

(No Model.)

N. D. INGRAM.
WICK TUBE FOR LAMPS.

No. 561,789.

Patented June 9, 1896.

Fig. 1.

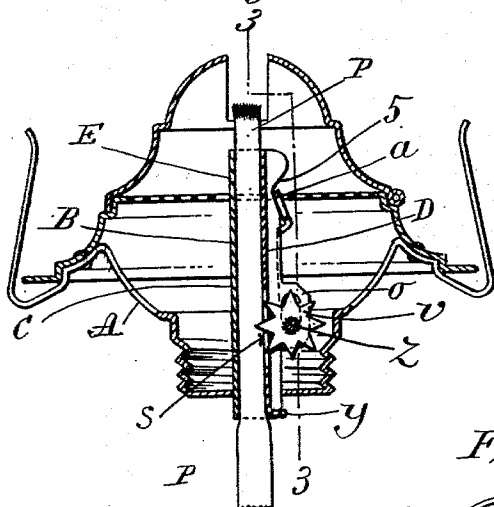


Fig. 2.

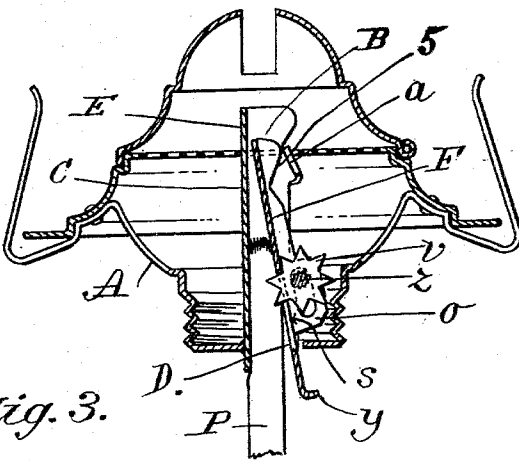


Fig. 3.

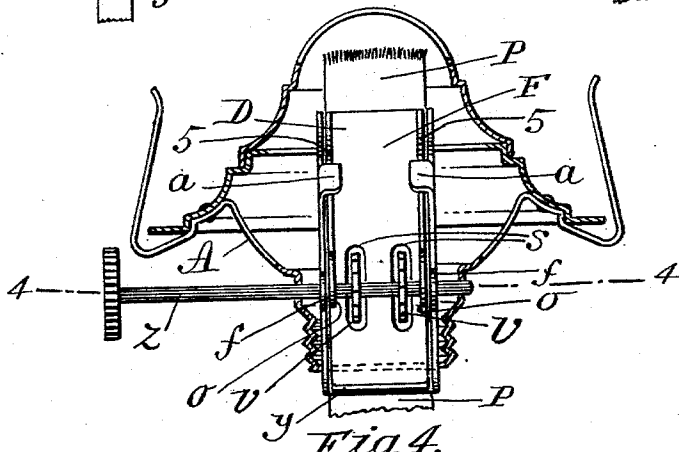


Fig. 4.

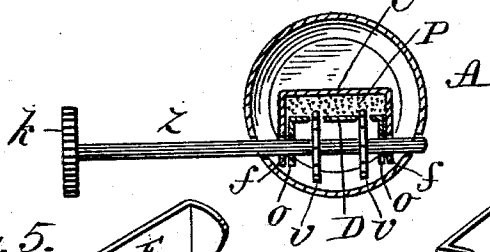
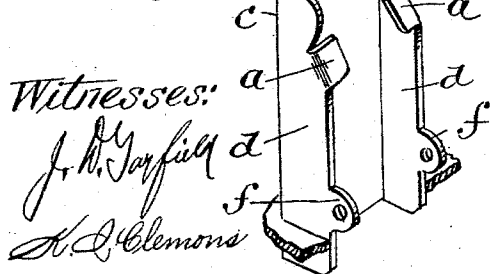
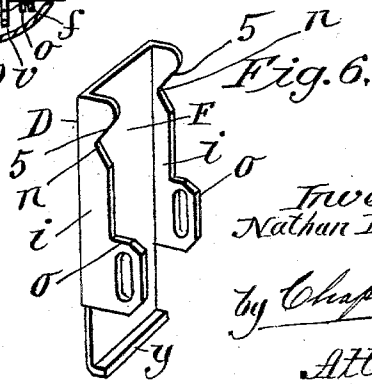


Fig. 5.



