

(No Model.)

F. P. BOLAND.
LAMP BURNER.

No. 577,612.

Patented Feb. 23, 1897.

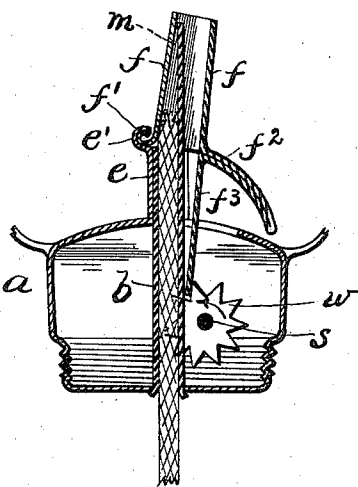
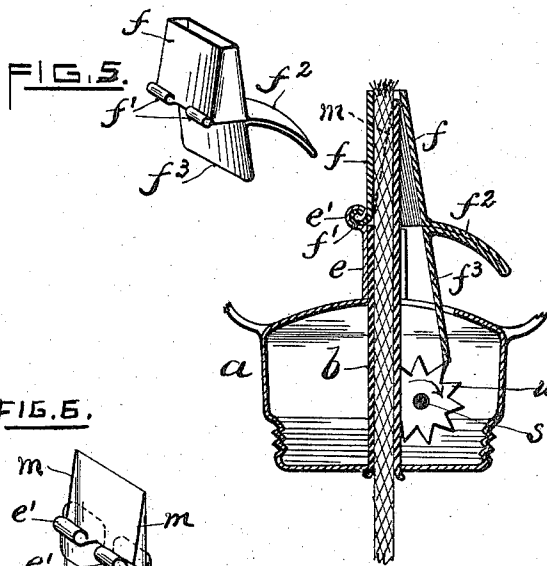
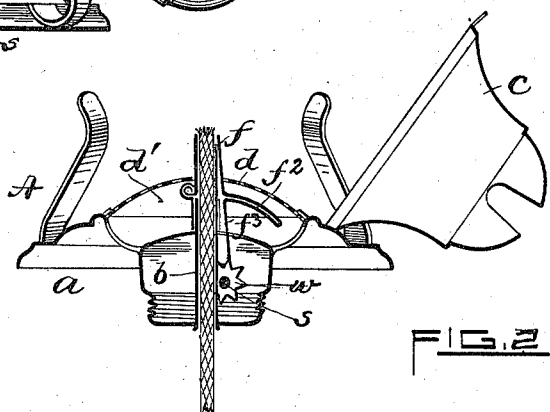
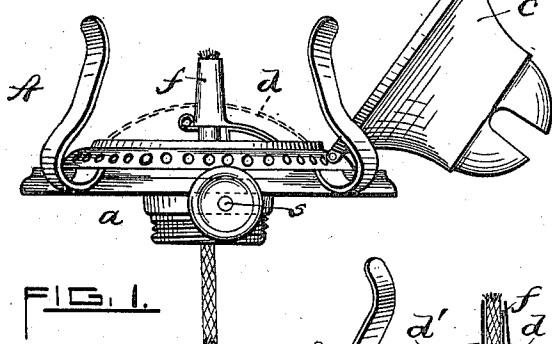
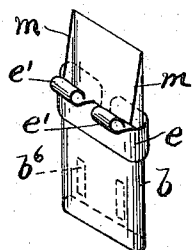


FIG. 5.



WITNESSES.

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FRANK P. BOLAND, OF PROVIDENCE, RHODE ISLAND.

LAMP-BURNER.

SPECIFICATION forming part of Letters Patent No. 577,612, dated February 23, 1897.

Application filed May 26, 1896. Serial No. 593,139. (No model.)

To all whom it may concern:

Be it known that I, FRANK P. BOLAND, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Lamp-Burners; 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, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My present invention relates to improvements in kerosene-burners of the class having devices adapted to extinguish the flame automatically by the act of turning down the wicks in the wick-tubes.

The invention forming the subject of this application for patent consists, essentially, in the combination, in a kerosene-burner having a beveled wick-tube and wick-adjusting wheels, of a pivotally-mounted extinguisher member or short tube inclosing the said beveled portion of the wick-tube and adapted to rest against one side of the wick, a combined counterweight and heat-conductor extending laterally from the lower part of the extinguisher-tube, and a downward-extending plate connected with the extinguisher member and in substantially continuous engagement with the said wick-adjusting wheels, whereby upon lowering the burning wick the extinguisher automatically swings into engagement with the beveled face of the wick-tube, thus extinguishing the flame and at the same time automatically swinging the lower end of said plate into the space lying between the contiguous tooth and the adjacent face of the wick-tube and preventing further downward movement of the wick, all as will be more fully hereinafter set forth and claimed.

In the accompanying sheet of drawings, Figure 1 is a side elevation of a lamp-burner embodying my improvements. Fig. 2 is a transverse central section of the same, showing the wick raised, as when burning. Fig. 3 is a corresponding sectional view, enlarged. Fig. 4 shows the extinguisher and locking device or stop in action, the wick being lowered in the wick-tube. Fig. 5 is a perspective

view of the combined extinguisher and stop member; and Fig. 6 is a similar view of the wick-tube, provided with ears and forming pivots for the extinguisher.

I may state that while I have represented my improvement applied to the burner of a small or hand lamp it is obvious that it is equally well adapted to larger burners and other types of well-known lamps, oil-stoves, &c., employing wicks and means for controlling the movement of the wicks in the wick-tubes.

