

No. 685,449.

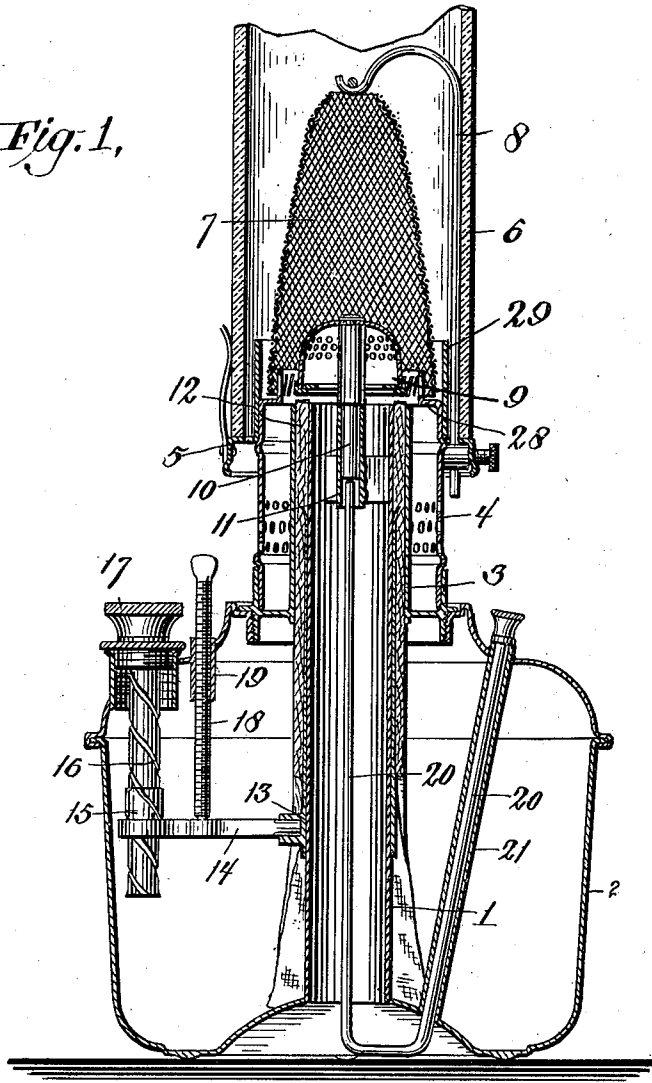
Patented Oct. 29, 1901.

N. JOHNSON.  
LAMP.

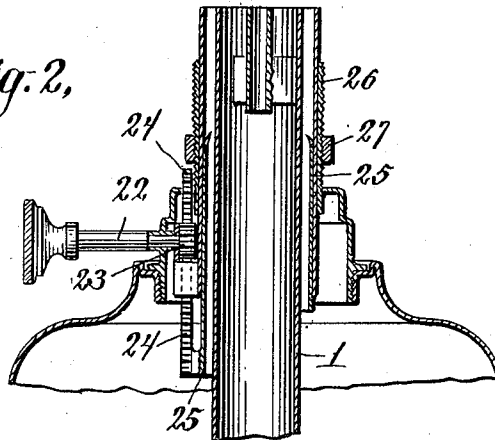
(Application filed Aug. 24, 1900.)

(No Model.)

*Fig. 1,*



*Fig. 2,*



WITNESSES:

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INVENTOR

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# UNITED STATES PATENT OFFICE.

NIS JOHNSON, OF MERIDEN, CONNECTICUT, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE INCANDESCENT PETROLEUM LIGHT COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF WEST VIRGINIA.

## LAMP.

SPECIFICATION forming part of Letters Patent No. 685,449, dated October 29, 1901.

Application filed August 24, 1900. Serial No. 27,882. (No model.)

*To all whom it may concern:*

Be it known that I, NIS JOHNSON, a citizen of the United States, residing at Meriden, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Lamps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to, improvements in lamps, and particularly to improvements in oil or spirit lamps of that class which produce light through the heating to incandescence of a suitable refractory body, such as a gauze mantle composed of refractory material.

My invention resides in the novel wick-stop employed and in the novel construction of the draft-collar and associated parts of the burner, whereby collection of unconsumed oil in the vicinity of the flame is prevented and the burner is simplified.

