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J. M. ROPER

1,978,115

SINGLE CONTACT ELECTRIC SOCKET

Filed Nov. 23, 1933

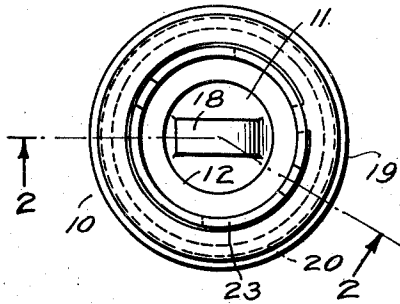


Fig. 1.

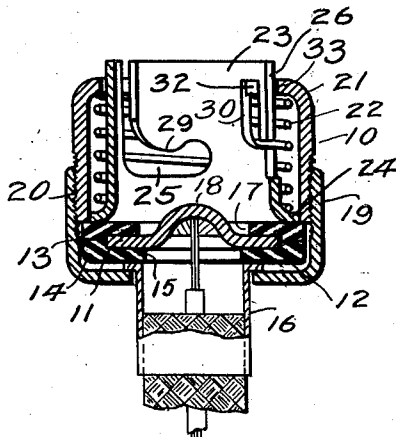


Fig. 2.

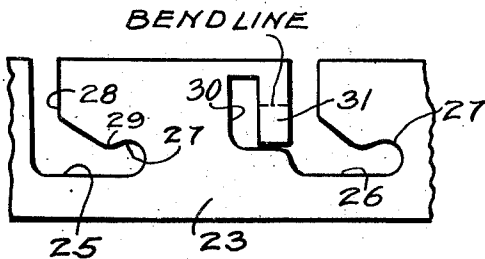


Fig. 3.

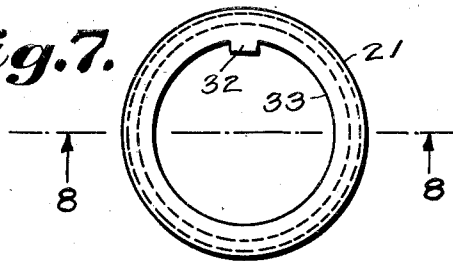


Fig. 4.

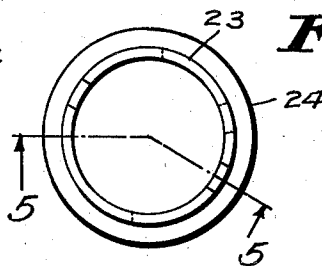
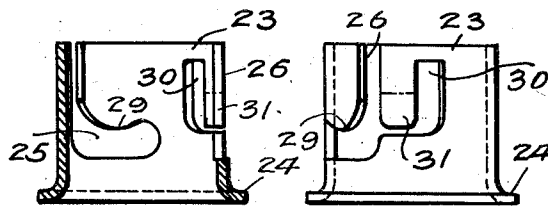


Fig. 5. Fig. 3.



JOHN M. ROPER
INVENTOR

BY *Harold Todd*
ATTORNEY

UNITED STATES PATENT OFFICE

1,978,115

SINGLE CONTACT ELECTRIC SOCKET

John M. Roper, Washington, D. C.

Application November 23, 1933, Serial No. 699,426

7 Claims. (Cl. 173—328)

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

This invention relates to a single contact electric socket and has for an object to provide improved electrical sockets especially useful on aircraft, both of the lighter and heavier than air type where the economy of space and weight are desirable features.

A further object of this invention is to provide an electrical socket especially adapted for holding electrical lamps of the bayonet joint type for use on vehicles of all descriptions, both vehicles used in the air, on the ground, on the water, and under the water.

A further object of this invention is to provide a lamp socket occupying a minimum amount of space and weight which will be especially useful on vehicles such as aircraft, and more particularly, on the wing surfaces and edges, so as to receive and hold a lamp in such positions without seriously affecting the aerodynamic characteristics of the wing surfaces.

A still further object of this invention is to provide a single contact lamp socket in combination with a metal covered conduit cable wherein the metal cover on the conduit cable acts as a ground or return lead for the circuit.

A still further object of this invention is to provide an electrical socket wherein the terminal is fixedly secured to the conductor member and the lamp is yieldably held in contact with the terminal rather than the conventional type wherein the lamp is fixedly held in the socket and the terminal is yieldably held against the lamp.

