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DOUBLE CONTACT ELECTRIC SOCKET

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Fig. 1. Fig. 4.

Fig. 2.

Fig. 3.

Fig. 5.

Fig. 7.

Fig. 6.

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This Invention relates to a double contact electric socket and has for an object to provide an improved electrical socket especially for use on aircraft both of the lighter and heavier than air type where the economy of space and weight are desirable features and relates more particularly to the adaptation to a double contact of the invention shown in the application Serial No. 699,426 filed November 27, 1933, concurrently herewith on a single contact electric socket by the same inventor.

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

A still 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 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 cross section on the line 3—3 of Fig. 1;

Fig. 4 is a development of the socket shell blank;

Fig. 5 is a top plan view of the socket housing;

Fig. 6 is a cross section on line 6—6 of Fig. 5;

Fig. 7 is a top plan view of the terminal assembly;

Fig. 8 is a side elevation of the terminal assembly per se; and

Fig. 9 is a cross section of the terminal assembly taken on line 9—9 of Fig. 7.

There is shown at 10 the assembled socket constituting this invention. This socket 10 comprises terminal assembly 11 consisting of two terminal inserts 12 about the flanges of which are molded an insulator 13, this insulator 13 being formed by molding an insulating material such as rubber, a phenolic condensation product commonly known as bakelite or such like theretofore according to the shape shown on the drawing. Each terminal insert is provided with a terminal hump 14 projecting externally of the molding 13 and a fan-shaped section which is left bare of molding on the upper side, which section includes an aperture 15 therethrough leading to a corresponding aperture 16 left in the molding on the bottom of the terminal assembly. The two terminal inserts are spaced from each other within the terminal assembly 11 by insulation molded therewithin so that the terminal humps 14 of each insert makes contact with the separate contacts of a double contact electric lamp 17. The terminal assembly 11 is held on a reinforcing terminal support 18 having a pair of opposite fingers 19 bent over into opposite slots 20 provided in the top of the insulation 13. The terminal support 18 is apertured as at 20 to permit the passage therethrough of lead wires 21, each lead wire 21 passing through the aperture 15 in the terminal insert 12 and spread over the fan-shaped section which is bare of insulation and secured thereto as by solder, the lead wires 21 being received in the conduit 22. As will be apparent, the lead wires 21 in the terminal assembly 11 thus provided are securely fastened thereto and there is no possibility of corrosion or accident interfering with the completion of the circuit from the leads 21 to the contact humps 14. The terminal assembly 11 is placed in a cap nut 23 which is apertured to permit the conduit 22 to pass therethrough. This cap nut 23 is internally threaded as at 24. Threaded into the cap nut 23 is a socket housing 25 which contains a yieldable compression spring 26 and a socket shell 27.

This socket shell 27, a development of which is shown in Fig. 4, is cylindrical in shape and has a projecting flange or base 28 at the base thereof. This socket shell 27 is provided with a pair of bayonet slots 29 and 30 having recesses 31 separated from the entrance slots 32 by a boss 33 to cooperate with the holding pins on the
conventional double contact lamp 17 inserted therein. The bayonet slot 29 is connected to a recess slot 34, a bendable tab 35 separating the slot 29 from the slot 34, this tab 35 and slot 30 cooperating with a boss 36 on the internally projecting rim or flange 37 of the housing 25 which enters within the bayonet slot 29 until it reaches the bent tab 35. The socket shell 27 and housing 21 are thus disposed relative to each other causing the boss 36 to enter the slot 34. A suitable tool then placed in the socket shell 26 presses the tab 35 into the cylindrical plane of the socket shell thereby closing off the slot 34 and preventing the separation of the shell 27 from the housing 25. With the shell 27 and housing 25 thus assembled and locked against separation the housing 21 is then threaded into the internal threads 34 of the cap nut 23, the finger 19 of the terminal support 18 entering the slots 38 in the housing 21 thus properly positioning the terminal humps 14 relative to the terminal contacts on the double contact lamp 17 placed within the assembled housing.

In operation the conventional double contact bulb 17 is placed in the socket 10 by means of the bayonet slots 29 and 30, being held in the recess 31 by the fact that the compression spring 26 yields after the lamp is inserted, and permits the shell 27 to ride upwardly within the limits of the movement of the boss 36 and the slot 34. With this construction it will be observed that the terminal assembly 11 is securely held to the wiring 21 of the conduit 22, the electric lamp is held in the socket shell 27 and is held yieldably against the contact hump of terminal 11. The connection between the wiring 21 of conduit 22 may be made as secure as possible as already described, there being no yielding parts therebetween as in the conventional plunger type, and thus no possible corrosion of the within the plug contact preventing the completion of the circuit from the conduit to the lamp. Further, it is impossible to pull conduit 22 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 an apertured cap nut, an insulated double contact terminal member in said apertured cap nut, a conduit to said terminal 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 socket housing, said compression spring being secured between said housing rim and said shell flange, said socket shell having a pair of bayonet joint slots extending to the edges thereof and an internal slot connected to one of said bayonet slots, 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 taper 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, 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, an apertured terminal support for said terminal assembly within said socket shell, a pair of opposite bent fingers on said support, said molding of said terminal assembly having a pair of opposite slots therein, said slots receiving said bent fingers therein, said socket housing having a pair of slots therein, said bent fingers entering said socket housing slots to more properly position said terminal hump contacts in relation to said socket assembly.

2. A lamp socket comprising an apertured cap nut, an insulated terminal member in said apertured cap nut, a conduit to said terminal 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, and a hump on said insert extending externally above said insulation and providing a lamp contact member.

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