The lamp herein described is of the type covered by the patent to Paul Lucas, No. 597,682, dated January 18, 1898, and is an improvement thereon.

The objects of my invention are to prevent careless raising of the wick too high to prevent the accumulation of unconsumed oil in the vicinity of the flame, whereby it may produce disagreeable odors, and to simplify the construction of the burner. These objects are attained in the lamp herein described and illustrated in the drawings which accompany and form a part of this specification, in which the same reference-numerals indicate the same or corresponding parts, and in which—

Figure 1 is a central vertical section of a lamp and burner constructed in accordance with my invention; and Fig. 2 is a similar section of a portion of a lamp, showing another form of stop.

In the drawings, the numeral 1 indicates the draft-tube or inner wick-tube of the lamp. This tube may extend through the oil-reservoir 2 to the base, as in ordinary central-draft lamps.

3 designates the outer wick-tube, and 4 the

outer perforated skirt or casing of the burner, which surrounds the outer wick-tube and supports the chimney-gallery 5.

6 designates the draft-chimney, 7 the mantle, and 8 the mantle-rod, secured by a set-screw to the chimney-gallery 5.

9 is a hollow dome-shaped shell or thimble, open at the bottom and supported by a pin 10, fitting within a socket 11, secured in the center of the draft-tube 1. The function and operation of this gasifier are the same as of the gasifier described and illustrated in the said Lucas patent, No. 597,682.

12 designates the wick. It is an ordinary tubular wick, fitting between wick-tubes 1 and 3 and split at the bottom to permit the passage of a bracket projecting from a toothed wick-band 13. From said bracket projects an arm 14, carrying at its end a screw-threaded nut 15, which surrounds and coacts with a wick-raising screw 16, having at its upper end a curled head 17, by which it may be rotated. By rotating screw 16 in one direction or the other the wick may be raised or lowered, as desired.

18 designates a screw mounted in a threaded sleeve 19, forming a part of the oil-reservoir 2, and located directly above the arm 14, so that said screw 18 may form a stop to limit the upward movement of the wick.

Lamps of the class to which this invention belongs are likely to smoke their mantles or otherwise give trouble if their wicks are raised too high while the lamp is in operation. Inexperienced persons are likely to raise the wicks too high, not being aware how little wick exposure is required to cause the lamp to operate to the best advantage. Raising the wick too high is also likely to cause overheating of the burner, which may result in a change of the flame back to the luminous condition, and it may also cause charring of the wick, thereby making necessary the trimming of the wick. These objections I overcome by providing the lamp with a wick-stop, which prevents the wick being raised too high and also serves to indicate when the wick is at the proper height to secure good operation of the lamp. The screw 18

forms such a stop, for it limits the height to which the arm 14 may be raised without a readjustment of the wick-stop. The screw may be adjusted to compensate for wasting  
 5 away of the wick, however, by simply turning it, and in a similar manner it may be adjusted to permit the proper exposure of wick when a new wick is placed in the lamp. In  
 10 lamps of this class it is very desirable that when the lamp is in operation the lower face of the gasifier shall be quite close to the top of the wick; but when the gasifier is so close it is difficult to light the lamp, because the  
 15 gasifier is in the way of a match used to light the lamp and because it tends to chill the flame, so preventing it from spreading around the wick. To facilitate the lighting of the lamp, therefore, I provide means for elevating the gasifier. Said means consists of a U-  
 20 shaped rod 20, one limb of which is within the draft-tube 1 and abuts against the lower end of the gasifier-pin 10, while the other limb is within a tube 21, reaching from the lower side of the oil-reservoir to the upper  
 25 side thereof, and is provided at the top with a suitable handle. By raising this handle the gasifier may be lifted slightly, so as to facilitate the lighting of the lamp, after which the handle may be depressed, thereby per-  
 30 mitting the gasifier to descend to its former and normal position.

The wick-stop shown in Fig. 1 is particularly adapted for use with wick-raising devices forming a part of the oil-reservoir of  
 35 the lamp. In Fig. 2 I have shown a wick-stop adapted to be used with the common "screw-lift" wick-raiser of central-draft lamps. Such wick-raiser consists of a pinion-shaft 22, carrying a pinion 23, intermeshing with a rack-bar 24, secured to the toothed  
 40 wick-band 25. Upon the outer wick-tube is a screw-threaded sleeve 26, and upon said sleeve is an adjustable nut 27 of such diameter that the rack-bar 24 when raised contacts with it and is thereby prevented from  
 45 being raised farther.

