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SPRING LIVE WIRE CONNECTER

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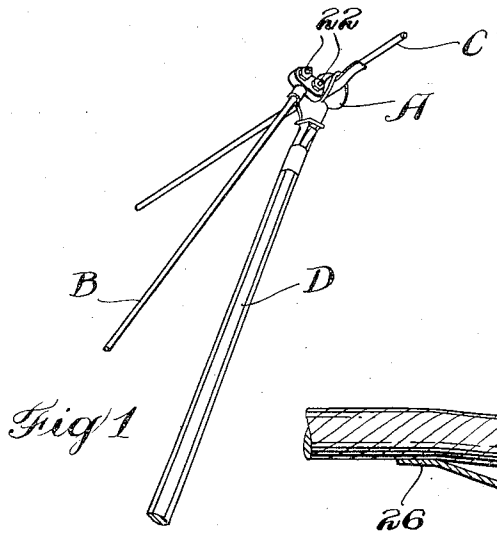


Fig. 1

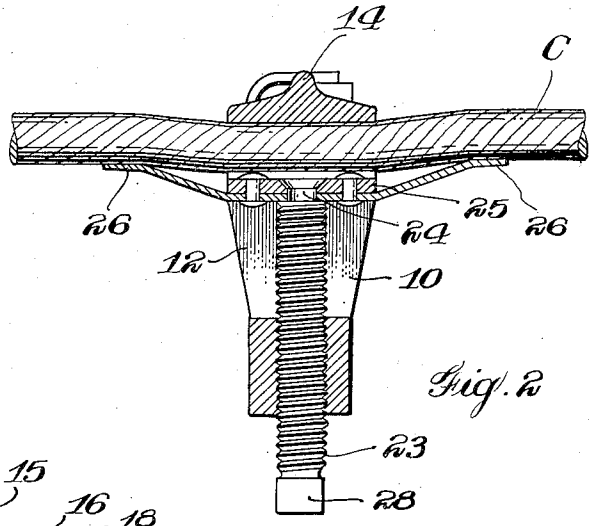


Fig. 2

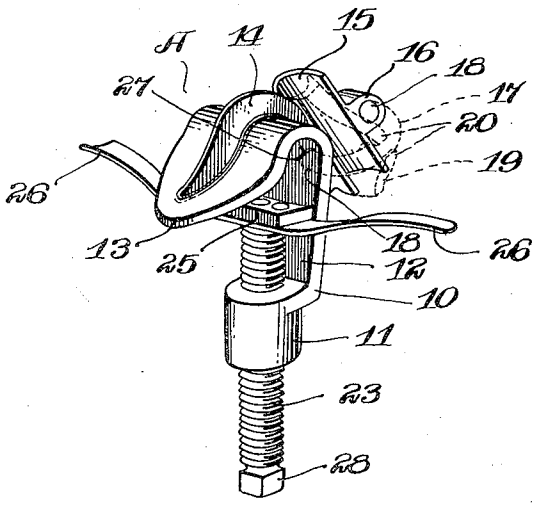


Fig. 3

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SPRING LIVE WIRE CONNECTER

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7 Claims. (Cl. 173—273)

My invention relates to an improvement in spring live wire connecters, wherein it is desired to provide a connecter which is suitable for connecting a cable or wire to a live wire or cable without the necessity of turning off the current during the operation.

Connections are often made to live wires or cables where it is impossible or impractical to cut off the current through such a live wire even momentarily. Such connections are ordinarily made at great risk to the linesman. My type of cable connecter permits the linesman to connect a cable or wire to a live wire, while at the same time obviating the danger to the linesman ordinarily accompanying such an operation.

The construction of my connecter combines with the safety feature a good solderless electrical connection between the attached cable and the live wire and insures low electrical loss therethrough. My connecter is designed to be used in the connection of a cable with the live wire which may be suspended at some distance from the ground without the necessity of coming in close contact with the live wire and without necessitating equipment whereby the linesman may be elevated to the wire in order to connect the cable thereto. My live wire connecter can therefore be used to connect a cable with a live wire intermediate the supports for this wire without the use of an elevating platform or other means for raising the linesman to the height of the live wire.

It is a feature of my invention that my spring live wire connecter may be used as a temporary connection and may be removed at will, leaving no trace of such connection. Accordingly, temporary lead wires may be secured to a live wire temporarily and may be removed whenever desired.

It is my object to provide a spring live wire connecter to which a cable or wire may be first connected and the connecter then looped over the live wire and secured in place. The connecter construction includes a guiding lip which acts to guide the connecter over the live wire and an adjustable clamping plate which may be clamped against the live wire when the connecter is in place. A feature of primary importance in my invention resides in a special formation of spring clamping means whereby the connecter is secured to the live wire under spring tension. This construction insures a high efficiency electric joint between the live wire and the connecter at all times, and acts to hold the connecter in any desired position on the live wire in a simple and effective manner. My connecter is adapted to be secured detachably on the end of an insulated stick of special construction, by means of which the connecter may be hooked over the live wire and clamped into this position. The insulated stick may then be removed leaving the connecter clamped under spring tension to the live wire.

Other objects and novel features of my invention, together with those which have been outlined here above, will be more fully and clearly set forth in the following specification and claims.

In the drawing forming a part of this specification:

Figure 1 is a perspective view of my connecter being attached to a live wire.

Figure 2 is a cross-sectional view taken longitudinally through the center of my connecter.

Figure 3 is a perspective view of the connecter illustrated in Figures 1 and 2.

