F. EVANS.

FLASH LIGHT.

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1,411,615. Patented Apr. 4, 1922.

Fig. 1.

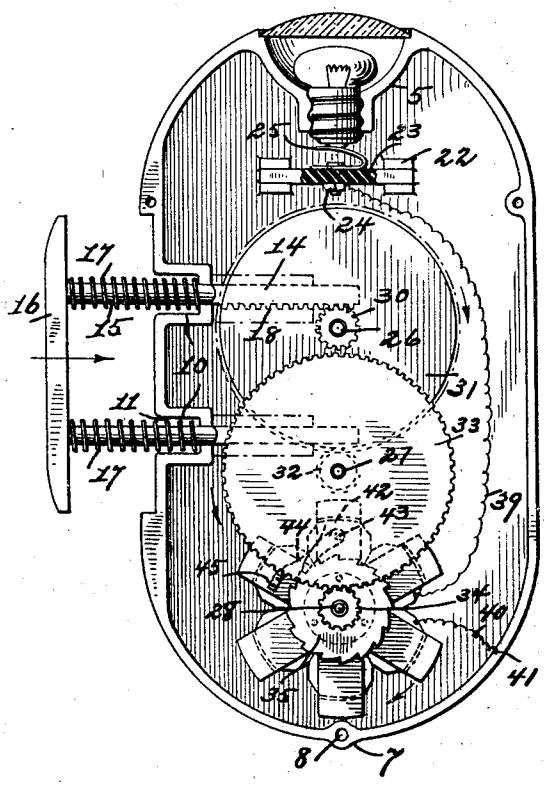
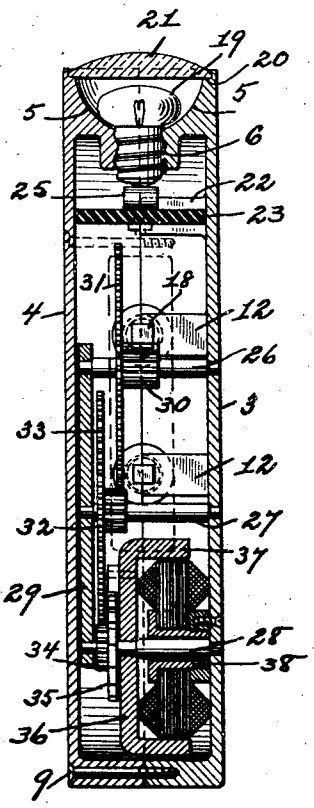


Fig. 2.



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UNITED STATES PATENT OFFICE.

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FLASH LIGHT.

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To all whom it may concern:

Be it known that I, FRED EVANS, a citizen of the United States, residing in the city of Summit, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Flash Lights, of which the following is a full, clear, and exact description.

This invention relates to pocket flash-lights, and it consists in certain constructions and in the arrangement and combination of parts hereinafter described and claimed.

Among the salient objects of the invention are: to provide a novel casing structure cast in two complementary sections, each having an equal portion of a lamp reflector and socket; to construct and arrange the parts so that they may be supported entirely by one section, leaving the other free for ready removal; and to provide a finger rest or piece extending longitudinally of the casing as an agency through which conveniently to actuate the working parts as the structure is carried in the hand.

For a full understanding of the invention, reference is to be had to the following description and the accompanying drawing, in which:—

Fig. 1 is a view in front elevation of my improved flash-light, the front casing section being removed; and

Fig. 2 is a central longitudinal cross-section of the same.

As shown in the drawing, my invention includes a casing of oblong form, the sides thereof having an undeviating direction, while the ends are sharply rounded. This casing is cast in two complementary sections, of which 3 represents the back section to which the working parts are attached, and 4 the removable front section. Each section at the top end is cast with one-half of a reflector 5 having a central lamp socket 6. The meeting edges of the sections are cast with certain corresponding reinforced regions as 7, designed to have screw-threaded openings as 8, for the reception of the screws 9, whereby the sections are secured together. At one side, the sections are cast with cylindrical indentations 10, to provide the sockets 11, as shown and in plan with these sockets, the back plate 3 is cast with forwardly projecting ledges 12. Slidably held in said ledges and guided thereby are the bars 14, formed with outer rounded portions 15, which extend through the socket indentations, and to the outer ends of which is secured a finger plate or rest 16. Coiled around the portions 15 and confined between the bottoms of the socket indentures and the finger plate 16 are the springs 17, which normally hold the bars drawn into outward position as shown. The top bar is provided with rack teeth 18, whereby to impart to a train of gears any movement of the finger piece 16, as will presently appear.

