E. B. WILCOX.

ELECTRIC CONNECTOR.

APPLICATION FILED OCT. 27, 1915.

1,201,784. Patented Oct. 17, 1916.

Fig 1

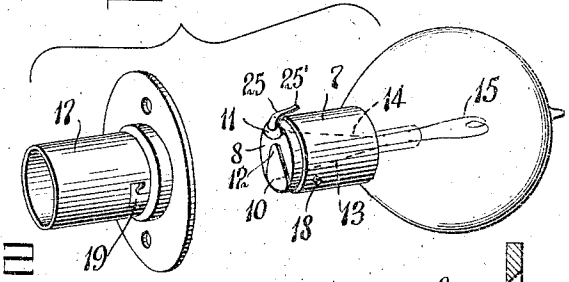



Fig 2

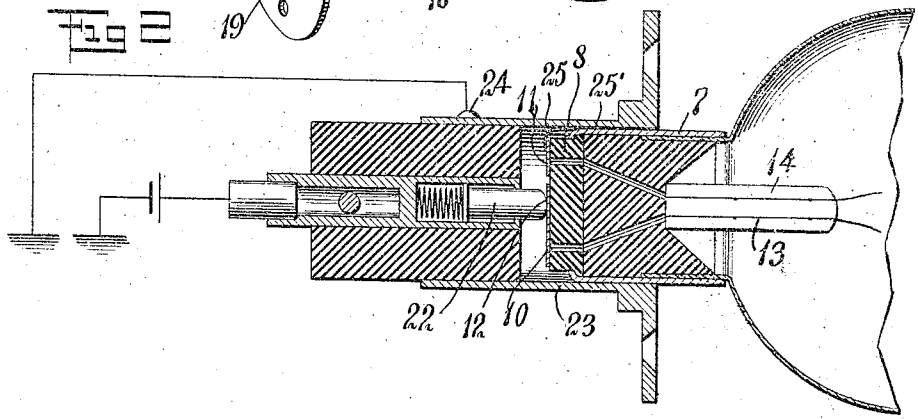



Fig 3

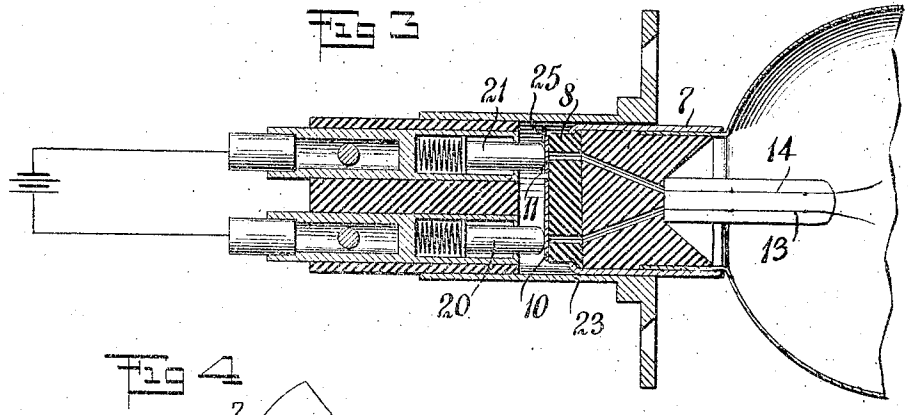
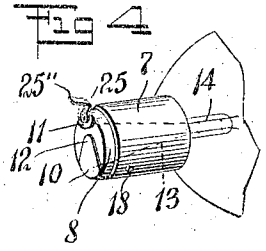



Fig 4




Inventor

Edson B. Wilcox

By Attorney

# UNITED STATES PATENT OFFICE.

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## ELECTRIC CONNECTOR.

1,201,784. Specification of Letters Patent. Patented Oct. 17, 1916.

Application filed October 27, 1915. Serial No. 58,173.

*To all whom it may concern:*

Be it known that I, EDSON B. WILCOX, a citizen of the United States of America, residing at Meriden, Connecticut, have invented a new and useful Electric Connector, of which the following is a specification.

The general objects of my present invention are to provide a simple and effective form of plug connector which can be used interchangeably in different types of sockets, my invention aiming particularly to provide such a connector in the form of a lamp base which will adapt the lamp to being used in sockets of either the two wire "all insulated" or the one wire "grounded" systems of distribution much used for automobile lighting.

A special object of the invention is to adapt the plug for direct application in a socket of the one wire type and to enable the ready displacement or removal of the grounding connection when the plug is to be used in a socket of the two wire all insulated type.

In the accomplishment of these objects, I construct the plug with two end contacts, with a center contact electrically connected with one of the end contacts and with a grounding contact electrically connected with the other one of the end contacts and adapted to be disconnected therefrom or to be so displaced as to be no longer effective. The grounding contact extends outward from the end contact to which it is connected far enough to make electrical engagement with the side contact of the socket, this side contact in the one wire type being usually the inner wall of the socket body. This grounding contact is, furthermore, preferably made of spring metal adapting it to make a firm electrical engagement with the side contact of the socket, and further adapting it to be readily broken off or bent out of the way when the plug is used in an all insulated type of socket.

Various other features will appear as the specification proceeds and will be made clear by a consideration of the accompanying drawing which illustrates the invention embodied in a practical and preferred form.

