S. B. PLATT.

Improvement in Lamp Burners.

No. 115,890. Patented June 13 1871.

Fig. 1

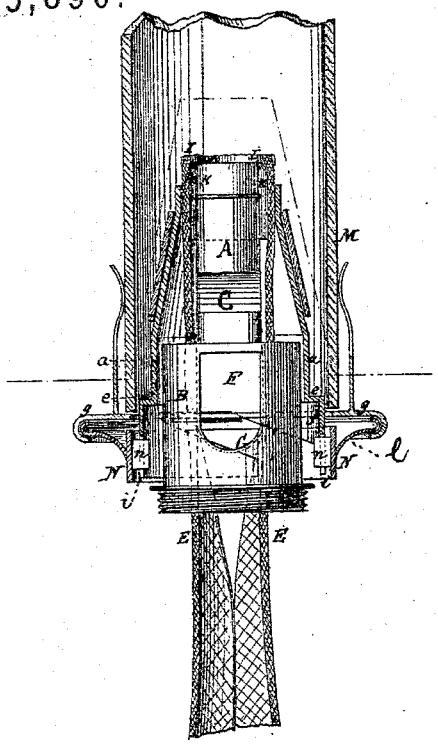


Fig. 2

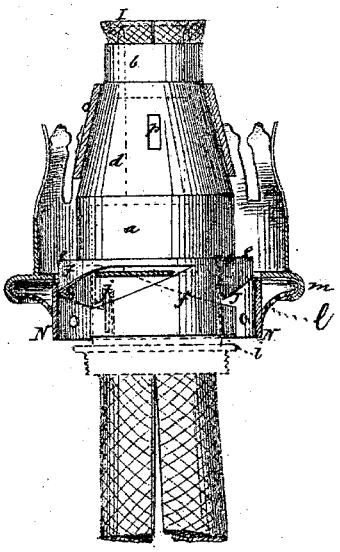


Fig. 4

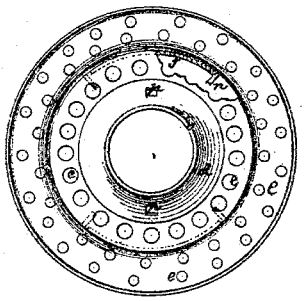


Fig. 3

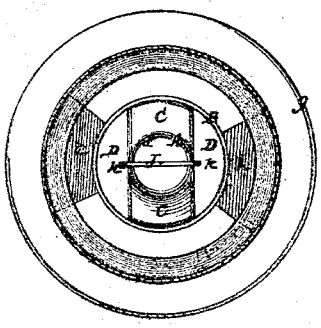


Fig. 5

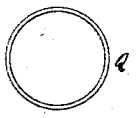
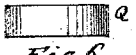


Fig. 6



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UNITED STATES PATENT OFFICE.

SEABURY B. PLATT, OF DERBY, CONNECTICUT.

IMPROVEMENT IN LAMP-BURNERS.

Specification forming part of Letters Patent No. 115,890, dated June 13, 1871.

To all whom it may concern:

Be it known that I, SEABURY B. PLATT, of Derby, in the county of New Haven and State of Connecticut, have invented a new and Improved Lamp-Burner; 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 drawing forming part of this specification.

This invention relates to improvements in that class of burners in which an Argand flame is produced by two flat wicks confined by an exterior tube around a central wick-tube, through which air is supplied from below, an outer tube being also employed to regulate the flame by raising or lowering, while the wick remains stationary. The improvements consist in the construction and arrangement hereinafter described, whereby the burner is made more economical and efficient than those now in use.

Figure 1 is sectional elevation of my improved burner. Fig. 2 is a section of the exterior parts and elevation of the flame-regulating tube. Fig. 3 is a plan with the wick-regulating tube removed. Fig. 4 is a plan with the chimney-holder removed. Figs. 5 and 6 are views of a ring which I sometimes employ to hold the wick so as not to be disturbed by the flame-regulating tube.

Similar letters of reference indicate corresponding parts.

A is a small tube rising up from the hollow cylinder B, which screws into the lamp-top, being connected to the top of the said cylinder by a flattened conical part, C, the flattened sides of which afford spaces D for inserting the wicks E from below, one in each space. The cylinder has a large opening, F, in each side, under the conical part C, for admitting air into tube A for conducting it to the flame. Below these openings is a bent plate, G, shown in dotted lines in Fig. 1, to shut off communication to the oil-space below, except a small hole made in said plate for the admission of a sufficient quantity of air to prevent the forming of a vacuum by the escape of the oil to the flame. This wick-tube A is flared out at the top, as shown at I, and roughened thereat by corrugating, cutting, or in any other way, the flaring being to contract the space between it and the wick-regulating tube, which will be presently described, and the roughening being to prevent the wick from turning with the said tube. The said tube is also provided with vertical flanges or ribs K, also employed to prevent the wick from turning. In this instance these flanges are formed by the plate J extending across the tube and through a slot in each side, but they may be applied in any approved way. The flame-regulating tube consists of the large hollow cylinder *a* and the smaller one *b*, joined by the conical section *d*, the horizontal perforated rim *e*, and the large cylinder *f*. The cylinder *a* is fitted around the upper part of cylinder B so as to turn freely, and the cylinder *b* is supported around the upper part of A, stopping about as much short of the top of it as the length of wick to be exposed to the flame, and it is as much larger as to provide an annular space between it and tube A, in which the wick may be confined snugly, but not too tightly. The perforated rim *e*, connecting the upper end of *f* with the lower end of *a*, is as wide as it can be and leave room for the lower end of the chimney M to fit down around it and rest on the ring *g*, which is connected to the cylinder B by the horizontal segmental pieces *h*. This hollow cylinder *f* is provided with two vertical notches, *i*, one on each of two opposite sides, capable of dropping down over the segmental pieces *h*, and from the bottom of each notch is a spiral groove, *j*, extending to the upper end. N is a vertical perforated ring, suspended from the ring *g* by the ogee-perforated ring *l*, fitted loosely in the groove formed by the flange *m* of said ring *g* turned under to hold it in the said position. The ring carries two or more inwardly-projecting radial studs, *n*, for bearing against the walls of the notches *i* in cylinder *f* for turning it, the said ring N being adapted for being turned readily by hand. O is a conical ring fitted on the conical tube *d*, to be used or not, as may be required, to cover the slots *p* in the latter, which are provided to admit of raising the wick when it has burned out at the top and requires readjusting by means of any suitable instrument passed through the slots into the wick, at which time the said ring is turned and similar slots in it brought to coincide with the slots *p;* or, in case it has no slots, it may be taken off. Instead of corrugating the upper end of tube A, or using the flanges K to pre-

