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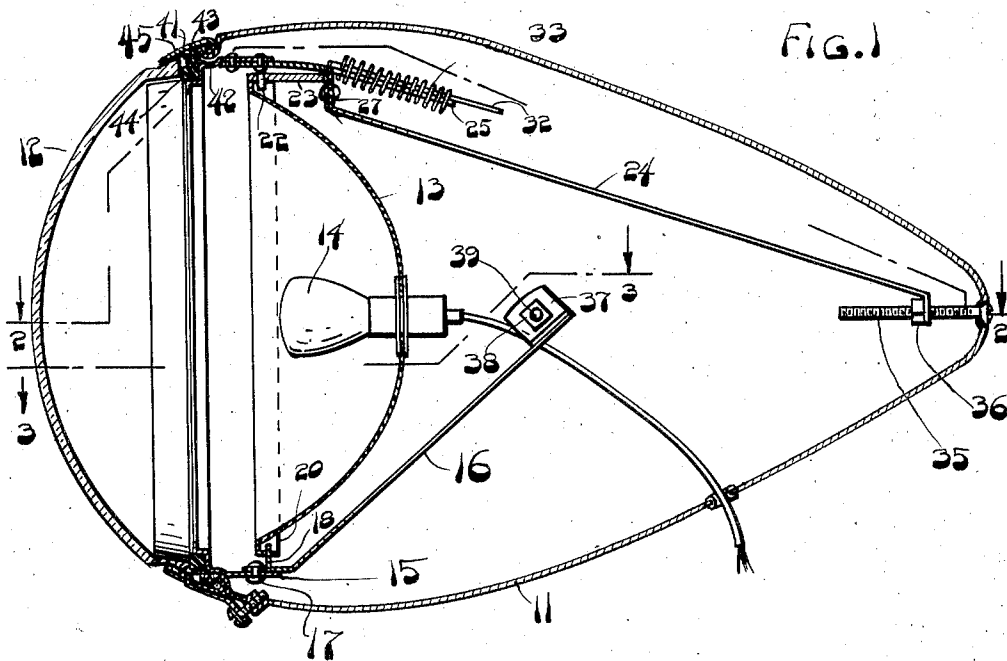
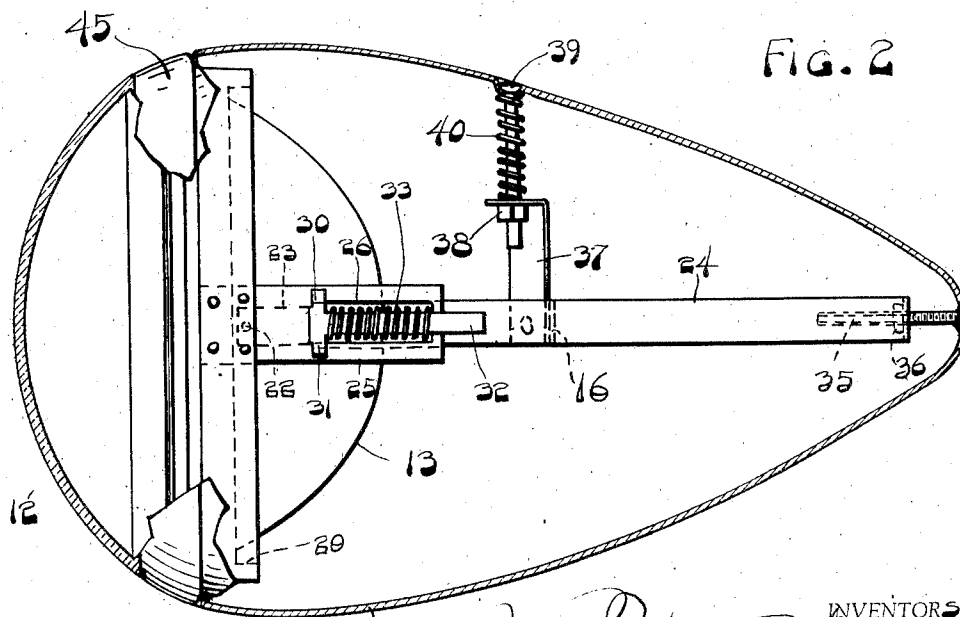
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2,227,502

