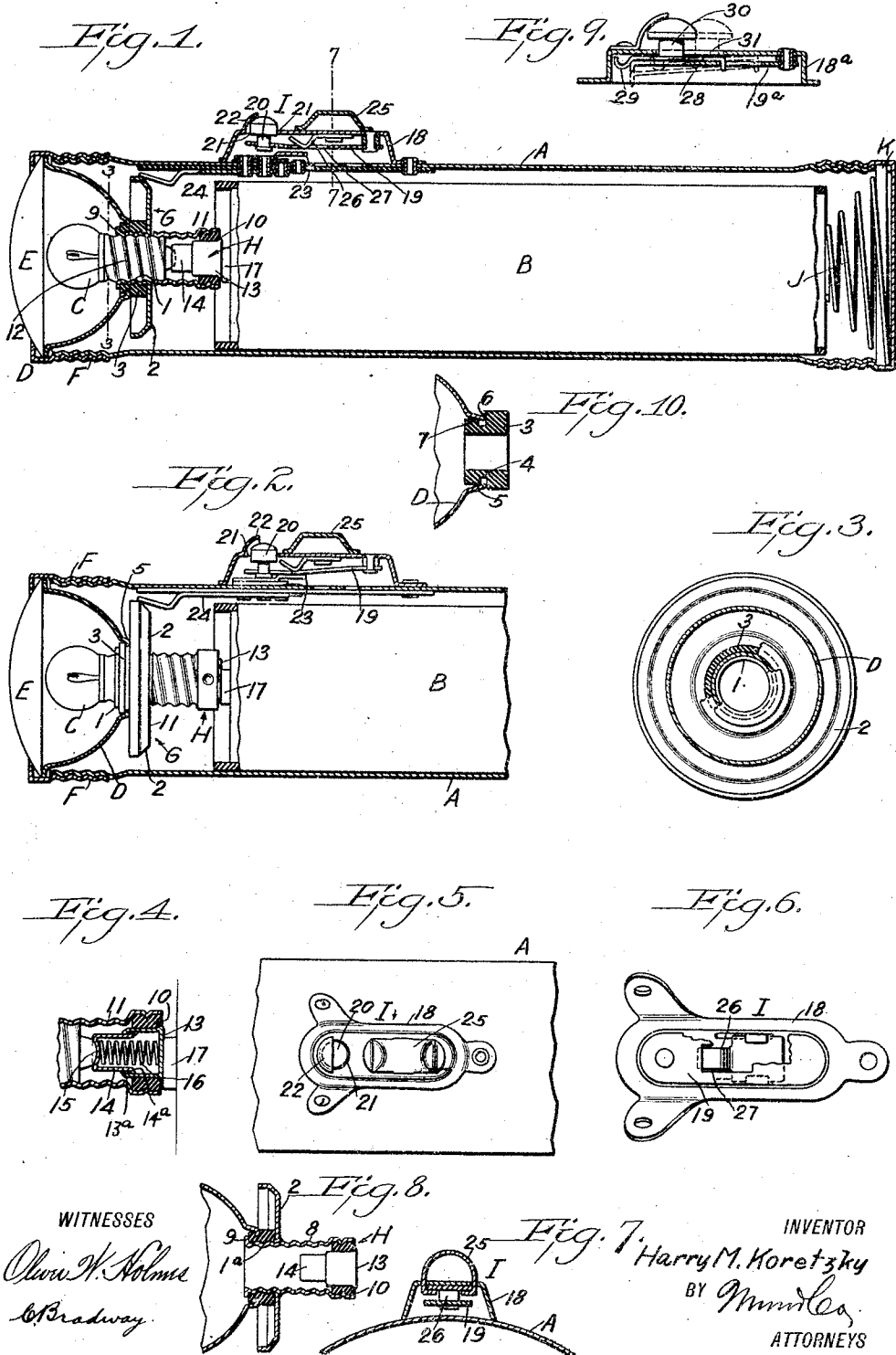


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FLASH LIGHT.
APPLICATION FILED MAY 10, 1918.

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UNITED STATES PATENT OFFICE.

