June 7, 1932. H. J. GUTTMAN 1,861,439

BATTERY TERMINAL GRIP

Filed Feb. 20, 1929

Fig. 1.

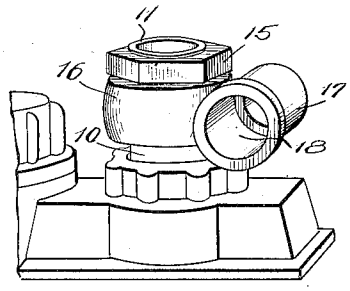


Fig. 2.

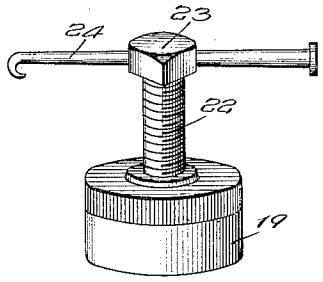


Fig. 3.

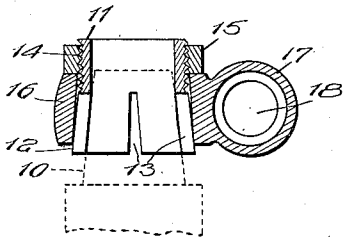
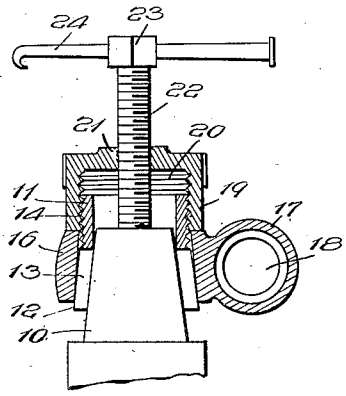


Fig. 4.



Witness:

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UNITED STATES PATENT OFFICE

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BATTERY TERMINAL GRIP

Application filed February 20, 1929. Serial No. 341,372.

This invention relates to battery terminal grips.

In the construction and use of battery terminals, great difficulty is often experienced, due to the corrosion of small threaded studs or the like which carry relatively small nuts which are difficult to gain access to and difficult to remove, especially when corroded. Difficulty is further frequently experienced in removing the grip element from the terminal post even after the nut or nuts have been loosened, by reason of the close adherence of the parts which become tightly jammed or gripped against one another, so that it frequently becomes necessary to employ an excessive amount of force or to hammer the parts, which is liable to cause breakage or to jar out the filling from the battery plates, which destroys the value of the battery.

The present invention is designed to overcome the difficulties above noted, by providing a grip which may be tightened by the turning of a relatively large nut so disposed as to be easy of access; and the invention also relates to an arrangement of the parts which provides for the employment of a releasing device which enables the grip to be easily loosened from the terminal post without danger of breakage, and in a convenient and satisfactory manner.

The invention as a whole is designed to be simple and rugged in construction and relatively inexpensive and durable.

The invention consists in the features of construction and combination of parts hereinafter described and claimed.

In the drawing:

Figure 1 is a perspective view of the terminal grip of the present invention;

Fig. 2 is a perspective view of the releasing device;

Fig. 3 is a longitudinal sectional view through the grip, showing the parts in gripping relation; and

Fig. 4 is a similar view, showing the releasing device applied in position to release the grip.

The grip as a whole is designed to embrace a tapered terminal post 10 of the usual character, which extends upwardly from the top of the battery box, and the grip comprises a split sleeve 11 which terminates at its lower end in a slightly flaring skirted portion 12, which is provided at recurrent intervals with slots or notches 13. The upper portion of the sleeve is of substantially uniform diameter and is provided with external threads 14 adapted to receive a nut 15 preferably of hexagonal shape.

The sleeve is encircled by a collar 16 which is slightly tapered on its inner bore, the tapering, however, being relatively less in degree than the flaring of the skirted portion of the sleeve when in normal or distended relation. The collar 16 is provided on one side with a protruding socket member 17 having a tapered bore 18 extending in transverse relation to the axis of the terminal post of the battery, which bore is adapted to receive the end of the current cable.

