

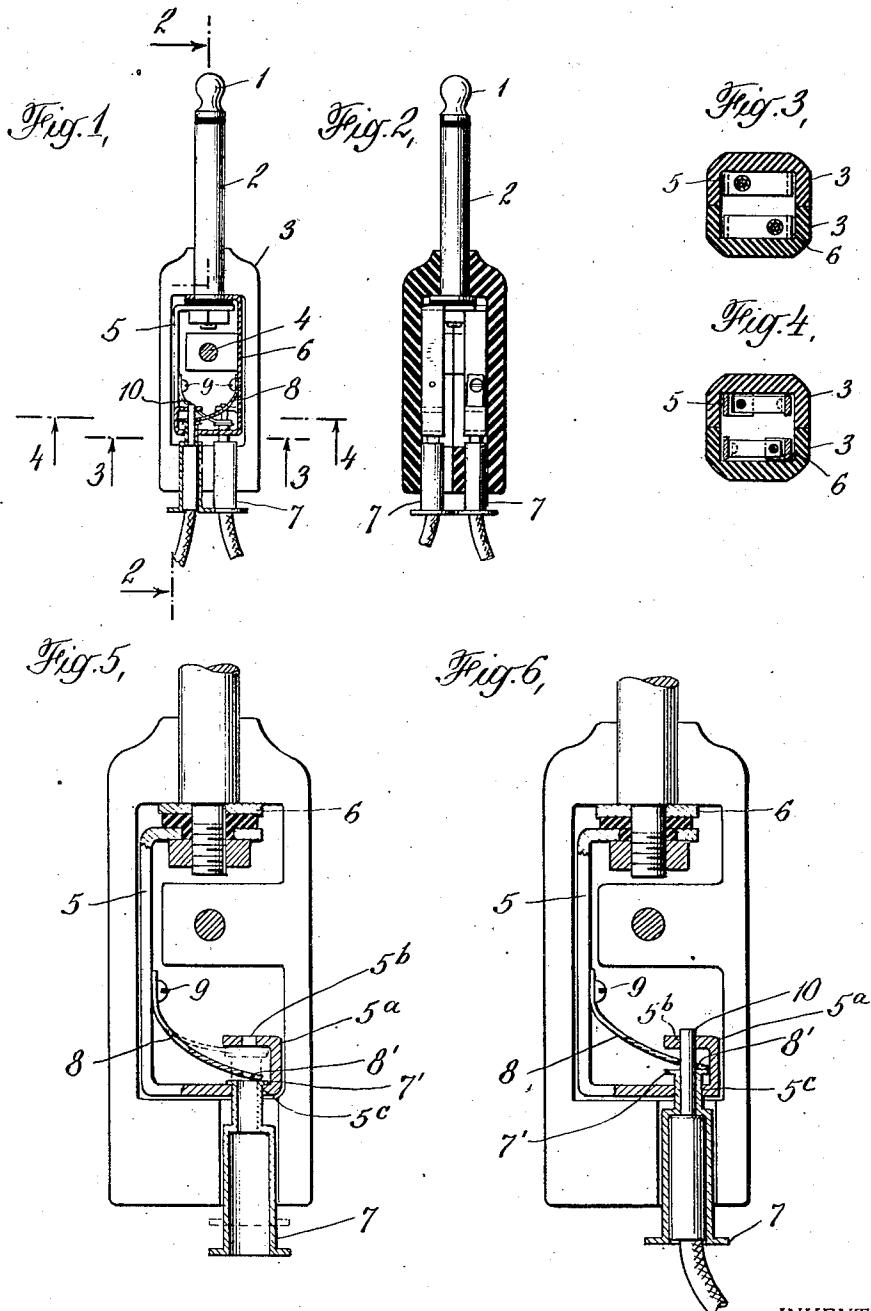
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L. G. PACENT

CONNECTING PLUG

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INVENTOR

Louis G. Pacent

BY

Emmie Davis, Marjorie Emmons

ATTORNEY

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LOUIS GERARD PACENT, OF WINFIELD, NEW YORK, ASSIGNOR TO PACENT ELECTRIC COMPANY, INC., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

CONNECTING PLUG.

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This invention is concerned, in general, with devices for making electrical connections, and, more particularly, devices of the spring connector type.

5 In its broader aspect, the object of the invention is the production of a spring type connector of simple and rugged construction which is economical to manufacture and easy to operate, but in all respects 10 reliable.

In its more specific aspect, the object is to produce a connecting plug of the telephone type including in its structure a spring connector having the desirable characteristics 15 previously set forth.