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FLASH-LIGHT.

1,296,404.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HARRY M. KORETZKY, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Flash-Light of which the following is a full, clear, and exact description.

This invention relates to flashlights, and has for its general objects to provide an improved means for attaching the reflector to its holder, and improved means for providing contact between the central terminal of the battery and the central contact of the lamp and at the same time removing the thrust of the battery on such central terminal; and an improved switch for closing the circuit continuously or intermittently.

With such and other objects in view, the invention comprises various novel features of construction and arrangement of parts which will be set forth with particularity in the following description and claims appended hereto.

In the accompanying drawing, which illustrates certain embodiments of the invention and wherein similar characters of reference indicate corresponding parts in all the views,

Figure 1 is a central longitudinal section of a flashlight;

Fig. 2 is a similar view showing the switch closed for continuous lighting;

Fig. 3 is a detail sectional view on the line 3—3 Fig. 1;

Fig. 4 is a sectional view of the combined contact and thrust-resisting device between the battery and lamp;

Fig. 5 is a plan view of the switch shown in Fig. 1;

Fig. 6 is a bottom view thereof;

Fig. 7 is a sectional view on the line 7—7, Fig. 1, shown on an enlarged scale;

Fig. 8 is a detail view of a modified form of lamp holder;

Fig. 9 is a longitudinal section of a modified form of switch;

Fig. 10 is a detail view showing the manner of attaching the reflector to its insulating bushing.

Referring to the drawing A designates the casing of the flashlight, B the battery, C the lamp, D the reflector, E the lens, F the lens-

holding cap screwed onto the casing, G the lamp-holding means, H the contact and thrust-resisting device, I the switch, J the battery spring, and K the rear cap of the casing.

The lamp C is screwed into a threaded metal socket 1 of the holder G, which socket, as shown in Fig. 1, is integral with the contact disk 2, and surrounding the socket is a bushing 3 of insulation to which the reflector is attached. This bushing 3 is constructed with an annular groove 4 into which the central flange 5 of the reflector D is upset. A shoulder 6 is provided at the rear side side of the groove 4, and the bushing is reduced at 7 in front of this shoulder so that it will just enter the opening of the reflector. The rear edge of the flange 5 engages the shoulder 6, as shown in Fig. 10, and by forcing the bushing into the reflector by means of suitable dies the flange of the reflector is bent inwardly and locks in the groove 4.

According to the construction shown in Fig. 8, the socket 1^a has a tubular extension 8 which projects beyond the contact disk 2, and serves as a means for holding the contact and thrust-resisting device H, and in this case the disk 2 is separate from the lamp socket and is soldered thereto. To hold the bushing and lamp socket firmly together in the form shown in Figs. 1 and 8, the forward edge 9 of the lamp socket is flanged outwardly over the bushing.

The contact and thrust-resisting device H comprises a ring of insulation 10 anchored in a thimble-like member 11 which screws on the threaded base 12 of the lamp C, and in the ring 10 is anchored a thimble-like member 13 which has an axially movable follower 14 which engages the central contact 15 of the lamp, there being a spring 16 for urging the follower into engagement with the contact 15. The central terminal 17 of the battery bears against the member or contact 13 and current flows through the latter and follower 14 to the contact 15 of the lamp. The central terminal of the battery by engaging the fixed contact 13 is prevented from exerting a thrust on the lamp and injuring the latter. According to the arrangement shown in Fig. 8 the insulating ring 10 is anchored in the rear end of the tubular

extension 8, so that the screw member 11 shown in Figs. 1 and 4 is dispensed with. Interengaging flanges 13^a and 14^a prevent the contact member 14 from becoming detached.

