S. C. SWETT.

Device for Lighting and Extinguishing Lamps, &c.

No. 207,995. Patented Sept. 10, 1878.

Fig. 1.

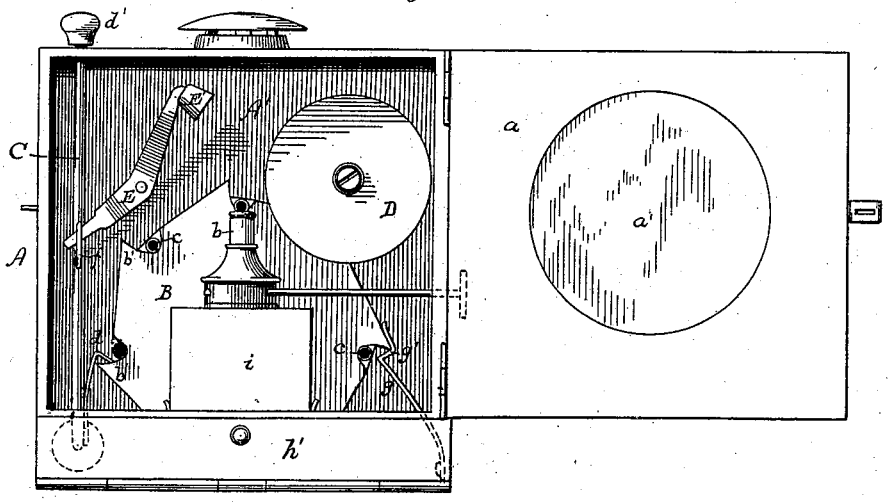


Fig. 2.

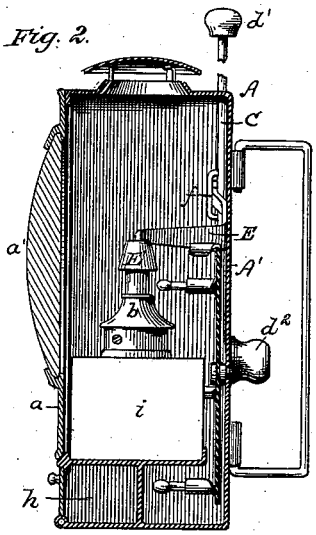


Fig. 3.

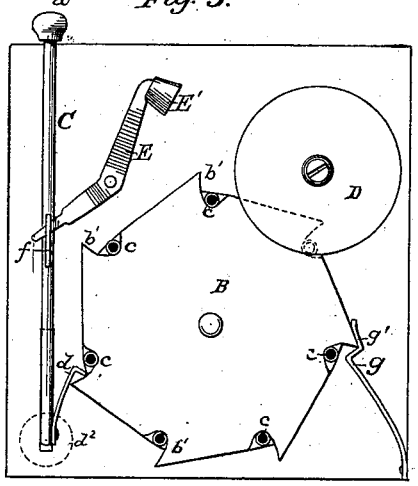


Fig. 4.

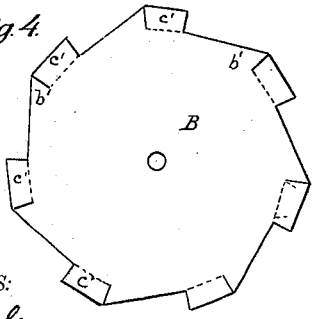
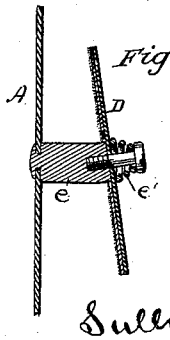


Fig. 5.



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UNITED STATES PATENT OFFICE.

SULLIVAN C. SWETT, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR TO HIMSELF, SAMUEL R. STRATTAN, AND JOHN THEODORE STRATTAN, OF STRATTANVILLE, PENNSYLVANIA.

IMPROVEMENT IN DEVICES FOR LIGHTING AND EXTINGUISHING LAMPS, &c.

Specification forming part of Letters Patent No. **207,995**, dated September 10, 1878; application filed May 3, 1878.

