

Feb. 27, 1940.

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2,192,114

SPOTLIGHT

Filed July 21, 1938

2 Sheets-Sheet 1

FIG. 2.

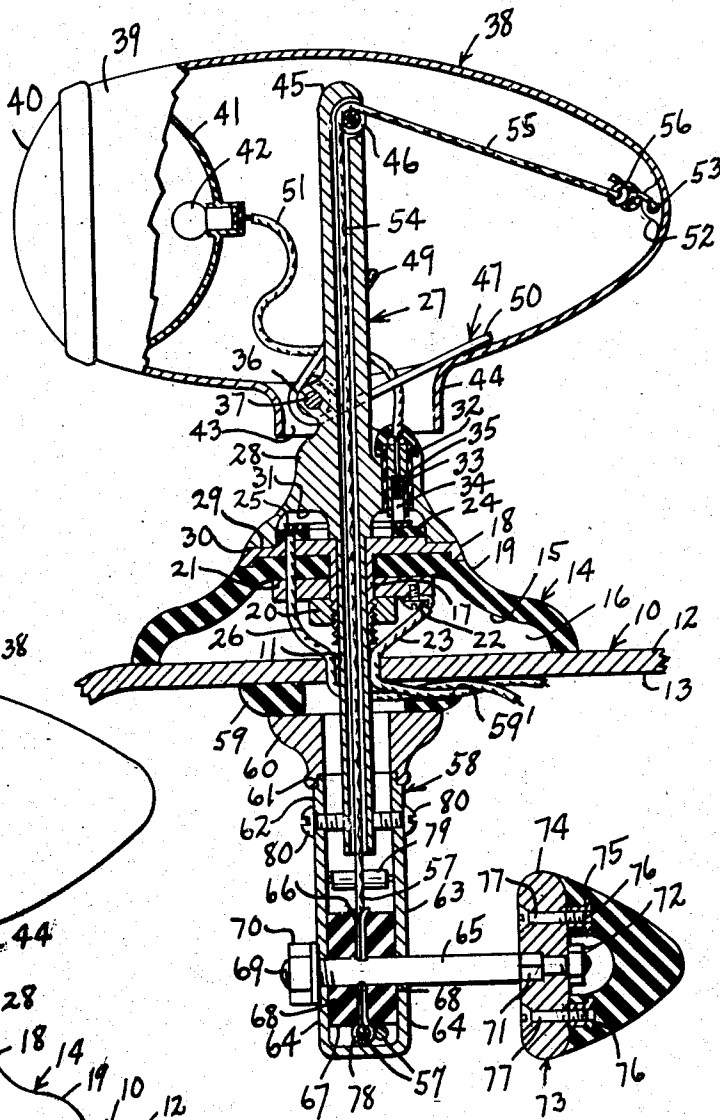
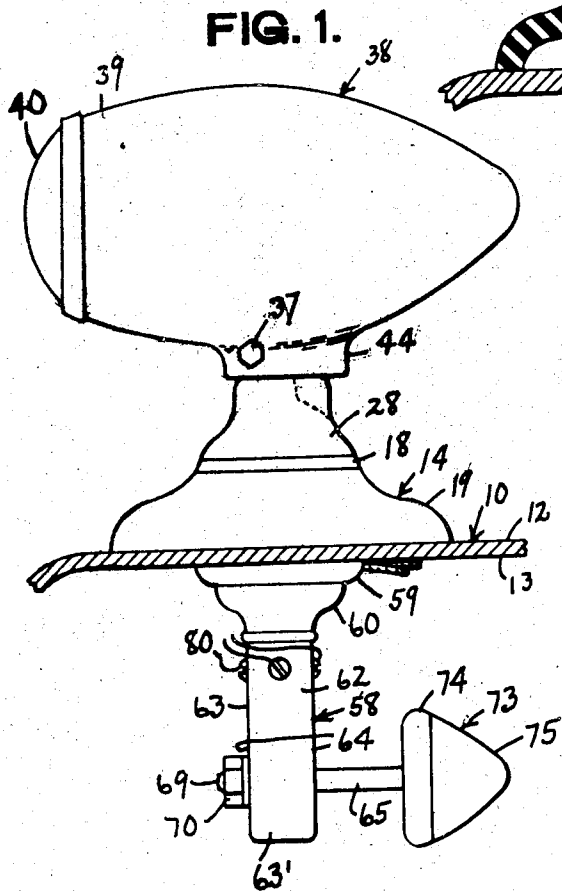


FIG. 1.



