

Nov. 3, 1931.

R. W. SCOTT

1,830,247

PLUG CONNECTER

Filed Aug. 22, 1928

Fig. 1.

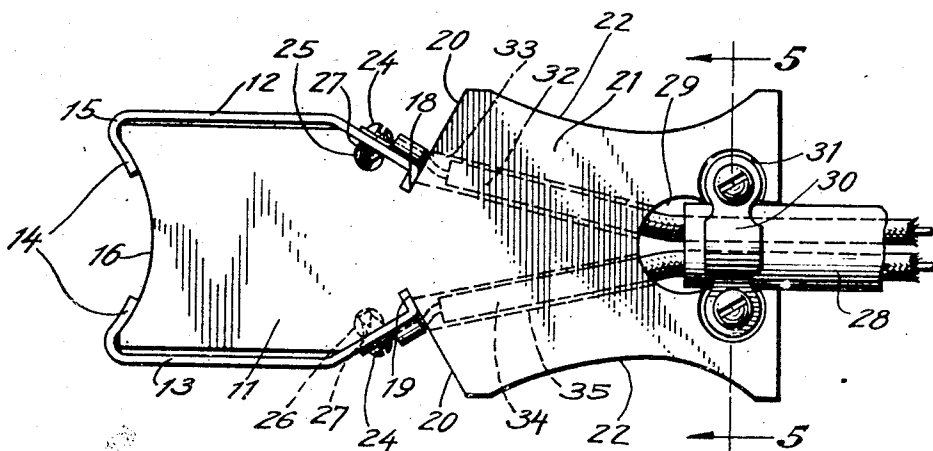


Fig. 2.

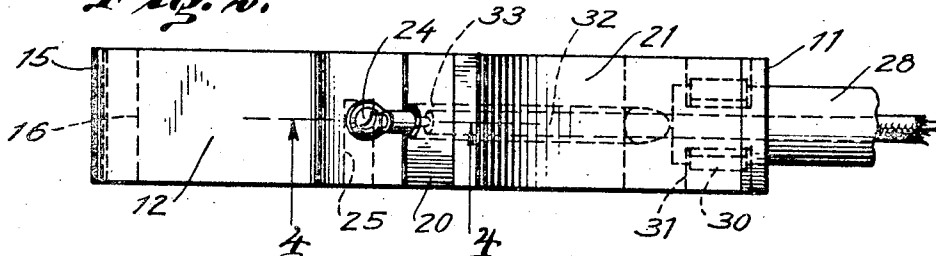


Fig. 3.

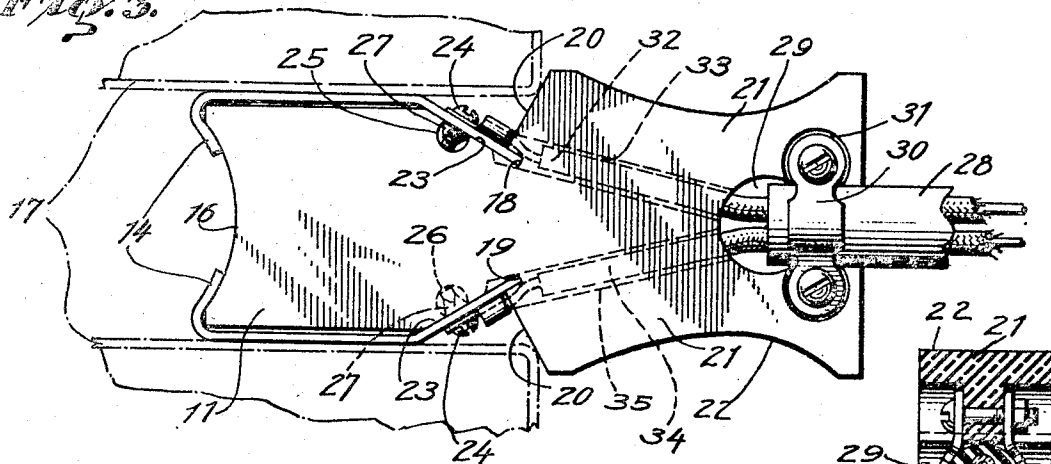


Fig. 4.

