H. C. ALEXANDER.
Lamp Burner.

No. 201,730. **Patented March 26, 1878.**

Fig. 1

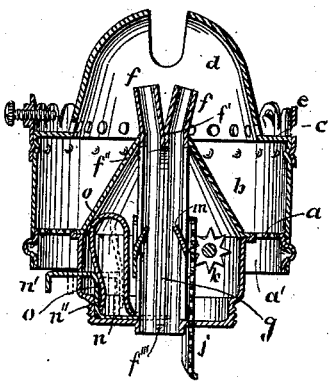


Fig. 2.

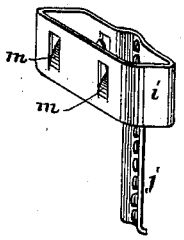


Fig. 3.

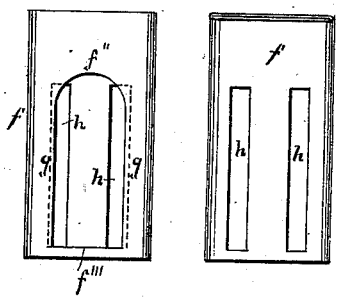
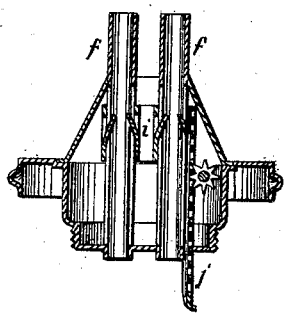


Fig. 4.



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UNITED STATES PATENT OFFICE.

HORACE C. ALEXANDER, OF NEW YORK, N. Y.

IMPROVEMENT IN LAMP-BURNERS.

Specification forming part of Letters Patent No. **201,730**, dated March 26, 1878; application filed January 3, 1878.

To all whom it may concern:

Be it known that I, HORACE C. ALEXANDER, of New York, in the county and State of New York, have invented certain new and useful Improvements 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 which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The invention relates to the arrangement of the wick-tubes of a compound burner, and to the wick-raising device.

It consists of a wick-carrier placed outside of the wick-tube, which is raised and lowered by a rack and pinion or other device, and which has teeth projecting inward through slots in the sides of the wick-tube, for the purpose of engaging with the wick, in combination with mechanism for clamping or holding the wick when the wick-carrier is to be lowered to a new position.

This is an improvement upon the wick-raising device described in the specification of my application for Letters Patent for an improvement in lamp-burners, filed October 27, 1877, which has the collar placed below the wick-tube and the rack extending up outside of the wick-tube to the actuating-wheel.

In said specification the take-up, or the device for holding the wick while the position of the slide is being changed, is shown as located at the top of the wick-tube, while in the present case I prefer to place it near the bottom of the wick-tube; and it may be simply a wire or prong, single or double, which can be pressed in through openings in the sides of the wick-tubes, and serve to hold both wicks.

The invention further consists of the arrangement of the two wick-tubes close together for a portion of their length, and diverging at the top. The wick-carrier, however, is in no way confined in its application to two wick-tubes placed close together, but may be used with single burners, or with parallel wick-tubes placed at a short distance apart.

Figure 1 is a vertical section of a lamp-burner embodying the invention, the section through the wick-tube being taken through the vertical side slots *h* of Fig. 3, and the section through the wick-raising device being partly through opposite teeth *m* and the rack-arm *j*. Fig. 2 is a view of the wick-carrier adapted for a pair of wick-tubes placed close together. Fig. 3 shows the inside and outside, respectively, of a wick-tube; and Fig. 4 is a vertical section of a pair of parallel wick-tubes placed a short distance apart, with the wick-raiser, the section being taken in the same manner as described in the case of Fig. 1.

The base of the burner and the projecting perforated flange *a* are made of one piece of metal, with the turned-down outer edge *a'*; and the short cylinder *b*, forming the sides of the burner, the chimney-rest *c*, and the air-cone *d* are in the same manner all stamped from one piece of metal. They are attached to the rim *a'* of the base by a bayonet-fastening, so that the top of the burner can be easily removed.

The chimney-guard *e* is a band which fits over the cylinder *b*, and is secured by indentations made in both *b* and *e* after the band *e* is in place.