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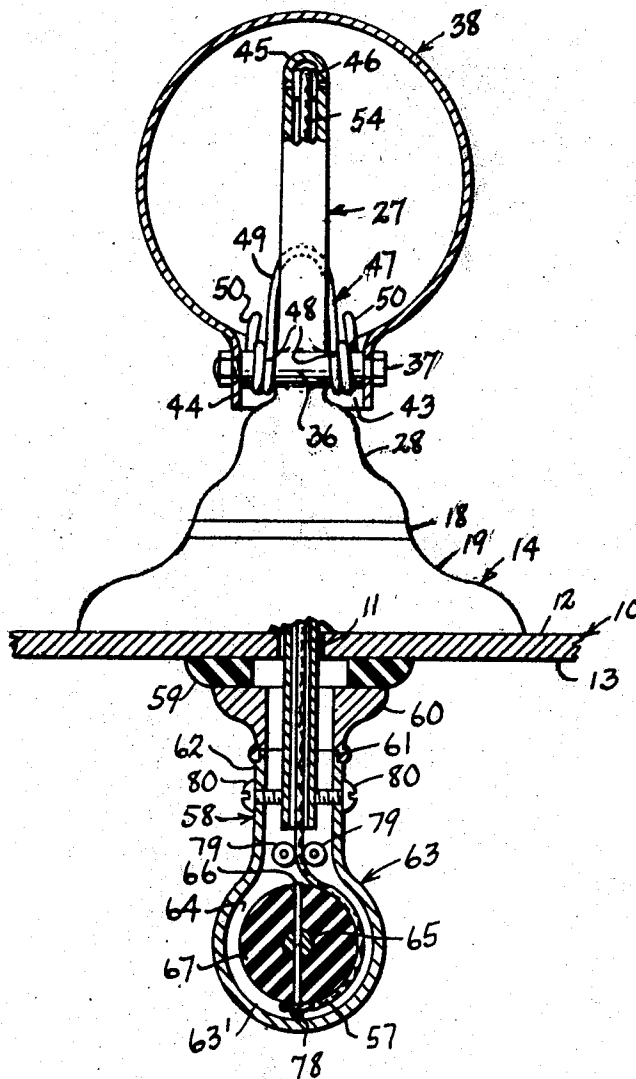
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FIG. 3.



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2,192,114

SPOTLIGHT

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Application July 21, 1938, Serial No. 220,543

6 Claims. (Cl. 240—61.13)

The invention relates to improvements in spotlights, and more particularly to improvements in adjustable spotlights adapted to be mounted exteriorly of the body of a vehicle, such as an automobile or airplane, and controlled from within the vehicle body.

One of the primary objects of the invention is to provide an adjustable spotlight of the character described, having control and electrical conducting mechanism completely housed within the spotlight.

Another and important object is to provide improved means for tilting the spotlight operable by a flexible line and spool in a manner similar to the operation of a derrick.

Another object of the invention is to provide a spotlight for vehicle mounting, so constructed as to facilitate streamlining of those portions of the light which are exposed to the air stream of the vehicle.

Still another object is to provide a spotlight having a supporting base adapted to engage and conform to the contour of a supporting wall surface.

A further object is to provide a spotlight including a stationary base and a rotary lamp body and having improved electrical conductor means between the base and lamp body.

A still further object is to provide a spotlight including a stationary base and a rotary lamp body and having improved means tending to retain the lamp body in any desired oriented relation to the base.

Yet another object is to provide a spotlight including a control cord and a spool for reeling in or paying out the cord and which spool is mounted in a manner whereby the spool will tend to automatically remain in any set position.

Other objects and advantages of the invention will become apparent during the course of the following detailed description, taken in connection with the accompanying drawings, forming a part of this specification, and in which drawings:

Figure 1 is a view in side elevation of the improved spotlight, mounted upon a supporting wall section.

Figure 2 is a vertical longitudinal sectional view of the spotlight.

Figure 3 is a vertical transverse sectional view of the spotlight.

In the drawings, which for the purpose of illustration show only a preferred embodiment of the invention, and wherein similar reference characters denote corresponding parts throughout the several views, 10 designates a supporting

wall, such as the roof of an automobile or airplane, provided with an opening 11 extending between the exterior and interior surfaces 12—13 of the wall.

Resting on the exterior surface 12 of the wall and in co-axial relation to the opening 10 is a resilient concavo-convex circular base 14 with its concave surface 15 adjacent the wall to provide a chamber 16. Disposed axially of the circular base 14 is a bushing 17 provided at one end with a radial flange 18 adjacent the convex surface 19 of the base and at its other end being externally threaded to receive a nut 20 engaging a metallic washer 21, adjacent the concave surface of the base. Secured to the washer 21, as by a screw 22 is a ground wire 23 leading thru the opening 11 of the supporting wall. Mounted intra-marginally of the radial flange 18 is an insulative ring 24 carrying a concentric conductor ring 25, from which a conductor wire 26 leads into the chamber 16 and thru the opening 11 of the supporting wall.

