Aug. 30, 1932. C. G. OLSON 1,874,593

ELECTRICAL CONNECTER

Filed Dec. 13, 1929

Fig. 1.

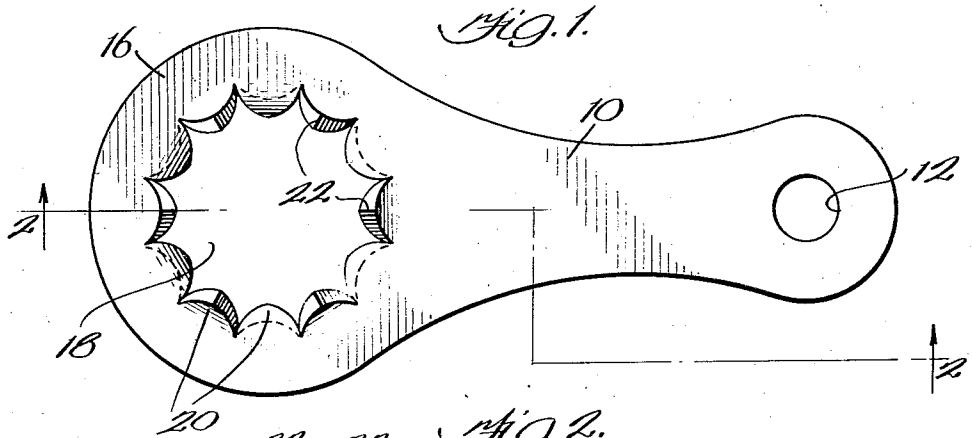


Fig. 2.

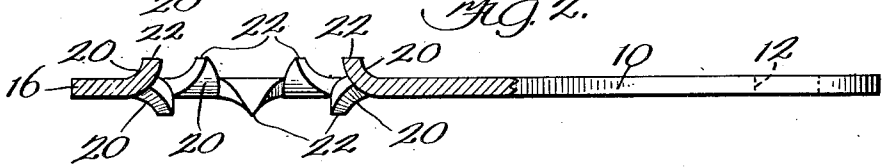


Fig. 3.

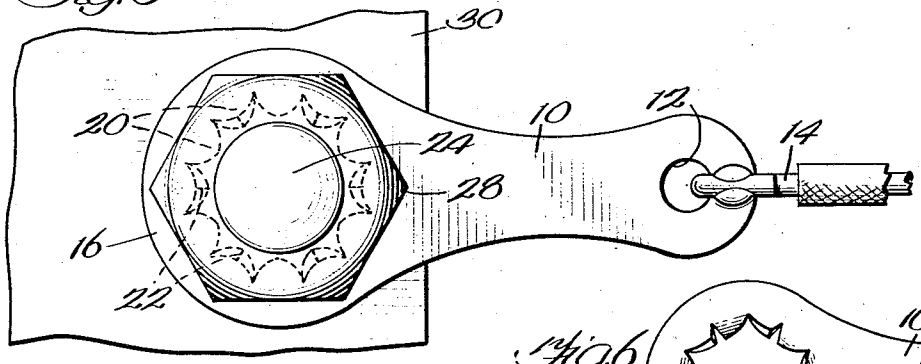


Fig. 6.

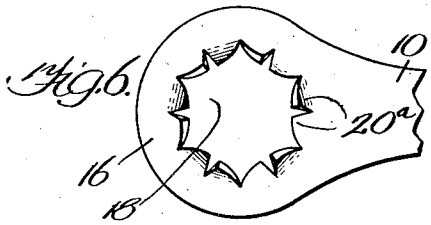


Fig. 4.

