W. ROBINSON.

Lamp Burner.

No. 66,635. Patented July 9, 1867.

Fig. 1

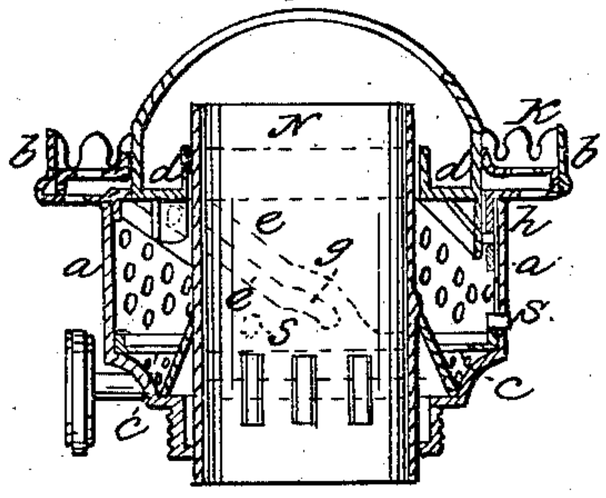


Fig. 2

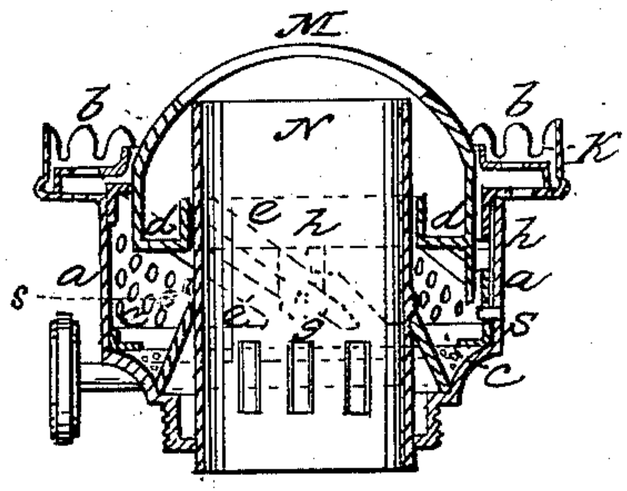
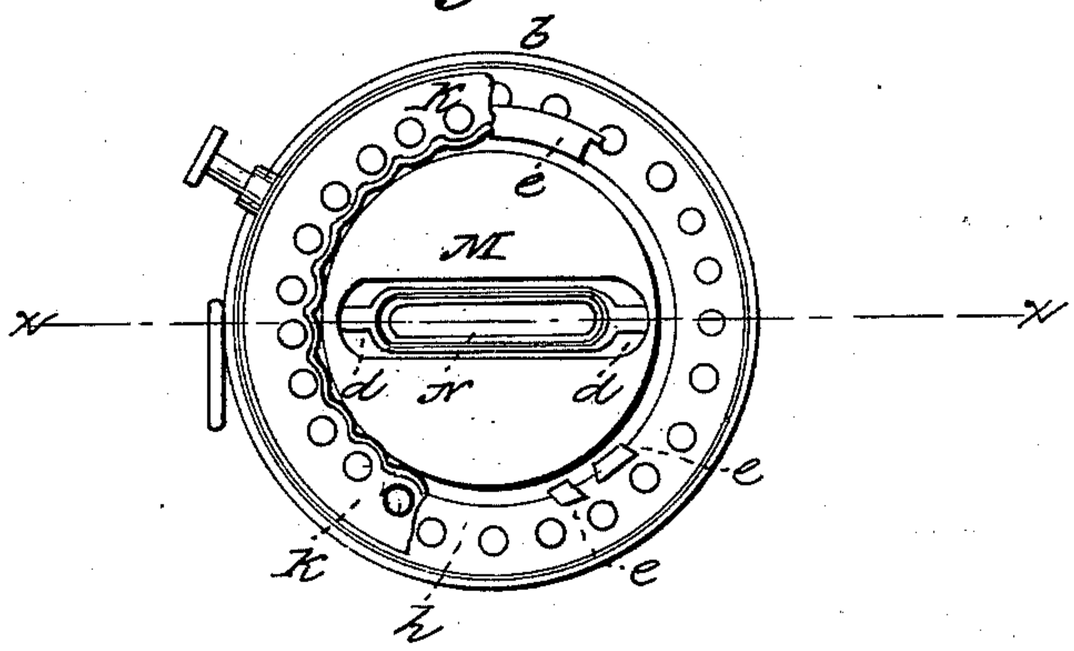


Fig. 3



Witnesses:

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WILLIAM ROBINSON, OF FUNKVILLE, PENNSYLVANIA.

Letters Patent No. 66,635, *dated July* 9, 1867.

IMPROVEMENT IN LAMP-BURNERS.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM ROBINSON, of Funkville, Venango county, Pennsylvania, have invented a new and useful Improvement in Lamp-Burners; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical section of my improved lamp-burner, showing the movable cone raised, taken in the line *x x*, fig. 3.

Figure 2 is a similar view, showing the cone lowered.

Figure 3 is a top view.

Similar letters of reference indicate corresponding parts.

