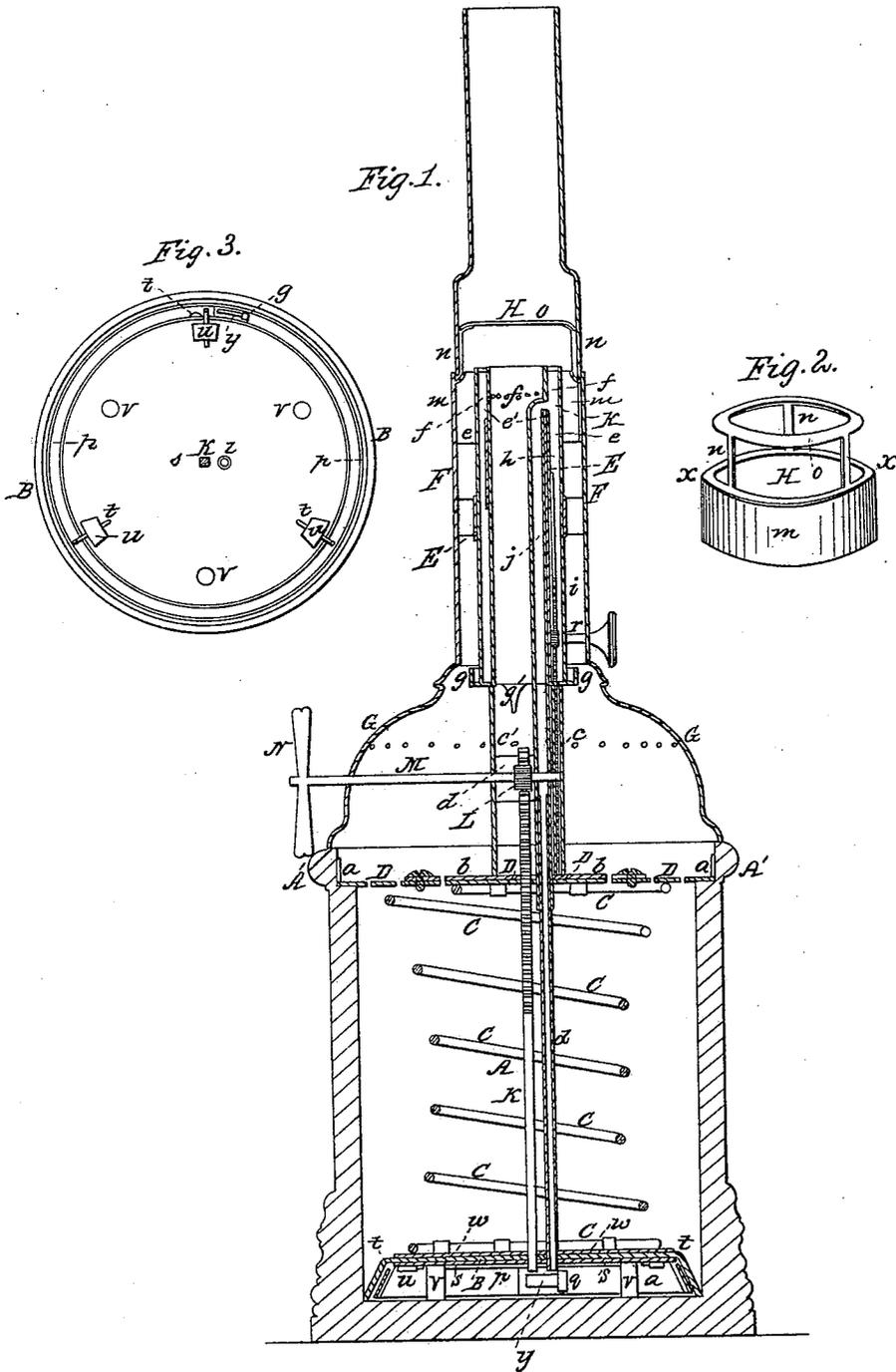


STUBER & HUGHES.

Lamp.

No. 19,266.

Patented Feb. 2, 1858.



UNITED STATES PATENT OFFICE.

JOHN STUBER AND RICHARD HUGHES, OF UTICA, NEW YORK.

LAMP.

Specification of Letters Patent No. 19,266, dated February 2, 1858.

To all whom it may concern:

Be it known that we, JOHN STUBER and RICHARD HUGHES, of Utica, in the county of Oneida and State of New York, have in-

5 v-ented certain new and useful Improvements in Lamps, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, making part of this specification, in which—
10 Figure 1, represents a vertical section of a lamp with our improvement applied there-
to. Fig. 2, a view in perspective of the cap
piece. Fig. 3, a bottom view of the piston.

15 The principal object of our improvement is to construct an efficient lamp for rail-roads, and other purposes where a jerking motion is communicated to the lamp.

Our improvement consists in so construct-
20 ing and arranging the upper half of the feed tube of a spring or mechanical lamp, as to feed the oil in at the top instead of the bottom of the wick tube, so that the lower half will be free to slide in it to the
25 top, for the purpose of shortening or lessening the height of the wick tube, and of rendering the lamp much more compact, than if the oil were fed at the bottom of a lamp constructed on this plan. And secondly our
30 improvement consists in a new mode of constructing the piston by means of which it is made to fit exactly the sides of the oil chamber without biting too much, so as to render it difficult of working.

35 To enable others skilled in the art to make construct and use our improved lamp we will now proceed to describe its parts in detail.