Referring again to Fig. 1, 28 designates the contracting draft-collar of the lamp. Preferably it is formed integrally with the main  
 50 portion of the skirt 4, and the chimney-gallery 5 is provided with an upwardly-projecting sleeve 29, fitting over the skirt 4 and supported thereby and forming, in effect, a continuation of said skirt and surrounding the  
 55 gasifier and serving to steady the mantle and to protect the lower end thereof, as well as to shield the flame from drafts. Said sleeve 29 and draft-collar 28 together form a pocket in which unconsumed oil might condense or  
 60 collect otherwise, and so give rise to a disagreeable smell. To obviate the production of such smell, I provide perforations in the upwardly-projecting portion of the draft-collar 28, through which perforations flame may  
 65 pass. Collection of unconsumed oil in the said pocket is thereby prevented.

The operation of the lamp is as follows:

To light the lamp, the skirt 4, which is normally held in place by a simple bayonet-joint in the ordinary manner, is removed with the  
 70 chimney and mantle. The gasifier is then raised by means of the rod 20, and if the wick be not at the proper height it is adjusted by means of the wick-raiser. The top of the  
 75 wick should project very slightly above the tops of the wick-tubes. If the wick-stop is not in proper adjustment, it is then adjusted to prevent the wick from being raised more than very slightly above the tops of the wick-  
 80 tubes. In this lamp it is not necessary to raise the wick after the lamp is once lighted. A lighted match is then applied to the lamp, and the skirt 4, with its associated parts, is replaced on the lamp, the gasifier being still  
 85 held up by the rod 20. At first a yellow luminous flame is produced, which grows higher as the parts of the burner become warm. After the gasifier and other parts of the burner have become sufficiently warm,  
 90 and for this a few seconds is usually sufficient, the rod 20 is pushed downward, so as to lower the gasifier, and the flame immediately changes to the non-luminous condition, the mantle becoming incandescent. The  
 95 lamp will then continue to operate without further attention. The wick-stop need not be adjusted each time the lamp is lighted, but requires adjustment only after the lamp has been in use for a considerable length of  
 100 time, provided, of course, that the wick does not become carbonized at any time because of exhaustion of the oil-supply, for in lamps of this class since the main flame is not close to the top of the wick the wick does not carbonize or waste away rapidly, as in ordinary  
 105 central-draft lamps, unless it be raised too high, and this is prevented by the wick-stop.

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

1. In a lamp, the combination, with a wick-band adapted to engage a wick, a member directly attached to said wick-band, for raising and lowering the same, and means for operating such member, of a screw-threaded stop,  
 115 directly engaging the said member by which the wick-band is raised and lowered, and adapted to limit the height to which the wick may be raised.

2. In a lamp, the combination, of a wick-band, an arm connected therewith, a screw engaging said arm and adapted to raise and lower the same, and another screw, mounted  
 120 over said arm, and adapted to engage the same and to limit the height to which it may be raised.

3. In an incandescent oil-lamp, the combination, with a wick-tube, a central draft-tube, a gasifier, and a skirt surrounding the wick-tube and gasifier, of a contracting draft-  
 130 collar for concentrating in the vicinity of the top of the wick-tube the air-currents rising between the wick-tube and skirt, said draft-collar having an upwardly-projecting portion

which is perforated so as to permit the passage of flame and heated gases to the outside of the draft-collar, thereby preventing the accumulation of odor-producing substances outside of said draft-collar.

5 4. In an incandescent oil-lamp, the combination, with a wick-tube, a central draft-tube, a gasifier, and a skirt surrounding the wick-tube and provided with a contracting  
10 draft-collar, of a gallery seated upon the skirt

and having an upwardly-projecting sleeve forming substantially a continuation of the skirt, projecting above the draft-collar, and serving to protect the flame from air-drafts.

In testimony whereof I affix my signature 15  
in the presence of two witnesses.

NIS JOHNSON.

Witnesses:

CORNELIUS J. DANAHER,  
THOMAS HINCKY.