This invention relates to an improvement in the construction of lamp-burners, and consists in making the cone or deflector movable, by raising and lowering it within the outer perforated frame or case of the burner, to set the top nearer or further from the top of the wick-tube, and also lower it below the top of the wick-tube. Several important advantages are derived from my improved arrangement of a movable cone. It enables an adjustment to be made of the cone, for burning the lamp with a high or low wick, and the draught of air concentrated upon the flame to produce perfect combustion, and consequently secure a bright light, whether the flame is high or low, large or small. Thus the light is entirely under control, and the flame may be regulated in size and amount of combustion without affecting its intensity or brilliancy. The smoke, in any case, is all consumed, or rather there is no smoke made, as the supply of oxygen is always adequate for the perfect combustion of the carbon of the oil, and consequently my improved burner corrects the nuisance of smoke-lamps, common to the ordinary burners with the fixed cone, when the wick is lowered below the point of combustion, at which point only the draught of air is deflected and concentrated upon the blaze, with the stationary cone, sufficiently to supply the oxygen requisite to produce perfect combustion. The reason why the movable cone has this effect upon combustion in either position of the wick, whether high or low, is, that the orifice in the top of the cone is brought, by raising or lowering, exactly to that position in relation to the wick and the flame that the air is deflected upon them in its passage through the cone, in both positions alike, just as it is in that position with the stationary cone, when the wick is raised and the flame is full. In the ordinary fixed cone, when the wick is lowered below that point of combustion, the flame is sluggish and the lamp smokes, because the draught of air is not directed upon it, but passes above it, through the orifice in the cone. Hence, too, the heat of the flame is not carried off, but is retained in the cone and absorbed by the brass work of the burner, extending to the lamp and the chimney, thus raising the temperature of kerosene or other hydrocarbon oils to such a degree as sometimes to cause explosion. This liability to danger is also obviated by my improved burner, as the brass work remains perfectly cool, whether the flame is high or low, on account of the rapid current of air induced by the perfect combustion produced by its direct action on the flame in any position of the wick. An economical consumption of oil may also be reckoned an advantage of my improved burner, both from perfect combustion and the control of the light at any degree of magnitude, either high or low. The adjustable cone also allows the wick to be trimmed by lowering the top below the wick-tube, so that the wick can be cut exactly even with the tube, instead of running the wick above the cone. My improved mode of arranging the cone to move up and down is, to construct a skeleton-frame connected with the rim that supports the chimney, which frame is set within the perforated case, and is made to turn back and forth, part of the way round, in opposite directions. The frame is formed of a ring at the bottom, which is held down by pins in the sides of the case, and several inclined slots running from the top to the bottom ring, in which slots are fitted pins, projecting from the bottom of the cone, so that the pins can travel down the inclines and carry the cone down, or travel up and raise the cone up, when the skeleton-frame is moved either back or forth, while the cone itself will rise and fall perpendicularly, without turning.

In the drawings, *a* is the perforated case or shell of the burner, fitted to a lamp in the ordinary way, but disconnected from the lip or rim *b*, that holds the chimney, instead of forming a part, as usual. The rim *b* sets upon the case *a*, and is connected with a ring, *c*, that is fitted on the inside of the case *a*, at its bottom, and is held in place by pins, *s*, projecting inside of the case *a*, which allow the ring to

slide under them, and thus turn the skeleton-frame, with the rim *b*, back and forth, partly around the inside of the case. The rim *b* is connected with the rim *c* by metal strips, *e e*, with slots between them, forming inclined planes from the bottom to the top, on the inside of the case *a*. The cone M has three or more pins, *h*, projecting from the lower edge, corresponding in number and position with the slots between the pairs of inclined strips *e e*, in which slots they are introduced, so that they will travel down the inclined planes by turning the rim *b* in one direction, and travel up on them by turning it in the other direction, while the cone itself will rise and fall without turning to set it nearer to or further from the top of the wick-tube N. The cone M is held in position, to slide vertically, by a guide, *d*, that extends across the cone, from side to side, and fits around the wick-tube N. Near the lower part of the metal inclines *e e*, a bend, *g*, is made to set the cone at its lowest point for burning with a low wick, in which bend the pins *h* will stop, to hold the cone in place for burning low. By applying a little extra force, the pins will pass over the bend to the bottom of the inclines, at which position the top of the cone will be below the lap of the wick-tube, and the wick may then be trimmed properly, which is not possible with a stationary dome. On the rim *b* may be placed a loose circular perforated plate, *k*, for the support of the chimney, as shown partially removed in fig. 3. It is obvious that the movable dome may be arranged in different ways with the same effect; for instead of the rim *b* for the support of the chimney being separate from the perforated case *a*, it might still be made a part of it, as usual, and the skeleton-frame of inclined planes *e e* might be operated by pins on the top working through horizontal slots in the rim or case.

Being informed that a patent was granted to Elias J. Hale, of Foxcroft, Maine, for an improvement in camphene lamps, dated June 22, 1858, which broadly covers the principle of construction whereby the cone of a lamp-burner is made adjustable with respect to the wick-tube within it, or *vice versa*, I therefore disclaim the said invention broadly, and limit my claim to the application of an improved device for adjusting the cone with respect to the wick-tube; and what I do claim, and desire to secure by Letters Patent, is—

1. The construction of inclined planes, so arranged with respect to the cone and shell of a lamp-burner as to raise and lower the cone for adjustment vertically.

2. The mode of adjusting the cone by means of inclined planes *e e*, operating substantially as herein described.

The above specification of my invention signed by me this 21st day of February, 1867.

WILLIAM ROBINSON.

Witnesses:

WILLIAM R. MENHOUT,

JAS. ROBINSON.