Dec. 11, 1956 W. G. TENNEY 2,774,054

BATTERY TERMINAL CONNECTOR

Filed May 5, 1955

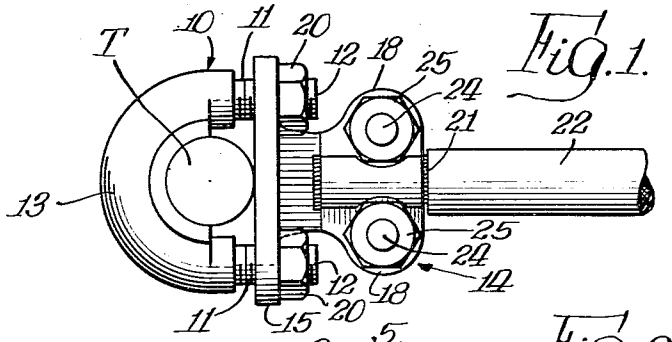


Fig. 1.

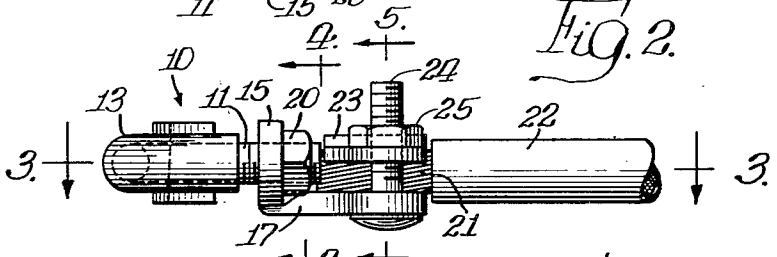


Fig. 2.

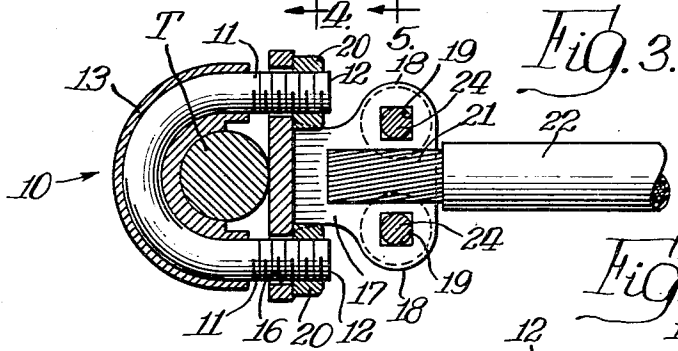


Fig. 3.

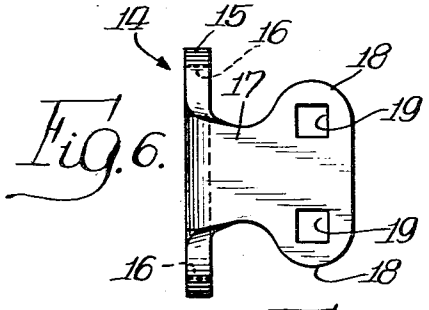


Fig. 6.

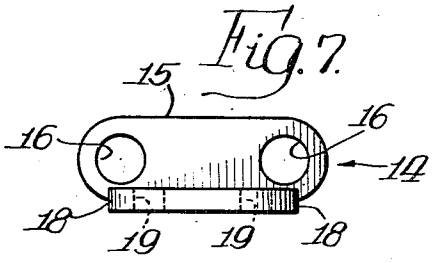


Fig. 7.

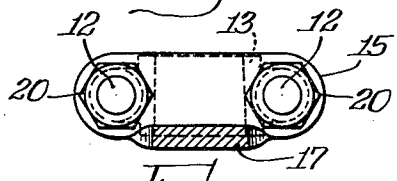


Fig. 4.

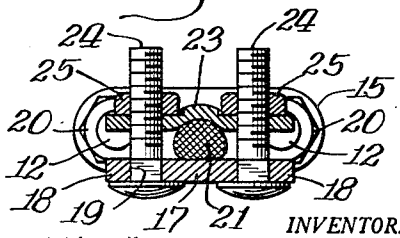


Fig. 5.

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BATTERY TERMINAL CONNECTOR

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2 Claims. (Cl. 339—233)

This invention relates to a battery terminal connector, and in particular it relates to a battery terminal connector which is extremely compact and inexpensive to manufacture, and which may be used as a replacement connector on automobile battery cables.

The terminal of the present invention utilizes a lead sheathed U-bolt of the type which has only the threaded end portions of its arms exposed, the entire base of the U and most of both arms being protected by the lead casing.

The cable end is clamped onto a one piece clamping member which has a bar provided adjacent its ends with apertures to receive the arms of the U-bolt, and a neck portion which is perpendicular to one margin of the straight bar and is narrower than the space between the apertures so that it may extend away from the U-bolt parallel to the U-bolt arms. The clamp bar is deep enough that the hex nuts by means of which the clamping member is secured to the U-bolt just clear the margins of the neck portion as they are screwed onto the threaded arms of the U-bolt.

