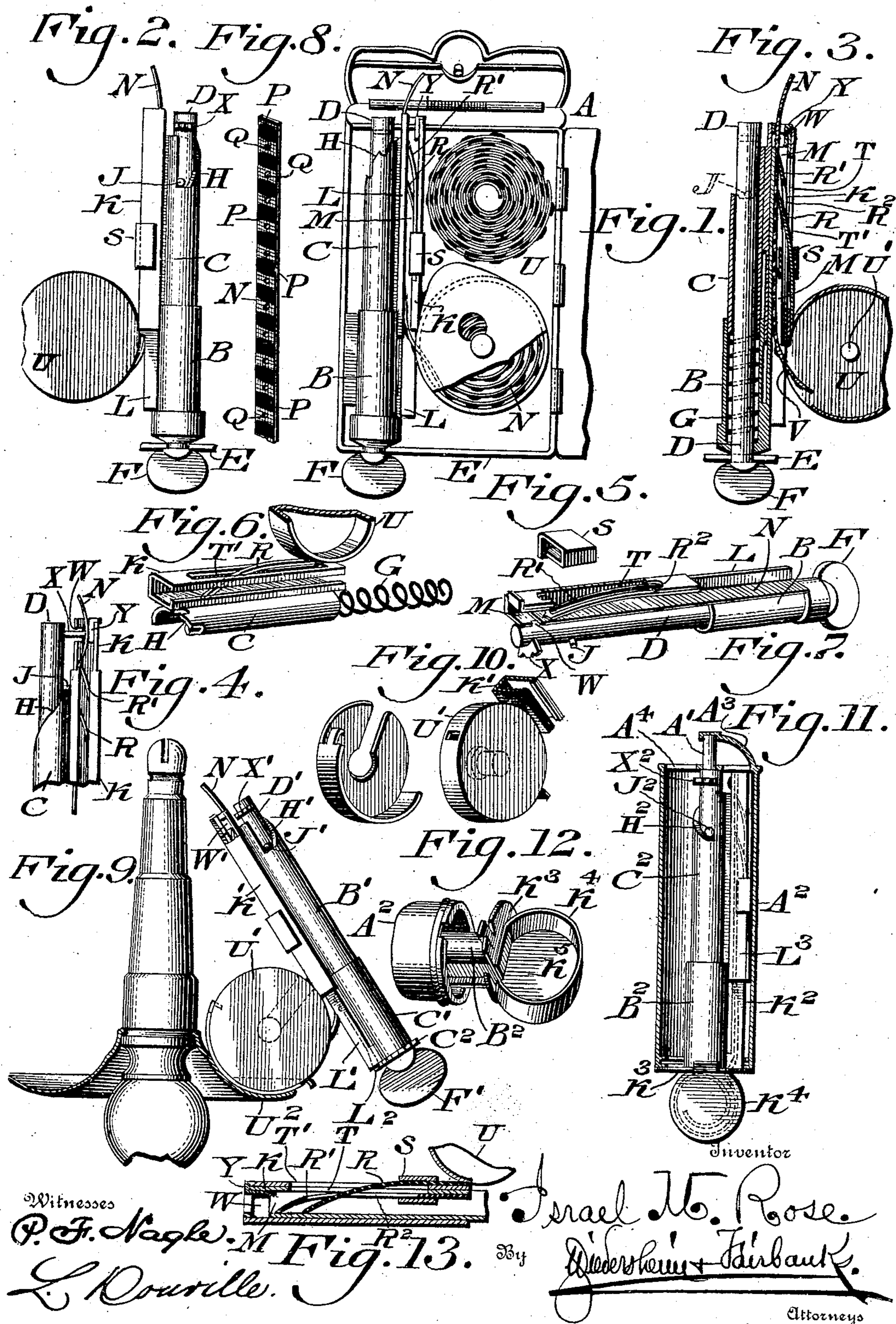


No. 865,802.

PATENTED SEPT. 10, 1907.

