Aug. 24, 1926. 1,596,891

J. RENSCH

BATTERY TERMINAL WITH SELF CLAMPING AND RELEASING MEANS

Filed Oct. 5, 1925

Fig. 1

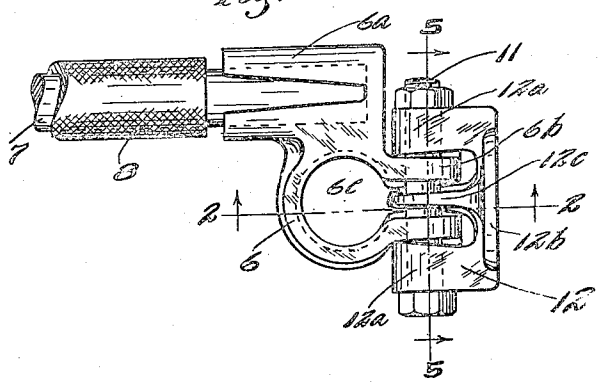


Fig. 2

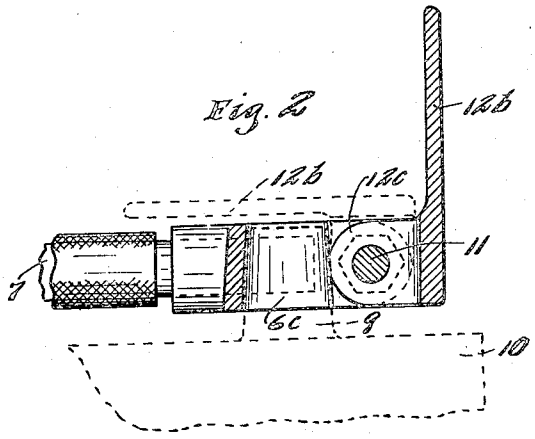


Fig. 3

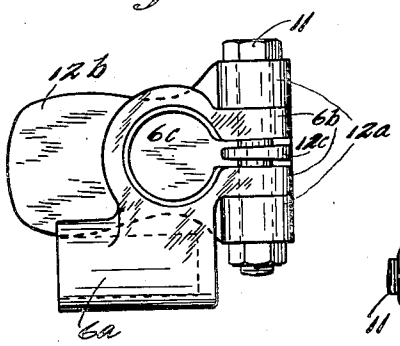


Fig. 5

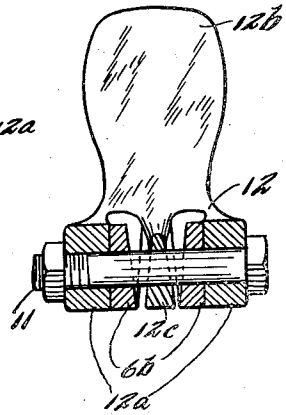
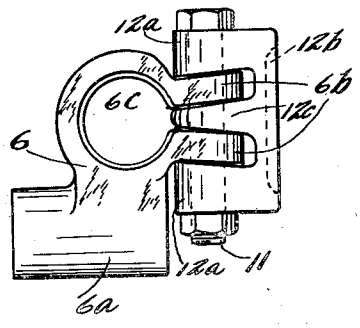


Fig. 4



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BATTERY TERMINAL WITH SELF CLAMPING AND RELEASING MEANS.

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This invention relates to a clamping device and particularly to a terminal connection for the terminal of a storage battery or similar apparatus embodying a clamping device. Storage batteries, as now commonly made, have terminal projections thereon on which is clamped the terminal which is connected to the conductor leads from the battery. It is desirable to have a terminal which can be quickly and easily placed in secure position on the battery and which can also be easily and quickly released and removed. Owing to the corrosive effect which often occurs at the battery terminal due to the acid used, it is quite desirable to have a terminal with a positive releasing means.

It is an object of this invention, therefore, to provide a connection or terminal for a storage battery adapted to embrace the terminal post of the battery having simple and efficient means for clamping the post and for releasing the terminal from clamping position.

It is a further object of the invention to provide a terminal connection for storage battery, or like apparatus, comprising spaced jaws having a passage therebetween, together with means pivoted to the jaws and having portions at the outer side thereof, whereby, when said means is swung to one position said jaws are moved together and when said means is swung to another position said jaws are moved apart.

It is also an object of the invention to provide such a terminal as set forth in the preceding paragraph in which said means also has a portion disposed between said jaws which will force said jaws apart when said means is moved to one position by its approaching movement of said jaws when said means is turned to another position.

These and other objects and advantages of the invention will be fully set forth in the following description made in connection with the accompanying drawings in which like characters refer to the same parts throughout the different views, and in which,

Fig. 1 is a top plan view of the device shown in open or releasing position;

Fig. 2 is a vertical section on the line 2—2 of Fig. 1, as indicated by the arrows;

Fig. 3 is a bottom plan view of the device shown in closed or clamping position;

Fig. 4 is a bottom plan view showing the device in open or released position; and

Fig. 5 is a vertical section on the line 5—5 of Fig. 1.

