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BATTERY CONNECTER

Filed Oct. 14, 1927

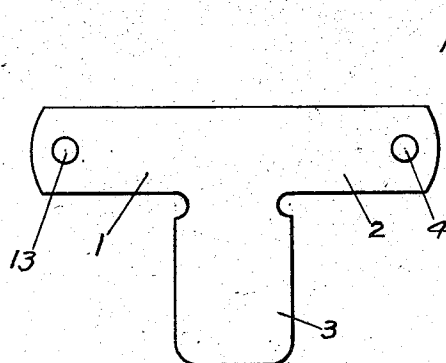


FIG. 1

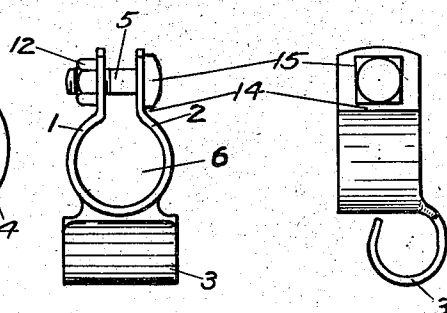


FIG. 2

FIG. 3

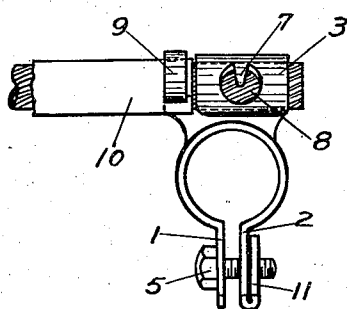


FIG. 4

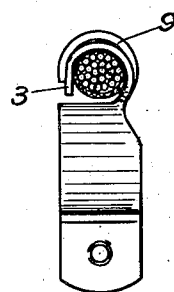


FIG. 5

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BATTERY CONNECTER.

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This invention relates to a connecter, particularly adapted for use in making connection with the terminal post of a storage battery, such as those used on automotive vehicles.

In the automotive industry, several million batteries are used each year, and the cost of installing and making connections to these batteries therefore amounts to considerable of a monetary item. Particularly is this true in view of the fact that heavy cable is used for making connections with the battery. These cables are required to carry a relatively heavy current to the starting motor, which is used in cranking the engine, and in order to keep the voltage drop within limits the cable is of large current carrying capacity, and it therefore becomes apparent that considerable care must be exercised in properly securing this heavy cable to the storage battery.

In the past it has been the practice to use connectors for joining these cables to the battery made from castings, usually cast brass or copper, then lead plated to protect them from the action of the acid, or acid fumes coming from the battery. Such castings have a more or less rough surface, and are apt to be porous, because the foundries are not always careful in their selection of materials used for making the connectors, and therefore cast connectors offer greater surface for attack of the acid or acid fumes, of the battery.

Furthermore, cast connectors must be machined and usually "tumbled" before they are lead plated, and due to the amount of work required on them, are relatively expensive.

It is therefore, the principal object of my invention to provide a connecter which is easy and cheap to manufacture, and one which overcomes the objectionable features above referred to in connection with the cast connectors. To this end I construct my connecter of rolled sheet metal, such as brass or copper, which metal is free from blow holes, and such imperfections, and which is much lighter than castings, yet of considerably greater conductivity per unit weight.

A connecter made from sheet metal by suitable punches and dies is much stronger and more easily and satisfactorily plated than the cast terminal, and from the construction herein set forth, it will be seen that it possesses several advantages over the

cast terminal, during the installation processes of connecting the cable thereto and attaching the connecter to the battery.

These advantages will be more readily appreciated after reading the specification taken in connection with the annexed drawing, wherein Figure 1, illustrates the blank from which one form of my connecter is made; Figures 2 and 3 show the completed connecter; Figures 4 and 5 show a modification of the device. It will be readily apparent that such a blank reduces the scrap to a minimum, due to the fact that these blanks can be punched in reverse position from a sheet of metal. After the blank has been punched, as shown in Figure 1, the arms 1 and 2 are formed, to the position shown in Figures 2, and 3, and likewise the tongue 3 is formed to the approximate size of the cable, which is to be soldered thereto. Holes 13 and 4 are punched in the blank for the reception of a bolt 5, which draws the arms 1 and 2 together to clamp arms 1 and 2 around the battery terminal post. The ends of the arms 1 and 2 are so formed at the point 14, that the head 15 of the bolt is prevented from turning when the nut 12 is tightened up. In attaching the cable to the tongue 3, the insulation is removed from the wire usually composed of a large number of strands of small wire, which strands are inserted in the hole formed by the tongue, which is hammered, squeezed or rolled down over the cable, which is then soldered to the tongue.

