

No. 612,886.

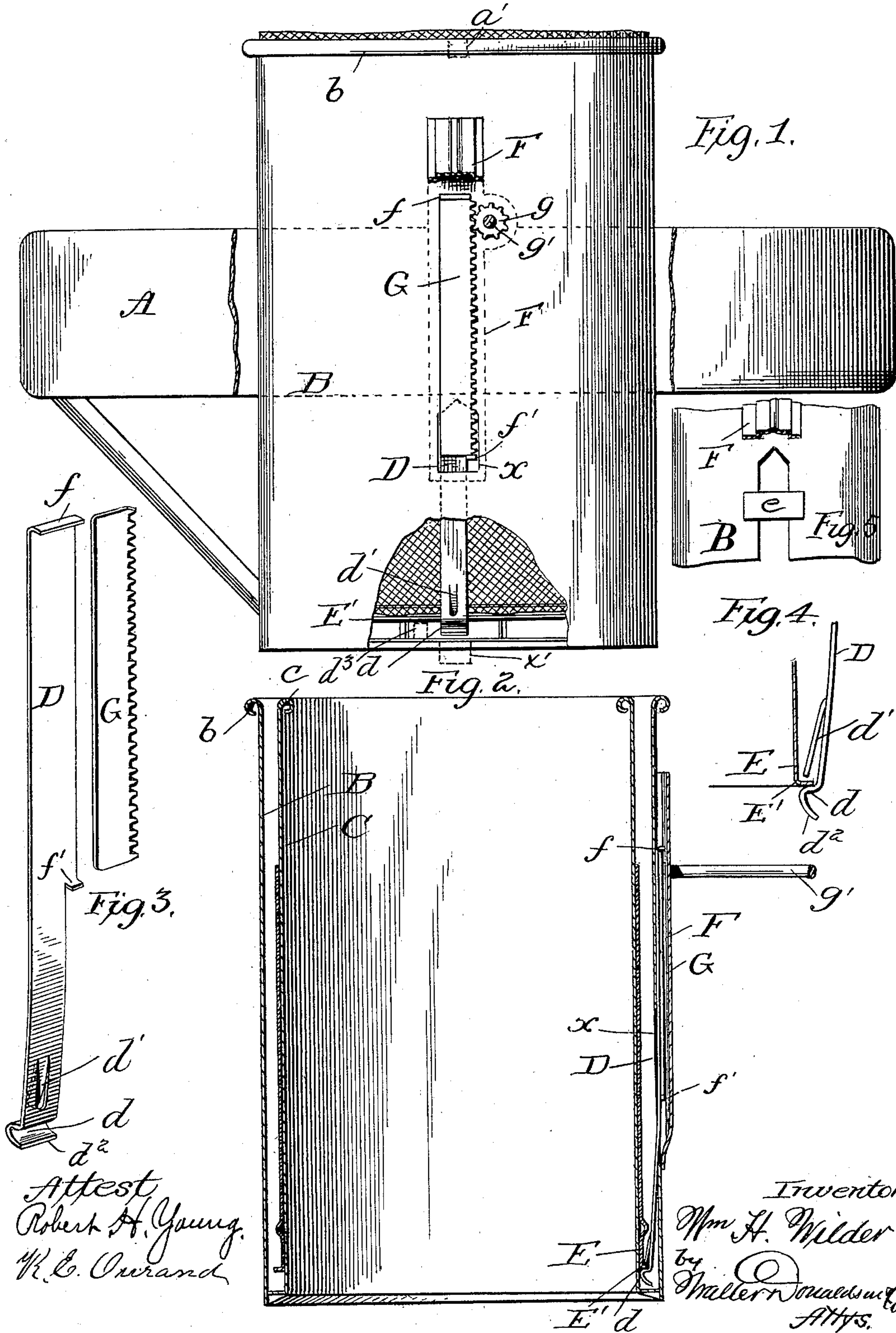
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W. H. WILDER.

WICK RAISER.

(Application filed Mar. 15, 1895.)

(No Model.)



Attest
Robert H. Young,
W. C. Curran

Inventor
Wm. H. Wilder
by
Shallern & Sons
Attys.

UNITED STATES PATENT OFFICE.

WILLIAM HENRY WILDER, OF NORTHAMPTON, MASSACHUSETTS.

WICK-RAISER.

SPECIFICATION forming part of Letters Patent No. 612,886, dated October 25, 1898.