vent the wick from turning with the regulator, I may employ a ring, Q, for that purpose, placing the ring down over the wick, confining it to tube A, and I propose to employ such rings in some cases. It may also be employed in connection with the roughened top of A. The wick, consisting of two flat pieces, E, being inserted from below through the spaces D, raised above the top A, and adjusted around it so as to completely encircle it, the flame-regulating and wick-controlling tube *a b d f* is put down over it until the lower edge of *f* rests on the segmental pieces *h*. It is then turned until the notches *i* are brought over them. Then it is further pressed down so that the upper walls of the spiral slots rest on the segments. Then the wick being trimmed off at the top even with the top of A, or thereabout, the burner is ready for use, and, being lighted, the flame will be regulated by the distance of the upper end of *b* from the top of the wick, which burns on the outside and top only, and the distance of the said upper end of *b* from the top of the wick will be varied by turning ring N, by which the spiral grooves and segmental pieces *h* cause the said regulators to raise or lower at the same time that it is turned. It will be seen that ample space is provided between the flame-regulator and the wick-tube for the oil to rise in the wick without obstruction nearly to the top, when the space is contracted so as to control the flow at the point of burning, to which point a liberal supply is afforded, but the escape is regulated with great facility by the raising of the cylinder *b* closer to or turning it away from the bell-mouth of tube A. When the wick has burned away so as to require readjusting, the slots *p* are exposed either by removing the ring O or turning it so as to reach them through similar slots in it, and the wicks are raised by any suitable instrument applied through the said slots. This flame-regulating tube may be taken off in the most ready manner for applying new wicks or for other purposes, and by taking it off the wicks may be applied in the most ready manner, no matter whether wet or dry, for being drawn up through the spaces D and alongside of the tube A, the flame-regulating tube being sufficiently large from the bottom to the top to allow the wick perfect freedom, and, binding on the wick only at the top, will go down over the wick without disturbing it, admitting of inserting the wick in the most ready manner, whether it be thick or thin, which I consider an important feature due to my arrangement and not existing in other lamps of this class which bind and obstruct the wick between two permanent tubes, so as to make great difficulty in inserting it, especially when wet. It will therefore be further seen that this detachable and revolving flame-regulator has the following functions: First, it confines the wick to its place around the wick-tube. Second, it regulates the exposure of the wick to the flame. Third, it renders it easy to trim the lamp under all circumstances, whether the wick be dry or wet. Fourth, it, together with the bell-mouthed top of A, confines the wick so as to economise the use of oil, while allowing a liberal supply up to a point immediately below the point of burning. Fifth, it admits air freely to the space surrounding the flame to support combustion.

The said regulator, together with the tube A, may be made very much shorter than here shown, which is desirable, inasmuch as it shortens the distance the oil has to flow from the reservoir to the flame.

By this arrangement I am enabled to produce an Argand burner of two flat wicks by the use of two tubes only, whereas in other burners of this character three have been heretofore required. I am also enabled to regulate the flame very quickly by a slight turn of the ring N, whereas the other arrangements require very much more turning to effect the adjustment. I also effect the adjustment without turning the chimney, which is very objectionable, for the chimneys, being very irregular and seldom sitting exactly plumb, will cause a variation in the light by being turned. The shifting of the regulator around the wick admits of applying an instrument to the wick at any part for lifting or adjusting it—for instance, at the edges or the center, as may be required at any time.

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

1. The combination, with the wick-tube A, of the flame-regulator, the latter being arranged for confining the wick against A, and for adjustment vertically to regulate the flame, substantially as specified.

2. The flame-regulator, having the spiral slots *j* acting on the segmental flanges *h* and operated by the ring N, substantially as specified.

3. The stationary tubes A, roughened at I and ribbed at *k*, as and for the purpose specified.

4. The suspended ring N, studded at *u*, combined with cylinder *f*, notched at *i*, for the purpose of enabling the latter to be turned in the manner described.

5. The said tube, having the flare or bell-mouthed upper end, for action, in conjunction with the flame-regulator, for confining the wick and limiting the thickness of the flame substantially as specified.

6. The combination, with the regulator, of the ring O, either having slots corresponding to slots *p* or not, all substantially as specified.

7. The revolving flame-regulator, having wick-adjusting slots *p*, substantially as specified.

The above specification of my invention signed by me this 10th day of March, 1871.

SEABURY B. PLATT.

Witnesses:

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