In the accompanying drawing the oil
40 chamber A is represented as being formed of a hollow or double cylinder, in which the piston (B) fits. To the upper side of this piston is secured one end of a spiral spring (C) in any suitable manner, whose other end is secured to the perforated disk (D)
45 in a similar manner. This disk rests upon the upper end of the hollow chamber (A) and is confined to it by means of projec-
50 tions (a) secured to the outer case (A') at proper distances apart, and at such a height from the upper end of the hollow chamber (A) as will admit the disk between it and them, there being suitable notches cut in the edge of the disk as will permit it to pass
55 after it has been so adjusted, by turning it slightly around it will be confined securely

between them to enable it to withstand the pressure of the spring (C). The spring as represented in the drawing is made in the style of sofa or chair springs.

60 To the upper side of the disk (D) is secured another perforated disk (b) to which is attached the wick tube (E) by means of standards (c and c') which for strength and another purpose to be hereafter described
65 are braced together by a cross piece (d). Near the top both of the in and outside cylinders (e and e') which together form the wick tube (E) are pierced a series of holes (f, f) for the purpose of giving free egress
70 to the superfluous oil from the wick tube, thus preventing the top of the wick from becoming too much saturated, which not only causes it to give a feeble light but frequently extinguishes it. The oil as it flows
75 out of the holes of the outer cylinder runs down into a gutter (g) formed on its bottom, whence it is conducted back into the oil chamber by means of a small spout (g')
80 formed on its side.

85 Between the outer and inner cylinders (e and e') is arranged the section of another (h) to the lower end of which is attached a rack (i) into which a small pinion or worm meshes, formed on the inner end of the thumb screw shaft (r), by turning which
90 the wick is raised or lowered as desired. To the inside of the inner cylinder (e) is secured the feed pipe (j) through which the oil from the chamber (A) is fed to the
95 wick, this pipe instead of leading into the wick tube at the bottom communicates at the top at (k), by this arrangement it will be seen that the lamp can be made much shorter than the ordinary method, as the
100 sliding end (l) of the feed pipe which passes through the piston into the oil chamber below, can slide clear to the top of the lamp, when the chamber is full of oil, whereas by the old method it merely could slide as far as the bottom, thus causing the standards
105 (c and c') to which the wick tube is attached to be made proportionally longer, which is objectionable for many reasons too obvious to be here described. That part of
110 the feed pipe secured to the wick tube is made sufficiently long to project below, and be attached to the disk (d). In other words both parts of the feeding tube are made nearly of the same length. By this plan the height of the wick tube can be shortened in ordinary lamps from two to four inches, which for

many purposes is an object of considerable importance. Over the wick tube is mounted the air cylinder (F) which rests upon the cover (G) of the oil chamber. This cover is pierced with a number of holes for the admission of air to the flame as in other lamps of similar construction. On the top of the air tube (F) is fitted an open cap (H), the cylinder (*m*) for this purpose being cut down a short distance below the top of the wick tube (E); upon the cap piece is fitted the glass chimney, a suitable groove (*x*)—see Fig. 2—for its reception being formed around it, upon this cylinder (*m*) are secured two or more standards (*n*) which support the top (*o*) of the cap piece. By constructing the cap piece open (as see Fig. 2) and then forming its sides with the glass chimney, it not only forms the draft for the necessary current of air, but it exposes the whole flame, thus enabling us to obtain the full benefit of all its light. The piston (B) is formed of a leather disk secured between two plates of metal, there being an elastic strip (*p*) of metal arranged around its periphery on its underside, the ends of which are connected together by means of a stud pin (*q*) secured on one end passing through a slot (*y*) formed in the other, by means of which the piston is allowed to expand or contract as circumstances may require. The strip (*p*) is connected to the under plate (*s*) by means of rods (*t*) which slide in grooves or loops (*u*) formed on the under side of the former, these rods and grooves serve not only to confine the strip to the piston but are so made as to permit it to expand or contract as before described. To the under side of the plate (*s*) are secured feet (*v*) which prevent the piston from being injured as it is forced against the bottom of the lamp by the action or force of the spring. To the

upper plate (*w*) of the piston is secured a rack bar (K) which passes up through the perforated disk (*b*) and meshes into a pinion (L) secured on the end of the shaft (M) by means of which the spring is wound up or forced together as when the lamp is filled, which then pressing against the piston forces it down upon the oil causing the latter to ascend the pipe (*j*) and feed the wick. As the force of the spring has a tendency to force the rack away from the pinion it is kept up to its work by the cross piece (*d*) before mentioned as a means of bracing the standards (*e* and *e'*) of the wick tube. The key (N) which turns the shaft of the pinion (L) may either be made fast to or removable from it as deemed most advisable.

Having thus fully described our improvements what we claim as new and desire to secure by Letters Patent is—

1. So constructing and arranging the upper half of the feed pipe (*j*) of a spring or mechanical lamp as that the lower half will be free to slide to the top or nearly so, of the wick tube for the purpose of lessening the height of the latter, and of rendering the lamp more compact, substantially as set forth.

2. The arrangement and combination of the elastic strip (*p*) pin (*q*) and slot (*y*) with the rods (*t*) and loops (*u*) the whole being constructed and operated in the manner substantially as set forth, for the purpose of forming an elastic piston for a lamp.

In testimony whereof we hereunto set our hands.

JOHN STUBER.
RICHARD HUGHES.

Witnesses:

P. HANNAY,
W. SERKI.