Dec. 20, 1938. A. B. SCOTT 2,140,855

AUTOMOBILE LAMP

Filed Dec. 19, 1936

Fig. 1

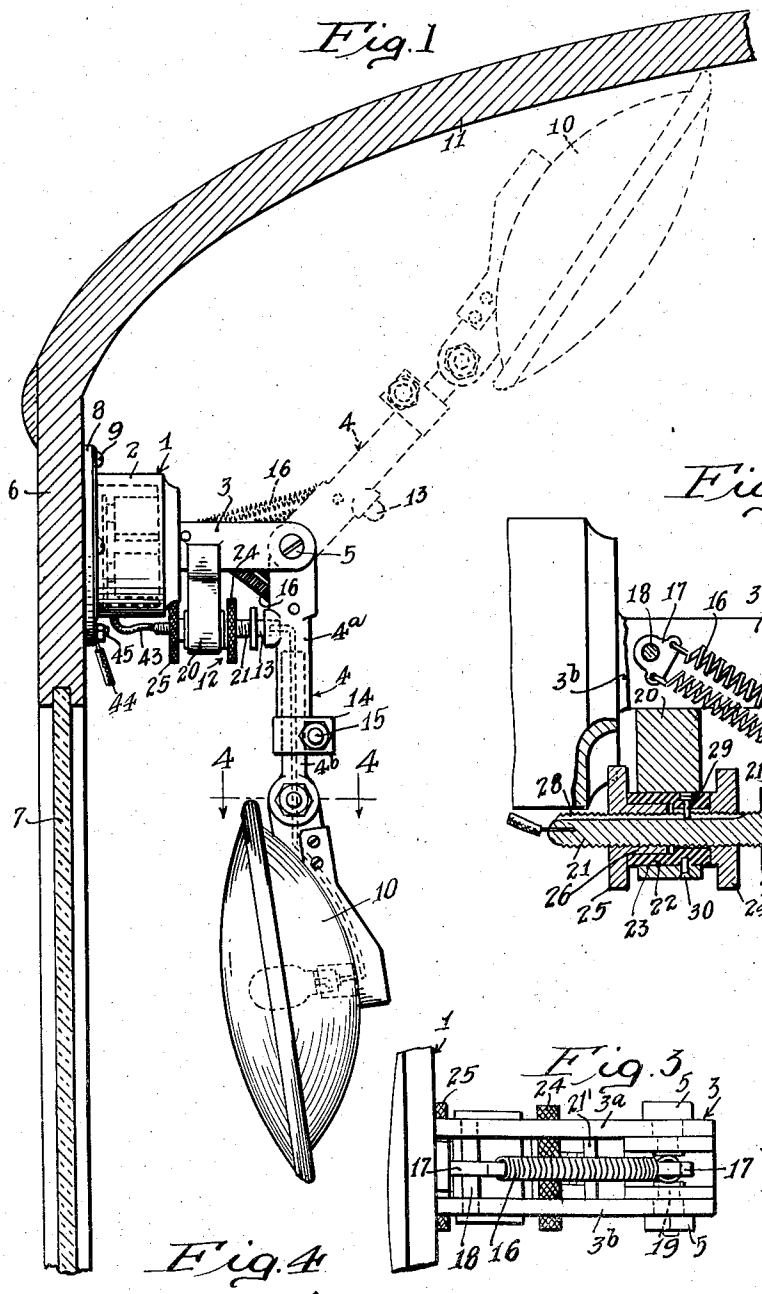
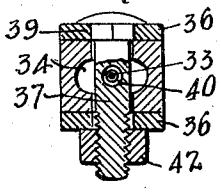


Fig. 2

Fig. 3

Fig. 4



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AUTOMOBILE LAMP

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6 Claims. (Cl. 240—7.1)

This invention relates to a lamp having a special construction adapting it to be carried in an automobile. While the lamp may be used for any special purpose, it is intended particularly to be used as a red lamp on police automobiles. It is desirable that such lamps on police automobiles should be held in a position so that they are not visible, but so that they can be immediately brought into an active position in which they will cast the beam ahead of the car. Due to the fact that such lamps are used in automobile bodies having considerable variation in design, it is found in practice that in some cars the lamps should be attached in one position, and in other cars in another position.