I. M. ROSE.
AUTOMATIC LIGHTING DEVICE.
APPLICATION FILED APR. 20, 1907.



UNITED STATES PATENT OFFICE.

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Specification of Letters Patent.

Patented Sept. 10, 1907.

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To all whom it may concern:

Be it known that I, ISRAEL M. ROSE, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Automatic Lighting Device, of which the following is a specification.

My invention consists of an automatic lighting device, embodying novel features of construction and operation, as will be hereinafter described and set forth in the claims.

Figure 1 represents a side elevation of an automatic lighting device embodying my invention. Fig. 2 represents a side elevation of the same opposite to that shown in Fig. 1. Fig. 3 represents a vertical section thereof. Fig. 4 represents a side elevation of a portion showing certain parts in different position from that shown in Fig. 1. Fig. 5 represents a perspective view of a slide employed. Figs. 6 and 7 represent perspective views of detached portions. Fig. 8 represents a view of a tape of fulminates employed to produce a flame by proper operation of adjacent members of the device. Fig. 9 represents a side elevation of a modification. Fig. 10 represents a perspective view of members detached from Fig. 9. Fig. 11 represents a partial vertical section and partial side elevation of a modification. Fig. 12 represents a perspective view of portions detached from Fig. 11. Fig. 13 represents a section of a detached portion.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings: A designates a box, case or other receptacle, within which is secured the stationary sleeve B, to which latter is telescopically fitted the sliding sleeve C.

D designates a rotary rod or shaft, which is passed freely through the sleeves B and C, and is swiveled on the wall E of the box A, it being provided with an operating handle F, which is preferably on the exterior of the box A. Interposed between the inner ends of said sleeves B, C, is the spring G, which is adapted to bear against the sleeve C and cause it to return to its normal position for purposes to be hereinafter described. The outer end of the sleeve C has its edge H of spiral form, and resting on the same is the pin or stud J, which latter projects from the side of the shaft D, whereby by rotating said shaft the stud J imparts sliding motion to the sleeve C in the direction towards the handle F.

Secured to the side of the stationary sleeve B, is the angular plate L, on which is freely fitted the channeled bar K, which is firmly connected with the sleeve C and movable therewith, said bar and plate extending parallel with the sleeves B, C. The side members or limbs of the channel bar L are separated, forming the passage M for the tape or strip N, which carries pellets

P of fulminating material, said pellets being spaced apart thereon, alternating with openings Q, which latter are adapted to receive the end of the detent R, which is attached to said channeled bar K and movable therewith, said bar also having fitted thereon the slide S, and said bar and the plate K being provided respectively with slots or recesses T, T'.

Secured to the stationary plate L is the check pawl R', the same having a longitudinally extending slot R² therein, it being noticed that the detent R is adapted to pass through the slots T, T' of the plate L and bar K and the slot R² of said check pawl R' in order to reach the back of the strip or tape N, and enter the respective opening in the latter, said pawl being also adapted to engage an opening in said strip for preventing return of the latter.

When the slide S is moved, the points of the detent and pawl are raised, whereby they present no obstacle to the insertion of a fresh tape into the passage M, when so required.

Connected with the bar L, is the tape-carrier magazine or casing U, which is provided with a post U' for holding the reel of tape, said casing having a throat V, so that the tape, when unreeled, may reach the passage M, when it will be manipulated, as will be hereinafter described.

In the end of the side of the plate K, is the recess W, and adjacent thereto on the rotary shaft D is the striker X, which is adapted to enter said recess and frictionally engage a pellet on the tape, the motion of which latter is so timed as to properly locate said pellet, so as to be reached by the striker when the latter is turned into the recess W by the rotation of the shaft D, see Fig. 4.

On the plate K, back of the recess W, there is the anvil Y, which is adapted to sustain the tape when the pellet thereon is engaged by the striker X.

The box A is sufficiently large to contain an additional reel of pellet tape to supply the one exhausted previously occupying the carrier U.