The wick-tubes *f f* are placed close together, with the exception of the upper portion from the point *f'* to the upper ends, which diverge so as to bring the ends of the wicks at a short distance apart, to admit air between the flames. The center of the inside of each wick-tube, when they are together, is cut away, so that the two wicks are in contact for a portion of the distance within the tubes, as from *f''* to *f'''*. A strip, *g*, is left at the sides of the tubes to divide the two wicks and keep each in its respective tube, though in contact with each other. The contact of the wicks makes the flames much more uniform than they are when both wicks are entirely confined in their respective tubes, for the reason that the oil rising in the wicks distributes itself uniformly through both of them.

There is an important difference between this compound wick-tube and the double tubes which have been used, made of a single wide tube split at the top, so as to form two separate tubes. As in the case of the single wide wick-tube, the wicks are together in the main portion of the tube, it being for that portion

of the tube a single tube with two wicks, while with this burner each wick is in its own tube independent of the other, and they cannot, by any possibility, be crowded into one of the single tubes at the top of the burner.

On the outside of each wick-tube there are narrow vertical slots *h*, through which the teeth *m* of the wick-carrier *i* project.

The wick-carrier *i* is a band, which encircles the wick-tubes, and slides freely on the outside of the same. It is raised and lowered by the rack *j* and the pinion *k*. The carrier *i* has spring-teeth *m* cut in its sides and bent inward with an upward inclination, so as to engage with the wicks and raise them when the collar is raised, and also to hold them firm enough to lower them when the collar is lowered, unless they are held by the take-up *n*, in which case the teeth *m* will slide down on the wicks. The teeth may, however, be cut in the upper edge of the collar *i*, or in any other way to serve the purpose.

This construction differs from a wick-raising device heretofore used which has a plate with teeth acting on the wick through slots in the sides of the tube, the plate being held against the side of the wick-tube by means of a spring, inasmuch as the wick-raiser encircles the tube, means being provided for holding the wick when the wick-raiser is to be lowered to a new position, and the teeth are constructed so as to permit the carrier to be lowered when the wick is held.

When the wick-tubes are two distinct tubes placed at a short distance apart, the carrier *i* is preferably made double—that is, with a collar for each tube, which collars are connected and both operated by one rack and pinion, and the rack and pinion may be placed on the outside of one of the tubes, or between them, if the distance between the two tubes permits.

It is evident that the compound wick-tubes, constructed as described, may be used with the ordinary wick-raising device—that is, with actuating-wheels on both sides of the wick-tubes, opposite each other and geared together, so as to operate simultaneously, and acting directly on the wicks through slots in the wick-tubes; and other common devices of adjusting the wicks may be combined with the two wick-tubes placed close together, so that the wicks can be in contact and yet in their respective tubes.

The take-up *n* is placed near the bottom of the wick-tubes. In my application of October 27, 1877, it is shown as a toothed plate, which is pressed in against the side of the wick, and thrown back by a spring when released. In the present case the device is modified to adapt it for two wicks, and the fastening *n*, when pressed in by applying the thumb to the head *n'*, passes through openings in the wick-tubes and through both wicks. The take-up may have two prongs, which will pass through the wicks near their outer edges. It is made with the shoulder *n''*, which serves a double purpose—as a seat for the end of the spring *o*, which holds it back when not in use, and also to prevent it from being thrown out too far. Its position when pressed in to hold the wicks is shown by dotted lines.

To insert the wicks, the carrier is run up as far as possible; then the wicks are inserted at the bottom, the take-up *n* is pressed in, and the carrier is run down, and then up; then the take-up is pressed in and the carrier is run down. This is repeated as often as is necessary.

I claim as my invention—

1. The improved wick-raising device, consisting of a wick-raiser encircling the wick-tube, and having teeth, which engage with the wick through openings in the wick-tube, with mechanism for raising and lowering it, and for holding the wick when the wick-raiser is to be lowered to a new position on the wick, substantially as and for the purposes set forth.

2. The combination of two or more wick-tubes placed in contact with each other, with portions of the sides of the tubes removed, as and for the purpose set forth.

3. The improved take-up *n*, operating through the sides of the wick-tube, and having points, which can be pressed into the wick or through it, and a spring for withdrawing it, in combination with a wick-tube and a wick-raising device, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

HORACE CLIFTON ALEXANDER.

Witnesses:
F. M. MONTIN,
EDWD. W. CONVERSE.