The general object of this invention is to produce a lamp of this type having characteristics of construction, which will enable the lamp to be carried normally in an inactive position, but quickly brought forward or down into an active position, and to provide the construction with means for automatically closing the circuit through the lamp when the lamp-carrying arm is in its active position.

A further object of the invention is to construct the device in such a way that in the active position of the lamp the lamp arm is held resiliently or yieldingly against a stop, which stop carries a contact means for completing the circuit through the lamp.

A further object of the invention is to construct this contact stop in such a way as to enable it to cooperate with the lamp arm to regulate the direction of the beam from the lamp.

In the preferred embodiment of the construction, the lamp arm is hingedly connected with the bracket, or post, and resilient means is employed attached to the bracket and to the arm near the hinge connection. With this arrangement the resilient means will hold the lamp arm either in its active, or its inactive position. One of the objects of the invention is to provide improved construction for this resilient means, which will operate to develop a considerable yielding pull in holding the lamp arm against the contact stop.

Further objects of the invention will appear hereinafter.

The invention consists in the novel parts and combination of parts to be described hereinafter, all of which contribute to produce an efficient automobile lamp.

A preferred embodiment of the invention is described in the following specification, while the scope of the invention is pointed out in the appended claims.

In the drawing:

Fig. 1 is a vertical section taken through the forward end of an automobile body adjacent the upper edge of the windshield, these parts being broken away. This view illustrates my improved lamp in side elevation in its active position, and also illustrates the lamp in its inactive position in dotted lines.

Fig. 2 is a vertical section taken on the axis of the lamp bracket, and showing a portion of the base of the bracket broken away, and also partially in section. This view also shows a portion of the lamp arm in section to illustrate details of its construction, and also shows the contact stop in vertical section.

Fig. 3 is a top plan view of the bracket and arm in the relation shown in Fig. 2, and showing a portion of the base of the bracket broken away.

Fig. 4 is a cross section on the line 4—4 of Fig. 1, upon an enlarged scale, and particularly illustrating the connection between the end of the arm and the lamp casing.

Referring more particularly to the parts, and especialy to Fig. 1, 1 indicates the lamp bracket, which, in the present instance preferably includes a holow or chambered base 2 from which a post 3 extends outwardly. This bracket carries a lamp arm 4, which is hingedly attached to it preferably by a pivot connection or pin 5. In practical use the lamp bracket may be attached at any convenient point within the car, but in the present instance it is illustrated as attached to the forward wall 6 of the car above the windshield 7. In order to facilitate making this attachment, the base 2 may be provided with a flange 8 through which screws or bolts 9 are applied. Between the bracket 1 and the arm 4 I provide yielding means for holding the arm in an elevated inactive position as indicated in the dotted lines in Fig. 1, or in an active depressed position shown in full lines. In the elevated position the arm holds the lamp casing 10 out of the way near or against the roof or top 11 of the car. In the depressed position the lamp casing 10 will be held in line with the windshield, so that the beam of light from the lamp will be cast through the windshield and forward of the car.

In the active position the yielding means referred to holds the arm 4 against stop means indicated generally by the reference numeral 12, and this stop means also constitutes contact means to engage contact means 13 on the lamp arm, so as to form an energizing circuit through the lamp in this position of the arm. This contact means 12 is preferably mounted so that

it is adjustable, thereby enabling the direction of the beam from the lamp to be regulated. This adjustment, of course, in the present instance, will adjust the beam in a vertical plane.

In order to enable the beam from the lamp to be adjusted in a horizontal plane, and also to enable the lamp arm to be lengthened thereby enabling the device to be adapted to various conditions in cars, I prefer to form the arm 4 with a body section 4a, which is preferably of tubular form, and within which an extension or stem 4b is received. This stem 4b can swivel in the tube 4. The end of the tube 4a is preferably slotted or split, as indicated in Fig. 2, and provided with oppositely disposed lugs 14 connected by a clamping bolt 15. It will be evident that by loosening up this bolt the arm 4b can be swiveled on its longitudinal axis, and adjusted in or out as may be desired.

