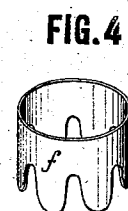
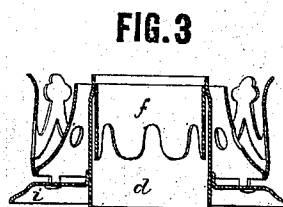
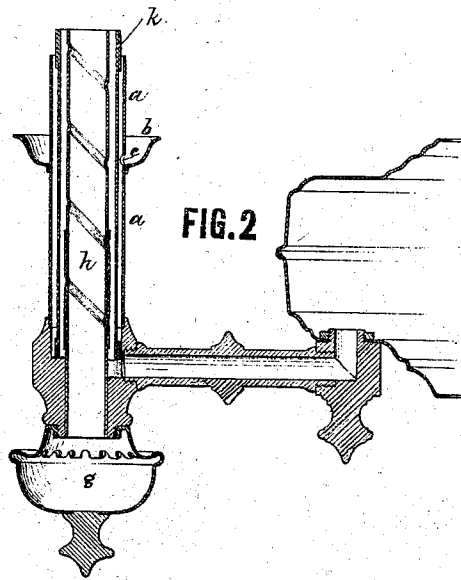
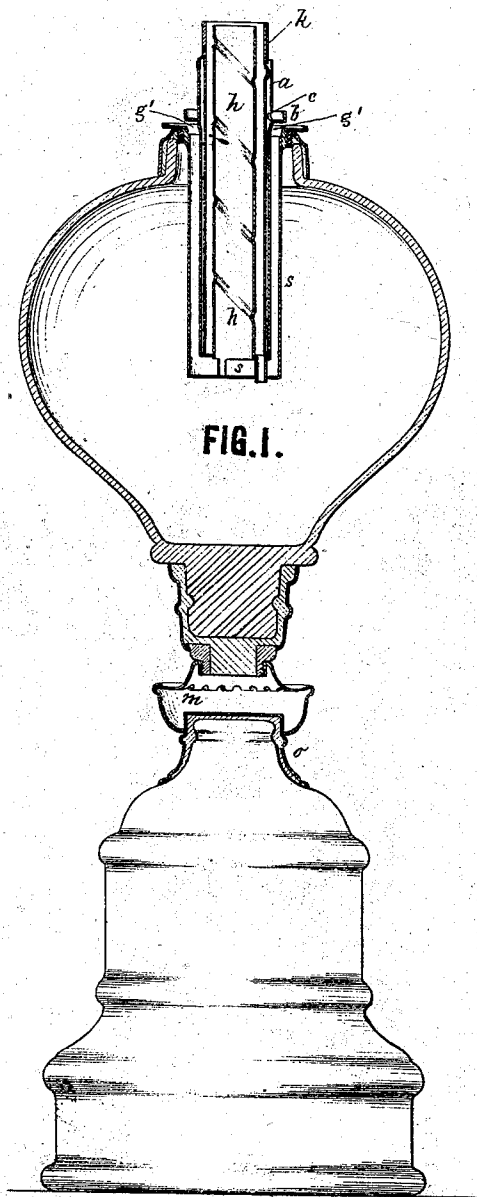


RUFUS S. MERRILL

ARGAND LAMPS.

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PATENTED JAN 17 1871



Rufus S. Merrill
by atty. A. Pollock

WITNESSES

M. B. Smith
John B. Hiley
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UNITED STATES PATENT OFFICE.

RUFUS S. MERRILL, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF,
WM. B. MERRILL, AND JOSHUA MERRILL, OF SAME PLACE.

IMPROVEMENT IN LAMPS.

Specification forming part of Letters Patent No. 111,072, dated January 17, 1871.

To all whom it may concern:

Be it known that I, RUFUS S. MERRILL, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Lamps, of which the following is a specification.

My invention relates to Argand lamps and burners, and its principal objects are—

First. To prevent the oil from gathering upon and running down or dripping from the exterior tube of the burner—that is to say, the outer tube or cylinder over which the removable part of the burner fits. In “student-lamps,” so called, this is a serious disadvantage, for the oil runs down the exterior of the burner-tube and drops therefrom upon the table or other place upon which the lamps rest; and in lamp-burners of a class similar to that for which Letters Patent were issued to Murray and Howland on the 21st of January, 1868, the oil running down the exterior tube will gather in the lower part of the burner in such quantity as to check or entirely stop the interior draft.

Second. To insure the proper adjustment of the removable portion of the burner upon the burner and wick raising tubes it is well known that the removable part of the burner is provided with two cylinders or tubes, the one placed within the other and joined together at their tops. When the removable part of burner is applied to the wick-tubes the exterior tube fits between the two sleeves or cylinders, and the lugs on the inner or wick-raising tube fit in notches cut in the inner sleeve or cylinder. It is very necessary that the inner sleeve should thus engage with the lugs, not only to effect the raising of the wick, but also to bring the removable part of the burner and the chimney which it carries into such position with respect to the wick as to insure proper combustion. It often happens, however, that, through either carelessness or ignorance, the person fitting the removable part of the burner to the lamp allows the inner sleeve to rest on top of, instead of fitting down around, the lugs on the wick-raising tube, thus throwing all the parts out of proper adjustment and causing an insufficient light to be produced.

