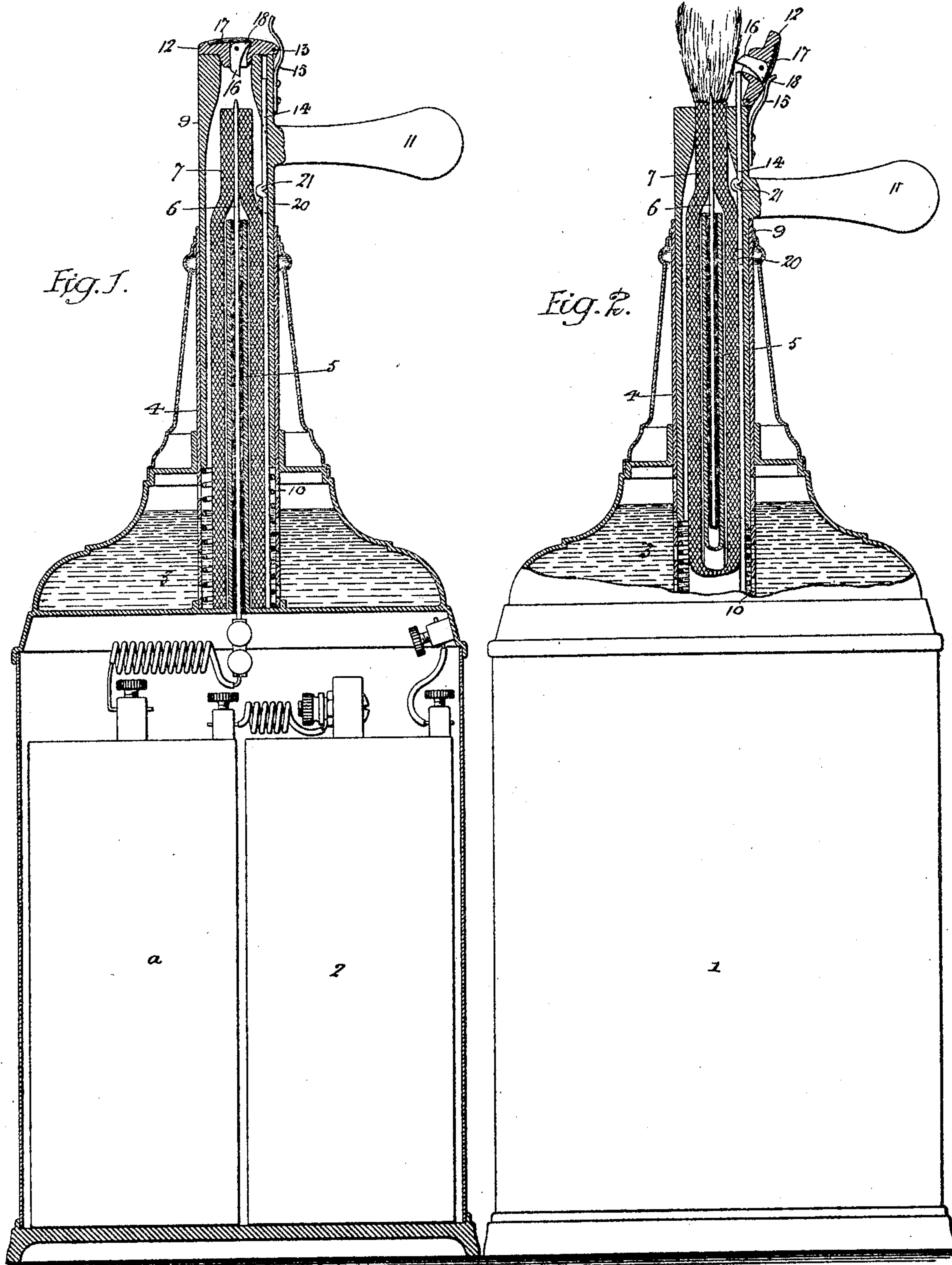


No. 797,979.

PATENTED AUG. 22, 1905.