The yielding means for holding the lamp arm resiliently in either position, may consist of a single coil spring, but preferably comprises a pair of coil springs 16, the ends of which are attached to spring headers 17 that are pivotally attached on pins 18 and 19 mounted respectively between the forks 3a and 3b that form the post 3 (see Fig. 3). By employing two springs in this way, it will be evident that in the lower position of the arm the lower spring is most effective in holding the arm against the contact means 12, and in the upper position the upper spring 16 is most effective in holding the arm in its elevated position. This mode of operation arises by reason of the fact that in the lower position the lower spring will be at a greater distance than the upper spring from the pivotal axis of the pin 5, and vice versa.

The contact means 12 is shown in detail in Fig. 2 in longitudinal section. This contact means is preferably mounted in a lug 20 that extends laterally and preferably downwardly from the forks 3a to which it is integrally connected when the bracket 1 is cast. The contact means preferably includes a contact screw 21, which is mounted for longitudinal adjustment in the lug 20, and preferably along a line substantially parallel with the longitudinal axis of the post 3. In the present instance I prefer to mount this contact screw 21 in an insulated bushing 22 that is secured in a socket 23 at the lower end of the lug 20. Any suitable means may be employed for effecting the longitudinal adjustment of this contact screw to alter the position of the arm 4 in its active position. For this purpose the contact screw 21 is preferably provided with means for preventing it from rotating, and it has sufficient length to extend at both ends beyond the end faces of the lug 20. On one end it is provided with an adjusting thumb nut 24, which has threaded engagement with the threads of the screw 21, and at the other end another thumb nut 25. If desired, the latter thumb nut 25 may have an integral sleeve 26 that is guided in the bushing 22. This enables the nut 25 to give a better support for the adjacent end of the contact screw. The other end of the contact screw is preferably provided with an enlarged head 21' having a dished or concave contact face 27 on its outer side to engage the contact 13 carried by the arm. This contact 13 preferably has a rounded nose for engaging the face 27 (see Fig. 2). By reason of the concave face 27 and the convex nose of the contact 13, a sufficient area of contact will result.

In order to prevent the contact screw 21 from rotating, it is preferably provided with a longitudinal groove 28 that receives a pin 29 extending in through the side of the bushing, the head of this pin 29 being countersunk into the bushing so that it is not in contact with the lug 20. The pin or rivet 30 may be provided for securing the insulating bushing 22 within the lug.

The contact means, or contact 13, is preferably mounted in an insulating bushing 31 received in a socket 32 formed in the side of the arm body 4a (see Fig. 2) and from the back of the contact 13 an insulated wire 33 leads through the stem 4b, which is also tubular, to carry the current into the lamp. Beyond the inner end of the stem 4b a small chamber 34 is formed to receive a few coils 35 formed in the insulated wire 33. These coils enable the arm to be extended without straining or breaking the wire 33.

If desired, the lamp casing 10 may be rigid with the extension 4b of the lamp arm, but I prefer to attach it to the extension 4b by a pivot joint. For this purpose I prefer to provide the lamp casing with a pair of lugs 36 between which the end of the extension 4b is received. Through the lugs and the end of the extension, a bolt 37 passes, said bolt being preferably of the carriage bolt type, and having an angular or square shank 38 received in a correspondingly formed socket 39 in one of the lugs 36 (see Fig. 4). This will prevent the bolt from rotating in such a way as to break the wire 33, which passes through a transverse opening 40 drilled through the shank of the bolt. The end of the stem 4b adjacent the lugs is preferably formed into a rounded hollow head, and the wall of this head on the axis of the arm, is provided with a slot 41 through which the wire passes before it is led into the interior of the lamp casing 10. It will be evident that by loosening up the nut 42 of the bolt 37 a considerable angular adjustment can be effected for the lamp casing 10 on the arm 4.

If desired, the device may be provided with a contact breaker within the chambered base 2 that will enable the lamp to flash continuously whenever it is in its active position. From this flashing device a current passes by a conductor, or insulated wire 43, that is connected to the end of the contact screw 21 (see Fig. 2).

A current may pass into the flasher device through an insulated wire 44 connecting to an insulated terminal 45 for one side of the flasher.

In the present instance the lamp circuit is a grounded circuit, but if desired, of course, a double wired circuit could be employed. Such a double wired circuit, however, would involve duplication of parts, and would increase the expense of the device.

