Oct. 14, 1930. B. ROGGE 1,778,039

PORTABLE ELECTRIC LAMP

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Fig. 1.

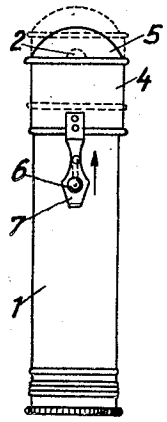


Fig 2.

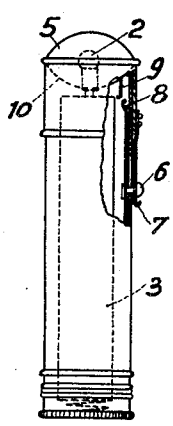


Fig. 3.

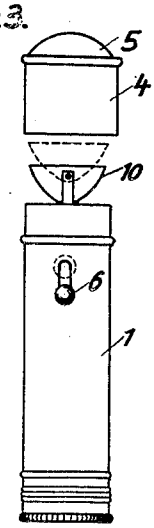


Fig. 4.

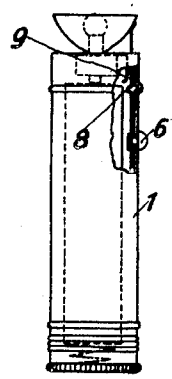


Fig. 5.

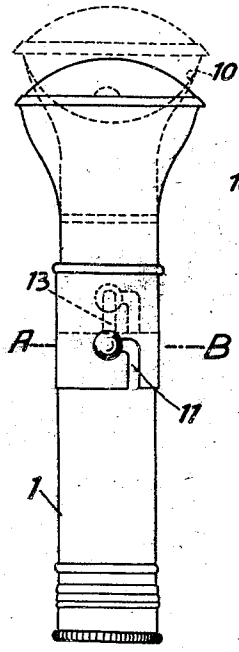


Fig. 6.

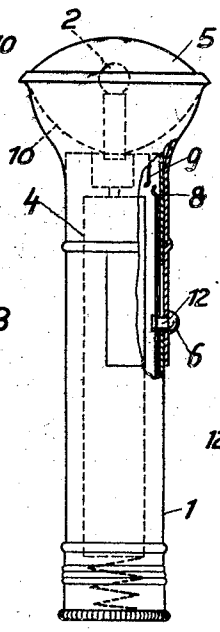
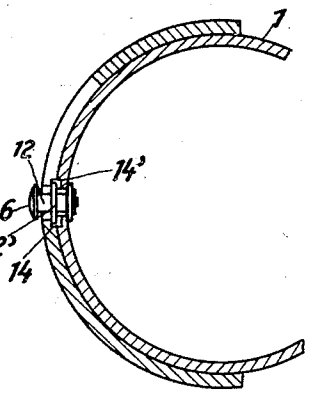


Fig. 7.



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Fig. 8.

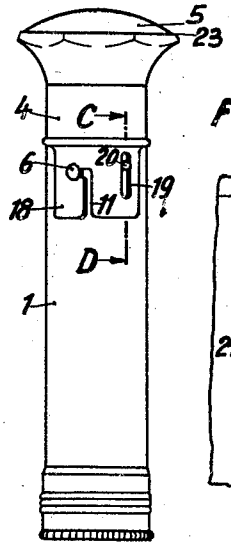


Fig. 9.

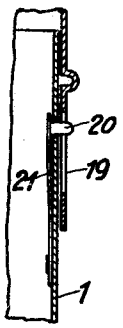


Fig. 11

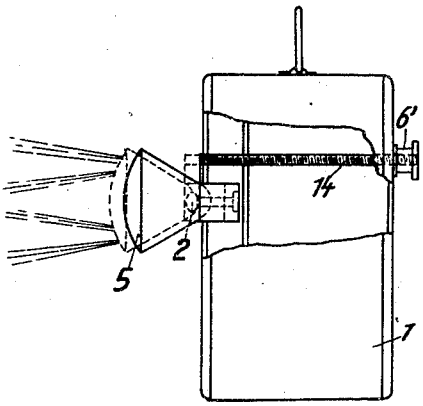


Fig. 10.

