June 6, 1950 A. P. SAUER 2,510,320

COMBINATION DECK AND HAND SEARCHLIGHT

Filed Oct. 29, 1948

Fig. 1.

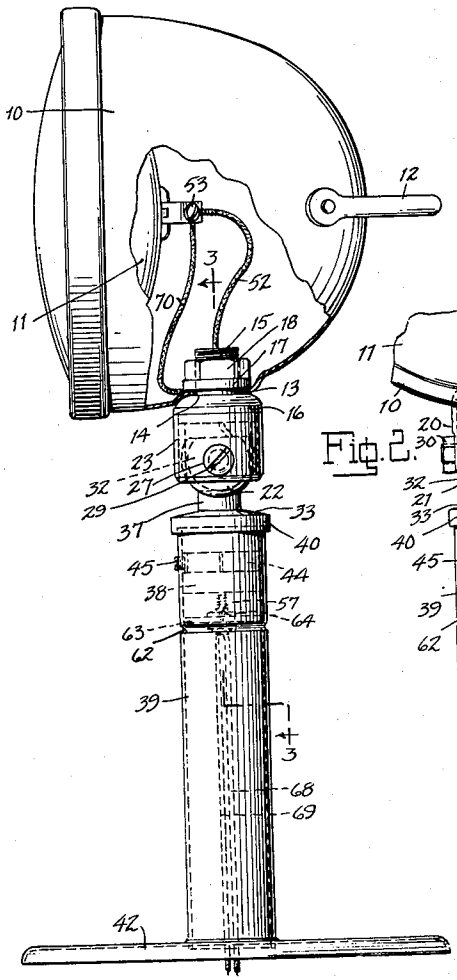


Fig. 2.

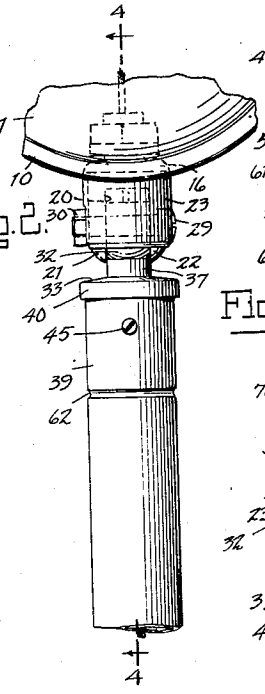


Fig. 3.

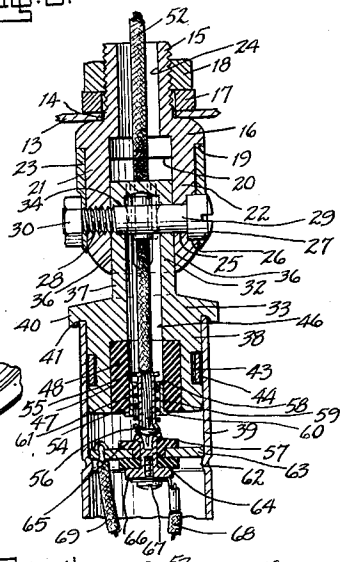


Fig. 4.

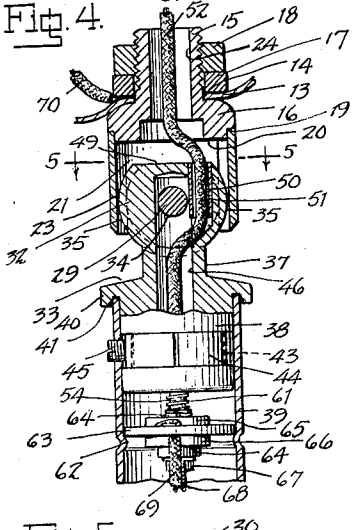


Fig. 6.

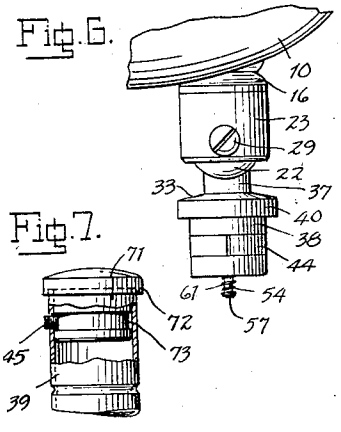


Fig. 8.

