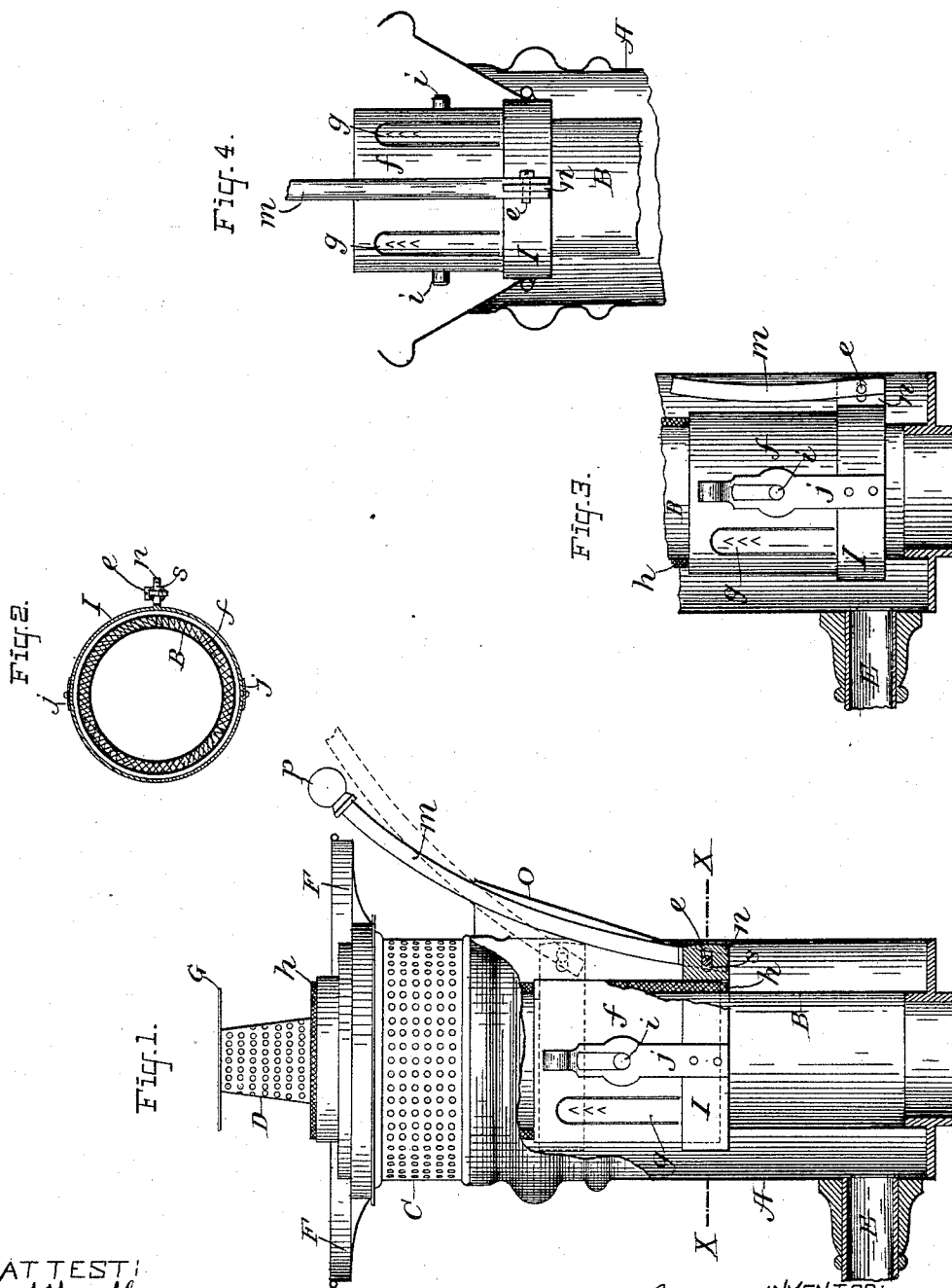


(No Model.)

L. F. GRISWOLD.
LAMP.

No. 486,038.

Patented Nov. 8, 1892.



ATTEST:
J. A. Hurdle
M. E. Coe

INVENTOR:
Lewis F. Griswold
BY
L. N. M. Sature
Attorney

UNITED STATES PATENT OFFICE.

