H. E. WALKER.

CONNECTOR FOR STORAGE BATTERIES.

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1,421,355. Patented June 27, 1922.

Fig. 1

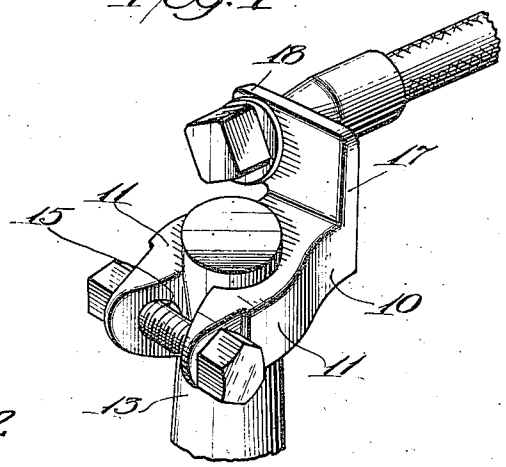


Fig. 2

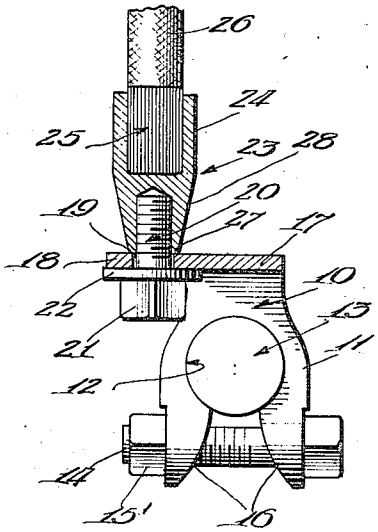
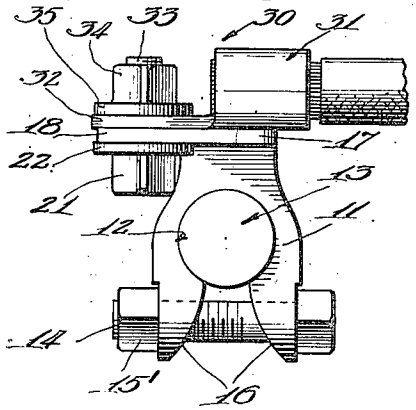


Fig. 3



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CONNECTOR FOR STORAGE BATTERIES.

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To all whom it may concern:

Be it known that I, HERBERT E. WALKER, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Connectors for Storage Batteries; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the characters of reference marked thereon, which form a part of this specification.

This invention relates to a novel connector for connecting the posts of a storage battery with the leads or conductors through which current is taken from and delivered to the battery in work.

Among the objects of the invention is to provide an improved connector for this purpose which is simple in design, which is adapted for connection to the battery post and is so constructed and arranged that the means by which a conductor or cable lead is fixed to the connector is in a position not to be interfered with by the battery post when the connector is fixed on said post, or by the means for fixing the connector to the post, so as to thereby afford ready access to the means for attaching the conductor terminal to the connector and removing the terminal therefrom, and also permitting attachment of the conductor or cable lead to the connector from either side of said connector.

The invention consists in the combination and arrangement of the parts shown in the drawings and described in the specification, and is pointed out in the appended claims.

As shown in the drawings:

Figure 1 is a perspective view of my improved connector illustrating the manner of clamping it on a battery post and the manner of attaching a conductor terminal thereto.

Figure 2 is a partially horizontal section and plan view thereof.

Figure 3 is a plan view of the connector illustrating the manner of attaching another form of conductor terminal to the connector.

As shown in the drawings, the principal portion of the connector may be made of a single piece of cast or forged metal. It comprises a body portion 10, two free ended symmetrically disposed jaws 11 integral at corresponding ends with the body 10. The jaws 11 are formed with opposed concave recesses 12, the curvatures of which are joined at the rear ends thereof which spring from the body 10. Said jaws are separated at their free ends and the recesses are formed so as to engage over a battery post 13. The jaws possess some resiliency and are adapted to be forced together to press their recessed portions on the post 13 by means of a clamping bolt 14 which extends through registering openings 15 in the free ends of the jaws. Said bolt is formed at one end with a bead and is threaded to receive at its other end a nut 15^1 which, when threaded on to the bolt, serves to clamp the jaws on the post. The inner faces of the free ends of the jaws are outwardly curved, as shown at 16, and the outer faces thereof are flattened for engagement with the head and nut of the bolt, the flattened faces being formed in depressions at the outer sides of said jaws.

