

Lamp Burner.

Patented Jan. 31, 1871.

A detailed technical diagram of a vertical steam engine mechanism. The central component is a vertical piston rod, labeled 'a' in the middle section and 'b' in the lower section. This rod is connected to a piston at the top, which is shown within a cylinder. The piston is labeled 'c' on its upper face and 'd' on its lower face. The cylinder is labeled 'e' on the left and 'f' on the right. The piston rod is supported by a crosshead, labeled 'g' on the left and 'h' on the right. The crosshead is connected to a connecting rod, labeled 'i' on the left and 'j' on the right. The connecting rod is attached to a crankshaft, labeled 'k' on the left and 'l' on the right. The crankshaft is shown in a vertical position, with the crank pin labeled 'm'. The entire mechanism is mounted on a base, labeled 'n'.

Freeman A. Taber
by his attorney
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Letters Patent No. 111,400, dated January 31, 1871.

IMPROVEMENT IN LAMP-BURNERS.

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

To all persons to whom these presents may come :

Be it known that I, FREEMAN AUGUSTUS TABER, of New Bedford, of the county of Bristol, of the State of Massachusetts, have invented a new and useful Improvement in Burners for Lamps, more especially for such for the combustion of a liquid rich in carbon; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figures 1 and 2 are side elevations of my improved burner;

Figure 3 is a horizontal section of it taken through its wick-elevators;

Figure 4 is an under-side view; and

Figure 5, a vertical and transverse section of the duplex air-deflector.

Figure 6 is a vertical section of such deflector taken through the indentations for supporting the arms of the inferior cone.

Figures 7 and 8 are vertical sections of the burner.

This burner has a wick-carrier, A, formed with two wick-receivers, tubes or passages, *a a*, and a central draught or air-passage, *b*, arranged between them, and furnished with one or two inducts, *c c*. These inducts are extended laterally from the said passage *b* to and through the wick-elevator case B.

The said case B, formed with a screw, *d*, to screw into the cap of a lamp-fountain or oil-reservoir, has arranged within it, and on opposite sides of the wick-carrier, two series of spur-wheels, *e e f f*, fixed on separate shafts, *g h*, that are disposed parallel to each other, the spur-wheels working through slots and into the wick-passages *a a*.

The two wick-elevator shafts are pivoted to the box, and each extends in opposite directions through it.

The two shafts are geared together by gears *i k* fixed on them, and arranged outside of the box or case B.

On the longer of the two shafts is a milled head, *l*, to enable it to be revolved. By turning the said head both shafts may be put in motion so as to elevate the two wicks or depress them simultaneously and with equal velocity, as occasion may require.

By arranging the connection-gears outside of the box B instead of inside of it, as they are usually disposed, I am enabled to make the box smaller, as well as to attain other useful advantages; that is to say, ready access can be had to them for either cleaning or repairing them, or for ascertaining, from time to time, whether they are in working order.

The burner is provided with what may be termed a "duplex air-deflector," or one composed of two conic deflectors C D, one being arranged within the other, and with an air-passage or space, *m*, between the two, all as represented.

The inferior or inner deflector C I arrange with its base above that of the outer deflector, so that there may be a free passage for air from one deflector into the other beneath the base of the inferior one, and I connect the inner to the outer one by means of arms *n n n n* radiating from the base of the lesser of the two, and terminating against the inner face of the cylindrical portion *o* of the superior deflector, such arms being retained in position against the said portion *o* by means of projections *p p p p* made on such part *o*, by punching it from its outer side or forming indentations therein, so as to cause each projection to be concavo-convex, as represented.

I have found, when the base of the inner deflector is raised above that of the outer one and the foraminous supporter E, on which the outer deflector rests, there is a much better combustion of the oil of the wick than results when the two deflectors are allowed to rest directly on the common perforated or foraminous supporter E.

The two deflectors are so combined that they are movable together, one being raised off or applied to the part E with the other.

By arranging the base of the inner cone of the duplex deflector above that of the outer cone, as described, and providing the inner cone with arms, as set forth, I am enabled to fasten the arms in place relatively to the outer deflector by indentations, as described, and thus do away with the necessity of soldering the arms or using solder to keep them in place. The same will also admit of one deflector being removed from the other, should such be requisite in order to cleanse the inner surface of the outer one, or the outer surface of the inner one, of carbonaceous or other deposits from the wick.

What I claim in the said burner is as follows:

1. The improved duplex deflector, made as described; that is, with its inner cone having its base arranged above that of the outer cone, and connected to it, and otherwise arranged with respect to it, as set forth.

2. The burner, made of the instrumentalities as described, arranged as set forth; that is, of the wick-carrier with its two wick-holders and central draught-passage, and one or more inducts, the wick-elevator box, the wick-elevators connected by gears arranged outside of the said box, the duplex air-deflector, or two cones, and the foraminous supporter, all constructed and disposed relatively to each other substantially as hereinbefore described, and as represented.

FREEMAN AUGUSTUS TABER.

Witnesses:

R. H. EDDY,
J. R. SNOW.