My spring live wire connecter A is especially adapted for use in connecting a cable B to a live wire or cable C. The formation of the connecter A is designed to be suitable for this type of work. The connecter A is formed with a body portion 10 which is somewhat hook-shaped. The body portion 10 is provided with an internally threaded boss 11 attached integrally to the lower end of the same. Extending from the boss 11, the body portion 10 is formed of a flat plate-like member providing a rear wall 12 and which is bent into a hook shape to terminate in a projecting lip 13. A reinforcing rib 14 is formed on the body portion 10 and holds the body portion rigidly in shape.

An angularly disposed channel 15 is integrally secured to the reinforcing rib 14 at the rear of the body portion 10. Bolt holes extend through the reinforcing rib 14 and through a boss 16 to accommodate a U bolt 17. The holes 18 are oppositely disposed on either side of the channel 15 and the U bolt 17 is equipped with a clamping plate 19 pivotally supported to the bolt by ears 20. As the nuts 22 on the ends of the U bolt 17 are tightened, the U-bolt forces the clamping plate 19 tightly against the cable B, holding this cable B firmly and providing a low loss electrical connection between the connecter A and the cable B.

A bolt 23 extends vertically through the boss 11 and is pivotally connected at 24 to a clamping jaw 25. Grooved spring arms 26 are secured to the clamping jaw 25 and operate integrally with this jaw. As the bolt 23 is rotated, the

clamping jaw 25 is raised or lowered, one side of this jaw bearing against the rear wall 12. The bearing of the jaw 25 against the wall 12 prevents the rotation of the jaw 25 with the bolt 23 and keeps the spring arms 26 in line with the groove 27 formed by the hook shape of the body portion 10.

When the spring live wire connecter A is secured in place, the cable B is inserted in the channel 15 and the nuts 22 are tightened drawing the U-bolt 17 against the clamping plate 19 and forcing this clamping plate in secure engagement with the cable B. When this cable B is in place, the connecter A is inserted on the end of a specially designed socketed insulated stick D of the type illustrated in Figure 1 of the drawing. The connecter A is then hooked over the live wire C, the outwardly extending lip 13 guiding the wire C into the groove 27 in the body portion 10. When the cable C is in the groove 27, the stick D is rotated. As a means for engaging the head 28 of the bolt 23 is provided in the end of the stick D, rotation of this stick tightens the bolt 23 forcing the clamping jaw 25 and the spring arms 26 toward the cable C. As the spring arms 26 bear against the cable C, they flex the cable slightly, as illustrated in Figure 2 of the drawing, and hold the connecter A under spring tension so that the connecter may not easily move longitudinally along the cable C after it has been secured in place. The springs 26 clamp the cable C tightly against the grooved end 27 of the body portion 10 and form a low loss electrical connecter between the connecter A and the cable C. In this way, the cable B may be electrically connected with the live wire C virtually without danger to the linesman and in a manner to provide a temporary or permanent electrical connection between these two cables. The connecter may be readily secured to the live wire or detached therefrom from a point remote from the live wire by means of the stick D.

In accordance with the patent statutes, I have described the principles of operation of my spring live wire connecter and while I have endeavored to set forth the best embodiment thereof, I desire to have it understood that this is only illustrative of a means of carrying out the invention, and that obvious changes may be made within the scope of the following claims without departing from the spirit of the invention.

I claim:

1. A spring live wire connecter including, a body portion, means for clamping a cable thereto, a groove formed therein for receiving a live wire, a clamping jaw, means for moving said clamping jaw toward or away from said live wire, and spring arms on said clamping jaw adapted to bear against said live wire projecting beyond said body, on either side thereof and hold the wire firmly in said groove.

2. A live wire connecter including, a body portion, means for clamping a cable thereto, a groove in said body portion for receiving a live wire, spring means adjustably secured to said body portion, and means for forcing said spring means toward said groove to clamp said wire in said connecter under spring tension.

3. A connecter for live electrical wires including, a body portion, means on said body portion for securing a cable thereto, a groove in said body portion adapted to receive a live wire, spring arms movably secured to said body portion adapted to bear longitudinally against the live wire beyond said groove to hold the wire in said groove, and means for moving said spring arms toward said groove to clamp the wire.

4. A connecter for live electrical wires including, a body portion, means for clamping a cable thereto, a groove formed in said body, a bolt extending through said body portion, resilient arms secured to said bolt pivotally, and insulated means for engaging said bolt to force said spring means against a live wire bearing on the same beyond said groove to firmly hold the wire in the groove.

5. A connecter for live electric wires including, a body portion, means for clamping a cable thereto, a clamping bolt extending therethrough, a clamping jaw on said bolt adapted to slide along said body portion, to prevent the jaw from turning relative to said body portion, spring arms connected on and projecting on either side of said clamping jaw and means for engaging said bolt to clamp said spring arms against a cable extending through said groove.

6. A spring live wire connecter including, a body portion, a channel formed integral with said body portion, a U-bolt extending transversely over the back of said channel with the ends of the bolt extending through said body portion, a clamping plate on said U-bolt adapted to clamp a cable in said channel, a groove formed in said body portion, a bolt extending through the lower portion of said body portion, a clamping jaw pivotally secured on the end of said bolt, spring means secured to and extending beyond said clamping jaw to resiliently clamp a wire extending through said groove when said bolt is tightened.

7. A live wire connecter including, a body portion, means for connecting a cable thereto, a groove formed in said body portion, spring clamping means extending beyond the ends of said groove, and means opposite said groove for urging said spring clamping means toward said groove to clamp a wire under spring tension in said groove.

HARRY CAIRD.