LEWIS F. GRISWOLD, OF MERIDEN, CONNECTICUT, ASSIGNOR TO THE
CHARLES PARKER COMPANY, OF SAME PLACE.

LAMP.

SPECIFICATION forming part of Letters Patent No. 486,038, dated November 8, 1892.

Application filed September 1, 1891. Serial No. 404,394. (No model.)

To all whom it may concern:

Be it known that I, LEWIS F. GRISWOLD, of Meriden, in the county of New Haven and State of Connecticut, have invented a certain new and useful Improvement in Lamps; 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, forming part of this specification.

My invention relates to that type of lamps which has a central air-draft, or, in other words, which comprise an "Argand" burner, and more especially to that species of this class of lamps known as the "German student-lamp," in which species the cylindrical oil-chamber that surrounds the tubular wick is made comparatively small (for appearance sake) and is kept supplied with oil up to the same level all the time from a reservoir located at some little distance from the oil-chamber of the burner and connected with said oil-chamber by a supply-tube, though my improvement may be used with more or less advantage in any and every form of Argand-burner lamp.

As is well known to those familiar with the manufacture and use of lamps of the type above referred to, it is important that the wick-raising mechanism be of such a character that, first, it will when manipulated through the medium of its protruding handle or hand-piece always raise and lower the tubular wick evenly—that is, so as to vertically move every point in the circular upper end of the wick to the same extent—and thus induce to the greatest possible degree of perfection in the action of the burner; second, it may be conveniently manipulated so as to thus raise and lower the tubular wick with a perfect degree of nicety; third, it shall be simple and economic of manufacture, while at the same time it shall be durable and perfectly efficient, and, fourth, it shall not be liable to get out of working order, and in case of any derangement or wearing out of any of the parts may be easily repaired; and in lamps of the type referred to that are designed for use where there are few facilities for repairing them in the event of any breakage, wearing out, or derangement of any of the parts it is

highly important to have the construction of the wick-raising mechanism such that duplicate parts (purchased from the manufacturer of the lamp) can easily be substituted by any person unskilled in mechanical work, and such that almost any one can readily extricate the wick-carrier from the other parts of the lamp and reinstate it properly for the purpose of renewing the tubular wick.

To provide for use a lamp of the type hereinbefore referred to which shall contain a wick-adjusting mechanism possessing in the greatest practical degree all the advantageous qualities hereinbefore alluded to is the main object of my invention, which to this end may be said to consist, essentially, in the novel structural features, which will be found hereinafter fully described, and which will be most particularly pointed out in the claims of this specification.

To enable those skilled in the art to make and use lamps containing either in part or in whole my invention, carried into effect either in precisely the form shown or under such modifications as my invention may be subject to, I will now proceed to fully describe my improvements, referring by letters to the accompanying drawings, which form part of this specification and in which I have shown my invention carried into effect in the form in which I have so far successfully practiced it.

In the drawings, Figure 1 is a sectional elevation of so much of an Argand-burner lamp (of that species known as the "student's lamp") as is necessary to be shown to fully illustrate the improvements made the subject of this application. Fig. 2 is a horizontal section at the line *xx* of Fig. 1. Fig. 3 is a view similar to Fig. 1, but showing only a portion of the oil-chamber and the parts arranged interiorly thereof and with the wick-carrier in a lower position than that seen at Fig. 1. Fig. 4 is a partial vertical central section taken in a plane transverse to that of Fig. 1 and showing the wick-carrier raised high enough for its easy extrication from the lamp and also illustrating a slight modification, to be presently explained.

In Fig. 1 I have illustrated an upward adjustment or movement of the wick-carrier and

its lifting devices by dotted lines, and in all the figures the same parts will be found always designated by the same letter of reference.