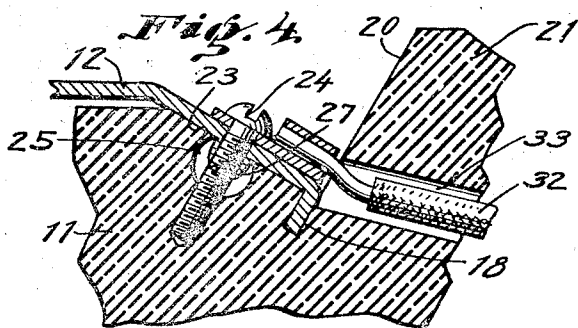
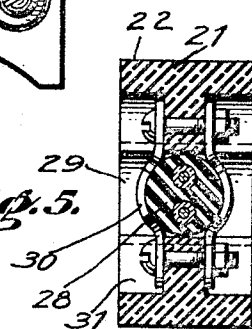


Fig. 5.



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PLUG CONNECTER

Application filed August 22, 1928. Serial No. 301,327.

This invention relates to electrical connection devices, and especially to separable connectors that are adapted to carry a considerable amount of current. Such plug connectors are used for example in studios where electric lights of considerable power are needed, as in the taking of motion pictures.

It is one of the objects of my invention to provide a simple and convenient device of this character, and especially one that can be manufactured inexpensively.

It is another object of my invention to provide a plug connector of large amperage that can be easily manipulated.

My invention possesses many other advantages, and has other objects which may be made more easily apparent from a consideration of several embodiments of my invention. For this purpose I have shown a few forms in the drawings accompanying and forming part of the present specification. I shall now proceed to describe these forms in detail, which illustrates the general principles of my invention; but it is to be understood that this detailed description is not to be taken in a limiting sense, since the scope of my invention is best defined by the appended claims.

Referring to the drawings:

Figure 1 is a side view of a plug connector embodying my invention;

Fig. 2 is a top plan view thereof;

Fig. 3 is a side view of a slightly different form of the connector, shown as engaged in a socket;

Fig. 4 is an enlarged detail sectional view, taken along plane 4-4 of Fig. 2; and

Fig. 5 is a sectional view taken along plane 5-5 of Fig. 1.

Referring to the form shown in Fig. 1, I provide a body 11 of insulation material, such as hard rubber, phenolic condensation product or fibre. This body is in the form of a comparatively thick member of uniform thickness, as shown in Fig. 2. It carries the contact strips 12, 13 at its top and bottom surfaces, which are shown as flat. Each strip has a bent in portion 14 that serves to provide a nicely rounded surface 15 at the active end of the contact strips; and these bent in por-

tions are, in this instance, shown as accommodated in the concavity 16 formed at the end of the body 11.

The turned in portions 14 are useful to limit outward movement of these conductors from the contiguous surfaces of the body 11. It is to be noted that these conductors are spaced slightly away from the body 11, so that they can be sprung toward each other, to fit snugly into the cooperating socket parts 17 (Fig. 3).

Body 11 has formed therewith a handle portion 21, shaped as at 22 to be conveniently gripped by the hand of the user. This portion has end surfaces 20, shown as slanting in this instance, and as forming substantially a right angle with the sloping surface 23 of body 11; surfaces 23 converge toward the axis of the body 11. It is on this sloping surface that the conductor strips 12, 13, are accommodated. The surfaces 20 extend considerably beyond the width of body 11, to form stop wings. When inserted into the corresponding socket 17 as shown in Fig. 3, these wings limit the inward movement by engaging the outer edges of the socket 17.

