

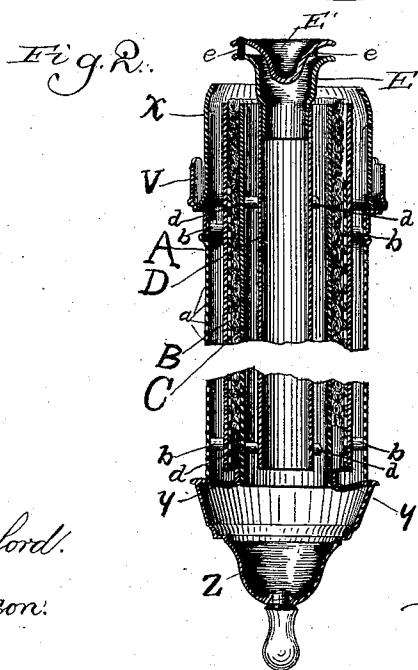
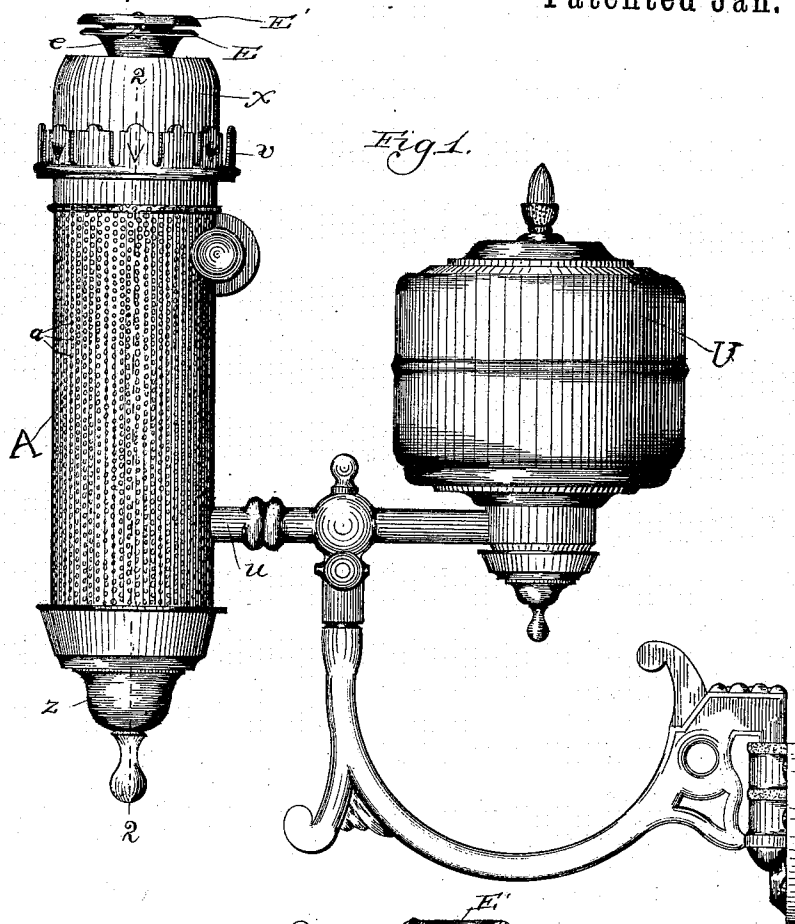
(No Model.)

M. J. DOOLEY.

ARGAND BURNER FOR LAMPS.

No. 334,417.

Patented Jan. 19, 1886.



Witnesses:
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UNITED STATES PATENT OFFICE.

MAURICE J. DOOLEY, OF CHICAGO, ILLINOIS.

ARGAND BURNER FOR LAMPS.

SPECIFICATION forming part of Letters Patent No. 334,417, dated January 19, 1886.

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To all whom it may concern:

Be it known that I, MAURICE J. DOOLEY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Argand Burners for Lamps, of which the following is a specification.

My invention relates to that class of lamps in which an Argand wick controlled by a pinion and ratchet is used, the hollow cylindrical flame which is produced by the lamp when the same is in use being supplied with air both from the inside and from the outside thereof; and the object of my invention is to produce or furnish a third supply or current of air to said flame at a suitable point or part of the same in the manner hereinafter more fully set forth, and thereby secure a more perfect combustion, and to so protect the flame and all currents or supplies of air furnished thereto as to render the flame independent of and not affected by any current, gust, or puff of air in the immediate vicinity of and about the lamp.

I have illustrated my invention by the drawings accompanying this specification and forming a part hereof, in which—

Figure 1 is an elevation of a lamp embodying and illustrating my invention. Fig. 2 is a cross-section of Fig. 1 on line 2 2.

Like letters refer to like parts throughout the several views.

U is the reservoir, having supply-tube *u*, containing the oil required in using the lamp. The position of this reservoir is immaterial.

V is the chimney-holder.

X is the dome surrounding the base of the flame.

Z is the ordinary drip-cup in use at the bottom of the wick-tubes, &c., having perforations *y* in the upper face or plate thereof. Drip-cup X is attached or screwed to the bottom of tube C.

A is a tube constructed of gauze or perforated metal having small openings *a*, and extends from drip-cup X to and into chimney-holder V. All air supplied to the flame of the lamp, when this part of my invention is made use of, passes through the perforations or holes *a a* in tube A.