Extending thru the bushing 17 and opening 11 is a hollow shaft 27 having an intermediate radially enlarged portion 28 provided with an annular bottom surface 29 slidably engaging the marginal edge portion 30 of the radial flange 18. The bottom surface 29 is provided with an annular groove or channel 31 accommodating the rings 24—25. Extending downwardly thru the enlarged portion 28 is a brush carrier 32 including an insulative jacket 33 communicating with the channel 31 and carrying a brush 34 urged, as by an expansion coil spring 35, into engagement with the conductor ring 25.

Superjacent the enlarged portion 28 and transversely of the shaft is a sleeve 36, offset from the axis of the shaft, and carrying a pivot pin 37.

The lamp body 38 is hollow and of egg-shaped contour and provided at its forward end portion 39 with any suitable lens 40 and reflector 41 carrying the usual electric light 42. At its lower side, the lamp body is provided with an opening 43, defined by a downwardly depending skirt-like flange 44. Extending loosely thru the opening 43 is the hollow shaft 27, the upper or free end 45 of which terminates adjacent the upper side of the lamp body and is provided with a sheave 46. At the skirt-like flange 44, the lamp body is tiltably mounted, by means of the pivot pin 37, to the shaft 27. Encircling the sleeve 36 at its end portions on either side of the shaft is a spring 47 including oppositely wound helical portions 48 joined by an intervening bight portion 49 engaging the shaft 27, the outer ends 50

of the helical portions 48 engaging the bottom rear side of the lamp body, thereby tending to tilt the lamp body backwardly. Extending between the light 42 and the brush 34 is a conductor wire 51, passing thru the opening 43 at the lower side of the lamp body. At its rear end, the lamp body is provided with an interiorly disposed fin 52 perforated to provide a fastening eye 53.

In order to tilt the lamp body forwardly and downwardly, a flexible line 54 is provided, extending thru the hollow shaft and having one end portion 55 trained around the sheave 46 and secured to the fin 52 at the knot 56. The opposite end portion 57 of the line depends from the lower end of the shaft 27.

Control means 58 for regulating the lateral orientation and vertical inclination of the lamp body, mounted interiorly of the vehicle, will now be described. Engaging the interior surface 13 of the wall 10 and co-axial with the opening 11 thereof, is a resilient annular washer 59, formed of rubber, and provided with a radial passage-way 59 for the conductor wires 23 and 26. Disposed concentrically beneath the resilient washer 59 is an inverted annular frusto-conical member 60 encircling the shaft and normally held stationary thru engagement with the washer 59. At its lower end, the member 60 is provided with an internal annular groove 61 in which it is rotatably mounted the cylindrical upper end portion 62 of a control frame 63. At its lower end portion 63, the control frame is provided with spaced parallel circular walls 64 rotatably supporting a co-axial rod 65 on which is fixed, as by a diametrically disposed cotter pin 66, a resilient spool 67, formed of rubber and having its end faces 68 contacting the interior surfaces of the circular walls 64. Threaded on one end portion 69 of the rod 65 is a nut 70 bearing against the frame and adapted to alter the axial relationship of the rod with respect to the frame whereby to vary the degree of engagement of the end faces of the spool 67 relative to the walls 64. Fixed on the squared opposite end portion 71 of the rod, as by a nut 72 is a handle 73 comprising a metallic wheel 74 and a conical rubber extension cap 75. Embedded in the base of the cap 75 are flanged nuts 76 cooperating with screws 77 carried by the wheel for securing the cap thereto. Secured to the head 78 of the cotter pin is the end portion 57 of the flexible line, spaced rollers 79 being provided transversely of the frame between the lower end of the shaft 27 and the spool.

In order to fix the shaft for rotation with the frame 63, set screws 80 are threadedly carried by the upper portion of the frame and extend radially inwardly into engagement with the shaft. By forcing the lamp body toward the supporting wall 10, the resilient base 14 may be compressed into close contact with the exterior surface of the wall, so as to conform to any irregularities in the contour thereof, and the base may then be secured in such relationship by the set screws 80.

In order to laterally swing the lamp body, it is only necessary to swing the handle 73, which effects corresponding turning movement of the frame 63 and shaft 27, the electrical connections to the light being constant due to the continuous contact of the brush 34 with the ring 25.

To tilt the lamp body forwardly and downwardly, the handle 73 is turned in a direction to effect a reeling-in movement of the spool, so that the pull exerted on the line will lift the rear-

ward end of the lamp body against the influence of the spring 47.

When it is desired to tilt the lamp body rearwardly and upwardly, the handle 73 is turned in a direction to permit paying-out of the line from the spool, so that the spring 47 will depress the rearward end of the lamp body, the frictional contact between the end faces 68 of the spool with the interior surfaces of the walls 64 being sufficient to retain the spool in any set position.

