Oct. 31, 1933. P. PARADUN 1,933,027

CONDUCTOR WIRE CLIP

Filed Oct. 12, 1931

Fig. 1.

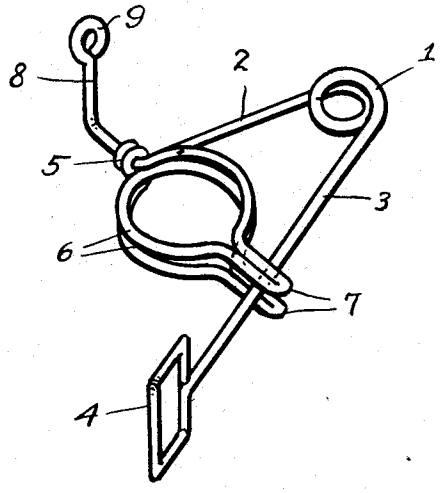


Fig. 2.

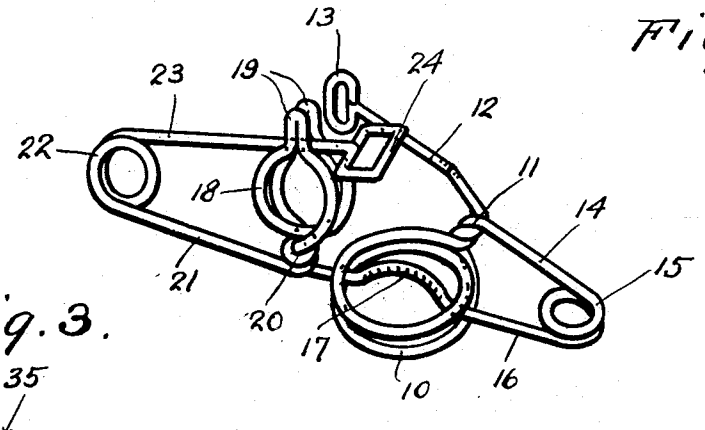
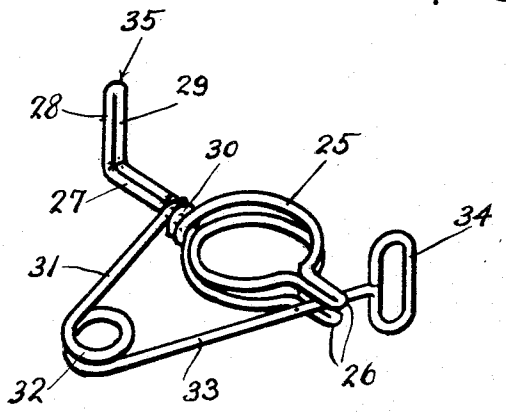


Fig. 3.



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CONDUCTOR WIRE CLIP

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4 Claims. (Cl. 173—273)

This invention relates to conductor wire clips and has for its primary object to provide, in a manner as hereinafter set forth, devices of this character embodying a novel construction, combination and arrangement of parts through the medium of which an electric current conducting wire may be expeditiously and detachably secured in any desired place, as to the terminals or posts of various types of batteries.

Other objects of the invention are to provide conductor wire clips of the aforementioned character which will be simple in construction, strong, durable, efficient and reliable in use and which may be manufactured at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawing, in which:—

Figure 1 is a view in perspective of one embodiment of the invention.

Figure 2 is a perspective view of another embodiment of the invention.

Figure 3 is a perspective view of still another embodiment of the invention.

Each form of the invention is formed from a single length of resilient wire. In Figure 1 of the drawing the wire is bent at an intermediate point in a manner to form the coil 1 from one end of which a comparatively short arm 2 extends and from the other end of which a comparatively long clamping arm 3 extends. Said arm 3 terminating, at its free end, in a loop 4 which preferably is of substantially rectangular form.

At its end which is remote from the coil 1, the arm 2 is coiled twice, as at 5, and is then formed to provide the coil 6 having two convolutions which are disposed substantially at right angles to the convolutions of the coil 5. The coil 6 is disposed between the arms 2 and 3. On the sides thereof which are remote from the coil 5, the convolutions of the coil 6 are bent or squeezed together in a manner to provide the guides 7 between which the clamping arm 3 is operable.

From the coil 6 the wire forming the clip shown in Figure 1 extends through the coil 5 and is bent at an angle, as at 8 and terminates in an eye 9. The eye 9 is for the passage of a bolt or other suitable securing elements for securing the clip to the electrical apparatus such as the terminal or post of a battery.

In use, with the clip secured in position on the electrical apparatus, the clamping arm 3 is pressed inwardly between the guides 7 and between the convolutions of the coil 6 after which the conductor wire to be connected is inserted through the coil 6 between the clamping arm 3 and the side of said coil 6 from which the guides 7 project. The clamping arm 3 is then released and springs outwardly in a manner to frictionally clamp the conductor wire in the coil 6. The clamping arm 3 is actuated by engaging a finger with the loop 4.

In the form of the invention illustrated in Figure 2 of the drawing, the wire has an intermediate portion bent in a manner to form a coil 10 the ends of which are twisted together, as at 11. From the twist 11 one end portion of the wire extends at an angle, as at 12, and terminates in a loop 13. Extending in substantially an opposite direction from the twist 11 is an arm 14 which merges with a coil 15. Extending from the coil 15 is a comparatively long clamping arm 16 having a toothed, arcuate intermediate portion operable within the coil 10, as indicated at 17. The clamping arm 16 is operable between the convolutions of the coil 10.