B is the tube surrounding and supporting the wicks.

b b are ties connecting and holding tubes A and B in their proper relative positions. Tube C is the inner wick-tube. Tube D is a hollow tube—such as has been heretofore in use in lamps of this description—placed in the center of tube C; but as a considerable portion of the air supplied to the flame passes through tube D, when a part of my invention, herein after more fully described, is used, I prefer to make the tube D of much larger dimensions than it has heretofore been made, thereby reducing in a proportionate amount the supply of air furnished the flame through the space between the outer surface of tube D and the inner surface of tube C, as otherwise too great a supply of air will be furnished to the flame through tube C.

d d are ties connecting tubes C and D and holding them in their proper relative position.

EE' is the double spreader or air-distributor of my invention.

e e are the posts connecting the two portions of air-distributor E E'.

The manner in which my invention is constructed is as follows: Tube A, constructed, as above stated, of gauze or metal tubing having a large number of holes therein, is placed around the outer wick-tube, B, at a suitable distance therefrom, and is secured thereto by ties *b b*. Chimney or globe holder V surrounds and fits closely upon the top of tube A, and is supported thereby, dome X resting upon the chimney or globe holder V. The supply of air for the outer side or wall of the flame passes through perforations *a a* in tube A and upward between tube A and tube B, forming a current of air which is supplied to the flame at and near the base of said flame, being directed toward and into the flame by dome X. Tube A extends to drip-cup Z. The upper plate of hollow drip-cup Z has perforations or holes *y y*. Wick-tube B extends down to a short distance above the top plate of hollow drip-cup Z, as shown in drawing Fig. 2. Wick-tube C extends below tube B, and has upon the lower end thereof threads fitting into like threads in the top plate of hollow drip-cup Z, or other suitable mode of securing drip-cup Z thereto. Inner tube, D, extends down to about the same position as does wick-tube B. All air supplied the flame in the center thereof passes

through the perforations or holes in tube A, (in the same manner as does the air supplied to the outer surface of said flame, as before described,) thence downward between tube A and tube B through perforations or holes *y y* in the top plate of drip-cup Z into drip-cup Z, thence upward, a portion passing through the space between the outer surface of tube D and the inner surface of tube C, and a portion passing upward through tube D.

The double spreader or air-distributor E E' of my invention is constructed as follows: The lower portion thereof, E, is formed or shaped or spun of hollow tubing, the lower part fitting into or over tube D, by which it is held in position, and of which it forms a continuation or prolongation, and the upper part of said lower portion, E, being shaped in the ordinary manner to deflect and direct the current of air ascending between tubes C and D, as before described, outward and against the base or near the base of the flame of the lamp. The upper portion, E', of my double spreader or air-distributor E E' is formed or spun of brass or other suitable metal to the form and shape substantially illustrated in Fig. 2, and is supported and held in proper relative position with piece E by posts *eee*, or their equivalents. The current of air ascending in tube D, as before described, passes into and through the space between the upper and inside surface of piece E and the under or outside surface of E', and is diverted and deflected thereby and distributed by means thereof and thrown into the flame of the lamp at a point or place in said flame above the base thereof.

The current of air passing through and distributed by my double spreader E E' is, at the time of leaving said spreader, of an extremely high degree of temperature, and when supplied to the flame of the lamp in the manner and at the point above described produces a perfect and complete combustion in the flame, and an extremely white, brilliant, and steady light is obtained.

The entire supply of air furnished the flame in my improved lamp, passing through holes or perforations *a a* in tube A, is divided into sprays or jets, which are or may be directed against the outer surface of tube B, to be from thence diverted and to proceed, in the form of a current of air, either up to the outer surface of the flame or down through drip cup Z and up through tubes C and D to the inner surface of

the flame; and hence any sudden and severe agitation of the surrounding air is diminished and controlled in such a manner that the flame obtained in a lamp constructed as here described is, to a very large extent, independent of such agitation, whether existing in the form of drafts, currents, puffs, or otherwise, and a steady, constant flame is produced.

Having thus described my invention, its construction and method of operation, what I claim is—

1. In a lamp constructed as described, tube A, having perforations *a a a* therein, said tube A extending from the drip-cup Z, having perforations *y y*, or its equivalent, to the chimney-holder or globe-holder V, and supporting the same, in combination with tubes surrounding the wick and supplying air to the flame of the lamp, substantially as described, all constructed, operated, and controlled substantially as and for the purposes set forth.

2. In a lamp constructed substantially as described, the tube A, having perforations *a a* therein, said tube extending from drip-cup Z, or its equivalent, to chimney-holder V and supporting said chimney-holder, in combination with the tube B, surrounding the wick, tube C on the inside of the wick, and tube D, placed inside of tube C and having a double spreader or air-distributor, constructed substantially as described, placed thereon, all operated, constructed, and controlled substantially as described, and for the purposes specified.

3. In a lamp constructed substantially as described, tube B, surrounding the wick, tube C on the inside of the wick, and tube D, placed in the center of tube C, in combination with a double spreader or air-distributor placed on tube D and forming a continuation thereof, all constructed and operated substantially as described, and for the purpose specified.

4. An air-deflector to be used in connection with the central air-tube in lamps of the character herein described, constructed of plates or pieces E E', connected together by posts *e e e*, all arranged, operated, and controlled substantially as described, and for the purpose specified.

MAURICE J. DOOLEY.

Witnesses:

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