Witnesses:
J. M. Jaffard
H. Q. Clemons

Fig. 6.



Inventor
Nathan D. Ingram.
by Chapin & Co.
Attorneys.

UNITED STATES PATENT OFFICE.

NATHAN D. INGRAM, OF HOLYOKE, MASSACHUSETTS.

WICK-TUBE FOR LAMPS.

SPECIFICATION forming part of Letters Patent No. 561,789, dated June 9, 1896.

Application filed March 2, 1896. Serial No. 531,499. (No model.)

To all whom it may concern:

Be it known that I, NATHAN D. INGRAM, a citizen of the United States of America, residing at Holyoke, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Wick-Tubes for Lamps, of which the following is a specification.

This invention relates to lamp-burners, and is adapted for use on lamps for burning petroleum or other suitable oils, the object being to provide improved wick holding and controlling devices for such burners; and the invention consists in the peculiar construction of the wick-tube of the burner and devices coöperating therewith for controlling said wick and forming an extinguisher, all as hereinafter fully described, and more particularly pointed out in the claims.

In the drawings forming part of this specification, Figures 1 and 2 are vertical sections of a lamp-burner containing wick holding and controlling devices embodying my improvements, said figures illustrating said devices in different operative positions, as below described. Fig. 3 is a similar view to Figs. 1 and 2, but illustrating the wick-tube and contiguous devices in side elevation. Fig. 4 is a section on line 4 4, Fig. 3. Figs. 5 and 6 are enlarged perspective views of the two wick-tube elements of the burner.

In the drawings, A indicates the portion of the body of the burner in which the wick-tube is ordinarily placed.

B indicates the wick-tube, which is located in and supported by said body portion A. Said wick-tube consists of two elements C and D. Said element C contains one side E and two narrow edges *d d* of the tube standing at right angles to said side E and having thereon the two ears *f f*, which are perforated to form bearings or supports for the wick-operating shaft *z*.

Two lips *a a*, one on each of said edges *d* and preferably opposite each other, as shown in Figs. 1, 2, 3, and 5, are provided for engagement with said wick-tube element D, as below described. Said wick-tube element D, similarly to said element C, consists of a side F, Figs. 3 and 6, and two narrow turned-up borders *i i*. The width of said element D is such that it is adapted to fit freely into said

tube element C, between the borders *d d* thereof, as shown in Fig. 3. Said tube element D has the ears *o o* on its borders, in which are elongated openings or slots, through which said wick-operating shaft *z* passes freely. Said shaft thus serves to retain the lower portion of said wick-tube element D in operative position relative to the adjoining part of the wick-tube element C, and at the same time permits said element D to have a certain degree of free endwise and oscillatory motion, as and for a purpose below described. Said wick-tube element D has a recess *n* in each of its borders *i*, over which recesses the said lips *a a* of said tube element C are turned. Said lips *a a* are not in any close or forcible contact with said recessed portions *n n* of said element borders *i i*, but they tend to prevent the upper end of the tube element D from swinging unduly away from the adjoining side E of the tube element C and effect other action of the element D, as below described. The engagement of said lips *a a* with the said recesses *n n* in the borders *i i* of the tube element D are also sufficiently free to permit of a certain degree of free endwise movement of said last-named element under said lips, whereby the upper end of the side F is given a movement approximately from the position in which it is shown in Figs. 1 and 3 to that which it is shown to occupy in Fig. 2 relative to the inner adjoining side of the side E of the tube element C. The portions of the borders of said recesses *n n* act against the upper edges of said lips *a a* when the said tube elements D shall be moved downward, as aforesaid, thereby swinging the upper end of said element toward the adjoining side of the tube element C, as shown in Fig. 2. Furthermore, the above-named connection between the said tube elements C and D, which is effected by the engagement of said lips *a a* with the said borders *i i*, is such as to provide for a certain degree of endwise motion in the said element D when the wick P is moved up and down in the wick-tube B. The lower end of the side F of said element D is turned slightly outward at *y* to prevent its engagement with said wick when it is raised. Said side F has one or more slots *s* there-through (see Fig. 3) opposite the toothed wick-engaging wheels *v*, which are fixed on said

