(No Model.)

N. F. MATHEWSON.

POCKET LAMP OR LIGHTING DEVICE.

No. 479,222. Patented July 19, 1892.

Fig. 1.

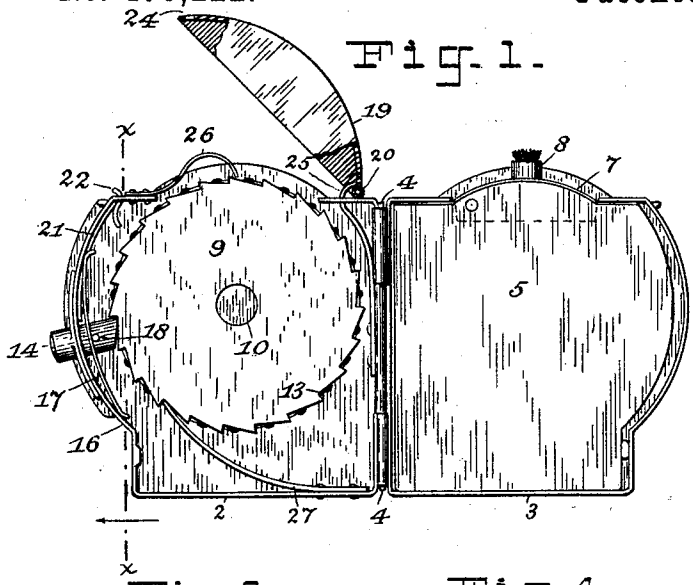


Fig. 2.

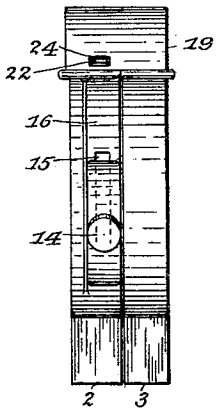


Fig. 3.

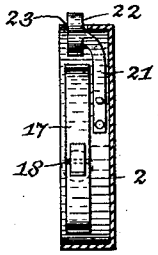


Fig. 4

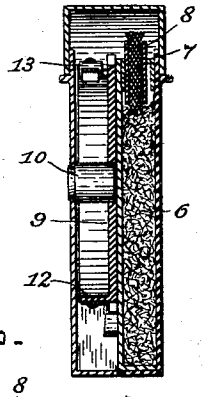


Fig. 5.

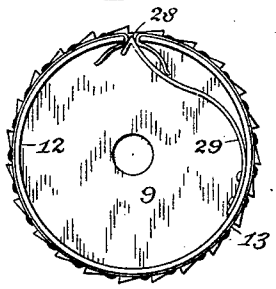


Fig. 6.

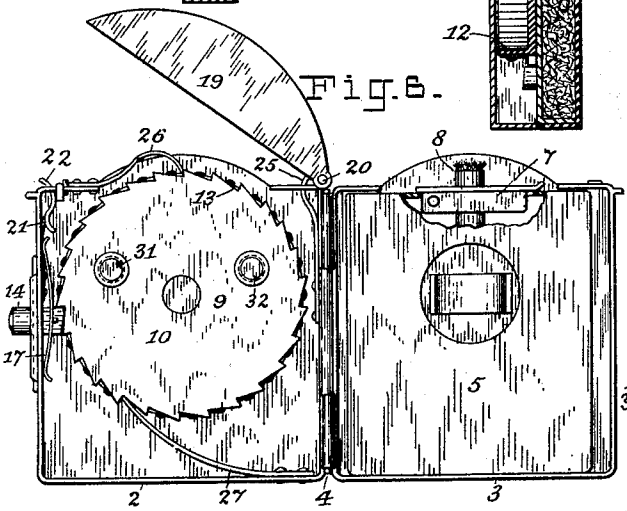


Fig. 7.