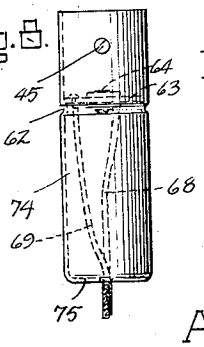


Fig. 5.

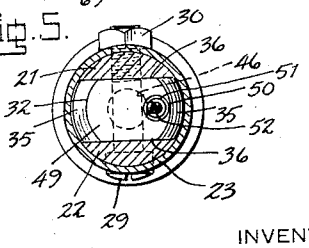


Fig. 7.

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COMBINATION DECK AND HAND SEARCHLIGHT

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3 Claims. (Cl. 240—61.12)

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The present invention relates to a combination deck and hand searchlight, particularly of the marine type for mounting upon a boat deck or the like and adapted to be manually manipulated to control the direction of the searchlight beam.

An object of the invention is to provide a searchlight structure including a lamp unit and a mounting post, wherein the lamp unit is readily removable from the mounting post so that it may be stored when not in use. A further object is to provide electric contact means cooperating between the post and the lamp unit adapted to be automatically connected upon assembly of the unit with the post, and further to provide such means which will permit free rotational movement of the searchlight unit in either direction through 360°.

Another object is to provide an auxiliary portable socket member, into which the lamp unit may be inserted upon removal from the post, and whereby the searchlight is converted from the deck-type searchlight to a portable hand searchlight. A further object is to provide a searchlight in which the operating parts and the electrical connections are completely closed, so that they are effectually protected against the entrance of water, salt spray and other deteriorating elements.

With the above and other objects in view, an embodiment of the invention is shown in the accompanying drawings, and this embodiment will be hereinafter more fully described with reference thereto, and the invention will be finally pointed out in the claims.

In the drawings:

Fig. 1 is a side elevation of a searchlight structure, according to the illustrated exemplary embodiment of the invention, and showing the lamp unit in assembled relation with the post for mounting upon a boat deck.

Fig. 2 is a front elevation, partially broken away.

Fig. 3 is a fragmentary vertical sectional view, on an enlarged scale, taken along the line 3—3 of Fig. 1.

Fig. 4 is a fragmentary sectional view, also on an enlarged scale, taken along the line 4—4 of Fig. 2.

Fig. 5 is a horizontal sectional view, taken along the line 5—5 of Fig. 4.

Fig. 6 is a side elevation, partially broken away, showing the lamp unit removed from the post.

Fig. 7 is a side elevation, partially broken away showing the upper end of the post with a closure cap assembled therewith.

Fig. 8 is a side elevation of the auxiliary portable socket in which the lamp unit is adapted to be inserted.

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Similar reference characters indicate corresponding parts throughout the several figures of the drawings.

Referring to the drawings, the combination deck and hand searchlight, according to the illustrated exemplary embodiment of the invention, comprises a lamp casing 10 of conventional type provided with a sealed beam type lamp element 11 and an operating handle 12, the lamp casing being provided in its lower side with a horizontally disposed flattened bearing portion 13 provided with a circular aperture 14 for receiving the threaded stud 15 of a mounting head 16. The mounting head extends outwardly at its upper end from the stud 15 for abutting engagement with the underside of the bearing portion 13, the head being secured to the lamp casing by a washer 17 engaging the upper side of the bearing portion 13 and a nut 18 screwed upon the stud 15. The head 16 is provided near its upper end with an annular abutment shoulder 19 and at its lower portion is slotted, as at 20, to form a pair of leg portions 21 and 22, the opposed inner surfaces of which are flat and parallel to each other. The external surfaces of the leg portions are cylindrical and are engaged by a cylindrical tubular sleeve 23 to enclose the open ends of the slot 20, the upper edge of the sleeve engaging the shoulder 19 and being secured to the head by being soldered or brazed at its upper edge to the shoulder 19 and at its inner circular surfaces to the outer cylindrical surface of the leg portion 21, the cylindrical surface of the leg portion portion 22 being unattached with respect to the sleeve, so that it may have relative movement toward the leg 21, as will presently more fully appear. A vertical passage 24 extends axially through the threaded portion 15 to the upper end of the slot 20 for receiving a conductor wire from the lamp, as will presently more fully appear.