shaft *z*. The said slots *s* are of such extent upwardly relative to the extremities of the teeth of said wick-engaging wheels *v* that a slight downward movement of the tube element D brings the upper ends of one or both of said slots into engagement with said wheels; and thereby their rotation is stopped and the downward movement of the wick is arrested. Said slight downward movement of said element D is permitted by the engaging adjustment of the said recesses *n n* and lips *a a*; but such freedom of engagement as said element D has does not permit of the separation of the latter from the element C, though there be no wick in the tube, for said element D is, when in the position shown in Fig. 2, engaged by the wheels *v*, as above stated.

The operation of the above-described improvements is as follows: The wick P is introduced into the wick-tube B between the tube sides E and F, at the bottom end of the latter, and being pushed in far enough to become engaged with the wheels *v v* the latter, through shaft *z*, is rotated by grasping the turning-disk *k* in the usual manner, and the wick is thereby fully entered into said tube, as shown in Figs. 1 and 3, and the said tube elements then assume the positions shown, which are those which they normally occupy while the wick is lighted or raised to a position which permits of lighting it, and no change takes place if the wick be additionally raised from time to time. When, however, the wick is lowered by turning shaft *z* and wheels *v* in the usual way, the tube element D is to a greater or less extent frictionally engaged by the side of said wick which is in contact therewith, and is thereby moved slightly downward, and as soon as the upper extremity of said wick shall have passed between the upper extremities of the two sides E and F of the wick-tube element C, about to the position shown in Fig. 2, the said side F swings substantially to the position shown in Fig. 2 and at the same time drops downward. Said downward movement of said side F causes the engagement of the upper ends of said slots *s s* with the wheels *v v*, thereby arresting their rotary movement and stopping the wick and holding it fixed in the wick-tube. The light is ordinarily extinguished when the upper end of said wick enters between said tube sides E and F, as described; but whether it be so or not it cannot be moved farther downward, for the shaft *z* and wheels *v v* cannot be rotated, and the said wick is engaged by said wheels.

Consequently the above-described wick-tube and wick-controlling devices, constructed and operating as described, constitute also a most effective wick guard or arrester, whereby a lamp-wick cannot, whether lighted or other-

wise, be fed downward into the fountain of a lamp and the risk of an explosion be thereby incurred.

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

1. A wick-tube element for lamps consisting of a side, and of parallel borders on opposite edges of said side standing at right angles to the plane thereof, means on said borders for supporting revoluble wick-operating devices thereon, combined with a second tube element having a like side and borders, and supported operatively between the borders of said first-named element for endwise and oscillatory movements therein, a revoluble shaft, and a toothed wick-engaging wheel or wheels thereon, supported on said first-named wick-tube element, said toothed wheel or wheels extending through slots in said second tube element for engagement with a wick held between said two tube elements, substantially as set forth.

2. A wick-tube for lamps consisting of the element C, containing a side E, two upstanding borders on said side, each having a lip *a*, and a shaft-bearing ear *f*, thereon, combined with a second element D, containing a side F, one or more longitudinal slots *s*, and two upstanding borders thereon, each having a recess *n*, for engagement with said lips, and the ear *o*, having a slot-shaped perforation there-through, a wick-operating shaft *z*, rotating in said bearings and extending through said ears *o, o*, and toothed wick-engaging wheels carried on said shaft and extending through said slots *s*, substantially as set forth.

3. A combined wick-tube and extinguisher consisting of a wick-tube open on one side at its top, and an endwise-moving slotted plate placed in the open side of the wick-tube, and which is moved by frictional contact with the wick alone, combined with the wick-operating shaft provided with wheels for engaging with the wick, substantially as shown.

4. In a combined wick-tube and extinguisher, the wick-tube open at its upper end at one side, and the wick-operating shaft, provided with wheels for moving the wick up and down, and which is journaled upon the tube, combined with a flanged and slotted plate, which is placed in the open end of the tube in direct contact with the wick and moved endwise by frictional contact therewith, the upward movement of said slotted plate being regulated by the wick-operating shaft and its downward movement by the wheels on said shaft, substantially as described.

NATHAN D. INGRAM.

Witnesses:

H. A. CHAPIN,
K. I. CLEMONS.