

May 26, 1942.

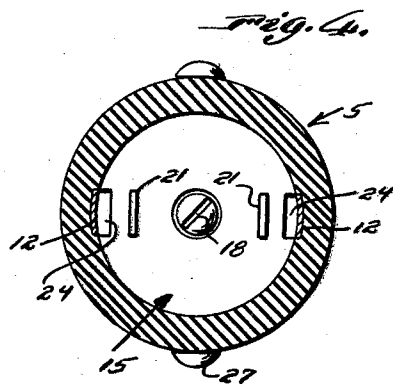
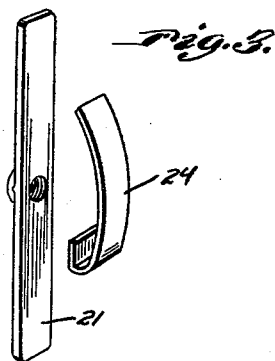
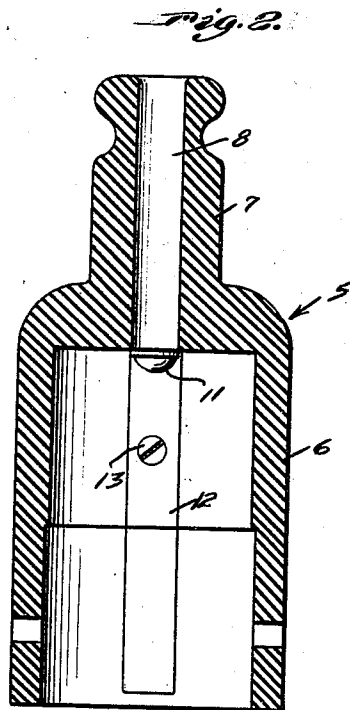
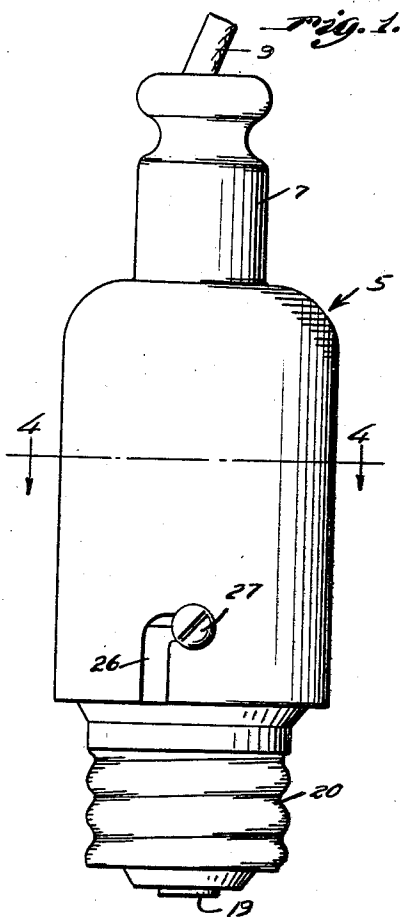
G. PRICE

