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J. O. CADIEUX

1,994,882

ELECTRIC CONNECTER

Filed April 16, 1930

Fig. 1.

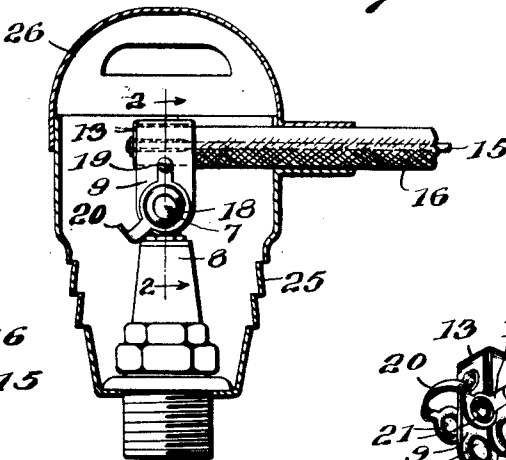


Fig. 4.

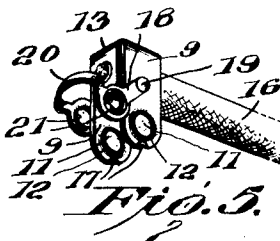
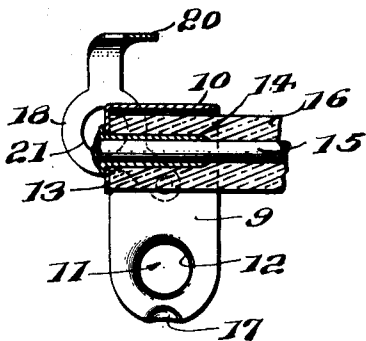


Fig. 5.

Fig. 3.

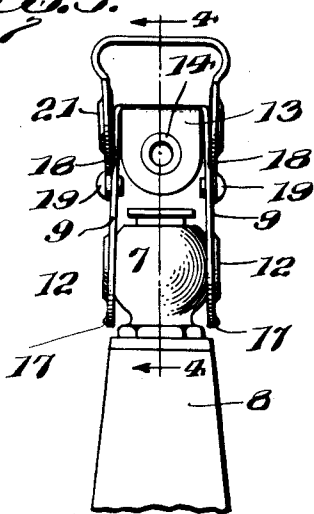
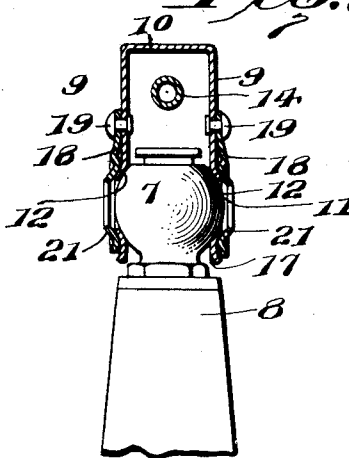


Fig. 2.



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UNITED STATES PATENT OFFICE

1,994,882

ELECTRIC CONNECTER

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5 Claims. (Cl. 173-269)

My invention relates particularly to clips for attaching electrical conductors to terminals such as spark plugs. The preferred form of device is adapted particularly to connect a conductor to a bulbous tip.

One object of the invention is to provide a clip which can be conveniently applied in direction axial to the spark plug.

Another object is to provide a clip of this character which can be readily housed in a shield.

Another object is to provide a latch for holding a clip securely in place and preventing its accidental disengagement.

In its preferred form the clip comprises spring jaws provided with means for anchoring a conductor between the sides of the jaws. The body of the clip is formed of resilient material such as phosphor bronze and the jaws are provided with recesses for receiving the spark plug tip. A latch member, also formed of resilient metal, is hinged to these jaws and provided with a finger piece at one side. The jaws and latch are provided with interfitting projections and recesses for holding the latch in its operating position.

Fig. 1 is a side view of a spark plug with a connector involving my invention and showing in section a shield or housing.

Fig. 2 is a sectional view of the connector on the plane of the line 2-2 of Fig. 1 and on an enlarged scale.

Fig. 3 is an end view showing the latch retracted.

Fig. 4 is a sectional view on the line of the plane of line 4-4 of Fig. 3 showing the connector without the spark plug.