While the spotlight has been shown and described as mounted upon a horizontal supporting wall, such as the roof of an automobile or airplane, it may be supported in the same manner by any suitable wall, such as the side wall of a vehicle or building.

It will be seen that a spotlight has been provided which may be mounted so as to exclude the weather, and which is of a construction permitting modern streamlined design, yet which is readily adjustable laterally, vertically or in a direction defined by lateral and vertical components. Various changes may be made in the form of invention herein shown and described, without departing from the spirit of the invention, or the scope of the following claims.

I claim:

1. In an adjustable spotlight, a hollow lamp body having an opening in one side defined by a skirt-like flange, a hollow standard extending loosely through said opening and having an end portion terminating interiorly of the lamp body and adjacent a side thereof opposite to said opening, said end portion carrying a sheave, means pivoting the lamp body at said skirt-like flange to said standard, a flexible line extending thru said hollow standard and having one end portion trained around said sheave and secured to an interior portion of said lamp body remote from said sheave, the opposite end portion of said line extending from the end portion of the standard opposite said sheave, and control means including a frame secured to the last-named end portion of the standard, a control shaft carried by the frame, a resilient spool fixed on the shaft and having an end surface frictionally engaging the frame, said last-named end portion of the line being secured to said spool, and means regulating the axial relationship of said shaft with respect to the frame whereby to vary the frictional engagement of said spool and frame.

2. In an adjustable spotlight, a hollow lamp body having an opening in one side defined by a skirt-like flange, a hollow standard extending loosely thru said opening and having an end portion terminating interiorly of the lamp body and adjacent a side thereof opposite to said opening, said end portion carrying a sheave, means pivoting the lamp body at said skirt-like flange to said standard, a spring acting between the pivot means and lamp body tending to tilt the lamp body about said pivot, a flexible line extending thru said hollow standard and having one end portion trained around said sheave and secured to an interior portion of said lamp body remote from said sheave, the opposite end portion of said line extending from the end portion of the standard opposite said sheave, and control means including a frame secured to the last-named end portion of the standard, a control shaft carried by the frame, a resilient spool fixed on the shaft and having an end surface frictionally engaging the frame, said last-named end portion of the line being secured to said spool, and means regu-

lating the axial relationship of said shaft with respect to the frame whereby to vary the frictional engagement of said spool and frame.

3. In an adjustable spotlight, a hollow standard, a lamp body pivotally secured to the standard, a flexible line in the hollow standard and secured at one end portion to a portion of the lamp body for controlling the pivotal relationship of the lamp body with respect to the standard, and control means including a frame fixed to the standard, a shaft rotatably carried by the frame, a resilient spool on the shaft, and a cotter pin extending diametrically thru said spool and shaft and having an eye adjacent the periphery of the spool, the opposite end portion of said flexible line being secured to said eye, said spool having an end surface frictionally engaging said frame and a nut threaded on said shaft and engaging said frame to vary the axial relationship of said shaft with respect to said frame whereby to alter the frictional relationship of said spool and frame.

4. In a spotlight of the character described, a hollow standard, a lamp body pivotally secured to the standard, a flexible line in the hollow standard and secured at one end portion to a portion of the lamp body for controlling the pivotal relationship of the lamp body with respect to the standard and control means including a frame fixed to the standard, a shaft rotatably carried by the frame and a resilient spool fixed on the shaft, said spool having its end portions disposed between and in frictional engagement with opposite sides of the frame, the opposite end portion of said flexible line being secured to said spool.

5. In a spotlight of the character described,

a hollow standard, a lamp body pivotally secured to the standard, a flexible line in the hollow standard and secured at one end portion to a portion of the lamp body for controlling the pivotal relationship of the lamp body with respect to the standard and control means including a frame fixed to the standard, a shaft rotatably carried by the frame, a resilient spool fixed on the shaft, said spool having its end portions disposed between and in frictional engagement with opposite sides of the frame, the opposite end portion of said flexible line being secured to said spool, and a nut threaded on said shaft and engaging said frame to vary the axial relationship of said shaft with respect to said frame whereby to alter the frictional relationship of said spool and frame.

6. In a spotlight of the class described, a resilient concavo-convex base for engagement with the exterior surface of a supporting wall, a bushing carried by said base including a radial flange, a hollow shaft extending thru said bushing, said shaft having an intermediate radially enlarged portion slidably engaging the flange, a lamp secured to the shaft for rotation therewith, a bearing encircling the shaft for engagement with the interior surface of a supporting wall, a control member rotatably engaging the bearing and encircling the shaft, and means releasably securing the control member to a selected portion of the shaft whereby said resilient base may be compressed to conform to the contour of the exterior surface of the supporting wall and whereby a predetermined frictional engagement of said flange with respect to said radial enlargement is had.

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