2,284,231

ELECTRIC CONNECTOR

Filed March 27, 1941

2 Sheets-Sheet 1



Inventor

Garfield Price

By

Clarence A. O'Brien

Attorney

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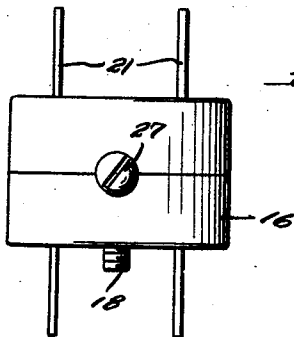
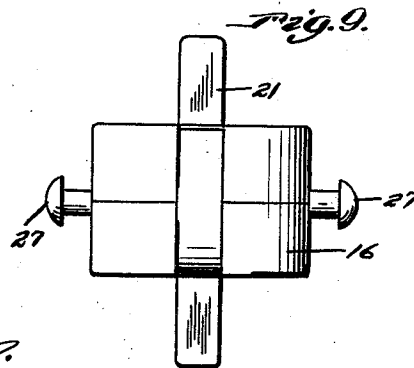
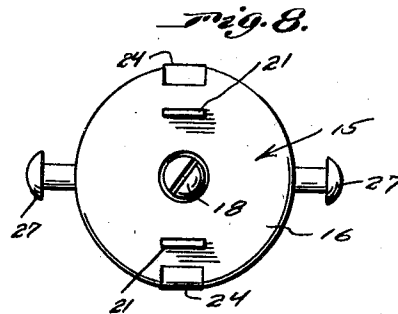
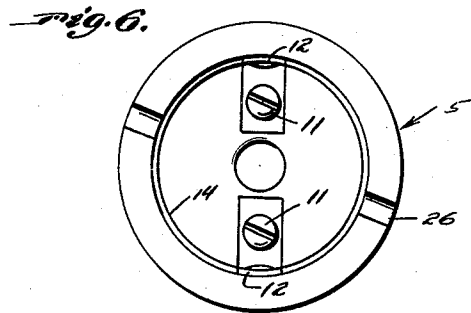
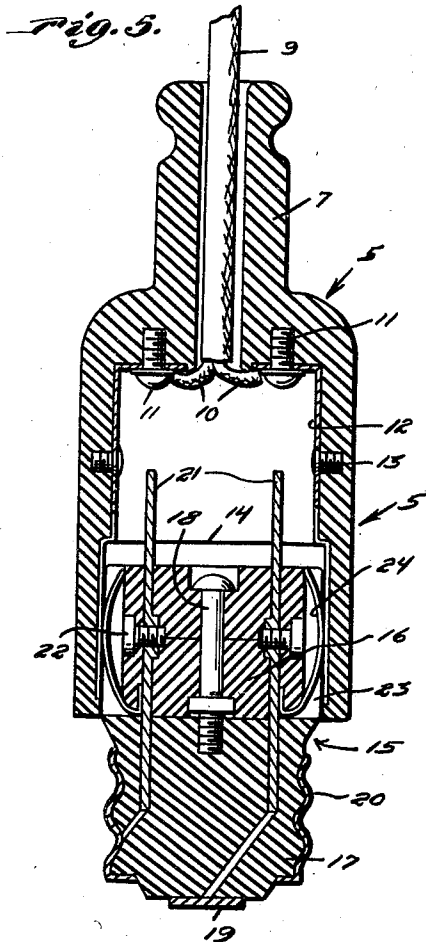
G. PRICE

2,284,231

ELECTRIC CONNECTOR

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2 Sheets-Sheet 2



Inventor

Garfield Price

By

Clarence A. O'Brien

Attorney

UNITED STATES PATENT OFFICE

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ELECTRIC CONNECTOR

Garfield Price, Gary, Ind.

Application March 27, 1941, Serial No. 385,536

2 Claims. (Cl. 173-343)

This invention relates to an electric connector and more particularly to improvements on the type of electric connector set forth in my U. S. Letters Patent No. 2,221,925, issued November 19, 1940. The primary object of this invention is the provision of a positive securing means for the plug in the casing to obviate any chance of said parts becoming accidentally detached during use and which may be easily operated to release the plug from the casing whenever it is desired to reverse the plug in said casing.

Another object of this invention is the provision of improved electrical connections between the contact elements of the plug and the conductors which enter the casing and which also act to frictionally secure the plug in the casing to eliminate play between said parts, and will in no way interfere with the removal and the replacement of the plug in the casing.

With these and other objects in view as will become more apparent as the description proceeds, the invention consists in certain novel features of construction, combination and arrangement of parts as will be hereinafter more fully described and claimed.

For a complete understanding of my invention, reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a side elevation illustrating an electric connector constructed in accordance with my invention.

Figure 2 is a vertical sectional view illustrating the casing and one of the contacts therein.

Figure 3 is a perspective view illustrating one of the contacts of the casing and a contact of the plug for cooperating with the contact of the casing in establishing an electrical connection.

Figure 4 is a sectional view taken on the line 4-4 of Figure 1.

Figure 5 is a vertical sectional view illustrating the casing with the plug therein.

Figure 6 is an end view illustrating the casing with the plug removed.

Figure 7 is a side elevation illustrating one part of the plug and the contact members carried thereby.

Figure 8 is an end view illustrating the plug.

Figure 9 is a side elevation of one of the parts of the plug and taken at right angles to the showing made in Figure 7.