It is preferred to make the collar with its cable socket integrally of brass, and to make the sleeve of brass, which latter is sufficiently hard and tough to take the threads and at the same time to afford relatively good conductivity when tightly gripped around the battery post, which, as is usual, is composed of lead or a composition thereof.

The releasing device is in the form of a cap 19 having an inner threaded bore 20, and having a head wall 21, through which is threaded a screw 22 having a head 23, through which is entered a handle 24 which may be a permanent handle or a temporary or makeshift handle afforded by a nail, short rod, or any other piece of metal which is available for use.

The cap 19 when in use takes the place of the nut 15 and threads down onto the collar, as shown in Fig. 4, after which the screw 22 may be rotated until its end contacts the upper end of the battery post, after which, continued rotation of the screw will impart a thrust which will cause the grip to back away from the post and thus release itself.

In use, the sleeve is inserted in place on the post, after which the collar may be slipped over the sleeve and the nut 15 turned down, which forces the collar downwardly,

thereby contracting the skirted portion of the sleeve and causing the same to tightly impinge against and grip around the tapering walls of the post, thus not only insuring against displacement but affording the close contact required for perfect electrical conductivity.

By threading the exterior portion of the upwardly extending sleeve, a nut of large diameter may be employed and manipulated directly from above, which not only promotes convenience but also reduces to a minimum the deleterious effects of corrosion, which, in the case of small nuts threaded onto laterally extending studs or the like, frequently has the effect of so freezing the parts together that it becomes necessary to cut off the nut or to employ an excessive amount of force in order to remove it. At the same time, the arrangement is one which leaves the sleeve open through the center for the inward protrusion of the thrust screw 22, so that the arrangement as a whole is one which fits the sleeve equally for the reception of the nut required in the gripping operation, or for the cap 19 required in the releasing operation.

I claim:

1. In a grip for the tapered post of a battery terminal, the combination of an open sleeve split and normally flared at its lower end and exteriorly threaded at its upper end, and adapted to grip the tapered post, a collar surrounding the sleeve and adapted to be forced inwardly to compress the flared portion of the sleeve, and provided with a terminal socket, and a releasing device adapted to be threaded onto the threaded portion of the sleeve beyond the position occupied by the collar and in position to bear against the collar, and provided with a threaded stem extending inwardly through the opening in the sleeve and adapted to impart a thrust against the post of the battery terminal.

2. In a grip for the tapered post of a battery terminal, the combination of an open sleeve split and normally flared at its lower end and exteriorly threaded at its upper end, and adapted to grip the tapered post, a collar surrounding the sleeve and adapted to be forced inwardly to compress the flared portion of the sleeve, and provided with a termial socket and a releasing device in the form of a cap having interior screw threads around its side wall adapted to engage the exterior threads of the open sleeve, and having a threaded bore through its center and a threaded stem extending inwardly through said bore and through the opening in the sleeve, and adapted to impart a thrust to the post of the battery terminal.

3. In a grip for the tapered post of a battery terminal, the combination of a sleeve provided with a central bore and having its lower portion in the form of a split flared skirt, adapted when contracted to grip the tapered post, and having exterior threads on its upper portion, a collar surrounding the skirt portion of the sleeve and adapted to be forced inwardly to contract the skirt portion into gripping relation with the tapered post of the battery terminal, and a releasing device threaded onto the outer end of the sleeve, and provided with a threaded stem extending inwardly through the opening in the sleeve and adapted to impart a thrust to the tapered post.

4. In a grip for the tapered post of a battery terminal, the combination of a sleeve provided with a central bore and having its lower portion in the form of a split flared skirt, adapted when contracted to grip the tapered post and having exterior threads on its upper portion, a collar having a bore tapered in less degree than the flaring of the skirt portion of the sleeve when distended, said collar surrounding the skirt portion of the sleeve and adapted to be forced inwardly to contract the skirt portion into gripping relation with the tapered post of the battery terminal, and a releasing device threaded onto the outer end of the sleeve and provided with a threaded stem extending inwardly through the opening in the sleeve and adapted to impart a thrust to the tapered post.