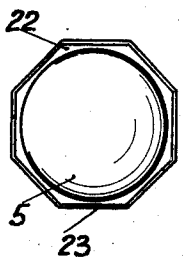
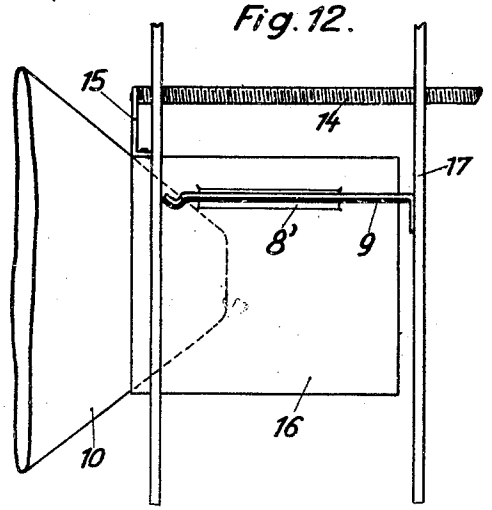


Fig. 12.



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Patented Oct. 14, 1930 1,778,039

UNITED STATES PATENT OFFICE

BERNHARD ROGGE, OF BERLIN, GERMANY

PORTABLE ELECTRIC LAMP

Application filed June 5, 1928, Serial No. 283,040, and in Germany August 2, 1927.

This invention relates to the casings of portable electric lamps with adjustable focus and has for its object to simplify both the manipulation and the internal construction of such lamps. For simplifying the manipulation, means are provided whereby the adjustment of the focussing effect, i. e., the alteration of the beam of rays, can be effected by means of the contact making switch member, so that the lamp need no longer be operated with both hands, but is capable of being focussed and switched off with one hand only. For simplifying the construction of the lamp, such a part of the casing is used as the slidable part for focussing the beam of rays as will not entail any complication in the internal arrangement of the lamp for maintaining the contact during the adjusting operation.

The invention consists more particularly in this, that the reflector or the top cap or both are connected to the switch member and are capable of being slid together with the same. This provides the two advantages referred to above over portable lamps of the known kind, in which the incandescent lamp is slidable together with the switch member, namely the simple construction and simplified manipulation not found in the known lamps.

In the accompanying drawing several constructional examples of the lamp according to the present invention are illustrated. Fig. 1 is a side elevation of one constructional form of lamp, Fig. 2 a side elevation partly in section at 90° to Fig. 1. Figs. 3 and 4 and Figs. 5 and 6 show corresponding views of two other constructional forms. Fig. 7 is a section to an enlarged scale on line A B of Fig. 5. Fig. 8 is a side elevation of a fourth constructional form, Fig. 9 a partial section to an enlarged scale on line C D of Fig. 8 and Fig. 10 a plan view of Fig. 8. Fig. 11 shows a view, partly in section of a fifth constructional form and Fig. 12 is a detail of Fig. 11 to an enlarged scale.

In the constructional form shown in Figs. 1 to 7, on the main part 1 of the casing, which contains the incandescent lamp 2 and the battery 3, the top cap 4 with the covering disc 5 is longitudinally slidable. This covering disc 5 may be either a lens or in many of the constructional forms a simple disc of glass or the like, which has no effect on the direction of the rays of light. In all these constructional forms the switching member has the form of a knob 6 located at the side of the part 1 of the casing and capable of being slid longitudinally of the casing.

In the lamp shown in Figs. 1 and 2 the connection between the top cap 4 and the knob 6 is established in accordance with the invention in a simple manner by a strip 7 which can be slipped resiliently over knob 6. On the knob 6 beng pushed upward, the contact spring 8 which is connected to it will make contact, shortly after the commencement of the motion of the knob, with the second contact spring 9 and will close the circuit. During the further displacement of the knob 6 the contact will remain closed, as the springs 8, 9 remain in contact with one another (Fig. 2). As long as the sliding motion of the knob 6 continues, the cap 4 with the covering disc 5, which in the present instance influences the beam of rays and must therefore be a lens, will take part in the sliding motion, thereby causing the shape of the beam to change. The reflector 10 is fixed to the part 1 of the casing and does not take part in the displacement of the cap 4.

In the constructional form shown in Figs. 3 and 4 the reflector 10 is slidable (see Fig. 3). For this purpose the reflector is fixed to the contact spring 8 which is attached to the knob 6. The manner in which this lamp operates will be readily understood from the drawing. The cap 4 with the covering disc 5 which in this case need not be a lens is simply slipped on to the part of the casing and does not take part in the displacement.

