Oct. 6, 1942. P. SAUER 2,297,916

MARINE FLAG POLE LIGHT AND SOCKET

Original Filed March 8, 1940

Fig. 1.

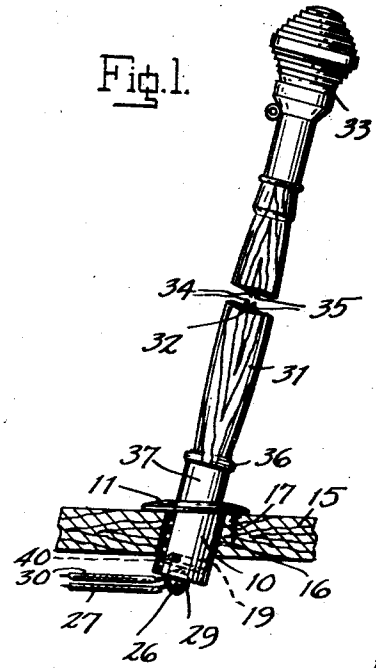


Fig. 2.

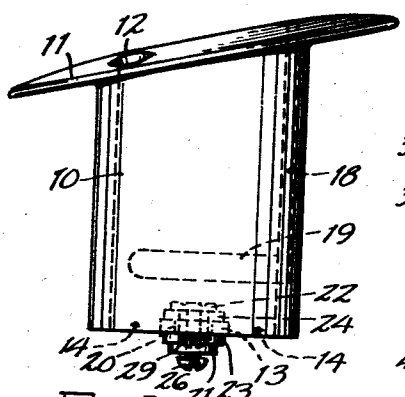


Fig. 3

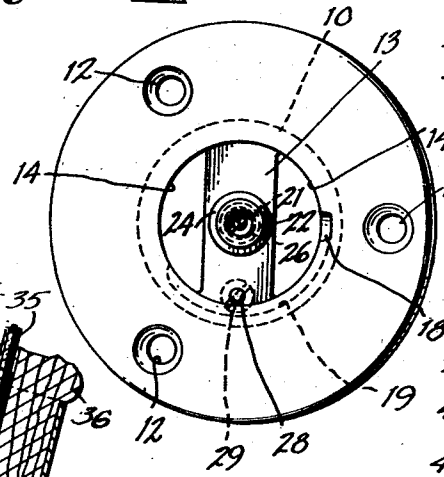


Fig. 4.

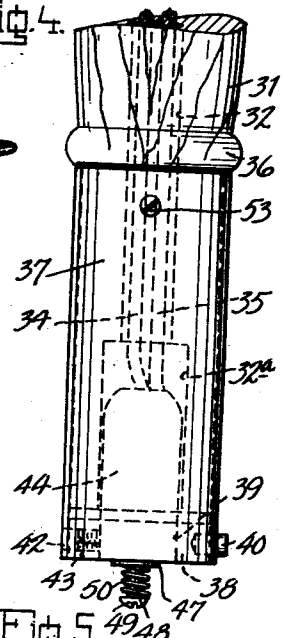


Fig. 5.

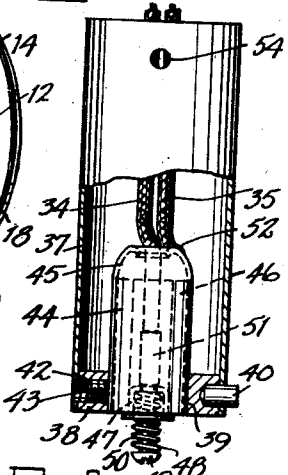


Fig. 6.

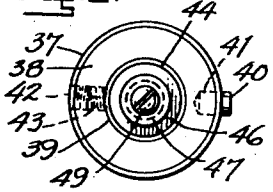
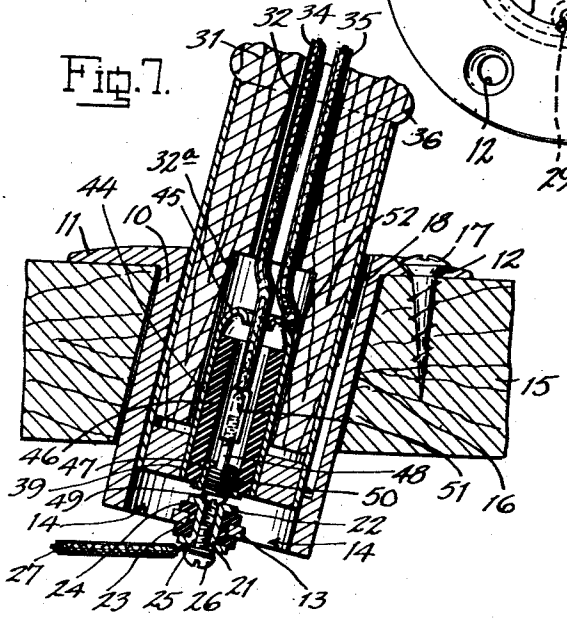


Fig. 7.