The manner in which these objects are effected can best be explained by reference to the accompanying drawings, in which—

Figure 1 is a vertical central section of a

lamp provided with what is commonly known as a “Howland burner.” Fig. 2 is a vertical central section of that portion of a student-lamp to which my invention relates. Fig. 3 is a like section, on an enlarged scale, of the removable portion of the burner. Fig. 4 is a view of the inner notched sleeve detached from the burner.

To accomplish the first object I have in view I place around the exterior burner-tube, *a*, at a suitable distance below its top, a trough or annular cup-like flange, *b*, at or near the bottom of which a hole, *c*, is cut in the tube *a* for the purpose of permitting the return to the interior of the tube of the oil which may gather in the trough. The appearance of oil upon the exterior of the tube *a* is mainly due to the following cause: The top of the tube *a*, when the removable part of the burner is applied to the lamp, fits between the two sleeves *d f*, Fig. 3, and as there is more or less oil within the tube the inner sleeve comes in contact with this oil, which, by capillary action, is carried up over the top of, and by means of the outer sleeve down upon, the sides of the tube *a*. Little or none of this oil will enter the drip-cup *g*, but the greater portion passes down upon the outside of the cup and drips upon the table or other piece of furniture upon which the lamp stands, so that not only is the exterior of the lamp disfigured and extremely disagreeable to handle, but the drippings will injure the furniture upon which the lamp stands. In the burner shown in Fig. 1 this dripping of the oil is not only disagreeable, but will prevent the requisite amount of air from passing to the wick. The central draft for the flame is fed by air which enters at the point *g'* and then passes down to the bottom of the case *s* and up through the inner tube, *h*, but the drippings of oil which run down the exterior of the tube *a* gather in the lower part of the case *s*, and gradually fill the space between the bottom of the case and the lower end of the central draft-tube, thus diminishing and finally cutting off entirely the supply of air, which of course is fatal to the proper combustion of the oil. This difficulty, however, is entirely removed by placing a trough, *b*, around the upper end of the tube *a*, and by cutting in the tube a hole, *c*, similar to that shown in Fig. 2.

The trough may be of any suitable shape

and construction, but should be located as near the top of the tube as possible, so as to catch the oil before it has traveled any distance, and at the same time so as to be concealed as far as possible from view by the base *i* of the burner.

I would here say that I am aware that troughs have been used on Argand burners to catch the drippings and return them to the wick or oil-reservoir, and I do not claim this use broadly. My invention, however, is directed to that kind of Argand burner in which the sleeves *d f* of the removable portion of the burner fit respectively upon the exterior and interior of the burner-supporting tube *a*, as shown, and the trough is arranged with relation to these parts, so that it shall be located upon the exterior of the tube *a*, at or just below the point to which the lower end of the outer sleeve, *d*, extends when the removable part of the burner is placed on the tube. By this means the oil which passes up between the inner sleeve, *f*, and the tube, and then over the top of the tube, and down between it and the exterior sleeve, *d*, (the two sleeves, in conjunction with the tube, forming, to some extent, the long and short legs of a siphon,) is caught before it can spread itself over the exterior of the burner; and, moreover, the trough is covered by the base *i* of the burner, and is in a great measure concealed from view.

The second object I have in view—viz., to insure the proper and ready adjustment of the removable portion of the burner upon the burner and wick-tube—I accomplish as follows: I have already stated that the ordinary notched inner sleeve of the removable part of the burner is very apt to rest upon the top of the lugs of the wick-raising tube *k*, instead of having the lugs fitting in the notches, and thus allowing the burner and chimney to be brought down to their proper position with respect to the wick. The failure to secure this proper adjustment of the burner is in a great measure owing to the fact that the inner sleeve usually has but two or three rectangular notches cut in its lower edge, while all the rest of the edge is left uncut and perfectly straight, so that it is difficult at any time to get the burner in its place without turning it around several times until the notches happen to come opposite to the lugs, and only then will the burner drop into position. This difficulty I

obviate by forming the parts of the sleeve between the notches as shown in Figs. 3 and 4, where *f* represents the inner or wick-raising sleeve provided with any suitable number of notches, and having that portion of its lower edge included between any two of the notches rounded or inclined toward each notch, so that if, when the burner is put on the tubes, the notches should not at first engage with the lugs on the wick-raising tube, the slightest motion of the burner will bring the notches into position and cause the sleeve to drop into place. By this means the difficulty above referred to is entirely removed for all practical purposes.

When a drip-cup, *m*, is used with the lamp, as is the case when the tube *h* extends down and is fastened to the bottom of the lamp, I prefer to make it without a bottom, and then close it by means of the upper end of the base of the lamp, *o*, in case the lamp is glass, by means of a socket-piece, *o*, on the top of the lamp-base, which is inserted in and soldered to the drip-cup, so as to close the bottom of the same. By this means the height of the lamp is reduced, saving of metal is effected; and a secure and tight joint is made.

Having now described my invention and the manner in which the same is or may be carried into effect, what I claim, and desire to secure by Letters Patent, is—

1. In an Argand lamp having the removable part of the burner provided with sleeves fitting over a burner-supporting tube, as described, the annular trough located upon the exterior of said burner-supporting tube at or just below the point to which the lower part of the exterior sleeve extends when the removable portion of the burner is placed on the tube, as herein shown and described.

2. The formation of the notched wick-raising sleeve of the removable portion of an Argand burner with inclined or beveled sides between the notches, substantially as and for the purposes shown and set forth.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

RUFUS S. MERRILL.

Witnesses:

M. BAILEY,
EDM. F. BROWN.