The operation is as follows:—The tape is located on the carrier U, and one end drawn into and through the passage M, so that the upper pellet will be placed in line with the striker X. When a light is required, the shaft D is rotated, whereby the sleeve C is lowered by the stud J, and the detent R rides freely over the back of the tape, the carrier U following the motion of said sleeve. The striker X now reaches the pellet in front of the anvil Y, and engages with or strikes said pellet, thus lighting the same, when the flash thereof is communicated to the portion of the tape above the same, see Fig. 4, thus producing a light or flame for any required purpose until said portion is consumed. Owing to the spiral edge H of the sleeve C, when the stud J clears the extreme rise thereof, said sleeve returns to

its normal position due to the action of the spring G, when detent R advances a length of the tape N, placing a fresh pellet in front of the anvil Y, when the device is in condition to repeat the operation of the shaft D to produce another light.

In Fig. 7, the fixed angular plate L is shown with the sleeve B, but without the movable or sliding bar K and the carrier U, while in Fig. 6, said bar is shown with said carrier and the sleeve C.

In Fig. 9, I show the invention as applied to a gas burner, or in lieu thereof, any other desired lighting device. In this case, the tape carrier U is connected with a support U² on the burner, and has secured to it the stationary plate K', in which is guided the movable bar L', which has attached to it the sleeve C', which is telescopically fitted on the sleeve B', which is stationarily connected with the bar K'. Within said sleeves is the rotatable shaft D', which is connected with the knob or handle F', and is swiveled on the lower end of the sleeve C' by means of the collar C², which is of the form of a ratchet, whose teeth are engaged by the spring pawl L², which is connected with the adjacent portion of the movable bar L', so as to limit or prevent improper rotation of said ratchet and consequently of the shaft D'. The upper end of the stationary sleeve B' has a spiral edge H', on which rides the stud J' on the shaft D', the latter having also a striker X', which is adapted to enter the adjacent recess W' in the bar L', and so engage the pellet on the tape in the channel of said bar L'. In the operation of the device in this construction, the rotation of the shaft D' by the handle F' causes the stud J' to ride on the spiral edge H', and so raise said shaft, and consequently the sleeve C' and the bar L', thus uncovering the recess W', so that the striker X' may enter the same and contact with the pellet, when the flash is occasioned by the latter, and the projecting end of the tape is accordingly lighted, and the flame or light produced.

In Figs. 11 and 12, I show a rod A', which extends through the casing A², and is stationarily secured to the upper end of the latter by the bracket A³. On said rod is fitted the rotary sleeve C², on which is telescopically fitted the stationary sleeve B², and has secured to it the sliding bar L³, which is movable on the plate K², said sleeve B² and plate K² being secured to a piece K³, which is adapted to be swiveled on and interlocked with the adjacent end of the casing A², and has the handle K⁴ secured to it, whereby the members within the casing may be rotated, it being seen that the sleeve C² has a spiral edge H², on which rides the stud J² on the stationary rod A', whereby by operating the handle K⁴ the members within the casing are rotated, and the tape is brought around to the striker X², and moved against the same, whereby the pellet is struck, when the end of the tape above said pellet is ignited and the flame therefrom passes through the opening A⁴ in the adjacent end of the casing. In this construction, the handle K⁴ is hollow, forming a chamber K⁵ to contain a reel of tape, which extends therefrom to the passage existing in the bar L³, through which said tape is movable, as in the other constructions.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In an automatic lighting device of the character stated, means for guiding and holding a strip of fulminate

pellets, means for advancing said strip, a rotary member, an endwise-movable member actuated thereby, a fulminate striking device on and rotatable with said rotary member, and means for operating said rotary member and advancing said device in line with a pellet on said strip to engage the same.

2. In an automatic lighting device of the character stated, a stationary sleeve, a sliding sleeve, a shaft in said sleeves, a stud adapted to engage one of said sleeves, means for rotating said shaft, a striker on said shaft, a strip of fulminate pellets adapted to be passed through a guiding and holding device, the latter having a passage therein, means for advancing said strip and placing a fulminate thereon in the path of the striker.