After passing through the coil 10 the arm 16 is bent at an angle and formed to provide a coil 18. The coil 18 is formed with two convolutions which are bent or squeezed together on one side in a manner to provide the guides 19. After leaving the coil 18 the wire is twisted, as at 20, and extends, as at 21, to a coil 22. Extending from the coil 22 is a clamping arm 23 which is operable between the guides 19 and the convolutions of the coil 18. The free end portion of the clamping arm 23 is formed to provide a loop 24.

In use, the clip illustrated in Figure 2 of the drawing is mounted in position, as on a battery terminal or post, by swinging the arm 16 toward the twist 11 between the convolutions of the coil 10. The coil 10 is then slipped over the terminal or post and the arm 16 is released, thus firmly gripping the terminal or post. As will be apparent the teeth on the arcuate portion 17 of the arm 16 will bite into the terminal or post. The convolutions of the coil 10 may also have teeth therein for biting into the post. Then, the clamping arm 23 is swung inwardly toward the twist 20 between the convolutions of the coil 18 and the conductor wire to be connected is inserted through the coil 18 between the clamping arm 23 and the sides of the convolutions of the coil 18 from which the guides 19 extend. The clamping arm 23 is actuated in the manner by engaging the finger on the loop 24. It will thus be seen that the conductor wire will be securely clamped by the clip.

In the form of the invention illustrated in Figure 3 of the drawing, the length of wire has at an intermediate portion formed to provide a coil 25 having two convolutions. On one side the convolutions of the coil 25 are bent or squeezed together in a manner to form the guides 26. From one end of the coil 25 the wire extends outwardly, as at 27, and may then be bent at an angle, as at 28 and is then bent upon itself, as at 29. The portions 27, 28 and 29 constitute an arm or bracket for mounting the clip on the electrical apparatus in any suitable manner, as by soldering.

From the other end of the coil 25, the wire is twisted around the inner end portion of the portion 27, as at 30. From the twist 30 an arm 31 extends which merges with a coil 32. Extending from the coil 32 is a comparatively long clamping arm 33 which is operable between the guides 26 and the convolutions of the coil 25. At its free end the clamping arm 33 terminates in a loop 34.

In use, the clip is, as before stated, secured on the electrical apparatus by connecting the arm or bracket constituted by the portions 27, 28 and 29 in any suitable manner. This bracket is designated generally by the reference numeral 35. The clamping arm 33 is then swung inwardly between the guides 26 and between the convolutions of the coil 25 and the conductor wire to be connected is then inserted through the coil 25 between the clamping arm 33 and the side portion of said coil 25 from which the guides 26 extend. The clamping arm 33 is actuated in this manner by engaging a finger on the loop 34. The clamping arm 33 is then released to securely clamp the conductor wire in the coil 25.

It is believed that the many advantages of clips in accordance with this invention will be readily understood, and although the preferred embodiments of the invention are as illustrated and described, it is to be understood that further changes in the details of construction and in the combination and arrangement of parts may be resorted to which will fall within the scope of the invention as claimed.

What is claimed is:—

1. A conductor connecting clip formed from a single length of resilient wire having an intermediate portion bent in a manner to form a coil, comparatively long and short, normally diverging arms extending from the ends of the coil, a coil on the free end of the short arm extending therefrom toward the long arm for the reception of the conductor, guides extending from the convolutions of the second named coil on opposite sides of the long arm, said long arm being operable between the convolutions of the coil and engageable with the conductor for clamping the same in the second named coil, the guides being engageable with the long arm for directing the same between the convolutions of the second named coil, a loop on the free end of the long arm, and means extending from the second named coil for mounting the clip on a support.

2. A conductor connecting clip formed from a single length of resilient wire having an intermediate portion bent in a manner to form a coil, comparatively long and short, normally diverging arms extending from the ends of the coil, a coil on the free end of the short arm extending therefrom toward the long arm for the reception of the conductor, guides extending from the convolutions of the second named coil on opposite sides of the long arm, said long arm being operable between the convolutions of the coil and engageable with the conductor for clamping the same in the second named coil, the guides being engageable with the long arm for directing the arm between the convolutions of the second named coil, a loop on the free end of the long arm, and means extending from the second named coil for mounting the clip on a support, said means comprising an angular bracket.

3. A conductor connecting clip formed from a single length of resilient wire having an intermediate portion bent in a manner to form a coil, comparatively long and short, normally diverging arms extending from the ends of the coil, a coil on the free end of the short arm extending therefrom toward the long arm for the reception of the conductor, guides extending from the convolutions of the second named coil on opposite sides of the long arm, said long arm being operable between the convolutions of the coil and engageable with the conductor for clamping the same in the second named coil, the guides being engageable with the long arm for directing the arm between the convolutions of the second named coil, a loop on the free end of the long arm, and means extending from the second named coil for mounting the clip on a support, said means comprising an angular bracket, and an eye on one end of the bracket for the passage of a securing element.

4. A conductor connecting clip formed from a single length of resilient wire having an intermediate portion bent in a manner to provide a coil, normally diverging arms extending from the ends of the coil, a coil on one of the arms extending therefrom toward the other arm, the second named coil being for the reception of the conductor, said other arm being operable between the convolutions of the second named coil and engageable with the conductor for frictionally clamping the same in the second named coil, the convolutions of the second named coil having the side portions thereof which are adjacent said other arm squeezed together in a manner to provide guides extending on opposite sides of said other arm for directing said other arm between the convolutions of the second named coil, and a loop on the free end of said other arm for engagement by a finger for actuating said other arm.

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