In this drawing: Figure 1 is a perspective view of the invention embodied in the form of a lamp and showing it in position ready to be inserted in a suitable socket. Fig. 2 is a longitudinal sectional view illustrating the use of the invention in a one wire grounded type of socket. Fig. 3 is a similar view showing the invention in use in a two wire all insulated type of socket, the grounding contact having been broken off or removed in this case to avoid grounding of the circuit. Fig. 4 is a perspective view of a slightly modified form of the invention.

In the herein disclosed embodiment, wherein the invention is illustrated in its application to a base for a lamp, the lamp base constitutes the body of the plug, and is shown as consisting of a metal sleeve or shell 7 carrying at its end an insulating disk or support 8 which forms an insulating base for the contacts.

The two end contacts are designated 10 and 11 respectively. These contacts are mounted on the insulating base at the end of the plug and are disposed on opposite sides of the center of the plug.

The center contact is designated 12 and the same is mounted on the end of the plug substantially at the center thereof and electrically connected with one of the end contacts, the contact 10 in this particular instance. A convenient method of constructing the center contact is to make it an integral inwardly extending projection of the plate which constitutes the end contact 10, as shown. The ends of the two circuit wires in the plug, which in this particular case constitute the leading-in wires 13 and 14 of the lamp filament 15, are suitably connected with the two end contacts, as indicated in the several views.

A suitable socket for use with the plug is illustrated at 17, in Fig. 1, the plug being shown provided with locking studs or pins 18 to engage in bayonet slots 19 in the socket to hold the plug properly seated therein.

When the plug is used in a socket of the two wire type such as illustrated in Fig. 3, the end contacts, disposed at opposite sides of the center of the plug, are engaged by correspondingly located contacts 20 and 21 in the socket, and the center contact is not used. Sockets of the one wire grounded type, such as illustrated in Fig. 2, are usually provided with a center contact 22, and the body 23 of the socket forms a side contact to which the other or grounded side of the circuit is connected, as indicated at 24. When used in a socket of this type, therefore, the center contact of the plug comes into use by

engaging with the center contact of the socket.

The grounding connection from the plug to the grounded side contact of the socket is made, according to my present invention, by providing a contact 25 electrically connected to the other one of the two end contacts, and extended outwardly far enough to make engagement with the side contact of the socket. In the illustration this side contact is in the form of a piece of spring metal secured to or formed integral with the contact 11 and extended outwardly substantially to the plane of the outer periphery of the plug and there bent over laterally as indicated at 25′, to form a spring brush for engagement with the inner wall of the socket body. This spring brush portion may be bent in either direction, that is either upwardly or away from the end as indicated in Figs. 1 and 2, or downwardly in the opposite direction as indicated at 25″ in Fig. 4. In the first form the brush member may be forced by its engagement with the inner wall of the socket into contact with the metallic shell of the plug. This brings the shell of the plug into circuit and provides that much additional contact between the plug and the socket. In the other form the brush provides the sole connection between the plug and the side contact of the socket. In either form it will be evident that the metallic shell 7 is unnecessary, and that the body of the plug may be made entirely of insulating material.

When the plug is used in a socket of the two wire all insulated type, the grounding contact is unnecessary, and in fact in this case is undesirable. This contact is, therefore, removed from service either by breaking or tearing it off, as indicated in Figs. 1 and 3, or by bending it down or deforming it, as indicated in dotted lines in Fig. 4, so that it will not engage with the side contacts of the socket. The structure of the contacts permits of this deformation and the advantage of deforming it instead of removing it, is that if it ever becomes necessary to use the plug again in a socket of the grounded type, the grounding contact may be readily bent back to place where it will make connection with the side contact of the socket.

From the foregoing it will be seen that my invention is simple and practical for the purposes intended, and provides a universal plug connection which can be manufactured at practically no greater expense than the ordinary plug, and which actually, if the metal shell is not used can probably be manufactured at less cost than the usual plug.

What I claim is:

1. In an electric lamp, a lamp base, a side contact on said lamp base, two end contacts on the lamp base at opposite sides of the center thereof, a filament supported by the lamp base and having its opposite ends connected to the respective end contacts, a center contact at the end of the lamp base electrically connected with one of the end contacts and an outwardly extending bendable spring brush electrically connected to the other one of said two end contacts.

2. In an electric lamp, a lamp base, a side contact on said lamp base, two end contacts on the lamp base at opposite sides of the center thereof, a filament supported by the lamp base and having its opposite ends connected to the respective end contacts, a center contact at the end of the lamp base electrically connected with one of the end contacts and a yieldable spring contact connected to the other one of said two end contacts normally disposed over the side contact on the base to be thereby forced into engagement with said side contact upon the insertion of the lamp in a socket intended therefor.

3. In an electric lamp, a lamp base, a side contact on said lamp base, two end contacts on the lamp base at opposite sides of the center thereof, a filament supported by the lamp base and having its opposite ends connected to the respective end contacts, a center contact at the end of the lamp base electrically connected with one of the end contacts and an outwardly extending detachable spring brush connected to the other one of said two end contacts and readily separable therefrom whereby when said brush is not needed the same may be readily detached from the end contact to which it is normally connected.

EDSON B. WILCOX.