No. 655,077. Patented July 31, 1900.

W. HARRIS.

LAMP BURNER.

(Application filed Nov. 18, 1899.)

(No Model.)

Fig. 1.

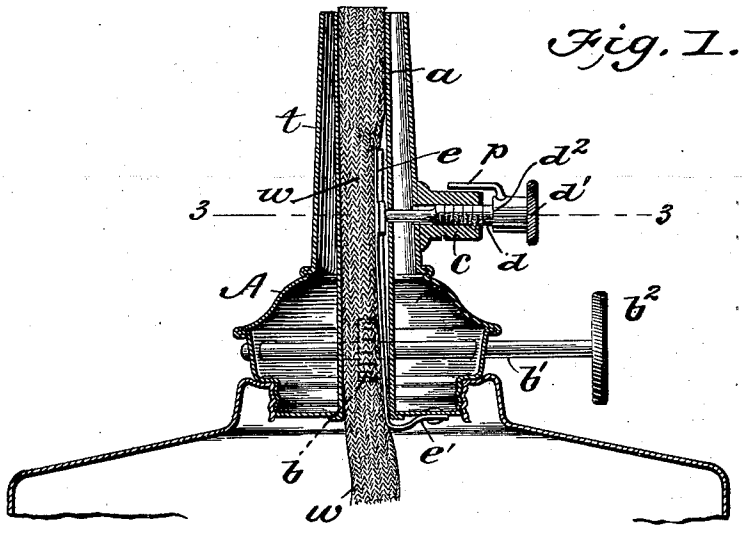


Fig. 3.

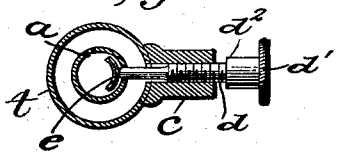


Fig. 2.

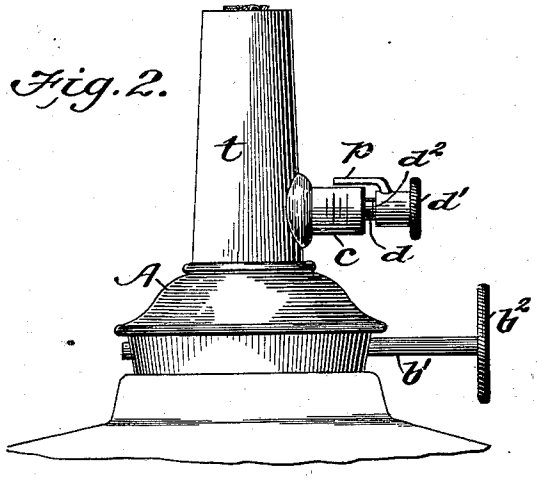
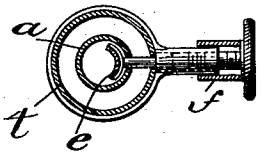


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM HARRIS, OF MOUND BAYOU, MISSISSIPPI, ASSIGNOR OF ONE-HALF TO ISAIAH T. MONTGOMERY, OF SAME PLACE.

LAMP-BURNER.

SPECIFICATION forming part of Letters Patent No. 655,077, dated July 31, 1900.

Application filed November 18, 1899. Serial No. 737,483. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HARRIS, of Mound Bayou, in the county of Bolivar and State of Mississippi, have invented a new and useful Improvement in Lamp-Burners, of which the following is a specification.

My invention is in the nature of an improvement in lamp-burners designed for the use of railroads, signal-switches, and cars which require to be kept lighted for a long period, and which improvement is designed to limit the amount of oil fed by capillary attraction through the wick, so as to save oil and make it last longer and also to give without a chimney a clear flame free from smoke. The improvement also is designed to prevent the jarring of the wick down, and in which respect my device finds a useful application for bicycle-lamps and other analogous uses.

It consists in the special construction and arrangement of parts of the burner as will permit of a regulated pressure on the wick without interfering with its feed and means for limiting and indicating the adjustment, as hereinafter fully described with reference to the drawings, in which—

Figure 1 is a vertical longitudinal section. Fig. 2 is a side view. Fig. 3 is a cross-section on line 3 3. Fig. 4 is a side view showing a modification.

In the drawings, Figs. 1, 2, and 3, A represents the burner-body, whose lower portion is screw-threaded to fit detachably into the font. In the burner-body is fixed the round wick-tube *a*, in the side of which is formed a vertical slot, through which protrudes into range of engagement with the wick the ratchet-wheel *b*, fixed on a shaft *b'*, carrying on its outer end a milled head b^2. This shaft *b'* is journaled in the burner-body in the usual way and furnishes the well-known means for raising and lowering the wick.