LAMP ADJUSTING MECHANISM

Filed Aug. 16, 1938

2 Sheets-Sheet 1



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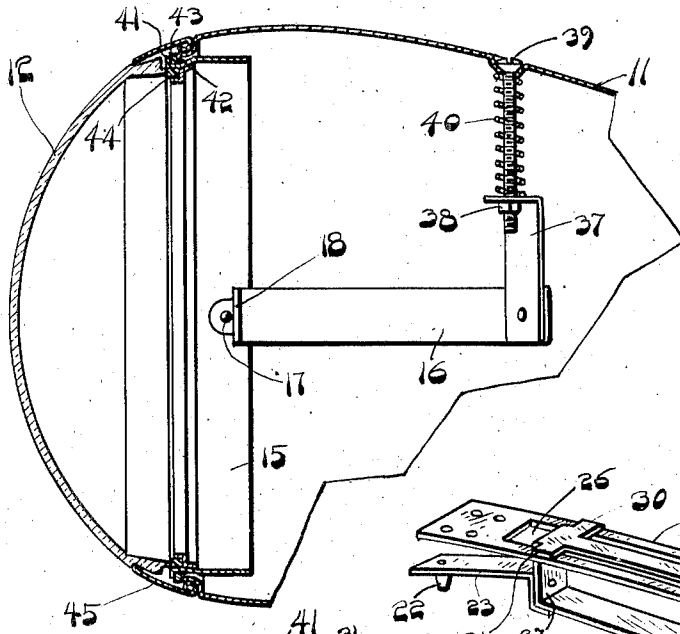