Referring in detail to the drawings, the numeral 5 indicates an insulated casing including a cylindrical portion 6 and a neck 7 integral with one end of the casing and provided with a bore 8 through which an extension cord 9 may extend

to permit the conductors 10 thereof to enter the casing and be secured in place by set screws 11 threaded in the casing and which extend through contact strips 12. The contact strips 12 are arranged opposite to each other in the casing and against the walls thereof having angularly related ends apertured to receive the set screws 11 and further said contact strips are apertured to receive set screws 13 which also thread into the casing and assist the set screws 11 in firmly securing the contact strips in place.

The casing 5 is fully open at its end opposite to the neck 7 and inwardly of the open end an internal shoulder 14 is located, the contact strips being shaped to fit the shoulder 14, as clearly shown in Figure 5.

The purpose of the shoulder 14 is to limit the inward movement of a plug 15 into said casing.

The plug 15 consists of portions 16 and 17 and the portion 16 includes companion sections secured together by a bolt 18 which also threads into the portion 17 of the plug for detachably connecting said portion 17 to the portion 16.

At one end of the portion 17 is an electric contact 19 and said portion 17 is further provided with a contact ferrule 20.

Mounted in the plug 15 are contact members 21 which project a limited distance beyond one end of the plug while the opposite ends are located in the portion 17 and one of the contact members connects with the ferrule 20 while the other contact member connects with the contact 19.

The contact members 21 are secured in the plug 15 by set screws 22 which extend through said contact members and are threaded in the portions 16 of the plug. Said portions 16 of the plug opposite the set screws 22 are provided with grooves 23 in which are mounted arcuately curved spring contacts 24 which protrude slightly outwardly of the grooves to bear against the contact strips 12 when the plug is inserted in the casing. Ends of the spring contacts 24 are embedded in the portions 16 of the plug and are secured to the contact members 21 to establish electrical connection therewith. The other ends of the spring contacts are free to slide in the grooves when pressure is exerted on said spring contacts, as for instance when brought into engagement with the contact strips 12 on the insertion of the plug into the casing.

The construction of the plug 15 as described in detail and shown in the drawings permits this connector to be threaded into an electric output

or to be inserted in an electric output of the type having spaced sockets to receive prongs.

In order to adapt the plug to either type of electric output it is only necessary to release the plug from the casing and reverse its position therein to position either the contact member 21 outwardly of the casing or position the portion 17 with the ferrule 20 outwardly of the casing.

The casing is provided with bayonet slots 26 to receive set screws 27 carried by the plug. This form of connection between the casing and the plug provides a positive securing means between said parts so that any possibility of the plug moving accidentally out of the casing is eliminated.

While I have shown and described the preferred embodiment of my invention, it will be understood that minor changes in construction, combination and arrangement of parts may be made without departing from the spirit and scope of the invention claimed.

Having thus described my invention, what I claim is:

1. In an electric connector, an insulated casing having one end open with its interior of cylindrical shape in cross section, contact strips extending longitudinally in the casing and located at opposite sides thereof, means for connecting the strips to conductors, a plug of non-conducting material having a snug fit in the casing and removable through the open end thereof and said plug being rotatably arranged in the casing, the open end of the casing having bayonet slots therein, projections on the plug for engaging the slots and detachably holding the plug in the casing, said plug having longitudinally extending oppositely arranged grooves in its sides, contact strips passing through the plug and located ad-

jacent the grooves and an outwardly bowed contact strip of spring metal in each groove, with one end bent inwardly and connected with a contact strip of the plug with said end embedded in the plug, the other end of the spring strip being free for sliding movement in the bottom of the groove, said bowed strips engaging the strips of the casing when the plug is inserted in the casing, and turned to place the projections of the plug in locking engagement with the bayonet slots of the casing.

2. In an electric connector, a casing of non-conducting material, contact strips in the casing located at opposite sides thereof, means for connecting the strips to conductors, a plug of non-conducting material removably fitting in the casing, said plug being composed of two sections, a bolt passing longitudinally through the sections for connecting them together, contact strips passing through the sections and having their ends projecting from the ends of the plug, spring strips connected with the strips of the plug and engaging the strips of the casing when the plug is inserted in the casing, a second plug having slots passing through one end thereof for receiving projecting end portions of the strips of the first plug and said end of the second plug having a threaded socket therein for receiving the portion of the bolt which connects the two sections of the first plug together, a ferrule encircling the second plug, means for electrically connecting the ferrule to one of the plug strips when the two plugs are connected together, a contact on the outer end of the second plug and means for electrically connecting the said contact with the other plug strip when the two plugs are connected together.

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