The leg portion 22 is provided with a cylindrical bolt-receiving hole 25 and a cylindrical counter-sink recess 26, and the sleeve 23 is provided with a hole 27 registering with the counter-sink recess 26. A threaded hole 28 is provided in the leg portion 21 and the sleeve 23, in axial alignment with the hole 25, for receiving the threaded end of a headed bolt 29, the head of which is adapted to seat within the counter-sink recess 26. By virtue of the fact that the leg portion 22 is unattached to the sleeve 23, tightening of the bolt is adapted to force the leg portion 22 toward the leg portion 21. A lock nut 30 is engaged upon the threaded

end of the bolt 29 and seats upon a flattened surface provided upon the sleeve 23.

Engaged between the leg portions 21 and 22 is the upper head portion 32 of a plug member 33, this head portion being provided with a transverse cylindrical passage 34 through which the bolt 29 is engaged. The forward and rearward surfaces of the head portion are spherically formed, as at 35, and the side surfaces are flat, as at 36, the latter being engaged by the flat side surfaces of the slot 20, and the spherical surfaces 35 allowing relative tilting movement about the axis of the bolt 29 of the head member 16 carrying the lamp casing. This tilting movement is permitted when the bolt 29 is screwed outwardly to release the leg portion 22, tightening of the bolt adapted to force the leg portion 22 toward the leg portion 21 to thus bind against the head portion 32 to lock the position of tilting of the lamp casing.

Below the head portion 32 of the plug member there is provided a cylindrical neck portion 37 which acts as a stop to limit the up and down tilting of the lamp. The lower end of the plug member is in the form of a cylindrical plug portion 38 adapted to be inserted in the upper end of the cylindrical tubular post 39, being provided at its upper end with an annular flange 40 having a recess 41 into which the upper edge of the post engages to thus provide a seal against the entrance of water. The post is of any suitable height, and at its lower end is provided with a base 42 adapted to be attached by screws or the like to the deck of the boat.

The plug portion 38 is provided with an annular recess 43 in which is engaged a split ring member 44, the latter being engageable by a set screw 45 provided in the post, tightening of the set screw adapted to frictionally bind the ring 44 against the interior of the post to thus retain the plug member against removal from the post while still permitting it to be freely turned in either direction through 360°. As shown clearly in Fig. 4, the set screw 45 projects inwardly of the outer cylindrical surface of the plug portion 38, so that the plug portion is positively retained against removal. However upon loosening the set screw the plug portion may be readily removed from the post.

A central vertical passage 46 extends upwardly through the plug member and is provided at its lower end with an enlarged recess portion 47 in which is engaged an insulating bushing 48. The upper end of the passage 46 terminates above the bolt 29 and below the upper flat surface 49 of the plug member, and at one side of the bolt there is provided in the head portion 36 of the plug member a vertical passage 50 extending downwardly from the flat surface 49 and intersecting the passage 46. A cylindrical tubular bushing 51 is provided in the passage 50 and extends from the upper flat surface 49 to a point in upwardly spaced relation to the lower end of the passage 50, thus providing a wire-receiving passage through the plug member disposed at one side of the bolt 29 but out of contact therewith.

The insulation-covered conductor wire 52 secured to one binding post 53 of the lamp extends downwardly through the passage 24 of the head member and through the tube 51 at one side of the bolt 29, and thence downwardly through the passage 46. The insulation covering of the wire 52 is removed from its lower end and upon this bared portion of the wire there is soldered a sleeve 54 having a lateral flange 55 at its upper

end and a flared flange 56 at its lower end, a contact button 57 being secured within this flared lower end by being soldered to the end of the wire. The sleeve 54 is slidably engaged with the inwardly flanged upper end 58 of a bushing 59 engaged within the insulating bushing 48, the lower end of the bushing 59 being outwardly flanged, as at 60, to engage the lower end of the bushing 48. A helical spring 61 is disposed about the sleeve 54 between the flange 58 and the flared flange 56, and normally presses the contact button 57 of the wire outwardly while permitting it to yield inwardly upon pressure being applied to the contact button 57.

