June 28, 1938. F. C. BRECKENRIDGE 2,121,783

AIRPLANE RUNNING LIGHT

Filed Feb. 3, 1937

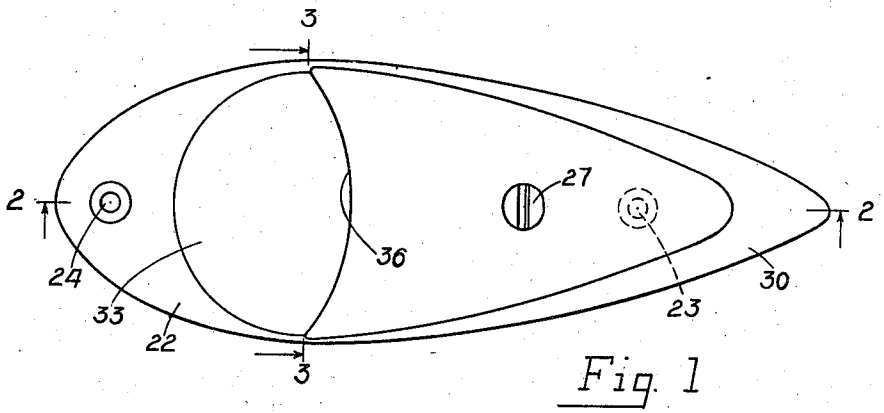


Fig. 1

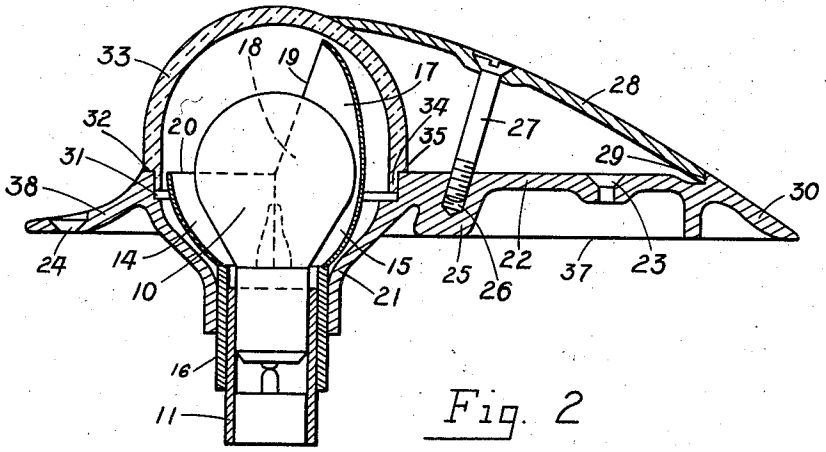


Fig. 2

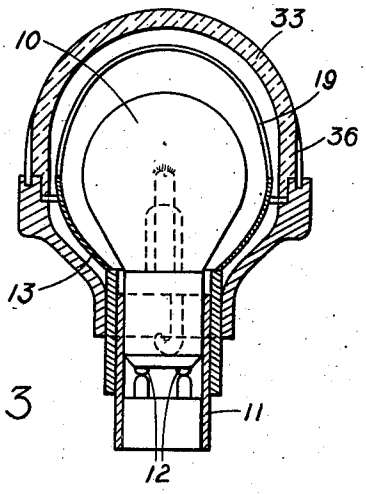


Fig. 3

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Patented June 28, 1938 2,121,783

UNITED STATES PATENT OFFICE

2,121,783

AIRPLANE RUNNING LIGHT

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Application February 3, 1937, Serial No. 123,873

2 Claims. (Cl. 240—7.7)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

This invention relates to an airplane running light and has for an object to provide an improved running light unit used on airplanes to enable pilots on other planes to more readily determine the position and direction of flight of the airplane on which this running light has been installed.

A further object of this invention is to provide an airplane running light unit including a bulb, reflector, dome and shield which are held in position by a single stud screw so that they may be easily assembled when necessary for replacement of the light bulb.

A further object of this invention is to provide an airplane running light unit having such aerodynamic qualities as to keep at a minimum any drag or interference with the aerodynamic qualities of the airplane wing to which it is applied.

A still further object of this invention is to provide a running light streamlined shield which also acts to hold the light dome anchored in position.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts as will be hereinafter more fully described.

Reference is to be had to the accompanying drawing forming a part of this specification in which like reference characters indicate corresponding parts through the several views, and in which:

Fig. 1 is a top plan view of the airplane running light unit of this invention;

Fig. 2 is a sectional view on line 2—2; and

Fig. 3 is a sectional view on line 3—3 of the drawing.