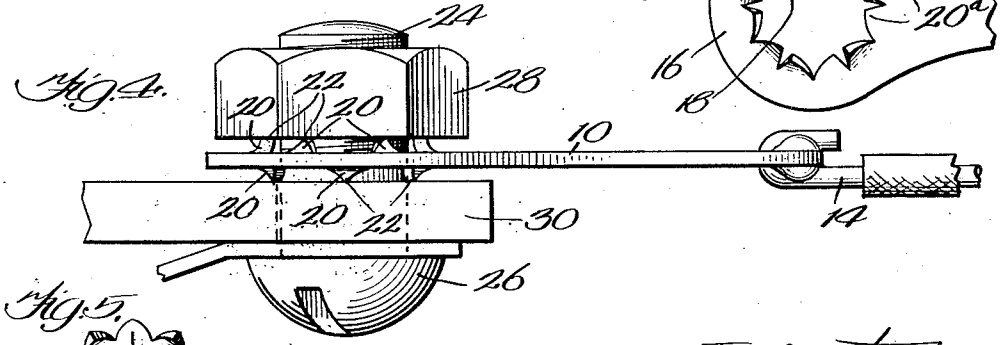
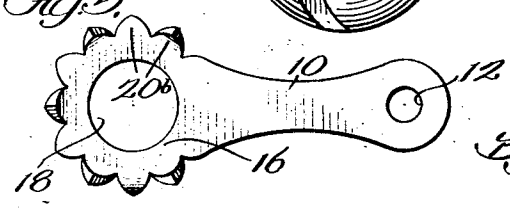


Fig. 5.



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Patented Aug. 30, 1932

1,874,593

UNITED STATES PATENT OFFICE

CARL G. OLSON, OF CHICAGO, ILLINOIS, ASSIGNOR TO SHAKEPROOF LOCK WASHER COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF DELAWARE

ELECTRICAL CONNECTER

Application filed December 13, 1929. Serial No. 413,707.

My invention relates generally to electrical connecters but more particularly to connecters which are adapted to be clamped in position upon a binding post.

It is one of the primary objects of my present invention to provide an electrical connecting device which is of extremely simple construction and which may be effectively stamped or otherwise formed from flat stock in a very expeditious manner.

Another object is to provide a connecter of the flat type which is provided with locking teeth of improved practical construction which will effectively dig into the work when clamped therebetween so as to securely lock the associated parts in position and further to positively insure proper electrical contact between the associated parts.

More specifically, my invention contemplates the provision of a connecter having a shank portion, the outer extremity of which is adapted to receive the terminal of an electrical conductor and the inner extremity is apertured and provided with a plurality of locking and contacting teeth which are alternately bent in opposite directions out of the plane of the connecter stock whereby to present sharp work engaging edges or corners upon opposite sides of the connecter.

These and other objects will be more apparent from the following detailed description when considered in connection with the accompanying drawing, wherein:

Figure 1 is a plan view of a connecter which is representative of one embodiment of my invention;

Figure 2 is a sectional view of the device taken substantially along the line 2—2 of Figure 1;

Figure 3 is a plan view of the connecter shown in operative association with a terminal screw and a conductor;

Figure 4 is a front elevational view of the structure shown in Figure 3;

Figure 5 discloses a modified form of connecter which embodies features of my invention; and

Figure 6 discloses a connecter similar to that disclosed in Figures 1 to 4 inclusive, but provided with ratchet-like teeth.

Referring now to the drawing more in detail wherein like numerals have been employed to designate similar parts throughout the various figures, it will be observed that my invention contemplates the provision of an electrical connecter which constitutes a shank 10 which simulates the shank structure shown in the patent to John M. Gribbie, Number 1,697,954. This shank 10 is provided at one extremity with an aperture 12 which is adapted to receive a conductor 14. The opposite extremity of the shank or body 10 is formed with an enlarged annular section 16 which is provided with an aperture 18.

Disposed along the inner margin of the annular section 16 is a plurality of teeth or prongs 20 as shown in Figures 1 to 4 inclusive. It is to be noted that alternate prongs are bent out of the plane of the section 16 in one direction and the other alternate prongs or teeth are bent out of said plane in the opposite direction. These teeth are V-shaped so as to enable a sharp work engaging edge 22 to be positioned on opposite sides and out of the plane of the section 16. The V-shape of the teeth enables the same to be flexed outwardly in opposite directions without the necessity of imparting a twist thereto. In other words, the teeth which project to one side of the section 16 function independently of the teeth which project in the opposite direction. This is to be clearly distinguished from teeth twisted out of the plane of the connecter stock wherein each tooth or prong has a portion projecting on opposite sides of the connecter stock. Thus, my invention contemplates the provision of a connecter in which the teeth are narrower at their outer extremities and oppositely bent out of the plane of the material so as to place the points or corners of said teeth in a position to effectively contact with the parts between which they are clamped.