The switch I comprises a housing 18 riveted to the casing A, and fastened in the housing is a spring contact 19 which has a pushbutton 20 fastened thereto, such pushbutton projecting out of an opening 21, at one edge of which is a guard 22 forming part of the housing 18, so that the pushbutton is prevented from accidentally coming in contact with an object, as when the flashlight is placed in a kit of tools, container or other holder. Fastened to the casing and located under the spring contact 19 is a fixed contact 23 which is electrically connected with a contact 24 arranged within the casing A and engaging the contact disk 2. On the outside of the housing 18 is a slide button 25 which is connected with a cam member 26 arranged within the housing, the cam being disposed in a slot 27 in the spring 19 and is movable into engagement with one end of the slot when the slide button 25 is moved toward the pushbutton, whereby cam action on the spring contact 19 will move the latter into engagement with the contact 23 and hold the circuit continuously closed, as clearly shown in Fig. 2.

In the switch shown in Fig. 9 the housing 18^a contains a spring contact 19^a on which is a slide 28 formed with a cam 29, and this slide has a button 30 projecting out of a slot 31 in the housing 18^a. When the button is in the full-line position, Fig. 9, it can be pressed to move the spring contact 19 to circuit-closing position for intermittent flashing of the lamp, but when the pushbutton is moved laterally to the dotted-line position the cam 29 of the slide rides on the top surface of the spring contact 19^a and moves the same to closed-circuit position, as shown by dotted lines, for continuous lighting of the lamp.

From the foregoing description taken in connection with the accompanying drawing, the advantages of the construction and method of operation will be readily understood by those skilled in the art to which the invention appertains, and while I have described the principle of operation, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative and that such changes may be made when desired as fall within the scope of the appended claims.

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

1. In a flashlight, the combination of a reflector having an opening and a flange at the opening, with an insulating bushing

in one piece fitting in the opening and having an annular groove into which the flange is upset to permanently connect the bushing with the reflector.

2. In a flashlight, the combination of a reflector having an opening and an annular flange at the opening, with a bushing having an annular groove with a shoulder at one side of the groove, and reduced from the groove to the end of the bushing in a direction opposite from the shoulder, the reduced end of the bushing being inserted in the opening of the reflector, and the flange of the latter being upset into the groove of the bushing.

3. In a flashlight, the combination of a lamp, a lamp holder, a battery, and a combined contacting and thrust-resisting device between the lamp and battery, said device comprising a tubular member and an insulating member attached thereto, and relatively movable spring-pressed parts carried by the insulating member and arranged within the tubular member.

4. In a flashlight, the combination of a lamp, a lamp holder, a battery, a tubular member extending from the holder toward the battery, an insulating member in the tubular member, a fixed contact carried by the tubular member and arranged to engage the central terminal of the battery, a movable contact carried by the said fixed contact and arranged to engage the central contact of the lamp, and spring means between the fixed and movable contacts for urging the latter toward the lamp.

5. In a flashlight, a device for electrically connecting the central terminal of a battery with the central contact of a lamp and for resisting the thrust of the battery on the lamp, said device comprising a supporting means including an insulating member, a fixed contact carried by the said member, a movable contact slidably mounted in the fixed contact, and spring means compressing on the movable member.

6. In a flashlight, a device for electrically connecting the central terminal of a battery with the central contact of a lamp and for resisting the thrust of the battery on the lamp, said device comprising a supporting means including an insulating member, a fixed contact carried by the said member, a movable contact slidably mounted in the fixed contact, spring means compressing on the movable member, and interengaging flanges on the fixed and movable contacts to permanently connect the same together.

7. In a flashlight, the combination of a reflector, a tubular member having one end connected with the reflector and insulated therefrom to form a lamp socket, a thrust-resisting device disposed in the tubular member and insulated therefrom, and a

yielding contact within the tubular member and carried by the thrust-resisting device.

8. In a flashlight, the combination of a lamp, a battery, a lamp socket in which the lamp is mounted, a contact disk connected with the socket, said socket having a tubular portion extending rearwardly from the disk, and means carried by the rearwardly-extending portion of the lamp socket to form a contact means between the central contacts of the lamp and battery.

9. The combination of a reflector having an opening and a flange at the opening, a lamp socket of smaller diameter than the opening and extending through the same, a contact member associated with the socket and a bushing made of a single piece of insulating material for insulating the contact member and socket from the reflector, said bushing having an external annular groove into which the edge of the flange of the reflector is upset.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."