There is shown at 10 a running light lamp mounted in a socket 11 through which extend suitable conduits to the lamp contacts 12. Extending upwardly from the socket 11 is the reflector 13 provided with suitable reflector surfaces so as to insure that the light will be reflected at the most appropriate angle. The reflector 13 has a spherical surface at 14 having its center of curvature substantially at the center of the lamp filament and extending from the cylindrical neck 16 to a plane 20 passing substantially through said filament center. At the rear is a second spherical surface 15 having its center of curvature substantially in the plane 20 and forward of the lamp filament. The surface at 17 is a toroidal surface generated by a circular, parabolic, or other appropriate arc rotated about an axis in its own plane, said axis passing through the center of curvature of the surface 15. In general the surface 17 is tangent to the surface 15 and extends from the plane of such tangency to a plane 19 passing substantially through the center of the lamp filament and making a dihedral angle of 110°, or other perscribed value, with the plane 20, which limits the spherical surface 15. The surface 14 is connected to the surfaces 15 and 17 by connecting surfaces of whatever configuration may be found convenient. The neck of the reflector 16 extends through a hollow recess in a protuberance 21 in the head of the unit base 22.

This unit base 22 is shaped substantially as shown, being provided with screw head receiving apertures 23 and 24 through which screws may be placed for securing the entire unit in proper position on the airplane wing. A depending boss 25 is provided so as to make place for a threaded aperture 26 into which may extend a screw 27 from the shield 28. It will be observed that the base 22 is provided with an undercut groove 29 against which the edges of the shield 28 are held by the screw 27, it being further observed that a flare 30 around the rear edges and sides of the unit base 22 provides a smooth continuation of the streamlined outer surface of the shield 28. The base 22 is also provided about the hollow recess in the protuberance 21 with a cylindrical recess 31, ending in a rabbet 32. A bulb and reflector covering dome 33, preferably made of suitably colored glass or other transparent material, is provided with a cylindrical rabbet 34 adapted to fit into the cylindrical recess 31 and have the edge 35 abut against the rabbet 32 on the unit base 22. The upper end 36 of the shield 28 rests over the top of the dome 33 as shown, and serves to hold it firmly in position, the single screw 27 thus serving to hold both the dome 33 and the shield 28 in assembled position.

The assembled running light unit as thus provided, is substantially tear-drop or streamlined in shape, as will be apparent from Fig. 1, the spherical dome 33 providing the head of the tear-drop, while the shield 28 and flare 30 provide the streamlined tail, thus keeping aerodynamic resistance thereof at a minimum. It will be further observed that the front edge 38 of the unit base 22 merges smoothly upward into the outer surface or dome 33. In assembling the unit on an airplane wing or tail surface, it is intended that the protuberance 21, lamp base and connecting conduit all be countersunk in the airplane wing or tail surface below the base line 37 of the unit base 22.

It will be understood that the above description and accompanying drawing comprehend only

the general and preferred embodiment of my invention, and that various changes in construction, proportion and arrangement of parts may be made within the scope of the appended claims without sacrificing any of the advantages of my invention.

The invention described herein may be manufactured and used by or for the Government of the United States of America for governmental purposes without the payment of any royalties thereon or therefor.

Having thus set forth and disclosed the nature of this invention, what is claimed is:

1. An aircraft running light comprising a base whose outline is substantially that defined by a longitudinal cross-section of a tear drop, a lamp receiving protuberance extending downwardly through the head of said base, a semi-spherical dome, interfitting rabbets on said dome and said protuberance, and means for quickly and detachably securing said dome to said base with said dome and protuberance rabbets in cooperating relation, said securing means comprising an undercut groove extending about the tail of the base and a shield having one end bearing in said undercut groove and the other end bearing on said dome to the rear of its high point and a single member extending through said shield intermediate said bearing points and secured to said base.

2. An aircraft running light comprising a base whose outline is substantially that defined by a longitudinal cross-section of a tear drop, a lamp receiving protuberance extending downwardly through the head of said base, a semi-spherical dome, interfitting rabbets on said dome and said protuberance, and means for quickly and detachably securing said dome to said base with said dome and protuberance rabbets in cooperating relation, said securing means comprising an undercut groove extending about the tail of the base and a shield having one end bearing in said undercut groove and the other end bearing on said dome to the rear of its high point and a single member extending through said shield intermediate said bearing points and secured to said base, said member comprising a screw having its head countersunk in said shield and threaded into said base, said shield merging smoothly with said dome and with said base to provide a streamlined surface of minimum aerodynamic resistance.

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