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MARINE FLAGPOLE LIGHT AND SOCKET

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Original application March 8, 1940, Serial No. 322,918. Divided and this application March 28, 1941, Serial No. 385,646

1 Claim. (Cl. 173—361)

The present invention relates to an improvement in marine flag pole light and socket, and the present application is a division of my original application filed March 8, 1940, Serial No. 322,-918. The invention has for an object to provide a pole ferrule and a socket having cooperative bayonet locking means formed directly in the ferrule and in the socket, whereby the pole may be readily inserted or removed from the socket and will be reliably retained in place, and further to provide in combination with such bayonet locking means electric contact means adapted to have resilient engagement through engagement of the ferrule in the socket, the ferrule adapted to be yieldably retained in its locked position through the tension created by the resilient contact. By this arrangement the necessity for wing nuts, set screws or other such fastening means for securing the pole in place is dispensed with, and at the same time a more reliable connection is provided which will not tend to loosen through vibration. Furthermore the bayonet connection is not subject to rust or corrosion as in the case of screw threaded fastening means.

A further object is to provide an electric contact means, one part of which is carried in the socket and the other part carried in the pole ferrule, the part carried in the socket being a fixed part while the part carried in the ferrule is a spring pressed movable part, the advantage of this arrangement being that the fixed part in the socket will not be subject to the destructive effects of rust or corrosion, and may therefore remain exposed to weather without danger of deterioration. Another object is to provide a socket having water drainage passages in relation to the fixed contact carried thereby, to the end that rain water cannot collect in the socket but will flow through the socket into the bilge of the boat. It therefore becomes unnecessary to provide a cover plate or cap for the socket in order to prevent water from collecting therein, as has been the practice heretofore.

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

In the drawing:

Fig. 1 is a side elevation, partially broken away, showing the flag pole light and socket according to the invention mounted in a boat deck, the latter being shown in section.

Fig. 2 is a side elevation of the socket member.

Fig. 3 is a plan view thereof.

Fig. 4 is a side elevation of the ferrule end of the pole.

Fig. 5 is a vertical sectional view partially in side elevation showing the ferrule and the electric contact unit carried thereby, the pole being removed.

Fig. 6 is a bottom plan view of the ferrule.

Fig. 7 is a vertical sectional view showing the pole cooperatively engaged in the socket.

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

Referring to the drawing, the flag pole light and socket, according to the exemplary illustrated embodiment of the invention, comprises a cylindrical tubular socket member **10**, provided at its upper end with a diagonally disposed mounting flange **11** having countersunk screw holes **12** therein and provided at its lower end with a transverse bridge support **13**, at each side of which there is provided a water drain passage **14**, these passages being adjacent the short forward side of the socket and the long rearward side, so that water cannot collect at the bottom of the socket in the mounted relation of the socket in the boat deck **15** as shown in Fig. 7. The flange **11** is diagonally disposed so that in the mounted relation, with the flange attached to the deck, the socket will be disposed at an inclination so as to support the pole with the usual rake, as is customary with such marine equipment. The deck is provided with a hole **16** to receive the socket which is secured in place by means of screws **17**.

At the rearward side of the bore of the socket there is provided a vertical groove **18** extending downwardly from the flange **11** to a point spaced from the lower end of the socket, where it communicates with a circumferential lateral groove **19** extending part way around the socket, the grooves **18** and **19** providing bayonet groove means for receiving the bayonet pin means of the pole ferrule, as will presently more fully appear.

The transverse bridge **13** is provided centrally with an aperture **20** within which is secured the electrical center contact member **21**, which is in the form of a tube flanged at its lower end and flanged or swedged over after assembly at its upper contact end **22**, this contact end being concavely recessed to provide a centering seat for engagement of the contact member carried by the ferrule. The contact member **20** is electrically insulated from the bridge by means of

a flanged insulation washer 23 engaged at the under side of the bridge and projected into the aperture 20 and by an insulating washer 24 at the upper side of the bridge, these washers being tightly clamped in place through the swedging or clamping over of the end 22 of the contact member. A threaded bore 25 is provided in the contact member in which is engaged the headed wire attaching screw 26 which secures the conductor wire 27 to the center contact. In spaced relation to the center contact the bridge is provided with a threaded hole 28 having a headed wire attaching screw 29 screwed therein and which secures the conductor wire 30 to the socket. These wires 27 and 30 are connected to the electric power source and in the case of an installation where one side of the battery is grounded the wire 27 will be connected to the battery and the wire 30 will be suitably grounded.

