H. W. COVERT.

Self-Lighting Lamp.

No. 208,226. Patented Sept. 24, 1878.

Fig. 2.

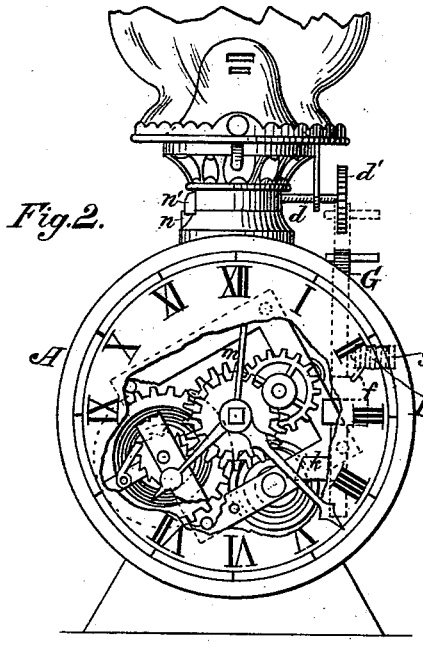


Fig. 3.

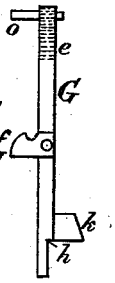
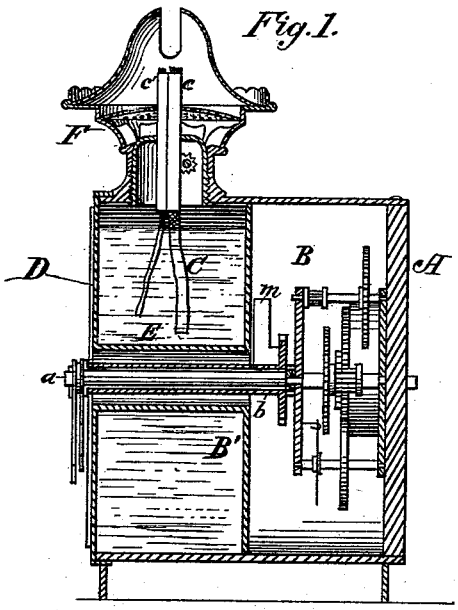


Fig. 4.

Fig. 1.



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UNITED STATES PATENT OFFICE.

HENRY W. COVERT, OF NEW YORK, N. Y.

IMPROVEMENT IN SELF-LIGHTING LAMPS.

Specification forming part of Letters Patent No. **208,226**, dated September 24, 1878; application filed January 31, 1878.

To all whom it may concern:

Be it known that I, HENRY WEED COVERT, of the city of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Self-Lighting Lamps, of which the following is such a full, clear, and exact description as will enable others skilled in the art to which it pertains to construct and use the same, reference being had to the accompanying drawings, in which similar letters indicate corresponding parts in the different figures—

Figure 1 being a vertical section through the operating mechanism of the clock and oil-chamber of the lamp. Fig. 2 is a front view, a part of the dial and oil-chamber being broken away to show the devices by which the wick of the lamp is raised when the time for lighting it arrives. Figs. 3 and 4 show details of construction upon an enlarged scale.

This invention relates to that class of lamps called "self-lighting;" and consists in the combination, with the lighting devices, of a clock mechanism, by means of which it is lighted at any predetermined hour, and in certain details of construction, which will be first fully described, and then specifically pointed out in the claims.

The outer case, A, is of cylindrical or other suitable form, and is divided by a partition into the two chambers B and C, one of which—the chamber B—serves as a receptacle for the clock-train, which may be similar in construction to that in common use for alarm and other clocks, and therefore requires no special description, except in so far as it requires change to adapt it to the devices used for raising the lamp-wick. The chamber C contains a supply of oil for the lamp, and is placed between the dial-plate D and the chamber B, which contains the clock-work. The shafts *a* and *b*, which carry the minute and hour hands, passing through the tube E, traversing the middle of the oil-chamber from side to side. Attached to the top of this oil-chamber by a screw-thread is the cap or lamp-burner F, constructed similarly to those used in lamps burning hydrocarbon oils, with this exception, that beside the large wick-tube *c* is placed a smaller one, *c'*, which contains a small auxiliary wick used for igniting that contained in the large tube *c*, which tube is provided with a toothed wheel mounted upon the shaft *d*, the teeth passing through slots in the side of the wick-tube, and acting upon the wick in the ordinary well-known manner. Upon the outer end of the shaft *d* is secured a toothed wheel, *d'*, by means of which the shaft is rotated, and consequently the wick within the large tube *c* raised or lowered.