T. S. SAYRE.  
LIGHTING DEVICE.  
APPLICATION FILED MAR. 8, 1905.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

THOMAS S. SAYRE, OF CAPE MAY, NEW JERSEY, ASSIGNOR OF ONE-HALF  
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## LIGHTING DEVICE.

No. 797,979.

Specification of Letters Patent.

Patented Aug. 22, 1905.

Application filed March 8, 1905. Serial No. 249,081.

*To all whom it may concern:*

Be it known that I, THOMAS S. SAYRE, a citizen of the United States, and a resident of Cape May, New Jersey, have invented certain Improvements in Lighting Devices, of which the following is a specification.

My invention relates to that class of lighting devices in which are employed a lamp having a wick which is ignited by an electric spark, the object of my invention being to so construct such a lighting device as to insure the ignition of the wick on each operation of the device. This object I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical sectional view of a lighting apparatus constructed in accordance with my invention and showing the parts in the inoperative position—that is to say, with the wick unlighted; and Fig. 2 is a view, partly in section and partly in side elevation, showing the parts in the operative position—that is to say, with the wick lighted.

1 represents a casing containing in its lower portion an electric-battery cell 2 and induction-coil 2<sup>a</sup> and in the upper portion a reservoir 3 for alcohol, gasoline, or other inflammable liquid, said upper portion of the casing being also provided with a central tube 4, perforated as to its lower portion, so that the inflammable fluid can gain access to the interior of the same, the tube also serving as a filling-tube for the lamp. Centrally within the tube 4 is a smaller tube 5, containing a mass of insulating material through which extends a rod 6, which is connected at its lower end to one of the poles of the electric generator, whose other pole is connected to the casing 1. The upper end of the rod 6 projects above the tube 5 and is surrounded by a wick 7, which also surrounds the tube 5 and extends down into the inflammable liquid in the reservoir 3, the top of the rod 6 projecting slightly above the top of the wick, as shown in Fig. 1.

Fitted so as to slide freely within the tube 4 is a tubular plunger 9, mounted upon a coiled spring 10, which is disposed in the lower portion of the tube 4, said plunger 9 having a projecting handle 11, whereby it can be readily depressed. The top of the plunger 9 is normally closed by a cap or cover 12, which is pivoted to one side of the plunger at 13 and is acted upon by a rod 14 and a spring 15. The rod 14 is guided in an opening in the up-

per portion of the plunger and extends down on the inside of said plunger to the bottom of the tube 4, the length of said rod 14 being such that as the plunger is depressed the upper end of the rod 14 will contact with the under side of the cap or cover 12 at a point somewhat in advance of the pivot of the same just after the upper end of the rod 6 has come into contact with the terminal which is carried by the cap. This terminal consists of a pivoted trigger 16, normally retained in the position shown in Fig. 1 by the action of a spring 17, which is secured to the top of the cap and acts upon a projecting heel 18 on the trigger. The said trigger has a beveled lower end for being acted upon by the projecting upper end of the rod 6.

When the parts are in their normal position, (shown in Fig. 1,) the plunger 9 is raised, so that its upper end is some distance above the top of the wick and also above the projecting tip of the rod 6, the terminal 16 being free from contact with the latter. By pressing down upon the handle 11 of the plunger, however, the beveled end of the trigger 16 is first caused to contact with the projecting tip of the rod 6, which laterally deflects the trigger, the sliding of one upon the other insuring good electrical contact. As the downward movement of the plunger continues the upper end of the rod 14 strikes the under side of the cap 12 and causes a quick lifting of said cap, so as to free the trigger 16 from contact with the rod 6, thus producing a spark. The upward movement of the cap 12 continues until said cap finally strikes and deflects the upper end of the spring 15, as shown in Fig. 2. When the plunger 9 is raised and its cap 12 is closed, as shown in Fig. 1, more or less gas or vapor collects in the upper portion of the plunger, and when said plunger is forced downwardly this gas or vapor is discharged and is instantly ignited when the electric spark has been formed by the separation of the rod 6 and trigger 16, thus insuring the lighting of the wick by the time the plunger 9 is fully depressed, as shown in Fig. 2. When the plunger is again permitted to rise, the spring 15 presses inwardly upon the cap or cover 12 until the latter has passed beyond the vertical line, after which it falls by its own weight and the flame of the wick is extinguished. The same results will be obtained if the plunger 9 is stationary and the lamp structure is moved.