Referring to the drawings, a terminal connection for the post of a storage battery or other member is indicated generally as 6. This connection has a socket 6^a projecting at one side adapted to receive an electrical conductor 7 illustrated as having an insulating covering 8 thereon. The member 6 also has spaced jaws 6^b which have a passage 6^c therebetween through which the post 9 of a storage battery 10 is adapted to project, as indicated in dotted lines in Fig. 2. While the passage 6^c may be of any desired shape, in the embodiment of the invention, it is shown as cylindrical or slightly conical to suit the standard form of post 9. The jaws 6^b are apertured to receive a pivot member illustrated as a headed and nutted bolt 11. The jaws 6^b are generally of cylindrical shape but are thicker at one side than the other. As illustrated, the thick part of the jaws is adjacent the bottom of the member 6, as shown in Figs. 3 and 4 and the narrow portion of the jaws is at the top of the device, as shown in Fig. 1, the inner surfaces of the jaws being formed on planes which are inclined to the axis of the bolt 11 and substantially parallel to a line passing through the center of passage 6^c and at right angles to the axis of the bolt 11. The outer faces of the jaws 6^b are formed on planes inclined slightly to the axis of bolt 11, but in the opposite direction to the planes of the inner surfaces of said jaws. A member 12 is pivotally or swingingly mounted on bolt 11 and is generally in the form of a yoke having end portions 12^a disposed at the outer side of the jaws 6^b and having end surfaces substantially normal to the axis of bolt 11 with which the head and the nut of bolt 11 respectively engage. The portions or lugs 12^a of member 12 have their inner surfaces formed on an inclined plane, the lugs 12^a thus being thickest at the ends nearest member 6, as shown in Fig. 1, but having their thinnest

portion at their bottoms remote from member 6, as shown in Fig. 1. The member 12 has a plate 12^b extending therefrom illustrated as having a flat top which forms a fingerpiece or handle. The member 12 also has a portion or tongue 12^c projecting therefrom and disposed between the jaws 6^b. This portion 12^c is wedge-shape having its thickest portion at the bottom or end of member 12 opposite handle 12^b, as shown in Fig. 4. The thickest portion of member 12^c is at the upper side of member 12 or the side toward the handle 12^b.

In operation, the member 12 is swung through an angle of substantially ninety degrees from releasing and clamping position. When the member 12 is in position with the handle 12^b extending substantially parallel with the axis of opening 6^c the device is in released position, as shown in Figs. 1, 2, 4 and 5. In this position, the thick part of tongue 12^c is between jaws 6^b and the outer surfaces of jaws 6^b are parallel to the inner surface of the lugs or portions 12^a. The jaws can thus expand or separate and they are positively moved or separated by the tongue 12^c. The position of the jaws of members 12 at this time is clearly shown in Figs. 1 and 4, both at the top and bottom of the device. The terminal 6 being in this open position can be placed on the post 9 and the handle 12^b is then swung to the dotted line position shown in Fig. 2, substantially at right angles to the axis of opening 6^c. When this occurs, the wide portion of tongue 12^c swings out from between the jaws 6^b and the thickest part of the portions or lugs 12^a swings against the outer surfaces of jaws 6^b at the thickest portions thereof and jaws 6^b are moved toward each other. This contracts the opening 6^c and the terminal is securely clamped onto post 9. The terminal can, of course, be released by again moving handle 12^b to the position shown in Fig. 2 and tongue 12^c then forces jaws 6^b apart after which the terminal can be lifted from post 9.

From the above description it is seen that applicant has provided an extremely simple and efficient terminal, one comprising very few parts and yet which has a very positive clamping and positive releasing action. The passage for the post is considerably contracted and expanded in the operation of the device and the terminal is very securely clamped onto the post. The device can be easily and inexpensively made and easily and very quickly operated. The same has been amply demonstrated in actual practice and found to be very successful and efficient.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the parts without departing from the scope of applicant's invention, which, generally stated, consists in a device capable of carrying out the objects above set forth, in the novel parts and combinations of parts disclosed and defined in the appended claims.

What is claimed is:

1. A terminal connection comprising a pair of clamping jaws having a passage therebetween adapted to receive the member to be clamped, a movable member connected to said jaws having means at the outer side of said jaws engaging the same and adapted, when said movable member is moved into one position, to move the jaws together and adapted, when said movable member is moved to another position, to permit said jaws to separate.

2. The structure set forth in claim 1, said movable member also having means disposed between said jaws and adapted, when said movable member is swung to said latter position, to force said jaws apart.

3. A terminal connection comprising a pair of clamping jaws having a passage therebetween, a member pivotally connected to said jaws having means thereon adapted, when said member is swung into one position, to engage the outer sides of said jaws and move the same together and having means adapted, when said member is swung to another position, to move between said jaws and force the same apart.

4. A terminal connection comprising a pair of clamping jaws having a passage therebetween, a pivot member passing through said jaws, a swinging means journaled on said pivot having members at the outer sides of said jaws with thick and thin portions and having a member disposed between said jaws with thick and thin portions, said thick and thin portions being constructed and arranged so that when said means is swung to one position the thick portions of said first mentioned members will move said jaws together and the thin portion of said member between the jaws will be disposed between said jaws but when said means is swung to another position the thin portions of said first mentioned members will engage said jaws and the thick portion of said means between said jaws will force said jaws apart.

5. A terminal connection comprising a pair of jaws having a passage therebetween, a swinging member pivotally connected to said connection and having ears disposed at the outer sides of said jaws, said ears being thicker at one side than the other whereby, when said swinging member is swung to one position, said thick side of the ears will be brought into engagement with said jaws and move the same together and when said swinging member is swung to another position the thin side of said ears

will be disposed so that said jaws may separate.

6. The structure set forth in claim 5, said jaws having outer inclined flat sides adapted when said jaws are separated to lie parallel to the inner sides respectively of said ears.

7. The structure set forth in claim 5, said swinging member also having a tongue disposed between said jaws comprising a narrow portion adapted to be disposed between said jaws when moved together, and a wide portion adapted to be moved between and positively engage said jaws.

In testimony whereof I affix my signature.

JOE RENSCH.