At the outer end of the neck is a pair of laterally flaring ears to receive upright bolts for cable attaching means which firmly secures the uninsulated end of the cable in a longitudinal position on the neck of the clamp member. The attaching means includes a pressure plate which has laterally extending portions opposite the ends of the U-bolt arms; and the length of the neck is such that when the bar of the clamp member is clamped against a battery terminal post, there is insufficient clearance between the ends of the U-bolt and the pressure plate to remove the nuts from the U-bolt arms without sliding the clamp member outwardly with the nuts as they are unscrewed. Since the cable extends longitudinally outwardly from the neck of the clamp member, the stiffness of the cable tends to urge the clamp bar against the terminal post, so that if the nuts on the U-bolt loosen, they will ordinarily butt against the pressure plate adjacent the cable end before they can fall off the U-bolt. Furthermore, the thrust of the cable against the clamping member takes off of the nuts some of the thrust which tends to loosen them.

The mounting of the clamp member so that it has a cable receiving neck portion extending longitudinally away from the U-bolt and the provision of attaching means on the neck to clamp a cable end in a position extending longitudinally from the neck provides a very compact simple terminal member in which the various elements cooperate with the cable in a novel way.

The invention is illustrated in a preferred embodiment in the accompanying drawings, in which:

Figure 1 is a top plan view of the device of the invention;

Figure 2 is a side elevation thereof;

Figure 3 is a section taken as indicated along line 3—3 of Figure 2;

Figure 4 is a section taken as indicated along line 4—4 of Figure 2;

Figure 5 is a section taken as indicated along line 5—5 of Figure 2;

Figure 6 is a bottom plan view of the clamp member; and

Figure 7 is an end elevation of the clamp member.

Referring to the drawings in greater detail, the battery terminal of the present invention includes a U-bolt **10** having arms **11** provided with threaded end portions **12**; and a lead sheath **13** covers all of the U-bolt except its threaded end portions.

A clamp member, indicated generally at **14**, has a straight clamp bar **15** which has apertures **16** near its ends (Fig. 7) to receive the end portions **12** of the U-bolt arms, and perpendicular to a margin of the clamp bar **15** is a neck portion **17** which is narrower than the space between the apertures **16** and extends away from the U-bolt parallel to its arms. The outer end of the neck **17** flares laterally to provide ears **18** in which are holes **19** which are generally opposite the ends of U-bolt arms **11**. The clamp member **14** is secured on the arms of the U-bolt by nuts **20** so that a battery terminal post T may be firmly clamped between the base of the U-bolt and the clamp bar **15**.

The uninsulated end portion **21** of a cable **22** is firmly secured in a position extending longitudinally of the outer end of the neck **17** by attaching means consisting of a laterally extending pressure plate **23** which is clamped onto the cable end **21** by bolts **24** which extend through the holes **20** and through matching holes in the pressure bar, and nuts **25** screwed onto said bolts.

As Figure 4 shows, the depth of the straight clamp bar **15** and the width of the neck **17** are such that there is a small clearance for the hex nuts **20** to turn when they are screwed onto the U-bolt to clamp the clamp member against the battery terminal post T.

As best seen in Figure 1, the pressure plate **23** of the cable attaching means has a shape substantially identical with that of the outer portion of the neck **17** and associated ears **18**, and as seen in Figure 5, the end portions of the pressure plate are aligned with the ends of the U-bolt arms **11**. Thus, the hex nuts **20** may be removed from the U-bolt arms only by moving the clamp bar **15** outwardly along the arms behind the nuts **20** as they are unscrewed. The normal stiffness of the battery cable thrusting inwardly on the clamp member **14** tends to prevent the clamp member from moving outwardly with the hex nuts unless direct linear force is applied to the cable or to the clamp member. The length of the U-bolt arms **11** from a perpendicular plane tangent to the battery terminal post plus the thickness of the nuts **20** is greater than the thickness of the clamp bar **15** plus the length of the neck **17** to the ears **18**, so that the thrust of the cable ordinarily prevents vibration of a vehicle from loosening the hex nuts **20** to the point where they can fall off.

The foregoing detailed description is given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, for some modifications will be obvious to those skilled in the art.

I claim:

1. A battery terminal connector comprising: a U-bolt having parallel arms adapted to embrace a battery terminal post; a clamping member including a clamp bar having apertures adjacent its ends to receive the end portions of the U-bolt arms and an integral neck with extends outwardly from a transversely extending margin of said bar parallel to said arms, said neck being narrower than the space between the arms; and having laterally flared ears at its outer end provided with holes, said ears being wider than the space between said arms; fastening means for a battery cable including a laterally extending pressure plate which has ears substantially coextensive with those on the neck, and means for clamping the uninsulated end

portion of a battery cable in a longitudinally extending position between the pressure plate and said neck with the ears on the pressure plate opposite the ends of the U-bolt arms; and nuts fastening said clamping member to the U-bolt, the length of said arms from a perpendicular plane tangent to the battery terminal post plus the thickness of said nuts being greater than the thickness of said clamp bar plus the length of said neck to said ears.

2. A battery terminal connector comprising: a U-bolt having parallel arms adapted to embrace a battery terminal post; a clamping member including a clamp bar having apertures adjacent its ends to receive the end portions of the U-bolt arms and an integral neck which extends outwardly from between the ends of said bar parallel to said arms, said neck being narrower than the space between the arms; cable attaching means on the neck to receive the uninsulated end portion of a battery cable

which extends longitudinally of the neck; said attaching means including laterally extending ears opposite the ends of the U-bolt arms; and nuts fastening said clamping member to the U-bolt, the length of said arms from a perpendicular plane tangent to the battery terminal post plus the thickness of said nuts being greater than the thickness of said clamp bar plus the length of said neck to said laterally extending ears.

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