Hence it is immaterial to the main purpose of my invention which of the parts actually has power applied to it to move it so long as there is movement of the one relatively to the other. The rod 14 passes through a yoke 20 on the inner side of the plunger 9 and has above said yoke a projecting lug 21, so that when the plunger 9 is removed from the lamp it will carry the rod 14 with it, the yoke and lug being so located, however, that they will not interfere with the depression of the plunger independently of the rod. The construction shown, however, is preferred.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. A lighting device in which are employed an electric sparking device, and a lamp and plunger movable relatively to one another, said plunger extending beyond the wick of the lamp, whereby a volume of gas or vapor will be expelled and ignited when the spark is formed, substantially as specified.

2. A lighting device in which are employed an electric sparking device, and a lamp and plunger movable relatively to one another, said plunger carrying one of the terminals of the sparking device and extending beyond the wick of the lamp, whereby a volume of gas or vapor will be expelled and ignited when the spark is formed, substantially as specified.

3. The combination, in a lighting device, of an electric sparking device, a lamp having a wick and plunger having a portion surrounding the wick and extending beyond the same, said lamp and plunger being movable relatively to one another, whereby a volume of gas or vapor is expelled when such movement is effected, substantially as specified.

4. The combination, in a lighting device, of an electric sparking device, a lamp having a wick and a plunger surrounding said wick and carrying one of the terminals of said sparking device, said plunger extending beyond the wick and said lamp and plunger being movable relatively to one another, whereby a volume of gas or vapor is expelled when such movement is permitted, substantially as specified.

5. A lighting device in which are combined an electric sparking device and a lamp and plunger movable relatively to one another, said plunger having a movable cap for closing the end of the same, and said cap carrying one of the terminals of the sparking device, substantially as specified.

6. The combination, in a lighting device, of a lamp having a wick, an electric sparking device having one of its terminals extending through and projecting above said wick, and a plunger surrounding said wick and carrying the other terminal of the sparking device, said lamp and plunger being movable relatively to one another, substantially as specified.

7. The combination in a lighting device, of a lamp having a wick, an electric sparking de-

vice having one of its terminals extending through and projecting above said wick, and a plunger surrounding the wick and having a pivoted cap which carries the other terminal of the sparking device, said lamp and plunger being movable relatively to one another, substantially as specified.

8. The combination, in a lighting device, of a casing having an oil-font, a central tube therein, an electric sparking device having one of its terminals centrally disposed within said tube, a wick surrounding said terminal and from which the terminal projects, and a plunger movable in respect to said wick and carrying the other terminal of the sparking device, substantially as specified.

9. The combination, in a lighting device, of a casing having an oil-font and a central tube therein, an electric sparking device having a terminal centrally disposed within said tube, a wick surrounding said terminal and from which the latter projects, a plunger movable in respect to the wick, said plunger being guided in the tube and mounted on a spring in the lower portion of the same, and a pivoted cap or cover normally closing the upper end of said plunger, and carrying the other terminal of the sparking device, substantially as specified.

10. The combination, in a lighting device, of a lamp, an electric sparking device, a plunger movable relatively to the lamp and having a pivoted carrier for one of the terminals of said sparking device, a rod for raising said carrier as the plunger is moved in one direction and a spring for restoring the carrier when the movement of the plunger is reversed, substantially as specified.

11. The combination, in a lighting device, of a lamp, an electric sparking device having a fixed terminal and a movable terminal, a plunger movable relatively to the lamp and having a pivoted carrier for said movable terminal, a rod for raising said carrier, and means for restoring same, said rod bearing such relation to the carrier that it will not act upon the same until the terminal carried thereby has been moved into contact with the fixed terminal, substantially as specified.

12. The combination, in a lighting device, of a lamp, an electric sparking device, a plunger movable relatively to the lamp, and having a pivoted carrier for one of the terminals of said sparking device, a rod for raising said carrier as the plunger is moved in one direction, and means for engaging said rod with the plunger, whereby it will be removed with said plunger, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOS. S. SAYRE.

Witnesses:

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