At a point above the wick-feeding devices there is soldered or otherwise attached a laterally-projecting sleeve *c*, having its interior provided with screw-threads, furnishing a long screw-nut, with which engages a screw-stem *d*, bearing on its outer end a milled head *d'*, by which the screw-point can be advanced into or withdrawn from the wick-tube. In the interior space of the wick-tube there is arranged a little strip of metal *e*, extending vertically between the inner wall of the wick-tube and the wick *w* and bearing directly against the latter at a point in front of the adjusting-screw *d*. This strip is slightly curved in cross-section to correspond to the curved surface of the wick, and said strip is immovably fixed in said tube by having its lower end riveted or soldered at *e'* to the bottom of the burner-body. With this construction when the screw *d* is turned up it presses against the strip *e* and forces it against the wick to compress the interstices of the wick, so that its capillary action is retarded and only a limited and predetermined amount of oil is allowed to reach the burning end of the wick. By this adjustment so great an economy of oil is obtained that the lamp-supply lasts three or four times longer than when burning with a full and uninterrupted oil-feed through the wick. The great advantage of this is readily understood by railroad men, and it not only economizes oil and prolongs the burning period of the lamp; but it also gives a clear white light without the use of a chimney free from smoke and lampblack.

At the point on the pressure-strip where the screw bears against it there may be attached a small cross-piece or reënforced bearing to take the strain of the screw. The sleeve-nut is also preferably formed on an external tube *t* or band encompassing the inner wick-tube, which external tube or band carries the strain of the set-screw.

Now I am aware that a device for choking the feed of oil in a wick has heretofore been devised in which a transverse sliding blade compressed the wick from the action of a set-screw; but the pressure on the wick was established and localized in a narrow transverse line, which so indented the wick as to make it difficult to regulate and also made permanent transverse creases in the wick, which distorted the wick permanently and interfered with the symmetry of the flame. Furthermore, it was with such construction necessary to draw back the compressing-blade to an extreme range before the wick could be raised or lowered, and, besides, the device could not be applied conveniently to burners already in use. With my longitudinally-arranged strip

in the wick-tube parallel with its inner walls and anchored at the bottom all these objections are overcome. I also provide means for indicating the extent of adjustment of the pressure necessary to give a predetermined flame which will sufficiently economize oil without going out and means also to prevent the full power of the compressing-screw from being exerted on the wick beyond a certain point. For the latter purpose the compressing-screw may have a stop-shoulder d^2, that strikes against the outer end of the sleeve-nut when the maximum adjustment is given, and thus prevent in the haste of trimming many lamps the extreme adjustment that would allow the lamp to go out after lighting or prevent it from feeding, a matter of the greatest importance in railroad-signal applications. Furthermore, the advance movement of the screw may be indicated to represent any desired number of hours of burning. Thus, for instance, a pointer p may be made to register with a set of external graduations on the sleeve-nut, or the screw-rod may have an external tube or sleeve f, (see Fig. 4,) that envelops the sleeve-nut telescopically and indicates by covering the said graduations the extent of the compression and the number of hours the lamp may burn.

A great advantage of my invention is its applicability to any kind of lamps already in use. Furthermore, the pressure of the adjusting devices is distributed over a considerable longitudinal section of the wick in such a manner as to avoid kinking the wick and without affecting its flexibility or the freedom of its feed in raising and lowering the wick. Again, the long-threaded sleeve-nut guards against stripping of threads and maintains the usefulness and efficiency of the device.

In making use of my invention I would have it understood that it may be applied to any kind of a lamp and to wick-tubes that are flat as well as round. For maintaining a regular and prolonged heat it finds a useful application in lamps for heating incubators and similar uses.

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

1. A lamp-burner having a longitudinally-arranged bearing-strip within the wick-tube and held fixedly against upward longitudinal movement; in combination with a set-screw tapped through the side of the wick-tube and bearing against said strip substantially as and for the purpose described.

2. A lamp-burner having a longitudinally-arranged bearing-strip within the wick-tube held fixedly against upward longitudinal movement; in combination with an elongated sleeve-nut fixed in the side of the tube, and a set-screw tapped in said sleeve-nut and bearing against the pressure-strip substantially as and for the purpose described.

3. The combination of a lamp-burner, a pressure-bearing for the wick, and a set-screw acting upon the pressure-bearing and having a stop to limit the extreme movement of the screw and prevent putting out the lamp as described.

4. The combination of a lamp-burner, a pressure-bearing for the wick, and a set-screw acting upon the pressure-bearing and having a series of graduations and an indicator for showing the amount of pressure on the wick and its relation to the oil consumption substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM HARRIS.

Witnesses:
WM. BROWNLEE,
A. L. WEBSTER.