At the end of the connector body 10 remote from the clamping bolt 14 and the free ends of the jaws, is a flange 17 which is herein shown as disposed at a right angle to the body 10. The said flange 17 is formed with a lateral extension 18 which is pierced to form an opening 19. The opening 19 is adapted to receive a cap bolt 20 formed at one end with a polygonal head 21 and inside said head with a rather broad flange 22 that bears against the inner face of the flange extension 18. The threaded end or shank of the cap bolt co-operates with fastening means by which a conductor terminal, clip or fitting, may be fixedly attached to the connector.

In Figures 1 and 2 is shown a form of conductor terminal 23 which comprises an axially socketed portion 24 to receive the stripped end 25 of an insulated or sheathed conductor 26. The end of the terminal 23 remote from the axial socket has a flat end face 27 that is adapted to fit against the rear flat face of the flange extension 18 around the opening 19 therein; and said end of the terminal is internally threaded to receive the shank or threaded end of the bolt 20. By this means the terminal may be fixedly clamped on the flange extension, the screw threaded connection of the bolt 20 and of the terminal reacting to force the flange 22 of the bolt and the end 27 of the fitting in close electrical contact with the flange extension 18.

The conductor terminal 23 shown in Figures 1 and 2 is formed at its inner or screw threaded end with an exterior taper formation 28 which, in some forms of connectors, is adapted to enter a tapered opening in the connector and to be clamped thereto in such way that the path for the electric current is through the tapered engaging faces of the connector and terminal.

The construction shown in Figure 3 is identical to that shown in Figures 1 and 2, except as to the form of conductor terminal or clip and the manner of fixing it to the connector.

As shown in said Figure 3, the terminal or clip, designated as a whole by 30, is arranged horizontally in rear of the flange 17 and is formed with a socket portion 31 to receive the bared conductor, and is formed also with a flat extension 32 disposed at one side of the axis of the socket 31 so as to lie flat against the rear face of the flange extension 18. In the latter construction the shank 33 of the bolt threads into a nut 34 which is formed on its face adjacent to the flange extension with a rather deep flange or rim 35 which is adapted for flat contact with said flange extension 18. The connector is thus adapted to many different types of conductor terminals, clips, or connections.

One advantage of the construction thus described over known connectors is, that the clamping means for clamping the jaws of the connector over the battery post are spaced from the connection of the conductor terminal or fitting to the connector, so as to give free access to the clamping means to enable the connector to be clamped on and removed from the battery post without hindrance of projecting parts at the conductor terminal part of the connector.

Another advantage of the construction herein shown is that the portion of the connector to which the conductor terminal, clip or fitting, is attached is located a distance from the connector body. Therefore, neither the body of the connector nor the end of the post, which may extend upwardly from said body, is in position to impede or hinder the free application of the clamping bolt by which the parts are fitted together, regardless of whether said bolt is large or small to fasten larger or smaller conductor terminals, clips, fittings, or the like, to the connector. It is an advantage to form the extension 18 of the flange 17 laterally away from the flange inasmuch as this arrangement does not increase the over all height of the connector. Furthermore, the relation of the extended flange portion to the body of the connector enables the conductor terminal, clip or fitting to be attached to either the front or rear side of the flange, as will be obvious, and this, taken in connection with the fact that the connector can be clamped to the post in different angular adjustments enables the conductor to be led to the connector from any direction.

Therefore, the construction and arrangement of the parts described is such as to permit the connector to be freely removed from or attached to the post while the conductor is connected thereto, and likewise to permit the conductor terminal, fitting, or connection, to be freely removed without clashing with the means for clamping the connector upon the battery post, or without clashing with the body of the connector when bolts of different sizes are employed to attach different dimension conductor terminals or fittings to the connector.

It will be understood that the structural details which have been above described in some detail may be varied within the spirit and scope of the claims hereto attached, and that said claims are not limited to the illustrated structure except as to claims where the particular structure is specifically set forth and as imposed by prior art.

I claim as my invention:

1. An electric connector for the purpose st forth comprising a body provided at one end with clamping jaws adapted to be clamped over a battery post, clamping means cooperating with said jaws, and a flange at the other end of the connector body, said flange being laterally offset relatively to said jaws and apertured to receive means to electrically and mechanically connect a conductor terminal thereto.

2. An electrical connector for the purpose set forth comprising a body having jaws formed to embrace a battery post, with means for clamping said jaws on the post, said body being provided at its end remote from the jaws with a flange disposed at an angle to the jaws and the flange being provided with an extension having an opening laterally beyond the body of the connector to receive clamping means to electrically and mechanically connect a conductor terminal thereto.

In witness whereof I claim the foregoing as my invention, I hereunto append my signature this 18 day of October, 1920.

HERBERT E. WALKER.