It is to be understood that the hole 6 formed by the arms 1 and 2, may be of uniform diameter, or may be formed tapering, to fit a tapered binding post to the battery. In the form shown in Figures 4 and 5, the tongue 3 of the connecter has a hole 8 punched therein, leaving a gripper finger 7, which is adapted to be hammered or forced into a bundle of wires, constituting the cable, and due to this hole 8, the cable can be more securely soldered to the terminal 3. It may be noted that the tongue 7 may be used in the construction shown in Figures 2 and 3. In addition, the tongue 3 is slit during the punching operation in such a way as to provide an auxiliary clamp 9, of relatively narrow width and the clamp 9 is bent around the insulation 10 of the cable, to prevent it from fraying or unravelling at the point where it is stripped or skinned from the wire; also in the form shown in

Figure 4, one of the arms 2 has its end 11 bent back on itself, so as to provide a sufficient metal for tapping, whereby the threaded end of the bolt 5 may engage the threads 5 tapped in the ends 2 and 11 to draw the arms 1 and 2 together.

In addition, lock nut 12 may be used on the end of the bolt 5 as the nut 12 is used in Figure 2. Furthermore the end of the arm 10 1 may likewise be bent around in the same manner as arm 2, for the purpose of giving greater strength at this point.

The connector described herein, being made of sheet metal is not easily susceptible 15 to breakage and may therefore be hammered with impunity, and is easily and quickly connected to the cable and installed on the battery.

These advantages and others pointed out 20 herein are particularly advantageous when it is remembered that cast terminals are hard to remove from the battery post, especially after corrosion has set in, and in many cases, particularly under the last mentioned, condition, the battery post is very liable to be 25 pulled out in trying to get the terminal off. The terminal herein disclosed can be pried apart without danger of breaking, and can thus be easily removed.

30 Having thus described my invention, what I claim is:

1. A battery connector made from; a T shaped punched blank having its stem formed to grip an electrical cable and its 35 arms formed to engage a battery terminal post, and means for drawing said arms securely around said battery post.

2. A battery connector made from a T shaped blank punched from sheet metal, the 40 stem of the blank being bent back toward the cross arms of the T and adapted to receive and grip an electrical cable, the arms of the blank being formed around an axis substantially at right angles to the axis of the 45 formed part of the stem and adapted to fit over a battery terminal post and means for drawing said arms securely around said battery post.

3. A battery connector made from a T 50 shaped punched blank having its stem split and both split parts bent back toward the cross arms of the T to grip an electrical cable, one part around the insulation and

the other around the conductors, said cross arms formed to engage a battery terminal 55 post, and means for drawing said arms securely around said battery post.

4. A battery connector made from a T shaped punched blank having its stem split and both split parts bent back toward the 60 cross arms of the T to grip an electrical cable, one part around the insulation and the other around the conductors, said latter part having an orifice punched therein to form a gripping finger adapted to be forced into 65 the conductor said orifice serving also to assist in soldering the connector to the cable, said cross arms formed to engage a battery terminal post and means for drawing said 70 arms securely around said battery post.

5. A battery connector made from a T shaped punched blank having its stem formed to grip an electrical cable, said stem having an orifice punched therein to form 75 a finger adapted to be forced into gripping relation with the conductors of the cable, said orifice also serving to assist in soldering the cable to the connector, said blank having its arms formed to engage a battery terminal 80 post and means for drawing said arms securely around said battery post.

6. A battery connector made from a T shaped punched blank having its stem formed to grip an electrical cable and its 85 arms formed to engage a battery terminal post, at least one of said arms being bent back on itself to provide means for assisting in securing said arms to a battery post.

7. A battery connector made from a T shaped punched blank having its stem split 90 and both split parts bent back toward the cross arms of the T to grip an electrical cable, one part around the insulation and the other around the conductors, said latter part having an orifice punched therein to form a 95 gripping finger adapted to be forced into the conductor, said orifice serving also to assist in soldering the connector to the cable, said cross arms formed to engage a battery terminal post, at least one of said arms being 100 formed back on itself to provide means for assisting in securing said arms to a battery post.

In testimony whereof, I affix my signature.

ALFRED C. DE LORME.