The mode of operation of the device is, of course, very simple. When the lamp arm is in its inactive position, the contact means 12 and 13 are out of engagement with each other, and no circuit exists through the lamp. As soon as the contact arm is swung down to its active position, and contact is established between the contact means 12 and 13, the circuit through the lamp will be immediately established.

It will be evident that by screwing up one of the thumb nuts 24 and unscrewing the other thumb nut 25, the contact screw 21 can be adjusted outwardly. By reversing this operation the contact screw can be adjusted inwardly. This will, of course, change the position of the lamp arm 4 and adjust the beam from the lamp 10

up or down in a vertical plane in front of the car.

Many other modifications may be resorted to without departing from the spirit of the invention.

What I claim is:

1. In an automobile lamp, the combination of a bracket adapted to be secured to the body of an automobile, an arm having a joint connection to the bracket, insulated contact means located in a lateral position with respect to the axis of the bracket, a lamp casing carried by the arm, insulated contact means carried by the arm between the said joint and the lamp casing, means connected with the bracket and the arm operating to hold the arm yieldingly in an inactive position with its said insulated contact means out of contact with the first-named contact means, and yieldingly in an active position with the second-named contact means in engagement with the first-named contact means, means for adjusting the first-named contact means in the general direction in which the axis of the bracket extends so as to regulate the position of the arm and lamp in their active position, and conductor means leading into the lamp casing from the second-named contact means.

2. In an automobile lamp, the combination of a post adapted to be secured to the body of an automobile, an arm having a joint connection to the post, said post having a lug extending laterally therefrom, insulated contact means mounted in the said lug for adjustment in a direction substantially parallel with the axis of the post, a lamp casing carried by the arm, insulated contact means carried by the arm between the said joint and the lamp casing, and resilient means connected with the post and with the arm operating to hold the arm in an inactive position with its said insulated contact means out of contact with the first-named contact means, and in an active position with the said contact means in engagement with each other, and means for conducting electric current from the second contact means into the lamp casing.

3. In an automobile lamp, the combination of a bracket adapted to be secured to the body of an automobile, an arm hingedly connected to the bracket, insulated contact means carried by the bracket located in a lateral position wtih respect to the axis of the bracket, a lamp casing carried by the arm, insulated contact means carried by the arm, a spring header plate attached to the bracket, and a spring header plate attached to the arm near the hinge connection, and a plurality of springs attached to the header plates and operating to hold the arm in an inactive position remote from the first-named contact means and in an active position with the contact means in engagement with each other to close an electric circuit through the lamp.

4. An automobile lamp constructed as described in claim 1, in which the lamp casing is hingedly secured to the free end of said arm.

5. In an automobile lamp, the combination of a bracket adapted to be secured to the body of an automobile, and having a laterally projecting lug, an arm hingedly connected to the bracket, an insulating bushing in the lug, a threaded contact screw mounted to slide through the bushing with means for holding the same against rotation, threaded adjusting means mounted on the threads of the contact screw on each side of the lug, an insulated contact carried by the arm, a lamp casing carried by the arm, and means for holding the arm in a position remote from the contact screw, and in an active position in which the contact on the arm engages the end of the contact screw to close an electric circuit through the lamp, said contact operating as an adjustable stop for the arm for regulating the direction of the light beam from the lamp.

6. In an automobile lamp, the combination of a bracket adapted to be secured to the body of an automobile, an arm having a tubular body portion with a chamber therein, and having a joint connection to the bracket, said arm having a tubular extension portion, insulated contact means located in a lateral position with respect to the axis of the bracket, a lamp casing carried by said extension portion, insulated contact means carried by the arm between the said joint and the lamp casing, means connected with the bracket and the arm operating to hold the arm yieldingly in an inactive position with its said insulated contact means out of contact with the first named contact means and yieldingly in an active position with the second named contact means in engagement with the first named contact means, means for adjusting the first named contact means in the general direction in which the axis of the bracket extends so as to regulate the position of the arm and lamp in their active positions, conductor means leading into the lamp casing from the second named contact means, said extension portion being capable of rotative adjustment on the axis of the body portion of the arm to change the direction in which the lamp projects its rays, with means for clamping the extension portion in different adjusted positions on the said body portion, and an insulated electric light wire extending through the tubular body portion and having coils carried in said chamber.

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