In Figures 3 and 4 I have shown the manner in which my improved connecter may be associated with the work. Said connecter is shown in operative association with a terminal screw 24 having a head 26. A nut 28 is mounted upon the screw 24 and is adapted to clamp the teeth or prongs 22 against a

second terminal member 30. In this connection it is to be understood that the disposition of the teeth or prongs is such as to render the same sufficiently resilient so that when they are clamped between the work, the inherent resiliency of said teeth will serve to establish an effective yielding contact therewith. The teeth are sufficiently rigid, however, so as to enable the outwardly displaced corner portions thereof to dig into the surface of the work so as to effectively lock the parts in position and thereby secure said terminal against lateral displacement. The roots of the teeth or prongs are sufficient in width to lend considerable rigidity and by tapering said teeth toward the outer extremities, a structure is presented which enables said teeth to be conveniently flexed or bent outwardly about an axis which extends transversely of the tooth structure.

Referring to Figure 6, it will be observed that I have disclosed a plurality of teeth or prongs which I have designated by the numeral 20*a*. These prongs are bent out of the plane of the connecter stock in the manner already described in connection with the tooth structures shown in Figures 1 to 4 inclusive. However, the teeth 20*a* differ structurally from the teeth 20 in that said teeth 20*a* are of ratchet-like construction. That is to say, the angular disposition of one side of each tooth 20*a* with respect to a line extending across the base thereof, differs from the angular disposition of the opposite side of said tooth. By having the teeth formed in this manner, the nut 28 may be readily tightened against the teeth, and the tendency for the nut to back off will be necessarily decreased.

In Figure 5 I have shown a plurality of teeth 20*b* disposed along the outer margin of the section 16. These teeth 20*b* are similar in structural characteristics to the teeth 20 shown in Figures 1 to 4 inclusive. It will thus be apparent that my invention contemplates the provision of the above described teeth or prongs along the inner or outer margin of the connecter.

From the foregoing it will be understood that I contemplate the provision of a connecter having a plurality of teeth which are so constructed as to greatly enhance the contacting characteristics of the connecter as well as the locking characteristics thereof. In other words, by providing the above described V-shaped teeth, a plurality of sharp edges or corners are presented on opposite sides of the connecter stock which will resiliently bear against and dig into the material between which they are clamped. The connecter may be made of spring bronze or other suitable material and may be conveniently stamped or otherwise formed from flat stock. Obviously, the invention is not limited to a connecter having the particular type of V-shaped tooth shown in the drawing but is capable of many other modifications without departing from the spirit and scope thereof.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. An electrical connecter of conductive material having a terminal member formed with an aperture for accommodating a binding screw, and a plurality of work engaging teeth disposed around said aperture, said teeth being narrowed to sharpen their outer extremities and alternately bent in opposite directions out of the plane of the connecter stock so as to present the outer narrowed portions thereof in position to be clamped between the work and thereby insure electrical contact and prevent inadvertent loosening of the parts.

2. An electrical connecter of conductive material having a terminal member provided with an aperture for accommodating a binding screw, and a plurality of work engaging teeth disposed around said aperture, said teeth being V-shaped to sharpen the free end thereof and alternately bent out of the plane of the connecter stock so as to present the sharpened outer portions thereof in position to be clamped between the work and thereby insure electrical contact and prevent inadvertent loosening of the parts.

3. An electrical connecter of conductive material including a terminal member provided with an aperture for accommodating a binding screw, and a plurality of marginal work engaging teeth alternately positioned in opposite directions out of the plane of the connecter stock, said teeth being of ratchet-like construction for insuring electrical contact and for preventing accidental loosening of the parts.

4. An electrical connecter of conductive material comprising a terminal member provided with an aperature for accommodating a binding screw, and a plurality of work engaging teeth disposed around said aperture, said teeth being V-shaped and of ratchet-like construction and alternately positioned in opposite directions out of the plane of the connecter stock so as to present sharp ratchet teeth in position to be clamped between the work and thereby insure electrical contact and prevent inadvertent loosening of the parts.

5. An electrical connecter of conductive material having a terminal member formed with an aperture for accommodating a binding screw, and a plurality of adjacently positioned teeth disposed around said aperture, the roots of said teeth being radially positioned with respect to said aperture, the remaining portions of alternate teeth being laterally displaced out of the plane of the connecter stock in one direction and the simi-

lar portions of the other alternate teeth being laterally displaced out of the plane of the connecter stock in the opposite direction, whereby to present work engaging tooth portions on opposite sides of the connecter stock.

In witness whereof, I have hereunto subscribed my name.

CARL G. OLSON.