTIVE HEAD-LIGHT BURNERS.

Specification forming part of Letters Patent No. **154,172**, dated August 18, 1874; application filed February 11, 1874.

To all whom it may concern:

Be it known that I, SAMUEL M. DAVIES, of the city of Chicago, in the county of Cook and State of Illinois, have invented certain Improvements in Burners for Locomotive Head-Lights, of which the following is a specification:

The object to be accomplished in this improvement is to construct a burner for locomotive head-lights, simple in construction, and so firmly and well made that it will stand the severe tests it undergoes when in use.

Figure 1 is an elevation showing the burner when completed, with the exception of the button over the top. Fig. 2 is a vertical section. Fig. 3 is a sectional view of the shell surrounding the burner. Fig. 4 is a view of the dome or top of the burner. Fig. 5 is a sectional view of the ratchet-shaft for elevating and lowering the burner. Fig. 6 represents the ring, having an extended arm to support the lamp-ratchet. Fig. 7 represents the handle-shaft.

Similar letters of reference refer to similar parts in the different figures.

This burner, it will be observed, is of that class known as the argand-burner, which supplies air to both the inner and outer sides of the burner. A is a shell surrounding the burner, and is made of brass and cast in hollow cylindrical form, upon the inside of which are four ribs, I, Fig. 3, at equal distances apart. This shell is divided into sections, as seen in Figs. 1 and 3, by cutting through the shell, but not through the ribs; the ribs serving the purpose of holding the sections in position. B is the outside tube of the lamp, and C is the inside tube of the lamp, leaving a space between the two. Within this space, between the two tubes, is the wick attached to ring Y. Connected to this ring is a rack-shaft, P, which descends into the socket Z, which socket is a continuation of the space between the outer and inner tubes. To this ring Y is attached the wick A'. The space at the lower end of the shell is closed at C', between the outer tube and the shell. At the upper end of the bars I is a bearing, B', which fits against the upper end of the tube B. Each

bar, between this bearing and the lower end of each, is cut away, leaving a space between the bar and the tube B. D is a tube passing down through the center of the lamp. E is a rod passing down through the tube D. This tube D is held in position by arms extending from the inner tube C. N is a shoulder fastened upon the rod E, which holds it in position. Upon the upper end of this rod is a button. J is a shoulder, upon which rests the shell A. K is a bell-shaped form attached to the lower end of the tubes B and C. L is a cup attached to the bell-shaped form by means of the posts M M. Q is a ratchet-wheel attached to the shaft V, which is turned by the handle D'. T is a screw through which passes the shaft V, and works within the nut E'. This nut is soldered onto the tube B. R is a washer working on the shaft V, and within the nut E'. Between the screw T and washer R is a packing, S. X is a set-screw holding the handle D' onto the shaft V. Fig. 7 shows this shaft V to better advantage. The screw T is limited in the distance it can go into the nut E' by a shoulder, T', on the shaft V, the washer R working on the larger part of the shaft. F' is a series of holes, through which the oil passes into the space between the outer and inner tubes B and C. F is a dome fitting over the upper end of the shell A. This dome is spun from two pieces of brass; the part F is made from one piece, and the part H, forming the shoulder, is made from another. The part F is spun with a shoulder, H', against which shoulder rests the upper end of the shell A, making the inside of both the shell and base of the dome flush. The part H forms the shoulder upon which the chimney rests. This part is slipped over the part F like a sleeve, and the lower edge of the part F is turned over the lower edge of the part H. I', Fig. 6, is an open ring placed in the space between the inner and outer tubes B and C, at the point where the ratchet-wheel Q enters the tube B. There is an opening, S', in this ring. One end of the ring extends upward, forming an arm, as seen at O', about half an inch high. The location of this ring is indicated by the dotted lines N' N'. The rack P passes down through

the space S' in the ring I'. At this point the ratchet-wheel Q fits the rack P, and the arm O' acts as a support for the rack in ascending and descending. This ring I', I cast in one piece.

The operation of my invention is as follows: Oil passes through the holes F' into the space between the two tubes B and C, within which is the wick A', and by turning the ratchet-handle D' the wick is raised or lowered. Air is supplied to the outer side of the flame by passing through the spaces between the different sections forming the shell A, and passes up between the shell and tube B under the dome onto the flame; the curvature of the dome turning the air onto the outside of the flame. The air for the inside passes under the bell-shaped form K, and up through the inner tube C onto the flame. Oil is prevented

from passing out around the ratchet-wheel Q by turning the screw T, which presses the packing S against the washer R, and against the inside of the nut E', which forms a perfectly tight joint.

I claim as my invention—

1. The open ring I', provided with the arm O' and opening S', in combination with the rack P, ratchet-wheel Q, and tubes B C, substantially as and for the purpose specified.

2. The screw T, nut E', shaft V, washer R, and packing S, in combination with the tubes B C and ring I', all constructed as and for the purpose herein specified.

SAMUEL M. DAVIES.

Witnesses :

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