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 throughout the several views and in which:

Fig. 1 is a top plan view of the assembled socket;

Fig. 2 is a cross section on the line 2—2 of Fig. 1;

Fig. 3 is a side elevation of the socket shell;

Fig. 4 is a top elevation of the socket shell;

Fig. 5 is a cross section on line 5—5 of Fig. 4.

Fig. 6 is a development of the socket shell

blank;

Fig. 7 is a top plan view of the socket housing; and

Fig. 8 is a cross section on the line 8—8 of Fig. 7.

There is shown at 10 the assembled socket constituting this invention. This socket 10 comprises

a terminal 11 of conducting material about the flanges of which are molded an insulator 12, this insulator 12 being formed by placing two washer-like members 13 and 14 on opposite sides of the flanges of the terminal 11 and molding them together under pressure, it being understood however that the insulator 12 may be made of one piece as desired, by placing the terminal 11 in an appropriate mold in which a suitable insulating material such as phenolic condensation product of the type commercially known as bakelite is placed. The insulator 12 is provided with an aperture 15 in the bottom thereof through which a conductor from a flanged conduit cable ferrule 16 is permanently secured as by soldering to the bottom of the conducting terminal 11. The top of the insulator 12 is likewise apertured as at 17 to permit a hump 18 formed in the terminal 11 to project above the upper surface of the insulator 12. This hump 18 provides a contact terminal which makes contact with the terminal on a conventional bayonet joint type single contact electric lamp. The assembled terminal 11 and insulator 12 is placed in a cap nut 19 which is apertured to permit the conduit 16 to pass therethrough. This cap nut 19 is internally threaded as at 20. Threaded into the cap nut 19 is the socket housing 21 which contains a yieldable compression spring 22 and a socket shell 23.

The socket shell 23 more clearly shown in Figs. 3-6, inclusive, is cylindrical in shape having a projecting flange 24 at the base thereof. This socket shell 23 is provided with a pair of bayonet slots 25 and 26 having recess 27 separated from the entrance slot 28 by a boss 29 to cooperate with the holding pins on the conventional lamp to be inserted therein. The bayonet slot 26 is connected to a recess slot 30, a bendable tab 31 separating the slot 26 from the slot 30. This tab 31 and slot 30 cooperate with a boss 32 formed on the internally projecting rim or flange 33 of the socket housing 21. Before the socket housing 21 is placed in the cap nut 19 the socket shell 23 is assembled within the socket housing 21 by first placing the compression spring 22 within the socket housing 21 against the flange 33. The socket shell 23 is then projected through the aperture in the socket housing 21, its base 24 compressing the spring 22 as it enters within the housing 21, the boss 32 on flange 23 of housing 21 enters within the bayonet slot 26 until it reaches the bent tab 31. The socket shell 23 and housing 21 are then rotated relative to each other causing the boss 32 to enter the slot 30. A suitable tool then placed within the socket shell 23 presses the tab 31 into

the cylindrical plane of the socket shell 23 thereby closing off the slot 30 and preventing the separation of the shell 23 from the housing 21.

With the shell 23 and housing 21 thus assembled and locked against separation, the housing 21 is then threaded into the internal threads 20 of the cap nut 19 completing the assembly of the lamp socket.

In operation, a conventional single contact bulb is placed into the socket 10 by means of the bayonet slots 25 and 26 being held in the recesses 27 therein, but the fact that the compression spring 22 yields as the lamp is inserted permits the shell 23 to ride upwardly within the limits of the movement of the boss 32 in the slot 30. With this construction it will be observed that the terminal 11 is securely held to the wiring of the conduit cable 16. The electric lamp is held in the socket shell 23 and is held yieldable against the contact hump 18 of the terminal 11.

The circuit passes through the conductor, in the metal covered conduit cable and cable ferrule 16, to the terminal 11 and contact hump 18, into the single contact of the lamp through the lamp filament, to the side of the base of the lamp, to the socket shell 23, the socket housing 21, the cap nut 19 and then is grounded for the return or completion of the circuit through the metal cover on the conduit cable and cable ferrule 16. The connection between the wiring of the conduit and contact 11 may be made as secure as possible, there being no yielding parts therebetween as in the conventional plunger type contact and there is thus no possibility of corrosion of the contact preventing the completion of the circuit from the conduit to the lamp. Further, it is impossible to pull the conduit cable and cable ferrule 16 away from the terminal 11 due to the elimination of any yielding parts therebetween.