Within the post 39 and seated upon an annular rib 62 thereof is a centrally apertured metal disk 63, provided with a central contact member 64 insulated from the disk by insulation washers 65 and 66, the contact member being in the form of a hollow rivet having its upper end riveted over upon the upper surface of the insulating washer 65, so that it forms a contact socket in which the contact button 57 is adapted to engage. A binding screw 67 is provided in the lower side of the contact member 64 for connection of the end of the conductor wire 68, this conductor wire extending downwardly through the post to a suitable source of current. Another conductor wire 69 is secured by soldering to the disk 63, and also extends downwardly through the post to the source of current. The disk 63 is in current-conducting contact with the post and through the metal-to-metal contact of the plug member with the post and with the head member 16 provides electrical conduction to the lamp casing, to which the lamp is grounded at the opposite side from its connection with the conductor wire 52 by a conductor wire 70 connected between the lamp and the lamp casing, being conveniently connected to the casing by engaging it beneath the washer 17.

In operation the lamp may be tilted either upwardly or downwardly as desired by loosening the bolt 29, and may be fixed at any desired tilted position by tightening the bolt 29. Through the handle 12 the lamp may be directed in any direction through free rotation of the plug member in the post, the electrical contact connection between the plug and the post permitting free rotation through 360° in either direction. When not in use the lamp unit may be readily removed from the post for storage and protection simply by loosening the set screw 45 and removing the plug portion from the post. As shown in Fig. 7 a closer cap 71 may be inserted in the upper end of the post to protect it against the entrance of water, this cap being provided with a recessed flange 72 for sealing engagement with the upper edge of the post, and being provided with an annular recess 73 for locking engagement of the set screw therewith.

In Fig. 8 there is illustrated a portable socket member 74 of substantially identical construction to the upper end portion of the post 39, its lower end being provided with a centrally apertured end wall 75 through which the conductor wires 68 and 69 extend. The plug portion of the lamp unit is inserted therein when it is desired to use the lamp as a portable hand type searchlight or general utility lamp.

I have illustrated and described a preferred and satisfactory embodiment of the invention, but it will be understood that changes may be made therein within the spirit and scope thereof as defined in the appended claims.

What is claimed is:

1. In a searchlight, a lamp unit including a casing, a head member secured to said casing, a plug member pivotally connected to said head member having a cylindrical plug portion provided with an external annular recess, a split ring engaged in said recess, a tubular cylindrical mounting member rotatably engageable by said cylindrical plug portion of said plug member and surrounding said split ring, and a set screw carried by said mounting member engageable in said recess to restrain said plug member against axial movement while permitting it to rotate, said set screw being engaged with the exterior surface of said ring to bind it within the space defined by said annular recess and the surrounding tubular mounting member.

2. In a searchlight, a lamp unit including a casing, a head member secured to said casing and having a wire-receiving passage therethrough and further having spaced leg portions defining a slot between them, a sleeve surrounding said leg portions and enclosing the ends of said slot, at least one of said leg portions being free of attachment at its outer surface to said sleeve, a plug member having an apertured head portion engaged in said slot between said leg portions, a transverse bolt extending between said leg portions and engaged through said apertured head portion to permit relative pivotal movement of said lamp unit relatively to said leg portion, tightening of said bolt adapted to bind said leg portions against the sides of said head portion to secure the lamp unit against tilting, said plug member having a wire-receiving passage extending therethrough, a conductor wire extending from said lamp unit through said passage of said head member and through said passage of plug

member, and a tubular mounting member engageable by said plug member.

3. In a searchlight, a lamp unit including a casing, a head member secured in said casing and having a wire-receiving passage therethrough and further having spaced leg portions defining a slot between them, a plug member having an apertured head portion engaged in said slot between said leg portions, a transverse bolt extending between said leg portions and engaged through said apertured head portion to permit relative pivotal movement of said lamp unit relatively to said leg portion, tightening of said bolt adapted to bind said leg portions against the sides of said head portion to secure the lamp unit against tilting, said plug member having an off-set wire-receiving passage extending downwardly from its upper end at one side of said bolt and an axial wire-receiving passage connected to said off-set passage and extending downwardly therefrom to the lower end of said plug member, a sleeve fixedly engaged in said off-set passage in laterally opposed relation to said bolt, and a conductor-wire extending from said lamp unit through said passage of said head member and through said passages and sleeve of said plug member out of contact with said bolt.

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