3. In an automatic lighting device of the character stated, a shaft, a movable member fitted thereon, means for holding said member, a projection on said shaft adapted to engage said movable member, a fulminate striker on said shaft, a guiding and holding device for a strip of fulminate pellets, and means for advancing said strip and placing a pellet thereon in the path of said striker.

4. In an automatic lighting device of the character stated, means for guiding and holding a strip of fulminate pellets, a rotary member, an endwise-movable sleeve actuated thereby, a movable member, a detent on the latter adapted to engage said strip, and means on said member adapted to engage said detent and remove it from said strip.

5. In an automatic lighting device of the character stated, a stationary member having a passage therein for guiding and holding a strip of fulminate pellets, a rotary member, an endwise-movable sleeve actuated thereby, a movable member, a detent on the latter adapted to engage said strip to advance the same, and a check pawl on said stationary member adapted to engage said strip to prevent return of the same.

6. In an automatic lighting device of the character stated, a stationary sleeve, a movable sleeve fitted thereto, the latter having a spiral end, a rotary shaft passing through said sleeves, a projection on said shaft adapted to ride on said spiral end, a fulminate striker on said shaft a spring acting on said movable sleeve, a guide and holder for a strip of fulminates, said guide and holder having an opening to receive said striker and admit the latter to a fulminate on said strip.

7. In an automatic lighting device, a strip of fulminate members, means embodying a rotary member and an endwise movable member actuated thereby for advancing the same to an operative position, and means for stationarily holding the same on the return motion of the advancing means.

8. In an automatic lighting device, a strip of fulminate members, a rotary member, an endwise-movable member actuated thereby and detent carried by said endwise-movable member for advancing the same to an operative position, and a check pawl for holding said strip on the return motion of said detent, said pawl being adapted to have said detent pass through the same.

9. In an automatic lighting device, a rotary and a stationary member parallel therewith, an endwise-movable member actuated by said rotary member, and a ratchet and pawl connected respectively with said rotary and stationary members.

10. In an automatic lighting device, a strip having fulminate members thereon alternating with openings between said members, said openings being adapted to be engaged by an advancing device.

11. In an automatic lighting device, a strip having fulminate members thereon alternating with openings between said members, said openings being adapted to be engaged by a retaining device.

12. In an automatic lighting device, a strip having fulminate members thereon alternating with openings between said members, said openings being adapted to be engaged by advancing and retaining devices.

13. In an automatic lighting device, a movable member, a strip of fulminate material, a containing and guiding piece for said strip, a device embodying a rotary member, a longitudinally-movable member actuated thereby, and means actuated by said movable member for advancing

said strip to locate the fulminate thereof in operative position, a striker carried by said rotary member adapted to engage said fulminate to ignite the same, and means for placing said striker and fulminate in engagement.

- 5 14. In an automatic lighting device, a movable member, a strip of fulminate material, a device on said member for advancing said strip, a containing and guiding piece for said strip, means embodying a rotary member, a longitudinally-movable member actuated thereby, and means
10 actuated by said movable member for advancing said strip to place the fulminate thereof in operative position, a striker carried by said rotary member adapted to engage said fulminate to ignite the same, means for placing said striker and fulminate in engagement, and means for re-
15 turning said movable member and the advancing device of said strip to normal positions.

15. In an automatic lighting device, a movable member, a carrier for a strip of fulminate material, a striker adapt-

ed to engage said material, a device for containing and guiding said strip, means for advancing said strip, means
20 embodying a rotary member, a longitudinally-movable member actuated thereby, and means actuated by said movable member for placing said striker and material in engagement to ignite the latter, and an anvil on said device back
25 of said striker.

16. In an automatic lighting device, a strip having fulminate members thereon alternating with openings between said members, and an advancing device embodying a rotary member and an endwise-movable member actuated
30 thereby and a member to engage said openings to advance said strip.

ISRAEL M. ROSE.

Witnesses:

JOHN A. WIEDERSHEIM,
HARRY C. DALTON.