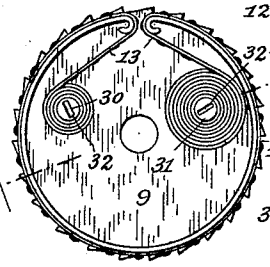
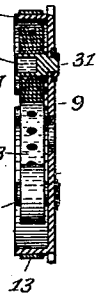


Fig. 8.



WITNESSES:

E. R. Bolton

C. L. David

INVENTOR:

Nathan F. Mathewson

By Marble, Mason & Caulfield

his Attorneys.

UNITED STATES PATENT OFFICE.

NATHAN F. MATHEWSON, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE LITTLE GEM MANUFACTURING COMPANY, OF NEW JERSEY.

POCKET-LAMP OR LIGHTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 479,222, dated July 19, 1892.

Application filed May 18, 1891. Serial No. 393,076. (No model.)

To all whom it may concern:

Be it known that I, NATHAN F. MATHEWSON, a citizen of the United States, residing at the city of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Pocket-Lamps or Lighting Devices, of which the following is a specification, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of lamps or lighting devices which are carried in the pocket and may be used for lighting cigars, lamps, gas-burners, and many other similar purposes, and more particularly to that subdivision thereof in which the fulminating material in the form of pellets is arranged and carried upon a tape, and is fully disclosed in the following specification, of which the accompanying drawings form a part, wherein similar numerals of reference designate like or equivalent parts wherever found throughout the several views, and in which—

Figure 1 represents my improved pocket-lamp or lighting device in elevation and open, with the hinged lid raised and parts thereof broken away to better show the construction. Fig. 2 is a front elevation; Fig. 3, a section on the line *x x* of Fig. 1; Fig. 4, a central vertical section; and Fig. 5 is a detail view of the interior of the tape-carrying disk thereof. Fig. 6 represents a modified form of the construction shown in Fig. 1. Fig. 7 represents a detail view of a modified form of the construction shown in Fig. 5, and Fig. 8 is a sectional view of the modified form of construction shown in Fig. 7 on the line *y y* thereof.

Referring to Fig. 1 of the drawings, it will be seen that my improved pocket-lamp or lighting device consists of a two-part casing or housing, the separate parts 2 and 3 of which are hinged together at 4, one of said parts, as 3, being provided with a reservoir or receptacle 5, in which is placed a suitable absorbent material 6, said reservoir being provided with a hinged cover 7, in which is placed a wick-tube 8, and the other part 2 being provided with a ratchet-disk 9, revolubly mounted on a pin or journal 10, secured to the side 2 of the casing, this ratchet-disk being provided on one of its sides with a flange or drum 12, as shown in Figs. 4 and 5, on which is placed a fulminate tape 13, provided at regular intervals with ignitible pellets or fulminates, and means for rotating or revolving the disk step by step and igniting one of the pellets or fulminates on the tape 13 at each successive movement of the disk. The means for rotating or revolving the disk 9 step by step consists of a push-pin 14, which passes through a vertical slot 15 in the rounded or curved front wall 16 of the part 2 of the casing. This push-pin 14 is provided at its inner end with a toe or point adapted to come in contact with the ratchet-teeth on the disk 9, and by pushing upward on the outer extremity of such push-pin it is caused to slide upward or along the slot 15, and thus rotate the disk through the space covered by the length of the slot, which is the same as the distance between two of the ratchet-teeth upon the disk. A spring 17, provided with a central opening, is placed upon the push-pin 14 inside of the casing 2, and is held in place by a pin 18. The form of this spring is such that its ends press against the inner side of the rounded front wall 16 of the casing in such a manner as to hold the inner end of the push-pin 14 in contact with the teeth of the ratchet-disk 9 at all times and yet allow the point of the push-pin to slip back behind said teeth when the same is pushed downward in the slot 15. The cover 19 of the casing is hinged thereto at 20 and is held in place when closed by a spring 21, the lower end of which is secured to the inner wall of the casing, as shown in Fig. 3, the upper end being provided with an extension 22, which passes through an opening 23, found in an extension of front wall of part 2 of the casing. The lower end of this extension 22 of the spring 21 is curved inward, as shown, and the outer or upper end curved outward and adapted to enter the opening 24 in the lid or cover 19 and hold the same securely in place when closed.