In the lamp shown in Figs. 5 to 7 the reflector 10 is fixed to the top cap 4. The cap is connected to the part 1 of the casing by means of a bayonet catch device 11. On sliding the knob 6 with the contact spring 8 which coacts with the second contact spring 9 and during the whole duration of

the sliding motion of the knob 6 remains in contact with the said spring 9, the cap 4 with the covering disc 5, which need not be a lens, and with the reflector 10 is displaced relatively to the incandescent lamp 2.

A particular advantage of this constructional form is that when the incandescent lamp 2 is switched on, the top cap 4 is locked to the part 1 of the casing, so that it cannot slip down inadvertently. This locking of the parts is effected by the shank 12 of the knob 6 being provided with a collar 12′ which is capable of engaging in a recess 14 at the end of a transverse arm of the slot 11. When the lamp is switched off, the collar 12′ can be pushed into a recess 14′ in the casing 1, whereupon, by turning the cap 4 and then withdrawing it, the cap can be removed from the casing 1. When the knob 6 with the cap is slid longitudinally of the casing for switching on the lamp, the collar 12′ can no longer be pressed into the recess 14′, so that the cap is locked. For the rest through the use of the bayonet catch arrangement 11 the cap 4 is secured from being inadvertently turned off, even in the position shown in Figs. 5 and 6 in full lines, through those parts of the cap 4 which are near the knob 6, 12 being under a certain tension, as long as the cap is being slid over the knob and has not as yet reached its end position, which tension is released in the said position by the provision of the small recess 14 (Fig. 7).

In the constructional form shown in Figs. 8 and 9 an apron 18 is provided on the lens cap 4, a crank slot 11 in which engages over the contact knob 6 of the torch. The apron 18 contains a second slot 19, in which a locking pin 20 engages. This locking pin is supported by a spring 21 within the casing and can therefore be forced out of the slot 19 for the purpose of taking off the cap 4. For taking off the lens cap, it is grasped with one hand, the locking pin 20 being pressed into the casing by one finger of the same hand. As the outer end of the pin is rounded, the cap can first be turned about the axis of the casing, whereupon, after the knob 6 has entered the axially directed part of the slot 11, the cap with the lens can be withdrawn.

To prevent the lens turning in the cap, when the latter is being removed, which would tend to loosen it, the otherwise round lens has an octagonal flange 22, which fits exactly into the octagonal flange 23 of the lens cap 4.

In the lamp shown in Figs. 11 and 12 which is intended to be used more particularly for a stand lamp but can also be suspended to a bicycle or the like, the switch member 6′ is in the form of a screw nut with a spindle 14. To the spindle 14 the reflector 10 with the covering disc 5 is fixed by means of an angle piece 15. At the rear end of the reflector 10 is a cylinder 16 on which is a contact 8′ in the form of a rail, the second contact 9 which is in the form of a spring being fixed to a partition 17 in the casing 1. On the nut 6′ being turned, the spindle 14 with the reflector 10 and the parts fixed to the same is displaced. This movement of the parts first establishes contact between the contact members 8′ and 9 and then influences the beam of rays emanating from the incandescent lamp 2 in the manner indicated in Fig. 11. In this lamp as well, the establishment of the contact and the alteration in the cone of rays by means of the switch member 6′ is effected with only one hand.

What I claim is:

1. A portable electric lamp comprising in combination a casing, an incandescent lamp fixed with respect to the casing, a covering cap on the casing, a lens mounted on said cap for concentrating the light emitted by the said incandescent lamp along a beam and a contact-making switch member capable of shifting the said cap relatively to the incandescent lamp, as and for the purpose set forth.

2. A portable electric lamp comprising in combination a casing, an incandescent lamp fixed with respect to the casing, a covering cap on the casing, means for concentrating the light emitted by the said incandescent lamp along a beam, a contact-making switch member capable of shifting the said means relatively to the incandescent lamp, an extension on the said lens cap extending over the said switch member, a slot in the said extension and a pin on the casing capable of engaging in the said slot for locking the said lens cap in position, as and for the purpose set forth.

In testimony whereof, I have signed my name to this specification this 6th day of March, 1928.

BERNHARD ROGGE.