5. In a grip of the class described, in combination with the tapered post of a battery terminal, a tubular sleeve having its lower portion slotted inwardly throughout a portion of its length and progressively distended to provide a flaring skirt portion, the sleeve around its upper portion being of cylindrical formation and unslotted and provided on its exterior with threads, an open-ended collar surrounding the skirt portion and having a tapered bore, the threaded portion of the sleeve extending upwardly above the collar, and a member threaded onto the upwardly extending portion of the sleeve and bearing against the outer rim of the collar and adapted to force the collar downwardly to contact the flaring skirt and contract the same to compressively engage the surface of the tapered post throughout its area contiguous to the skirt portion of the sleeve to afford a powerful grip and an extended conductive contact.

6. In a grip of the class described, in combination with the tapered post of a battery terminal, a tubular sleeve of substantially uniform wall thickness throughout and having its lower portion slotted inwardly throughout a portion of its length and progressively distended to provide a flaring skirt portion, the sleeve around its upper portion being of cylindrical formation and unslotted and provided on its exterior with threads, an open-ended collar surrounding the skirt portion of the sleeve and having a bore tapered in less degree than the flaring of the skirt portion when distended, the threaded portion of

the sleeve extending upwardly above the collar, a member threaded onto the upwardly extending portion of the sleeve and bearing against the outer rim of the collar and adapted to force the collar downwardly to contact the flaring skirt and contract the same to compressively engage the surface of the tapered post throughout its area contiguous to the inner surface of the skirt portion of the sleeve to afford a powerful grip and an extended conductive contact.

7. In a grip of the class described, in combination with the tapered post of a battery terminal, a tubular sleeve of substantially uniform wall thickness throughout and having its lower portion slotted inwardly throughout a portion of its length and progressively distended to provide a flaring skirt portion, the sleeve around its upper portion being of cylindrical formation and unslotted and provided on its exterior with threads, an open-ended collar surrounding the skirt portion and having a tapered bore, the threaded portion of the sleeve extending upwardly above the collar, and a member threaded onto the upwardly extending portion of the sleeve and bearing against the outer rim of the collar and adapted to force the collar downwardly to contact the flaring skirt and contract the same to compressively engage the surface of the tapered post throughout its area contiguous to the inner surface of the skirt portion of the sleeve to afford a powerful grip and an extended conductive contact, and a releasing device threaded through said member and extending downwardly through the sleeve and adapted to impart a thrust to the tapering post.

8. In a grip of the class described, in combination with the tapered post of a battery terminal, a tubular sleeve of substantially uniform wall thickness throughout and having its lower portion slotted inwardly throughout a portion of its length and progressively distended to provide a flaring skirt portion. the sleeve around its upper portion being of cylindrical formation and unslotted and provided on its exterior with threads, an open-ended collar surrounding the skirt portion of the sleeve and having a bore tapered in less degree than the flaring of the skirt portion when distended, the threaded portion of the sleeve extending upwardly above the collar, a member threaded onto the upwardly extending portion of the sleeve and bearing against the outer rim of the collar and adapted to force the collar downwardly to contact the flaring skirt and contract the same to compressively engage the surface of the tapered post throughout its area contiguous to the inner surface of the skirt portion of the sleeve to afford a powerful grip and an extended conductive contact, and a releasing device threaded through said member and extending downwardly through the sleeve and adapted to impart a thrust to the tapered post.

9. A device of the character described, comprising a sleeve whose upper portion is circumferentially continuous and is exteriorly screw-threaded and whose lower portion is slotted, in combination with a collar encircling said sleeve, said collar and sleeve being adapted for attachment to a tapered post, and a nut co-operating with the screw-threaded portion of said sleeve to force said collar downwardly along the slotted portion of said sleeve to thereby bring about a firm union of said parts upon said post.

In witness that I claim the foregoing I have hereunto subscribed my name this 11th day of February, 1929.

HARRY J. GUTTMAN.