To all whom it may concern:

Be it known that I, SULLIVAN CLARK SWETT, of Washington, in the county of Washington and District of Columbia, have invented a new and useful Improvement in Lighting and Extinguishing Lanterns and Lamps; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The object I have in view is to produce lighting and extinguishing devices, by which a light can be quickly and easily put out or lighted, when desired, without the trouble and danger of using a match in the ordinary manner, and by which, in inclosed and protected lights, such as lanterns, the wick can be ignited without opening the case of the lantern, and without liability of the light being blown out by the wind. These means are simple in their construction, and therefore quite cheap in cost, and are certain in their operation.

My invention therein consists in the construction of the lighting and extinguishing devices, and in the several combinations of the operative parts, as fully hereinafter pointed out and claimed.

In the drawings, Figure 1 is a front elevation of a lantern embodying my invention, with the door swung open to show the operating parts; Fig. 2, a vertical cross-section of the same, with the extinguishing-hood dropped over the top of the burner; Fig. 3, a view of the lighting and extinguishing devices removed from the lantern; Fig. 4, a separate view of the blank for making the match-carrying wheel; and Fig. 5, a section through the friction-disk and its spindle.

Like letters of reference denote corresponding parts in all the figures.

A represents the case of a lantern; *a*, the door to the same; and *b* the wick-tube or burner. These are shown in the form of a pocket or dark lantern, the door having a lens, *a'*, through which the light passes; but my invention is equally well adapted for use with other hand-lanterns, which often it may be found desirable to light when the wind is blowing, or when it would be dangerous to light a match in the ordinary way, and also to stationary lanterns, such as ship-lights, which could be lighted and extinguished without removing them from their positions.

On the back A' of the lantern, behind the burner *b*, is mounted a revolving wheel, B, having ratchet-teeth *b'* on its periphery, by which it is turned.

Match-holding sockets *c* are formed on the edge of the wheel B, the same in number as the ratchet-teeth, and project at right angles to the face of the wheel. This wheel, its ratchet-teeth, and match-holding sockets are preferably constructed from a single piece of sheet metal, the flat blank being shown in Fig. 4.

By turning up the parts *c'* of the blank on the dotted lines, and twisting the outer corners of these parts together, the sockets *c* will be formed, one just in front of each ratchet-tooth. The wheel B is placed in such a position that in its revolution the socket *c* will in turn be brought in line with the top of the burner.

A sliding rod, C, is arranged vertically in the case of the lantern, and is guided in any suitable manner. To this rod is attached a spring-pawl, *d*, which engages with the ratchet-teeth *b'* on the wheel B. This rod C may be moved by a knob, d^1, on its upper end, where it projects through the case; or the rod may be confined entirely in the case, and be moved by a knob, d^2, secured to a pin projecting from the rod, and sliding in a slot in the back A' of the lantern-case.

D is a metal disk, with a friction-surface on its inner side of any suitable material. This disk is mounted in an inclined position on the end of a spindle, *e*, projecting from the back A' of the lantern; and against the outside of the disk is held, by a screw setting into the end of the spindle, a spring, *e'*, which allows the disk to spring outwardly to a limited extent when rubbed on its friction-surface.

The friction-disk is placed, as shown, just back and on one side of the burner, and in front of a portion of the edge of the wheel B, so that the match-sockets move behind such disk through a part of their revolution.

E is a bent lever, pivoted to the back A′, and working at its outer end in a loop, *f*, secured to or a slot formed in the sliding rod C. At its inner end the lever E is provided with a hood, E′, which, when dropped down over the burner by the upward movement of the rod C, will extinguish the light, and by the downward movement of such rod this hood will be raised out of the way of the light. With the opposite side of the wheel B from the pawl *d* engages a spring-detent, *g*, secured to the case of the lantern, and having an angular end, *g′*, of such form that it fits over the ratchet-teeth, and prevents the wheel B from being turned by the upward movement of the pawl, and also stops such wheel when the pawl has reached the lower limit of its movement, so that the lighted match will always be in the right position to ignite the wick.