In the drawings, A is the cylindrical oil-chamber, B the central-draft tube, C the foraminous cylindrical chimney-gallery, and D the ordinary perforated cone through which the air ascending in tube B is supplied to the inner wall of the tubular flame of the burner, while E is the oil-supply tube connecting the oil-chamber A with a reservoir, (not shown,) F is the globe-holder, and G the spreader-button, of a student-lamp, all constructed, arranged, and operating in about the usual and well-known manner.

h is the usual tubular wick generally used in Argand-burner lamps, and *f* is a tubular carrier device which is adapted to surround or embrace the said wick and through the medium of which (by a lifter mechanism or device) said wick is raised and lowered, as will be presently described. The wick-carrier *f* is provided with means for effecting a proper engagement between its interior surface and the exterior of the tubular wick *h*, (to insure the movement of the wick and carrier together,) which means, in the case shown, consists of a series (three) of inwardly-sprung tongue-like devices *g*, preferably formed integrally of the metallic tubular carrier and that have inwardly-projecting points or burrs that are sufficiently indented or pressed into the exterior surface of the wick to take hold of it and enforce its movement with the carrier-tube *f*. Said carrier *f* is formed or provided with outwardly-projecting pins or short studs *i i*, which are located diametrically opposite each other and a short distance below the upper end of said carrier, all as plainly seen in the drawings, and pivotally connected or engaged with these pins or trunnion-like devices *i i* are the two vertical arms *j j* of the lifter mechanism. This mechanism is composed of the said arms *j j*, a ring or annular band *l*, to which the lower ends of said arms are connected, and a curved lifter-rod *m*, the lower bifurcated end of which is coupled (in a manner to be presently explained) to the radially-projecting plate-like portion *n* of the band *l* and the upper portion of which rod, passing through the laterally-projecting housing *o* of the lamp, is provided at *p* with a knob or head that serves the double purpose of preventing said lifter-rod from dropping clear down into the oil-chamber and of facilitating the manipulation by hand of the rod's upper protruding end. The projection *n* of the band *l* (which projection is straddled by the lower forked end of rod *m*) has an oblong horizontally-arranged perforations, through which passes a small screw *e*, the body portion of which passes through a plain hole in one fork of the bifurcated end of rod *m*, while the threaded portion of said screw engages with a female thread in the other fork of the bar, all in such manner that (see Fig. 2) the lower end of the rod *m* may be easily detached from and

reattached to the said perforated portion *n* of the band of the lifter mechanism. The tongue-like devices or vertically-arranged arms *j j*, that are connected at their lower ends or portions to the annulus *l*, and the perforated upper ends of which engage with the pins *i i* of the wick-carrier *f*, may be either in the form of springs rigidly connected to said band *l*, as shown at Fig. 1, and adapted to automatically spring apart at their upper ends sufficiently to become disengaged from the pins *i i* (and thus permit the removal from the lamp of the wick-carrier *h*) whenever the latter shall have been lifted up far enough, or said arms may be of the form illustrated at Fig. 4, where they are shown as hinged at their lower extremities to the exterior of band *l* and adapted to drop apart or sufficiently spread apart by gravity to permit the disengagement of their upper perforated portions from the pins *i i* of the wick-carrier.

In the operation of the wick-adjusting mechanism herein shown and described it is only necessary to take hold of the upper protruding end of rod *m*, when by either lifting or pressing downwardly said rod the upper end of the tubular wick *h* may be raised and lowered or perfectly adjusted to regulate the flame of the lamp at pleasure and perfectly.

By reason of the combination, with the tubular wick-carrier *f*, of a surrounding band or ring *l*, provided with vertically-projecting arms *j*, that are pivotally or flexibly connected with the carrier-tube near their ends, I am enabled, it will be seen, to raise and lower the band *l* by means of a lifter device connected to one point or side of the band, and yet move the carrier-tube *f* in such manner that it will evenly raise and lower the tubular wick, because at the initial movement of the lifter-rod *m* in each direction the band *l*, though it will move first at the vicinity of its point of attachment to the lower end of said rod, will quickly come to a dead-lock with the carrier-tube *f* by reason of the connections therewith at the pins *i i*, and then the said carrier will be moved in a right line (up or down) and without moving the wick unevenly.

The curved form of rod *m* shown is very desirable, since with this form of lifter (which is economic of manufacture) the protruding end of the lifter device will in ascending clear the perimeter of the globe-holder of the lamp, while at the same time the rod can, as shown, be set to work throughout its inclosed portion very close to the wick-carrier, and hence within an oil-chamber A of comparatively small diameter, which is quite a desideratum, especially in that species of lamp in which it is common and desirable to have the oil-chamber very small in diameter.