It will be noted that there are no movable or spring parts in the socket member or any parts that will be injuriously affected or have their functions impaired by rust or corrosion. With the pole disengaged any rain water falling into the socket will pass through the passages 14, the cross-wise and inclined disposition of the bridge portion 13 between the front and rear surfaces of the socket precluding any possibility of water collecting and remaining in the socket, the same being entirely free of any pockets or horizontal surfaces.

The pole 31, shown formed of wood, is provided with a wire conduit passage 32 therethrough, and upon the upper end of the pole there is mounted the light unit 33 to which the two conductor wires 34 and 35 which extend through the passage 32 are connected. Upon the lower end of the pole, which is shouldered as at 36, there is engaged the cylindrical metal ferrule member 37.

As shown clearly in Fig. 5 this member is provided in its lower end with a relatively thick metal disc 38 having a central cylindrical passage 39 therein, this disc being rigidly secured in the ferrule by soldering, welding or the like. A radially projecting bayonet pin 40 is provided near the lower end of the ferrule, being set into a pocket 41 in the disc 38 and rigidly secured by soldering, welding, or the like. A threaded radial hole 42 is provided through the disc and the ferrule, preferably diametrically opposite to the bayonet pin 40 and in which is screwed a set screw 43 for the purpose of rigidly securing in place the electric contact unit.

This unit comprises a tubular cylindrical metal shell 44 having its upper end 45 dome shaped and provided with an inwardly flanged central conductor wire receiving passage. A cylindrical tubular insulation sleeve 46 is fitted in the shell, and in the lower end of this sleeve there is inserted a flanged apertured cup member 47 through which the stem 48 of the movable center contact head 49 is slidably engaged, a spring 50 being provided about the stem between the head 49 and the cup 47. The stem 49 is screwed into a metal sleeve 51 to which the end of the conductor wire 34 is secured by soldering, this sleeve forming a stop shoulder for limiting the projection of the stem under pressure of the spring 50 through contact with the inner end of the cup 47, as shown in Fig. 5. The conductor wire 35 is connected to the metal shell 44 by soldering, as at 52.

The passage 32 through the pole is enlarged at its lower end, as at 32a, to provide a pocket for receiving the shell 44, and the ferrule is non-rotatably secured to the lower end of the pole by means of a screw 53 engaged through a hole 54 in the ferrule.

In order to engage the pole in the socket the pin 40 is engaged in the groove 18 and the ferrule dropped into the socket so that the spring contact member 49 engages the fixed contact 21. With the parts of this relation and with the spring 50 expanded the bayonet pin 40 is within the vertical groove 18 at a point slightly above the lateral bayonet groove 19. In order to secure the pole it is pressed downwardly into the socket, compressing the spring 50 to the point where the bayonet pin 40 registers with the lateral bayonet groove 19, and thereupon the pole is rotated to bring the pin 40 into the groove 19, the pole preferably being rotated to the point where the pin 40 abuts the end of the groove 19. During the rotation of the pole the engaged contact members 49 and 21 form a center pivot to facilitate easy turning. In this locked position the compressed spring 50 both maintains the locked position of the pole and tight contacting engagement between the contact members 49 and 21, thus maintaining positive electrical connection between the conductor wires 34 and 27. Electrical connection between the conductor wires 35 and 30 is established through the contacting relations of the shell 44, disc 38, ferrule 37, socket 10, and screw 29. While the pole is firmly and reliably retained by the spring pressed bayonet connection it may be readily removed simply by rotating it to bring the pin 40 into register with the vertical groove 18, whereupon the expanding spring 49 partially lifts the ferrule in the socket.

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 claim.

Having thus described my invention what I claim and desire to secure by Letters Patent is:

A pole light plug for insertion in a metallic current conducting socket having an insulated current conducting center contact member in its base, comprising a tubular current conducting metallic ferrule member adapted to be secured to a light pole or the like and to be engaged in said socket with its outer surface in contact therewith, a relatively thick current conducting metal disc secured in the lower end of said tube having a central axial passage, a contact unit secured in said passage comprising a current conducting metal shell having its lower end substantially flush with the lower surface of said disc, an insulating sleeve in said shell, a spring pressed inwardly yieldable electrical contact member in said sleeve having a contact end projected downwardly from said shell of substantially smaller diameter than said ferrule member and adapted to contact said center contact of said socket, an electrical conductor wire in electrical connection with said metal sleeve, and an electrical conductor wire in electrical connection with said spring pressed contact member.

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