In the bottom of the lantern-case, at the front thereof, is placed a match-box, *h*, having a small door, *h′*, just below the door *a* of the lantern, which closes the front of the match-box.

The top of this box forms a support for the oil-pot *i*, and raises the oil-pot above the bottom of the lantern-case, so that the match-sockets can pass under such oil-pot in their revolution.

In operation, the sockets *c* would first be filled with short matches, which may be placed in the sockets either when the lamp is in or out of the lantern, but more conveniently after it has been removed therefrom. The wick is then adjusted by means of the wick-raising stem, which preferably should be made to project through the side of the lantern-case, so that it can be operated from the outside of the lantern.

When it is desired to light the wick, supposing the rod C to be in its upward position, such rod is moved quickly downward, and one of the matches will be rubbed against the friction-disk, and brought quite close to the wick in a lighted condition. Then, by moving the rod C upwardly, the hood E′ will extinguish the light, and the pawl *d* will engage with another ratchet-tooth and be ready to turn the wheel B when the rod is again moved down. The same movement of the rod C raises the hood from the wick and lights the same.

By arranging the friction-surface on a disk capable of being revolved on its spindle every match, as it strikes such disk, will turn it till the match reaches a central line on the disk, and it will then be scratched and lighted, so that the disk will be turned for a short distance every time the wheel B is moved, and will present a new surface to each match.

By the inclination of this disk the matches are moved past the edge of its friction-surface before touching, and therefore will not injure the edge of the disk, or be lighted before being rubbed across the surface of the same. The spring *e′* is especially adapted to assist the revolving movement of the disk, since it equalized the friction of the matches against its rough surface. The construction of the other parts of the mechanism for lighting and extinguishing is very simple, and the parts are few in number, so that they can be arranged in a very compact manner, and applied at a comparatively small cost. They are also sure in operation, a match being lighted at every movement of the wheel B. I have designed to use with this lantern ordinary parlor-matches, cut to the proper length.

It is evident that the lighting and extinguishing devices above described could be applied to lamps, in which case it would be found convenient to mount them upon a reflector behind the light.

Having thus fully described my invention, and explained some of its advantages, what I claim as new therein, and desire to secure by Letters Patent, is—

1. The combination, with the revolving match-carrying wheel provided with ratchet-teeth on its periphery, of a sliding rod having a pawl engaging with the said ratchet-teeth, substantially as and for the purpose set forth.

2. The combination, with the wheel B, having ratchet-teeth *b′* and match-sockets *c*, of the rod C, provided with pawl *d*, and the detent *g*, substantially as described and shown.

3. The combination, with the sliding rod operating the lighting devices, of the pivoted lever having extinguishing-hood, and connected to the said sliding rod, so that the hood is raised from the wick, and the wick is ignited by the same movement of the said sliding rod, substantially as and for the purpose set forth.

4. The combination, with the match-carrying wheel provided with ratchet-teeth on its periphery, of the sliding rod having pawl and the lever carrying extinguishing-hood, connected to such sliding rod, substantially as described and shown.

5. In lighting devices, the friction-disk, mounted on the end of a spindle and adapted to be revolved so that it will present a new surface to each match, substantially as described.

6. The revolving friction-disk mounted on a spindle and adapted to be partially revolved by the rubbing of each match on its friction-surface, the said disk being inclined on the spindle, and provided with a spring to allow it to yield when a match is pressed against it, substantially as described and shown.

7. The combination of the revolving friction-disk with the revolving match-carrying wheel, substantially as and for the purpose set forth.

8. The combination, in lighting and extin-

guishing devices, of a revolving match-carrying wheel, a sliding rod operating such wheel and the extinguishing-hood, and a revolving friction-disk, substantially as described and shown.

9. The match-carrying wheel B, having ratchet-teeth b' and match-sockets c, all made from a single blank of sheet metal, substantially in the manner described and shown.

This specification signed and witnessed this 29th day of April, 1878.

SULLIVAN CLARK SWETT.

Witnesses:
R. N. DYER,
WARREN SEELY.