To avoid the binding and cramping of the parts and their connections, which would arise in the case of the use of such a lifter-rod in the kind of lamp in which I have shown it were the lower end of the rod merely pivoted or hinged to the portion *n* of the band *l*,

I have devised and employed the sort of coupling shown, consisting in the coupler pin or screw *e*, arranged and working in the oblong aperture *s*, whereby while the band *l* and its part *n* moves up and down vertically the connecting-pin *e* is free to move up and down in a curved line, all as plainly illustrated in the drawings.

It will be seen that although when in their assembled and operative condition all the parts of the wick-adjusting mechanism are connected together, so as to work perfectly and efficiently, the plain tubular carrier *f* is easily detachable, as shown, from the lifter devices and extricable from the lamp, and the band *l* may be detached from the lifter-rod *m* by simply unscrewing the small screw *e*. Hence the lifter-rod, the screw *e*, the annulus *l*, and the wick-carrier *f* may each be removed and replaced by a new duplicate, and this by any person of ordinary skill and judgment, though not skilled in mechanical work or matters, and this is quite a desideratum to the users of lamps in out-of-the-way localities, where it might be difficult or impossible to get a lamp repaired otherwise than by the mere substitution for broken or worn parts of duplicate parts purchased with or at least from the manufacturer of the lamp. Of course whenever it may be necessary to remove the lifter devices the knob or head-piece *b* of the rod *m* must simply be removed by unscrewing it, so that the rod can descend by gravity wholly within the oil-chamber of the lamp, after which by tipping the lamp properly to one side the upper end may be made to come out through the open upper end of the chamber, (after the removal of the burner or gallery and its attachments,) all in a manner obvious.

I wish it to be understood that the separable or distinct features of improvement herein shown and described may of course be separately used with more or less advantage, though I prefer in practicing my invention to embody them all in one lamp, as thereby may be derived in greater measure the fruits of my invention.

Having now so fully described the several novel features of my improved lamp that those skilled in the art can understand and practice my invention either in whole or in part, and wishing it to be understood, furthermore, that various modifications may of course be made in the lamp shown and described with reference to each of the novel features forming part of my invention without departing from

the gist or pith of my improvement as regards such structural features, what I claim as new, and desire to secure by Letters Patent, is—

1. In an Argand-burner lamp, the combination, with a tubular wick-carrier adapted to surround the wick and engage therewith to move it up and down, of a ring or annular band *l*, arranged loosely round about, but flexibly or pivotally coupled to said wick-carrier, and a lifter-rod hinged or pivotally coupled at its lower end to one side of said ring *l* and having its upper end protruded through an opening in the upper part of the oil-chamber of the lamp, the whole constructed, arranged, and operating in the manner and for the purposes hereinbefore set forth.

2. In an Argand-burner lamp, the combination, with a tubular wick-carrier, of a ring or band surrounding the said carrier, vertically-projecting arms attached at one set of their ends to said ring and perforated at or near the other set of their ends, pins or projections on the carrier, which are detachably coupled to the perforated ends of said arms, and suitable means accessible exteriorly of the lamp for lowering and raising said ring or band, all substantially as and for the purposes set forth.

3. In a wick-adjusting mechanism for Argand-burner lamps, the combination, with a curved lifter-rod, the upper end of which protrudes from the oil-chamber of the lamp, of a wick-carrier the portion of which that is connected to the lower end of said rod is provided with an oblong aperture *s*, and a pin *e* in the lower end of said rod, working in said oblong aperture, all substantially as and for the purposes set forth.

4. A wick-adjusting mechanism for Argand-burner lamps, composed of a wick-carrier, a lifter-rod arranged within and projected upwardly through an aperture of the oil-chamber and provided with a knob or handle to prevent its casual descent bodily into said chamber, and a ring or band surrounding the carrier, pivotally connected therewith and connected at one side to the lower end of said lifter-rod, said parts being detachably connected with the others, as and for the purposes set forth.

In witness whereof I have hereunto set my hand this 26th day of August, 1891.

LEWIS F. GRISWOLD.

In presence of—

R. A. PALMER,
CHAS. C. POWERS.