In the operation of this device the upper end of the spring 17 comes in contact with the lower end of the extension 22 of the spring

21 as the pin 14 is pressed upward and forces the same inward. The upper end of the extension is released from the opening 24 in the cover, and a spring 25 throws it back. At the same time the disk 9 is advanced one step by the inner end of the push-pin and a spring-scratcher 26, one end of which is secured to the extension of the front wall of the casing, through which the extension of the spring 21 passes, and the other end of which is adapted to come in contact with the pellets on the tape 13, ignites one of said pellets as the same is pushed thereunder, and the wick, which passes through the tube 8 in the hinged cover of the reservoir 5, is lighted thereby. A spring 27, secured to the casing in any desired manner, prevents the reverse movement of the disk 9 as the push-pin 14 is pressed backward preparatory to a repetition of the operation of lighting the lamp.

In order to prevent the slipping of the fulminating tape 13, the flange 12 of the disk 9, which forms the drum upon which such tape is carried, is preferably provided, as shown in Fig. 5, with a slot 28, through which the ends of the tape are passed into the interior of the drum formed by this flange, and a spring 29, secured upon the interior and provided at its free end with a V-shaped projection adapted to enter such slot, prevents the tape from slipping out of this slot by pressing the same firmly against the sides thereof, and by this simple arrangement the tape is kept firmly secured upon the periphery of the drum or flange 12, and the interior thereof may be used for the storage of the unignited portion of the fulminating tape.

In the modified form of construction shown in Fig. 6 the casing or housing is made substantially rectangular in form instead of having its front wall 16 curved or rounded, as is the case in Fig. 1; but otherwise the mechanism and operation is similar to that of the form shown in Fig. 1.

The form of revoluble tape-carrying disk 9 shown in Fig. 5, as well as the form thereof shown in Figs. 7 and 8, may be used in either of the forms of housing shown in Figs. 1 and 6. The form of disk 9 shown in Figs. 7 and 8 differs from that shown in Fig. 5 by having no spring 29 for keeping the ends of the tape in place, but is provided in place thereof with two revoluble studs 30 and 31, secured to the disk in any desired manner, which extend inwardly therefrom to about the depth of the flange 12. These studs are preferably provided with slots 32, into which a knife-blade or other suitable tool may be inserted for revolving the same. Upon these studs is wound the fulminating tape, one carrying that portion of the roll that has been used and the other that which is as yet unignited. Then when the fulminates upon that portion of the tape which is upon the periphery of the flange or drum 12 are exhausted, by turning the stud upon which the waste or used tape is wound the waste tape upon the flange is wound around said stud and fresh tape provided with fulminates drawn from the other stud into position upon the periphery of the drum of flange 12 in position to be ignited when the toothed disk carrying the flange is in position. The two sides 2 and 3 of the casing or housing are also provided at the front or open end thereof with a catch of any desired form of construction, by which the same are held closed together, when desired. The wick, which passes through the wick-tube 8 in the hinged cover 7 of the reservoir 5, is of any suitable and preferred material, and should be of sufficient length to reach to the bottom of the reservoir, so as to take up the burning fluid freely from the absorbent therein.

It is evident that many changes and modifications in the construction, combination, and arrangement of parts of my improved pocket-lamp or lighting device other than those shown and described herein may be made without departing from the scope of my invention, and I do not limit myself to any particular form thereof; but,

Having fully described my invention, its construction and operation, what I claim, and desire to secure by Letters Patent, is—

1. In a lighting device, a revolubly-mounted drum adapted to receive and hold secured upon its periphery, so as to be rotated therewith, a tape provided with drops or bits of fulminating material, substantially as shown and described.