Fig. 5 is a perspective view of the connector.

The tip 7 indicates the bulbous end of the spark plug 8 with which the connector is particularly intended to be used.

The body of the clip has the jaws 9-9 connected by a cross piece 10. The jaws are provided with recesses 11 which may be in the form of perforations surrounded by outwardly projecting flanges 12. A lug 13 is flanged over from the base 10 and extends across one side of the space between the jaws 9. A tubular portion 14 is connected to this lug and receives the end of the conductor 15 which may be soldered in place therein. The conductor of course will be provided with suitable insulation 16. And the conductor itself may be of any suitable form.

The jaws are preferably provided with introductory notches 17 to facilitate the application of the jaws 9 to the tip 7.

The latch member has side arms 18 hinged at

19 to the jaws and provided with an arcuate cross bar 20 offset at one side which serves as a finger piece or handle to facilitate movement of the latch. The side arms are provided with recesses formed by pressing flanges 21 outwardly so as to coact with the flange 12 on the sides of the jaws when the parts are in the interlocked position of Figs. 1 and 2. The openings through the jaws and latch leave passages for the escape of dirt, etc. and thus prevent accumulation of non-conducting material which might otherwise be caked on the inner sides of the jaws where they press against the bulbous tip of the spark plug.

The preferred construction is especially intended for use with shielded spark plugs where the shield may have, for instance, a body portion 25 and a detachable cap 26. My invention however is not concerned with the details of this shield.

To apply the connector it will be seen that it is simply necessary to press the clip toward the spark plug in an axial direction, the notch 17 serving as the directing guide. The clip is pressed downward by pressure on the base 10 and when the jaws snap on to the tip 7 the latch handle is pressed downwardly until the flanges 21 and 12 interlock. The latch thus reinforces the jaws and makes it practically impossible to detach the connector from the spark plug. The pairs of jaws should be sufficiently resilient to permit the clip to be applied to the bulbous tip when the latch is disengaged and the latch should have sufficient resiliency to permit it to expand laterally for the purpose of engagement and disengagement of the flanges 21 and 12. The cross bar 20 should be sufficiently rigid so that the latch itself can not too easily expand. The parts are so designed as to also adapt the connector to terminals which are either somewhat larger or somewhat smaller than the standard dimension.

I claim:

1. A connector comprising a clip member having side jaws with recesses for engaging a bulbous terminal, a flange secured to the clip member having a wire receiving tube between the jaws, and a latch having side arms hinged to the jaws and having a cross bar connecting the sides of the latch and constituting a finger piece.

2. A connector comprising a U-shaped clip member having side jaws with recesses for engaging a terminal, a flange formed integral with the clip member and closing the upper outer portion thereof, a wire receiving tube attached to said flange and extending inwardly thereof between said jaws, and a latch having side arms

hinged to the jaws and having an arcuate cross bar connecting the sides of the latch and constituting a finger piece.

5 3. A connector comprising a U-shaped clip member having yielding jaws equipped with outwardly pressed recessed portions for axial engagement with a bulbous terminal of a spark
10 plug, a flange secured to the clip member provided with a wire receiving tube between the jaws, a latch having side arms with outwardly pressed recessed portions for interfitting engagement with the jaw portions, and an arcuate member connecting the sides of the latch and constituting a finger piece.

15 4. A spark plug connector comprising a terminal frame having spring jaws extending transversely therefrom, a conductor connected to said frame, said jaws extending laterally from said conductor and having recesses to receive the

bulbous head of a spark plug, and a latch hinged to the sides of the frame and adapted to swing over the end of the frame clear of the jaws and frame and also adapted to swing over the sides of the jaws to clamp the jaws in place upon a bulbous terminal.

5. A spark plug connector comprising a sheet metal frame having a top, side flanges extending transversely from the top and forming jaws having recesses for receiving the bulbous tip of a
10 spark plug, and an end plate closing part of the space between the side flanges at one end of the frame, an insulated conductor having the end of its insulation housed between the side flanges and beneath the top of the frame and its wire
15 electrically connected to the end plate, and a latch member hinged to the side flanges and embracing the jaws adjacent the recesses.

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