Application filed March 15, 1895. Serial No. 541,848. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HENRY WILDER, a citizen of the United States, residing at Northampton, in the county of Hampshire and State of Massachusetts, have invented certain new and useful Improvements in Wick-Raisers, of which the following is a specification, reference being had therein to the accompanying drawings.

10 My invention relates to certain improvements in the wick-tubes of central-draft lamps and lamp-stoves and the device for raising the wick therein.

15 I have aimed in the present instance to provide a construction in which the upper ends of the inner and outer wick-tubes shall be even and unbroken and perfectly concentric, whereby gas is prevented from rising and causing an uneven flame.

20 I have further aimed to provide a construction in which the lifting-bar of the wick-raiser shall be wholly outside of and disconnected from the outer wick-tube above the point where it engages the wick-ring, and this
25 connection shall be below the level of the oil on all ordinary occasions.

A further object is to provide a wick-raising device which may be readily attached and detached from the wick-ring.

30 A still further object is to simplify and improve the construction of the various parts and to increase the effectiveness of operation of the lamp or stove containing the improvements in the greatest possible degree.

35 The invention is illustrated in the accompanying drawings, in which—

40 Figure 1 is a side elevation of the reservoir of a lamp or lamp-stove with a sufficient portion broken away to show the wick-tube in elevation. Fig. 2 is a vertical section through the wick-tube. Fig. 3 is a detail of the lifting-bar and rack-bar. Fig. 4 is an enlarged sectional view showing the connection between the lifting-bar and the wick-ring. Fig.
45 5 is a detail view.

In the figures, A represents the reservoir of the lamp or lamp-stove, and B the outer wick-tube, while C represents the inner wick-tube. These two tubes are concentric, and their upper
50 edges are continuous and unbroken, having no space or irregularity where gas may escape to mar the flame.

The wick-raiser consists, essentially, of a vertically-moving lifting-bar D, suitably guided and operated, which has its upper portion located outside the outer wick-tube, 55 while its lower end is detachably connected with the wick-ring E. In order to provide for this connection, the outer wick-tube is slotted at *x* to a point as high up as it is necessary or desirable that the lower end of the wick should be raised by the lifting-bar, and the lower end of the bar, extending through or into this slot, is detachably connected with the wick-ring. A very desirable form of connection 65 between the bar and wick-ring is that shown in the accompanying drawings, in which the wick-ring has an outwardly-turned flange E' at its lower edge, which flange is engaged on its under side by the turned-over end or bead *d* of the bar and on its upper side by the tongue *d'*, so that the upward or downward movement of the bar will raise or lower the wick.

The bar D is preferably a spring-bar, so that its lower end will be kept in engagement 75 with the wick-ring by the spring of the material, and, if necessary, or desirable a bridge-piece *e*, Fig. 5, may be secured to the edges of the slot in the outer wick-tube, this bridge-piece bearing against the outer face of the bar and aiding to hold it to its work. 80

The lifting-bar is guided by a casing F, secured against the side of the outer wick-tube and extending down below the oil-level or to 85 the point where the lifting-bar enters the slot in the wick-tube.

The lifting-bar may be operated in any desirable manner; but I prefer the means shown in the accompanying drawings, in which it will 90 be seen that the casing also incloses a rack-bar G, which is arranged against the outer face of the lifting-bar. The rack-bar is held against movement independent of the lifting-bar by a lug *f* upon the upper end of the lifting-bar, which bears against the upper end of the rack-bar, and a corresponding lug *f'*, which bears against the lower end. The rack-bar is operated by a gear *g* and spindle *g'*. 95

It will be especially noted that the connection of the lifting-bar with the wick-ring is 100 below the low-oil line, and the outer wick-tube is unbroken above this point. Further than this, the casing containing the lifting-bar and

gear extends below the low-oil line, and consequently no more gas could rise through this casing than can evaporate from the surface of the oil therein, and as the rack-bar and lifting-bar fit the interior of the casing very snugly there will be room for no oil within the casing, and consequently the arrangement will be absolutely gas-proof. This, it will be noticed, permits the omission of the long sleeve and stuffing-box ordinarily used in connection with the raising-spindle g' .

In raising a wick by wick-raisers embodying a rack-and-gear construction it often occurs that the operator will turn the spindle until the gear is disengaged from the rack, and then the wick cannot be turned down again without handling the wick itself. This disadvantage is avoided in the present construction by reason of the lug f' , which holds the lower end of the rack. This, it will be observed, lies close against the bottom tooth of the rack, and in lifting the rack at the extremity of its upward movement the teeth of the gear will strike against this lug f' and prevent the further turning of the gear before it can become disengaged from the teeth of the rack, so that it will be impossible to turn the rack up to such an extent by the spindle that it will not be engaged on reversing the motion. The rack-bar and lifting-bar may, however, be removed when desired by simply turning the rack up until its lower end is automatically disengaged from the wick-ring, as hereinafter described, and then placing a knife or similar instrument between the upper ends of the rack and lifting bars, when the rack-bar can then be easily removed completely and afterward the lifting-bar.