It is evident that, if the wick in the small tube be lighted while the large one is depressed beneath the upper end of the tube *c*, it will continue to burn without igniting the latter; but should the large wick be raised above the end of its inclosing-tube, it will at once catch from the small one, and burn with a flame corresponding in size to that of the wick and the height to which it is raised above the end of the tube. In order to cause this elevation of the large wick to take place at any desired hour of the night, I place a sliding bar, G, in such a position that its upper end, which projects from the case and is toothed at *e*, may be brought in contact with the periphery of the toothed wheel *d'*, so that a vertical movement of the bar will rotate the wheel and its shaft, thus raising or lowering the wick. A projection, *f*, upon the bar serves to receive one end of the coiled spring H, which is secured to a bracket within the case by means of the screw *g*. This spring supplies the power necessary to depress the bar and raise the wick when the notch *h* near the lower end of the bar is released from the guide I. This guide is firmly secured to the partition B', or to the outer wall of the case, and serves to keep the sliding bar within proper vertical limits, as well as supporting the bar by means of the notch *h* when it is to be set for use.

A tripping-block, *k*, having an inclined outer edge, is also attached to the bar, and so placed that the outer end of the arm *m*, which is secured to the hollow shaft *b*, carrying the hour-hand of the clock, will strike it during its revolution, forcing it off from its hold upon the guide I, and allowing the spring H to press the bar downward, thus causing its toothed end to rotate the wheel *d'* and raise the wick. A circular plate, L, attached to the outer end of the shaft *b* and resting upon the face of the dial, furnishes the means for setting the train

of clock-work into the proper position for causing the arm *m* to strike the tripping-block *k* at any predetermined hour, as in the ordinary alarm-clocks in common use.

In order that the wheel *d'* may always be in the right position to be acted upon by the teeth of the sliding bar, stops *n* and *n'* are attached to the two parts of the burner, so that its upper part can only be screwed down to a certain point, which will bring the bar and toothed wheel into the proper relations to each other.

To set the apparatus to light at any desired hour for which the clock-work has previously been arranged, the wick of the lamp is turned as high as it is wished to burn it; then pull up the sliding bar G by means of the handle *o*. In its ascent it will engage with the wheel *d'* and turn down the large wick, putting it out if lighted. A slight pull on the upper end of the bar when raised causes the notch *h* near its lower end to engage with and rest upon the guide I, where it will remain until displaced by the tripping-arm *m* upon the shaft *b*.

The small wick in the tube *c'* is not acted upon by the mechanism, and therefore will remain lighted, while the large one is turned down ready to be lighted by the latter the instant it is brought up and into the proper position.

A shade or reflector may be placed over the chimney of the lamp, or in any convenient position, and so arranged as to throw the light of the small wick upon the dial-plate, thus illuminating it sufficiently to enable the hour to be read from it at any time of night. The small wick is employed principally for the reason that in lamps burning hydrocarbon oils, if a large wick be turned down to reduce the light, the combustion will be imperfect, thus allowing unpleasant odors to escape, which are very objectionable, especially in a sleeping-room, while the small wick may burn with full intensity, and not give out so much light as to incommode persons sleeping in the room. This device is found to be preferable to the ordinary alarm-clock used by people who are obliged to rise at any specified hour of the night, as it disturbs no one but the occupants of the room in which it is situated, and they are much less liable to fall asleep again, as they often will after the noise of an alarm has subsided, and the light to dress by is ready without recourse to the match-box, as is necessary under other circumstances.

It will be apparent that this principle may be applied to self-lighting gas-burners with but little change in the operative parts, as the same means employed for raising the wick of the lamp would turn the plug of a gas-burner.

Having thus described my invention, I claim as new, and desire to secure by Letters Patent of the United States, the following:

1. A lamp-burner provided with the large vertically-adjustable wick and a small auxiliary wick, in combination with the means heretofore described for automatically raising and lowering the adjustable wick, as and for the purpose set forth.

2. A lamp-burner provided with a vertically-adjustable wick moved by a toothed wheel, *d'*, upon the shaft *d*, in combination with a vertically-sliding toothed bar, G, or its equivalent, substantially as and for the purpose specified.

3. The sliding toothed bar G or its equivalent, provided with catch *h* and tripping-block *k*, in combination with a tripping-arm, *m*, attached to a clock-train, substantially as and for the purpose shown and described.

4. The case A, provided with the chamber B, for the reception of a train of clock-work, and the oil-receptacle C, placed between the clock-train and its dial, as shown and described.

5. The stops *n* and *n'*, attached to the stationary and revolvable parts of a lamp-burner, for the purpose of preventing the rotation of the latter beyond a specified point, as set forth.

6. A lamp-burner provided with a large vertically-adjustable wick and a small auxiliary wick or its equivalent, when used in combination with a train of clock-work, as and for the purpose set forth.

In testimony that I claim the foregoing as my own I hereunto affix my signature in presence of two witnesses.

HENRY W. COVERT.

Witnesses:

E. A. CARLEY,

JAMES F. RILEY.