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.

I claim:

1. A lamp socket comprising a cap nut, an internally projecting apertured flange on said nut, an insulated terminal member in said cap nut, a conduit to said terminal member extending through the aperture of said nut flange, and a lamp socket assembly threadedly secured within said cap nut a ferrule on said conduit extending through the aperture of said cap nut, an externally extending flange on said ferrule, said ferrule flange being secured between said cap nut flange and said insulated terminal member by said lamp socket assembly pressing against said terminal member.

2. A lamp socket comprising an apertured cap nut, an insulated terminal member in said apertured cap nut, a conduit to said terminal member extending through the aperture of said nut, a lamp socket assembly threadedly secured in said cap nut, a conduit ferrule extending through the aperture of said cap nut, an externally extending flange on said ferrule, said flange being secured between said cap nut and said lamp socket assembly, said lamp socket assembly comprising an

inner socket shell, an outwardly flanged base on said shell, a socket housing, an inwardly flanged rim on said socket housing, said rim being apertured, and a compression spring, said socket shell being placed within said shell housing and said compression spring being secured between said housing rim and said shell base.

3. A lamp socket comprising an apertured cap nut, an insulated terminal member in said apertured cap nut, a conduit to said terminal member extending through the aperture of said nut, a lamp socket assembly threadedly secured in said cap nut, said lamp socket assembly comprising an inner socket shell, an outwardly flanged base on said shell, a socket housing, an inwardly flanged rim on said socket housing, said rim being apertured, an internally projecting boss on said housing rim, a compression spring, said socket shell being placed within said shell housing, said compression spring being secured between said housing rim and said shell flange, a pair of bayonet joint slots in said socket shell extending to the edge of said shell, an internal slot connected to one of said bayonet slots and a bendable tab separating said internal slot from said bayonet slot, said internal slot being adapted to receive said housing rim boss therein, and to lock said boss therein by having said bendable tab placed in the cylindrical plane of said shell.

4. A lamp socket comprising an apertured cap nut, an insulated terminal member in said apertured cap nut, a conduit to said terminal member extending through the aperture of said nut, a lamp socket assembly threadedly secured in said cap nut, said lamp socket assembly comprising an inner socket shell, an outwardly flanged base on said shell, a socket housing, an inwardly flanged rim on said socket housing, said rim being apertured, an internally projecting boss on said housing rim, a compression spring, said socket shell being placed within said shell housing, said compression spring being secured between said housing rim and said shell flange, a pair of bayonet joint slots in said socket shell extending to the edge of said shell, an internal slot connected to one of said bayonet slots and a bendable tab separating said internal slot from said bayonet slot, said internal slot being adapted to receive said housing rim boss therein, and to lock said boss therein by having said bendable tab placed in the cylindrical plane of said shell, said insulated terminal comprising a washer-like conductor member, an insulation molded about the periphery of said washer-like conductor member, and a hump formed in the center of said washer-like member and extending beyond the surface of the molded insulation, said hump providing the terminal contact.

5. In a single contact lamp socket, a terminal contact member comprising a disc like member of conducting material, insulation means secured about the peripheral flange of said disc like member, the center of said disc member being formed into a hump projecting above the insulation means providing a lamp contact member, the bottom of said contact hump being adapted to have a lead wire soldered thereto.

6. In a single contact lamp socket, a terminal contact member comprising a disc like member of conducting material, insulation means secured about the peripheral flange of said disc like member, the center of said disc member being formed into a hump projecting above the insulation means providing a lamp contact member, the bottom of said contact hump being adapted to

have a lead wire soldered thereto, said insulation means comprising a pair of washer-like members.

7. In a single contact lamp socket, a terminal contact member comprising a disc like member
5 of conducting material, insulation means secured about the peripheral flange of said disc like member, the center of said disc member being formed

into a hump projecting above the insulation means providing a lamp contact member, the bottom of said contact hump being adapted to have a lead wire soldered thereto, said insulation means comprising a pair of washer-like members, 80 molded together into a single member.

JOHN M. ROPER.

10	85
15	90
20	95
25	100
30	105
35	110
40	115
45	120
50	125
55	130
60	135
65	140
70	145
75	150