

UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN LOCOMOTIVE LAMP

Specification forming part of Letters Patent No. **35,122**, dated April 29, 1862

To all whom it may concern:

Be it known that I, Irvin A. Williams, of Utica, in the County of Oneida, and State of New York, have invented a new and improved Locomotive Lamp; and I do hereby declare that the following is a full, clear and exact description of the same, reference being had to the accompanying drawings making a part of this specification in which:

Figure 1, is a vertical central section of my invention taken in the line **h – h**, figure 2.

Figure 2, a horizontal section of the same, taken in the line **y – y** figure 1.

Similar letters of reference indicate corresponding parts in the two figures.

This invention relates to a new and improved Locomotive Lamp for burning coal oil.

The object of the invention is to obtain a lamp for the purpose specified which will admit of the flame being supplied with a requisite quantity of oxygen to support proper combustion and at the same time prevent the flame from flickering under the motion of the locomotive and from other disturbing causes which tend to produce an uneven supply of air to the flame.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A, represents a fountain or reservoir which contains the oil and **B**, is a tube which leads from said fountain or reservoir to a hollow cylindrical wick-tube **C**, of annular form in its transverse section and which contains a tubular wick **D**, as shown already in Figure 1. The above parts are well known, have been used in various kinds of lamps and therefore do not require a minute description.

E, **F**, are two perforated cylinders which encompass the wick-tube **C**, a space **a**, being allowed between the two cylinders and a space **b**, allowed between the inner cylinder **F**, and its wick-tube **C**, as shown clearly in Figure 1. The inner perforated cylinder **F**, extends upward some distance above the outer perforated **E**, and on the upper end of the cylinder **E**, there is placed a cap **g**, the lower part **c**, of which is of cylindrical form and

the upper part **d**, of conical form, the conical part **d**, encompassing the base of the flame **e**, within the wick-tube **C**, there are placed two perforated horizontal disks **H, I**, to which there is attached centrally an upright rod **f**, having a button **g**, at its upper end. A perforated disk **J**, is also placed in the lower part of the wick-tube **C**.

K, is a chamber on hollow base, which is permanently attached to the lower end of the wick-tube **C**. This chamber or base **K**, is of flaring form and its upper part projects beyond the tube **c**, and is perforated with holes **h**, at suitable distances apart. The upper part of the chamber or base **K**, is covered by a perforated cap **I**, said cap covering the perforations **N**, in the upper part of the base **K**, and being sufficiently large to admit of a space **i**, all around the upper part of the chamber or base between it and the cap **I**, as shown in Figure 1. The lower end of the chamber or base **K**, is provided with a screw stopper **M**.

From the above description it will be seen that the flame **e**, is supplied with air internally through the perforated cap **I**, holes **n**, in the chamber or base **K**, said air passing up through the perforated disk **J**, the interior of the wick-tube **C**, and through the perforated disk **H, I**, as indicated by arrows **1**. The flame is supplied externally with air which passes through the perforated cylinders **E, F**, and thence up into the cap or deflector **g**, the upper part **d**, of the cap deflecting the upward current of air upon the base of the flame as indicated by the arrows **2**.

The two perforated cylinders **E, F**, with the space **a, b**, cause a uniform passage of air up within the cap or deflector **g**, they serve as equalizers while the perforated cap **I**, and holes **h**, in the chamber or base **K**, together with the space **I**, and the perforated disks **J, H, I**, perform the same function for the internal current of air. In consequence therefore of both currents of air which supply the flame being uniform or steady in their flow or passage to the flame the latter will burn without flickering or smoking and with a brilliant illuminating flame. The cap or deflector **g**, ensures the external current of air being thrown or deflected properly on the base or lower part of the flame **e**.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

The perforated cylinders **E, F**, one or more in combination with the cap or deflector **g**, and hollow wick-tube **C**, arranged substantially as and for the purpose specified.

Irvin A. Williams

Witnesses

R. Gawley
James Lind