2. In a lighting device, the combination, with a drum adapted to receive and hold secured upon its periphery, so as to be rotated therewith, a tape provided with drops or bits of fulminating material, of means for rotating the drum and for exploding the bits of fulminating material one by one as the drum is rotated, substantially as shown and described.

3. In a pocket-lamp or lighting device, the combination, with a drum adapted to receive upon its periphery a tape provided with drops or bits of fulminating material, of means for securing the fulminating tape to the drum, so that the same may be rotated therewith, and means for rotating the drum and exploding the bits of fulminating material one by one as the same is rotated, substantially as shown and described.

4. In a pocket lighting device, the combination, with a drum adapted to receive upon its periphery a tape provided with drops or bits of fulminating material, of means for securing the tape to the drum, so that the same may be rotated therewith, a spring-scratcher adapted to press upon the tape on the drum and explode the bits of fulminating material one by one as the tape is carried beneath it, and means for rotating the drum step by step, substantially as shown and described.

5. In a lighting device, the combination, with a drum adapted to receive and hold secured upon its periphery, so as to be rotated

therewith, a tape provided with drops or bits of fulminating material, of a holder for an ignitible wick adjacent to the periphery of the drum, means for exploding the drops or bits of fulminating material one by one at a point adjacent to the wick as the drum is rotated, and means for rotating the drum step by step, substantially as shown and described.

6. In a lighting device or pocket-lamp, the combination, with a drum adapted to receive and hold secured upon its periphery, so as to be rotated therewith, a tape provided with drops or bits of fulminating material, of a reservoir adapted to receive an absorbent material, and a wick, one end of which protrudes therefrom, means for exploding the drops or bits of fulminating material one by one at a point adjacent to the protruding portion of the wick as the drum is rotated, and means for rotating the drum step by step, substantially as shown and described.

7. In a pocket-lamp or lighting device, a revoluble disk having a flange secured thereto forming a drum, said flange being provided with a slot, as 28, by which a tape provided with drops or bits of fulminating material may be secured upon the periphery of the drum formed by the flange in such manner as to be rotated with the drum, and means by which the ends of the tape may be secured within said slot, substantially as shown and described.

8. In a pocket-lamp or lighting device, the combination, with a revoluble disk, of a flange forming a drum secured thereto and adapted to receive upon its periphery a tape provided with drops or bits of fulminating material, said flange having a slot through which the ends of the tape pass, of means located within the drum formed by the flange for drawing the expended tape upon the flange within the same and coiling it and at the same time drawing a fresh portion of unexploded tape from the interior of said drum upon the periphery thereof, substantially as shown and described.

9. In a pocket-lamp or lighting device, the combination, with a revoluble disk, of a flange forming a drum secured thereto, having a slot, as 28, and adapted to receive and hold upon its peripheral surface a tape provided with drops or bits of fulminating material, of means located within the drum formed by the flange for holding a coil of unexpended tape, and a stud also located within the drum and adapted to be rotated, whereon the expended tape upon the periphery of the drum may be wound after being drawn through the slot 28, the expended tape as it is drawn within the drum drawing from the interior thereof through the slot sufficient unexpended tape to cover the periphery of the drum, substantially as shown and described.

10. In a pocket-lamp or lighting device, the combination, with a revoluble disk provided with a flange forming a drum adapted to receive upon its peripheral surface a tape provided with drops or bits of fulminating material and having a passage or slot through which the ends of such tape pass to the interior of the drum formed by such flange, of two studs located within such drum, one of which is adapted to hold a coil of unexpended tape and the other of which is adapted to rewind upon itself as it is rotated the expended tape upon the peripheral surface of the flange, and thus draw from the other stud out upon such flange sufficient unexpended tape to cover the same, substantially as shown and described.

Signed at the city of Providence, in the county of Providence and State of Rhode Island, this 12th day of May, A. D. 1891.

NATHAN F. MATHEWSON.

Witnesses:
BENJAMIN L. DENNIS,
SAMUEL CLOUGH.