In the drawings, A indicates the burner as a whole and provided with my present improvements. The burner base or body *a* is adapted to be screwed to a lamp, as usual. The flat wick-tube *b* is located centrally of the burner and extends upwardly therethrough. A slotted cone or cap *c* is hinged to and surmounts the burner and incloses the upper portion of the wick-tube, &c., when in use, as common.

At or below the base of the cap *c* the burner is provided with a horizontally-arranged perforated plate or air-distributor *d*, through which the fixed wick-tube *b* passes, thereby forming an air space or chamber *d'*, into which cool air is drawn and from which the said air flows upwardly to aid combustion. The lower wall of said chamber *d'* is cut away contiguous to the tube *b* to freely receive the locking-plate *f*³, soon to be described. Below said plate are mounted the feed-wheels *w w*, the latter being fixed to the horizontal shaft or spindle *s* and adapted to pass through openings, as *b*⁶, Fig. 6, formed in the adjacent side of the wick-tube, as common.

The following description relates more particularly to the novel features of my invention. The upper part of the wick-tube above plate *d* is cut across from the top downward on one side, so as to form a beveled surface *m*. Thus it will be seen that the wick is exposed, but unsupported by the tube on the side contiguous to its said cut-away portion. In order to provide a support for the said exposed part of the wick, I employ the extinguisher member *f*, the same consisting, essentially, of a flat tube loosely surrounding the upper part of the wick-tube. This piece *f* is so arranged that it not only supports the wick laterally, but it practically constitutes the

tube proper, through which the wick projects when burning. The extinguisher f is pivoted at its lower end to the fixed wick-tube b by means of bent lateral projections f' , capable of oscillation in ears e' , secured to or integral with the wick-tube. As drawn, however, I have represented a holder e , secured to the exterior of the tube b , the former being provided with said ears. Thus it will be seen that the swinging movement of the extinguisher is limited by the walls of the wick-tube; that is to say, when the wick is raised the parts b and f are substantially parallel or concentric, and when the wick is lowered in the tube the concurrent angular movement of the extinguisher is continued until arrested by the said beveled surface m , thus closing the mouth of the wick-tube and practically excluding air from the corresponding end of the wick.

The side of the extinguisher opposite the pivot-point is provided at its lower end with a comparatively large lateral extension f^2 . This latter not only forms a counterweight to automatically insure the closure of the wick-tube when the wick is lowered, but it also serves to conduct heat downward from the burning wick, thereby to a considerable extent preventing the wick-tube and extinguisher from getting too hot. It will be seen that the counterweighted portion f^2 is located in the said air space or chamber d' below the perforated plate d .

Another feature of my invention resides in providing the under side of the said extension f^2 with a substantially vertical locking-plate f^3 , having its lower end or edge in practically continuous engagement with the pair of said feed or wick-adjusting wheels $w w$. The plate f^3 may be integral with the extinguisher member, or it may be attached thereto in any well-known manner. I prefer, however, to make the plate rigid with the extension portion f^2 and arranged at substantially right angles to its under surface, as shown.

I may add that the pitch or angular distance from one tooth to another circumferentially of the wheels w is or may be such that it will practically equal the vertical movement of the wick from the raised to the lowered position.

In Fig. 3 it will be seen that the locking-plate, by reason of its proximity to the teeth of the wheels w , will, upon turning the latter to the left, as in lowering the wick, operate to forcibly move the plate f^3 toward the wick-tube until the plate is arrested by the side of the wick-tube. (See Fig. 4.) Thus it is apparent that even though the extinguisher should accidentally fail to operate from any cause the action of the wheel-teeth upon the locking-plate (in lowering the wick) will positively insure the necessary movement of the

extinguisher and at the same time lock the feed-wheels, and thus prevent the wick from being lowered past them into the lamp. This feature of my invention I consider of especial value. Fig. 4 shows clearly the relation of the parts when thus locked. The plate f^3 in no wise obstructs or prevents a free movement of the wheels in the opposite direction when the wick is to be raised.

I claim as my invention—

1. In a lamp-burner, the combination of a swinging annular extinguisher member surrounding the upper portion of the wick-tube, provided with a lateral extension forming a weight and heat-conductor, and a locking-plate integral with said extinguisher member having its lower end arranged to engage the teeth of the usual wick-adjusting wheels, substantially as hereinbefore described and for the purpose set forth.

2. In a lamp-burner, the combination with the wick-tube having its upper part beveled on one side, and toothed wheels extending inwardly through the lower side of said tube for actuating the wick, of the swinging extinguisher f arranged to automatically close the said beveled part of the wick-tube, and a downward-extending locking plate or stop f^3 integral with or rigidly secured to the extinguisher member and in practically continuous engagement with the teeth of the wick-adjusting wheels, whereby the wick may be raised unobstructedly but is prevented from being lowered past the wheels, substantially as hereinbefore described.

3. In a lamp-burner, the wick-tube beveled across on one side at its upper end portion, a central space or chamber, as d' , into which cool air enters, and toothed feed-wheels mounted below said chamber, in combination with the swinging extinguisher member f inclosing the said beveled part of the wick-tube, having an integrally-formed extension f^2 forming a combined weight and heat-conductor located in said air-chamber, and the locking plate or stop f^3 projecting downwardly from said extension f^2 having its lower end adapted to engage the teeth of the feed-wheels, whereby the rotation of the latter as in elevating the wick uncovers the wick-tube, while a reverse movement of the wheels, as in lowering the wick, closes the tube and at the same time interposes the said stop f^3 between the face of the tube and the adjacent teeth of the wheels, substantially as hereinbefore described and for the purpose set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

FRANK P. BOLAND.

Witnesses:

GEO. H. REMINGTON,
REMINGTON SHERMAN.