In accordance with the foregoing objects, the connector constituting the preferred form 20 of the invention comprises a rigid conducting member having a pair of oppositely disposed apertures, that is substantially aligned apertures, through which, conjointly, a wire 25 or cord tip or other similar conductor may be inserted, and a resilient member such as a flat spring having one end fixed and its free 30 end suitable disposed and operable to grip or otherwise restrain the conductor against withdrawal from the aforementioned conducting member, together with suitable 35 means such as a push button for flexing the resilient member, whereby the free end of the latter may be readily moved out of the path of the conductor or disengaged therefrom to permit insertion and withdrawal of the latter.

35 At the present time the invention finds its most important embodiment in telephone plugs for use particularly in conjunction with radio apparatus. Radio telephone headsets are ordinarily provided with cords 40 having so-called pin type cord tips which, of course, are not adapted for making connections with spring jacks, but are particularly well adapted for making connections with certain types of binding posts and 45 spring clips, such as the well-known Fahnestock clips. Because of the fact that it is frequently desirable to connect a telephone headset with binding posts and the like, especially for experimental and testing purposes, it is undesirable, in many cases, to 50 have the headset permanently connected to a plug. The structure of the present invention is designed to meet this situation in that it provides a plug to which a cord 55 provided with the usual pin type cord tips

may be quickly and easily connected and disconnected and in which substantially the entire mechanism for effecting such connections is mounted inside the handle of the 60 plug.

In connection with the detailed description of the invention to follow, reference will be made to the accompanying drawing, in which

Fig. 1 is a elevational view of a telephone plug with one-half of the handle removed for the purpose of more clearly disclosing the interior mechanism;

Fig. 2 is a sectional view taken along the line 2—2 of Fig. 1;

Fig. 3 is a cross sectional view taken along the line 3—3 of Fig. 4;

Fig. 4 is a cross sectional view taken along the line 4—4 of Fig. 1;

Fig. 5 is a fragmentary view, partly in 75 cross section, of the plug shown in Figs. 1 to 4 inclusive.

Referring first to Figs. 1 to 6 inclusive, the plug shown comprises the usual tip and sleeve conductors 1 and 2 respectively and a split handle 3 of insulating material. A screw 4 may be provided for holding the two parts of the handle 3 together. The tip and sleeve members 1 and 2 are insulated from one another in the usual manner, and at 85 their ends are connected to the metallic conducting members 5 and 6 respectively. These latter members are suitably formed, as shown, to fit within the handle 3, and are bent at their lower ends into the form of a 90 U-shaped portion, as illustrated at 5^a. In the two limbs of each of these U-shaped portions oppositely disposed apertures 5^b and 5^c are provided, in the latter of which the hollow push button 7 is slidably mounted. A 95 resilient member, in the form of a flat spring 8, is fixed at one end to the member 5 by means of a screw or rivet 9, and its free end, as clearly shown, extends between the two limbs of the U-shaped portion. The free 100 end of the spring 8 is provided with an aperture 8' of such size that when its axis is in approximate alignment with the apertures 5^b and 5^c, a wire or a cord tip such as 10 of a size adapted to fit loosely in the aperture 105 5^b may be inserted therethrough. The tension of spring 8, however, tends to press its free end downwardly, as viewed in the drawing, into a position wherein the aperture 8' is so situated that the cord tip 10 110

cannot be inserted therethrough. When, however, the free end of spring 8 is forced upwardly by means of the push button 7, this aperture 8' is moved into such a position 5 as will permit the insertion of the cord tip 10. With the cord tip 10 thus inserted, upon the push button being released, the free end of spring 8 tends to move downwardly, and, as a result, is twisted into a plane wherein 10 the cord tip 10 is gripped in the aperture 8' and securely held against withdrawal. It will be perfectly clear from an examination of the drawing that any force applied to the cord tending to withdraw it from the plug 15 operates to tighten the grip of the spring 8 on the cord tip, so that it is practically impossible to withdraw the cord tip without first pressing the button 7. In Fig. 5 the spring 8 is shown in full and dotted lines in 20 its two extreme positions respectively. The flange 7', integral with the button 7, prevents withdrawal of the latter. It is thought that the details of the structure will be perfectly clear from the description already 25 given in conjunction with the very complete illustration of Figs. 1 to 6 inclusive.

It will be understood that although the invention finds its greatest utility at the present time in telephone plugs as illustrated, it is not to be regarded as limited to 30 such structures, inasmuch as it is equally adapted for use as a spring connector outside of the telephone plug art.

I claim:

A device for making electrical connections comprising a rigid conducting member having a pair of substantially aligned apertures, a push button slidably disposed in one of said apertures, the other of said apertures being adapted to receive a conductor, said 35 push button being apertured to permit the insertion therethrough of the said conductor, a resilient member fixed at one end and having means at its free end portion for engaging and restraining the said conductor 40 against withdrawal, said push button being operable to flex said resilient member for disengaging the latter from the said conductor 45 to permit its withdrawal.

In testimony whereof I affix my signature.

LOUIS GERARD PACENT.