FIG. 3

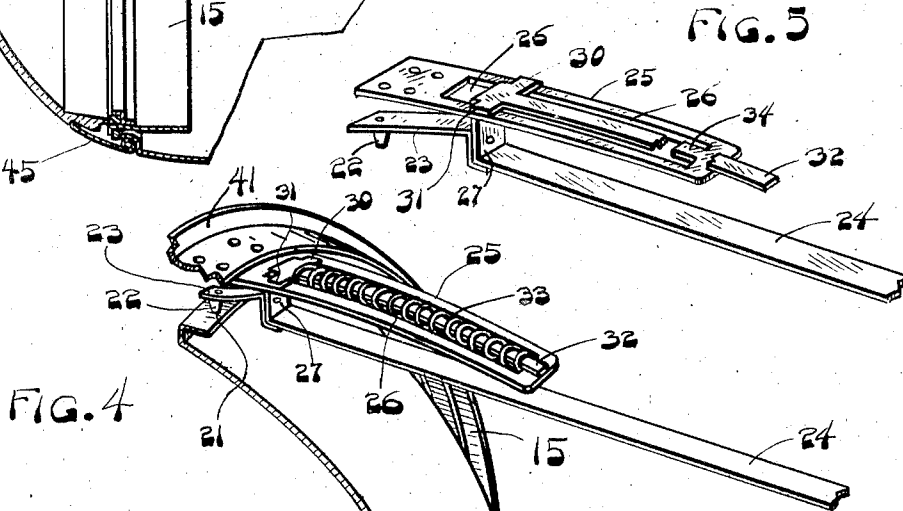


FIG. 4

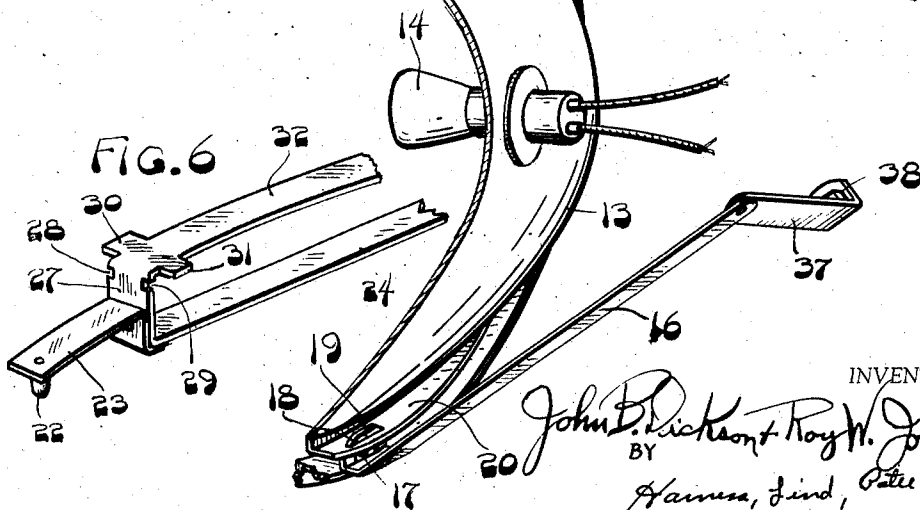


FIG. 6

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LAMP ADJUSTING MECHANISM

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3 Claims. (Cl. 240—41.6)

Since headlamp structures of the automobile type have come to play an increasingly important role in automobile body design through their relatively fixed or built-in placement as an integral part of the vehicle, such as is exemplified in fender, radiator, and hood contained lamps, the purposes or functions for which such lamps have been provided, have to be met by equipping them with suitable devices whereby the aim or direction of the light beams from such lamps may be adjusted simply, positively and with a minimum of tools and loss of time, as well as so that no dismantling or bodily adjustment of the lamp casing or body part is required.

The foregoing constitutes an object of our invention, an example of which is herein described. A further object is to provide a unique and simple mechanism which is capable of universality of adjustment throughout a circle of 360 degrees of placement on a screen or target against which the light beam may be projected in testing it for directional characteristics and light distribution over legally prescribed regions of specified intensities involving vertical and horizontal components of beam aim.

These and other objects are attained in the adjustable beam headlamp described in the following specification and illustrated in the accompanying drawings, in which:

Fig. 1 is a vertical longitudinal sectional view of a lamp structure embodying our invention.

Fig. 2 is a horizontal longitudinal sectional view of the lamp shown in Fig. 1, and taken somewhat on the line 2—2 thereof.

Fig. 3 is a fragmental and horizontal sectional view of the lamp shown in Fig. 1 and taken on the line 3—3 thereof, the reflector having been removed.

Fig. 4 is a fragmental perspective view of the mechanism embodying the major portion of the novelty incorporated in our improved lamp.

Fig. 5 is a fragmental perspective view of an important detail of the mechanism shown in Fig. 4, a spring having been removed to disclose the relationship of the parts more clearly.

Fig. 6 is a fragmental perspective view of but one element of the detail shown in Fig. 5, more clearly to convey adequate understanding thereof.

The lamp which we have devised to incorporate the features of our invention may include a body 11 having a closure lens 12, with a reflector 13 within the body and mounting the usual lamp bulb 14. Obviously, the body may partake of shapes other than that shown, and may even

constitute a part of the vehicle structure, as exemplified in the vogue for lamps built into the fenders, hoods or other parts of the vehicle. Since the mounting of lamps as at present requires fixity relatively to the remaining vehicle structure, some suitable means for aiming or placement of the beam of light projected from the lamp has to be incorporated. This has been accomplished in the structure we have devised by mounting the reflector so that it is rendered adjustably rotatable both on a horizontal axis and on a vertical axis. In our preference these axes may occupy a plane substantially coincident with the plane of the mouth of the reflector and normal to its axis. Thus provided, it is obvious that universality of beam placement at any point within an area encompassing 360 degrees is obtainable without necessitating bodily or casing adjustment of the lamp.