The automatic disengagement of the lifting-bar and wick-ring above referred to is accomplished by the tongue d' bearing against the edge of the slot and forcing the end of the spring-bar outward far enough to clear the flange, when the wick and its ring may be easily pulled out.

By long-continued use it is found that by reason of the tongue d' bearing against the edge of the slot the said edge, if square, sometimes gets bent inward far enough to catch the flange of the wick-ring and prevent its removal. To prevent this, the said upper edge of the slot is made of inverted-V shape, whereby, even if bent inward, the wick-ring may be drawn out, as the flange will ride upon the beveled edges.

In order to keep the upper edges of the wick-tubes perfectly concentric and prevent their becoming bent out of shape, I find it desirable to strengthen the said edges by beading or upsetting them, as shown at b and c . The bead upon the outer wick-tube in this instance serves as a stop to limit the upward movement of the bar before it reaches the point of automatic disengagement, and the continued upward movement may be accomplished by springing the upper end of the

lifting-bar out sufficiently to clear the bead. If no bead is used upon the lamp and the stop is desired, a suitable projection a' may be provided, as shown in dotted lines. It may happen that the wick-ring will accidentally get beneath the jaws of the lifting-bar and drop to the bottom of the wick-space. In order to provide for reengaging the parts, the lower end of the lifting-bar is beveled, as shown at d^2 , and a stop d^3 at the lower end of the wick-space holds the wick-ring sufficiently elevated to permit the bar to ride over the flange and reengage the same.

Instead of the projection or stop the wick-ring might be permitted to drop clear to the bottom of the wick-space and a pocket x' (shown in dotted lines) be provided for the reception of the end of the bar.

The slot in the outer wick-tube for the admission of the lifting-bar may be simply a small opening, or it may extend clear to the bottom of the tube, as may be found desirable.

Instead of having the rack-bar attached to the lifting-bar, as is shown in the drawings, it may be rigidly connected by riveting or in any desired manner, or it might be formed integral therewith. Further than this, it is not necessary to use the rack for operating the lifting-bar, as a lever of ordinary or any desired construction might be substituted for the rack and gear.

While I have shown the wick-raiser upon the outside of the outer wick-tube, it might be placed in a similar manner inside the inner wick-tube without materially altering the parts or departing from the spirit of my invention.

While I have described a wick-ring as the means of connection between the lifting devices and the wick, it will be understood that I do not limit myself in this respect, as any of the well-known connections may be used instead of the ring.

Having thus described my invention, what I claim is—

1. In combination, the outer wick-tube having an opening therein located wholly below the oil-line, the wick-ring having the annular flange and the lifting device guided on the outer side of the wick-tube and having its lower end passing through the opening longitudinally and detachably connected with the flange, substantially as described.

2. In combination, the wick-tube having an opening through the same below the oil-line, a wick-raiser having its end passing through said opening to engage the wick, the upper wall of said opening being formed of inverted-V shape whereby in the upward movement of the raiser it is disconnected from the wick, substantially as described.

3. In combination, the wick-tube having an opening therein below the oil-line, the wick-ring having an annular flange, the lifting-bar having its lower end extending through said opening, a lug or projection upon its lower

end for engaging the under side of the flange and a tongue for bearing against the upper side of the flange, said tongue having an inclined face, substantially as described.

5 4. In combination, the wick-tube having an opening therein, the wick-ring, the lifting-bar passing through the opening and detachably connected with the wick-ring, means for automatically disengaging the bar and ring
10 at the limit of the upward movement, and means for engaging the said parts when the wick-ring slips below the bar, substantially as described.

15 5. In combination, the wick-tube, the wick-ring, the lifting device detachably connected therewith, and means for automatically en-

gaging the lifting device and ring when the ring slips below said device, substantially as described.

6. A wick-tube having a turned-over edge 20 forming a bead, a wick-raiser, a guide or casing therefor on the side of the wick-tube, said casing terminating below the top of the wick-tube, said raiser contacting with the bead to limit its movement and adapted to be sprung 25 out therefrom to remove the same.

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

WILLIAM HENRY WILDER.

Witnesses:

H. M. GATES,

C. H. STOCKWELL.