The cast reflector 5 is of concave form outwardly as shown, and the same forms a chamber for the incandescent lamp 19, which is screw-threaded into the socket 6. The rim of the reflector is provided with an annular recess 20, in which is set a lens 21, designed to intensify the rays of light. Below the socket 6, the back plate 3 is cast with forwardly projecting lugs 22, in which is secured a plate 23 of non-conducting material. On this plate is secured by a binding post 24, a conducting spring 25, designed to engage a terminal of the lamp base.

Below the non-conducting plate 23, the working parts are supported on the arbors 26, 27 and 28, arranged in parallelism, transversely of the casing, with their rear ends operatively secured in the back section 3, and their forward ends similarly secured in a plate 29, held to gauge so as to lay flat on the front plate 4. In mesh with the rack bar 18 is a pinion 30, which is fast with the gear wheel 31 on the arbor 26. Engaged with the gear wheel 31 is a pinion 32, which with the gear wheel 33 is fast on the arbor 27. The gear wheel 33 imparts its movement to a pinion 34, fast with the ratchet wheel 35 on the arbor 28.

The speed multiplying gearing thus arranged, is designed to spin a permanent magnet 36, having branches 37 extending about a generator, consisting of armatures, coil wound in series, and attached to a sleeve guard 38, surrounding the arbor 28 and made rigid with the back section 3. One end 39 of the winding extends to the non-conductor 23 where it is secured under the binding post 24; the other end 40 thereof is grounded on the casing at 41, the return to 41 being effected through the lamp base and the casing. The operating connection between the ratchet 35 and the magnet 36 consists of a pawl 42, pivoted at 43 to a magnet

branch in position to engage the teeth of the ratchet; so that when the finger rest 16 is pressed toward the casing, the train of gears will be actuated, turning the ratchet against the pawl and thereby spinning the magnet. On the other hand, when under the influence of the spring 17, the finger rest 16 is moved outwardly, the gearing train will be actuated reversely without spinning the magnet, since the paw in this instance rises over the ratchet teeth. The pawl is normally urged into engagement with the ratchet teeth by a spring 44, attached to one of the magnet branches at 45.

According to an important feature of my invention, no separate parts are required for the lamp chamber, reflector or lamp socket, since these parts are provided for by casting one-half of them with each complementary section. According to another important feature, all the parts are fashioned and arranged in such manner that they are maintained and held by the back section, so that by removing the screws 9, the front section may be readily removed without disturbing or disassembling any of the parts.

In practice, the lamp is held in one hand, and by means of either the thumb or the fingers, pressure is exerted on the finger rest 16, with the result that the magnet will be spun around, causing the lamp to glow.

Having thus described my invention, what I claim is:—

1. In a pocket flash-light, the combination with longitudinally separable sections cast at one end with half-reflector and socket sections, of an incandescent lamp engaged in the socket, a plate formed with one of the separable sections for carrying a current-generator connected in circuit with the lamp, a spring-pressed impelling element projecting from the side of the sections, and adapted to be actuated by the hand grasping the sections, and means which are operable by the impelling element, carried by said plate for actuating the current generator.

2. In a pocket flash-light, the combination with longitudinally separable sections cast at one end with half-reflector and socket sections, of an incandescent lamp engaged in the socket so formed, a plate formed with one of the separable sections and carrying a current-generator connected in circuit with said lamp, a spring-pressed impelling device projecting from the side of the sections and comprising rods one of which within the sections merges into a rack bar, a finger rest for said rods, and means carried on said plate and operable by said rack bar for actuating the generator.

3. In a pocket flash-light, the combination with longitudinally separable sections cast at one end with half-reflector and socket portions, of an incandescent lamp threadedly engaged in the socket so formed, a plate formed with one of the separable sections and carrying a current-generator connected in circuit with said lamp, a spring-pressed impelling device projecting from the side of the section and comprising rods which within the sections merge into bars and one of which is a rack-bar, a finger rest for said rods and by which to actuate the same by the hand grasping the sections, means cast on the frame forming section for guiding said rods, and means carried on said plate and operable by said rack-bar for actuating the generator.

4. In a pocket flash-light, the combination with longitudinally separable casing sections cast with rounded ends and with half-reflector and socket portions in one end and also with half-socket indentations at one side, of an incandescent lamp threadedly engaged in the lamp socket, a plate formed with one of the separable sections and connected thereto by arbors, a current-generator carried by said frame in the other rounded end and connected in circuit with the lamp, rods extending through the socket indentations and connected exteriorly by a finger rest, springs coiled around said rods and confined between said sockets and said rest, and means carried on said plate and operable by one of said rods for actuating said generator.

This specification signed and witnessed this eighth day of March, 1920.

FRED EVANS.

Witnesses:
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