To establish the reflector mounting axes a ring 15 has been provided. This ring, as will be described, is mounted in the open end of the casing 11. To the rear of the ring a rearwardly extending guide and spring support 25 is attached. This guide has a slot 26 therein to receive the upturned end 27 of arm 24, in which slots 28 and 29 are formed to receive the edges of the slot 26 in sliding engagement therewith. Ears 30 and 31, with a tongue 32 between them, terminate the arm 24 at the reflector end, the tongue 32 lying at its end upon the end of support 25, and being somewhat narrower than the slot 26, carries a coil compression spring 33 in the slot. The end of the support is provided with a narrow spring retaining lug 34 which, when the end of the spring occupies it, will prevent its disengagement from slot-occupying position. Thus, when the arm 24 is drawn backwardly against the pressure of spring 33 the reflector will be tipped in a vertical plane to cause the light beam to be projected above horizontal, while the spring pressure will cause the reflector to be moved forwardly, thereby throwing the beam at an angle below horizontal. A screw 35 at the rear of the lamp casing, passing through the threaded or nutted end 36 of arm 24, and accessible for adjustment externally of the casing, is employed to create this tipping of the reflector in a vertical plane.

To produce horizontal movement of the reflector by means of an arm 16, a link 37 pivoted at the rear end of the arm, has been provided, the opposite end of the link being bent and threaded or nutted as at 38 to receive a screw 39 upon which a coil compression spring 40 is mounted

between end 38 and the casing for exterior adjustment of the screw to bring the reflector horizontally against the pressure of spring 40 for swinging the light beam to one side of the vertical axial plane of the vehicle, while opposite adjustment of the screw will permit spring 40 to swing the reflector to project the light beam to the opposite side of the vertical axial plane of the reflector.

10 At the bottom of the ring 15 the arm 16 is pivoted at a point 17. This arm carries a vertical finger 18 located substantially above the pivot 17, and the reflector flange 20 is provided with a corresponding slot 19 into which the finger fits 15 for creating reflector movement when arm 16 is moved from side to side. Since finger 18 is tapered and since slot 19 is somewhat less in length than the width of the finger, the reflector slot occupies the finger so that the arm and the 20 reflector are quite rigid relatively to each other. The top of the reflector is pivoted at a diametrically opposite point by providing an aperture 21 into which a tapered pivot pin 22 enters, the pin being carried by a spring 23 which urges a snug 25 fit within the aperture to hold the reflector against looseness and consequent vibration. This spring 23 is attached to the arm 24.

The manner of mounting ring 15 with relation to the lamp body 11 may vary materially. However, an exemplary manner of mounting it may consist in providing it with an outwardly turned flange 41 and the body with an inwardly turned flange 42, with a sealing cushion 43 of suitable material between them. Cooperating with this 35 is a closure lens mounting of any suitable character involving a sealing cushion 44 at the edge of the lens, with an annular pocket to receive the cushion and perhaps a lens closure ring 45 by means of which the toutensemble may be held in 40 position. Obvious departures from such general features may be made since they in no manner relate to or affect the structural features embodying the invention which has been described and which is set forth in the claims which now follow.

45 We claim:

1. In a headlamp, a housing, a reflector, means for adjustably positioning said reflector relative to said housing including a ring member, a guide and supporting member secured to said ring member and having a slot therein, an actuating 5 element operably connected with said reflector and slidably supported on said guide and supporting member, said element having a portion thereof registering with said slot, and yielding means carried by said portion and extending into said 10 slot for opposing sliding movement of said actuating element on said guide and supporting member.

2. In a headlamp, a housing, a reflector, means for adjustably positioning said reflector relative 15 to said housing including a ring, a guide and supporting member secured to said ring having a slot therein, an actuating element operably connected with said reflector and slidably supported by said member, said element having abutment forming 20 ears overlying the wall of said member bounding said slot and a tongue-like portion registering with the latter, and a coil spring carried by said tongue-like portion and acting between said ears and a wall of said slot for opposing sliding move- 25 ment of said element relative to said support.

3. In a headlamp, a housing, a ring member, a reflector having a slot therein, means including a fixed pivot mounting said reflector relative to said ring member for accommodating pivotal move- 30 ment thereof about an axis, an actuating member having a finger disposed in said slot and providing a fulcrum for accommodating rocking movement of said reflector for adjustment about another axis, said fulcrum being disposed imme- 35 diately adjacent said fixed pivot, and a pair of means each operable to adjustably position said reflector about one of said axes respectively without disturbing the effective adjustment of said reflector about the other of said axes. 40

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