In order to confine the conductor strips 12, 13 on body 11, these strips can have their ends accommodated in grooves 18, 19 shown as having one side thereof formed as a continuation of surfaces 20; thus these grooves are located at the base of surfaces 20. The strips can be bent inwardly to fit these grooves. Or, as shown in the modification of Fig. 3, the grooves can be formed with one of their surfaces as a continuation of the slanting surface 23 on body 11. In that case, the ends of conductors 12, 13, need not be bent up. This slot arrangement effectively anchors the conductors in place, especially as the fit in the slots is made purposely tight.

Connections to the contact strips 12 and 13 are provided by the aid of screws 24 that are threaded into those portions of strips 12 and 13 that overlie surfaces 23. In order to accommodate the inwardly projecting end of these screws, body 11 is provided with slots 25, 26 which open into faces 23, and which can be easily formed by first drilling the body before it is cut at surface 23, the cut

then passing through the drilled hole. These drilled holes, as shown most clearly in Fig. 2, do not extend all the way through the block or body 11, but just far enough to space the projecting end of screw 24 at the center of surface 23.

As shown most clearly in Fig. 4, the lower surface of the conductors 12, 13 where the screw 24 projects through, has a burr 27 thereon, formed by tapping the hole through the conductor. Thus even before screw 24 is inserted in the conductor, there is a projection at the lower side thereof, which when positioned in slots 25, 26, locks the conductors against movement along the surface 23.

Lateral movement, across the width of body 11 is also prevented by the manner in which the leads are brought to screws 24. In the present instance, I show a twin conductor cable 28 fastened into the slot 29 in handle 21, as by clamps 30 fitting into a depression 31 in the handle. One conductor 32, properly insulated, extends through an aperture 33 that extends between slot 29 and surface 20. It is connected to the screw 24 where it emerges at the face 20. The other conductor 34 likewise extends through a similar aperture 35 and is connected at its free end to its corresponding screw 24.

The manner of use of the plug is evident from the foregoing. The contacts 12, 13, being fastened only at their inner ends, can readily be flexed as body 11 is inserted into a socket 17, to form a tight connection therein. There are very few parts for the entire plug, and it can be assembled quickly and without the need of any tools.

I claim:

1. In a contact device, a body of insulation material, said body having a pair of external surfaces, a pair of metallic contact strips, overlying and normally spaced slightly from said surfaces, means forming a groove connection for confining the conductors against movement in one direction with respect to the body, and means confining the contact strips against movement in another direction.

2. In a contact device, a body of insulation material, said body having a pair of external surfaces, each surface having a slanting portion, said slanting portions converging toward the axis of the body, a contact strip contacting with each slanting portion and having its end engaging in a groove opening in the slanting portion, said groove extending across the body, and a connection to each strip, said connection passing through an aperture in the body and thereby preventing lateral movement of the contact strips.

3. The combination as set forth in claim 2, in which the contact strips have portions that parallel each other and spaced slightly from the external surfaces, so as to permit them to flex.

4. In a contact device, a body of insulation material, and a pair of contact strips overlying but out of contact with opposed faces of the body, said body having overhanging edges, and the strips each having free bent up portions engaging said edges.

5. The combination as set forth in claim 4, in which the overlying contact strips are fastened to the body only adjacent that end of the strip which is remote from the bent up portions.

6. In a contact device, a body of insulation material, said body having a handle portion, said handle portion having a pair of wing portions for limiting the movement of the device into a socket, said wing portions each having a slanting surface, conductors fastened into the handle portion and extending through apertures to the slanting surface, and a pair of contact strips overlying the body and each engaging a groove respectively at the base of the slanting surface, said conductors being connected to said strips.

7. The combination as set forth in claim 6, in which screws are used for the connections between the conductors and the strips, the ends of the screws projecting through the strips and into other grooves extending only part of the way through the body.

In testimony whereof I have hereunto set my hand.

RAY W. SCOTT.