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1,515,666

J. K. ELDERKIN

TERMINAL CLIP

Filed May 19, 1922

Fig. 1.

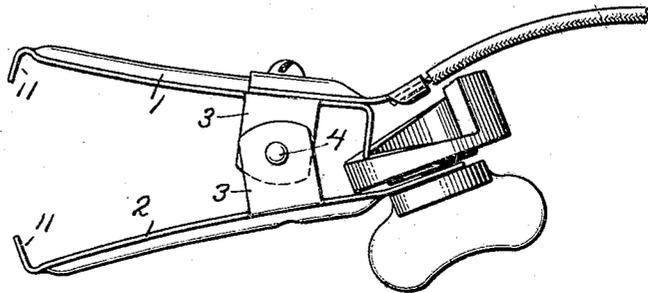


Fig. 2.

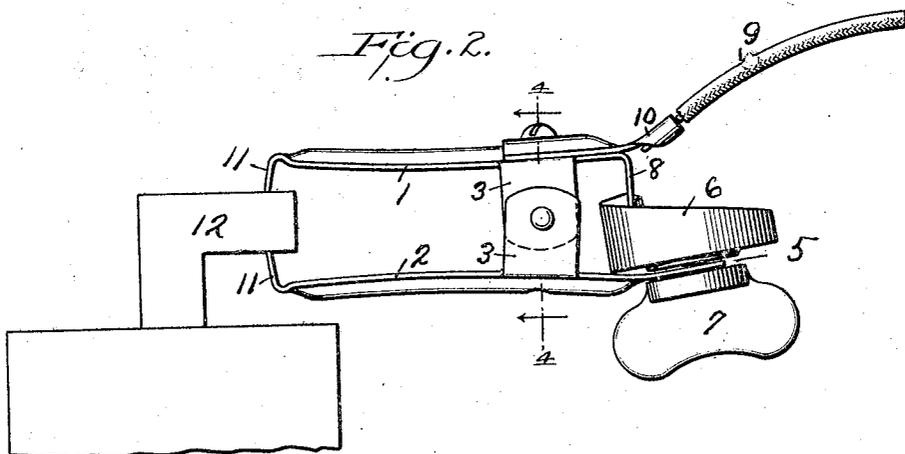


Fig. 3.

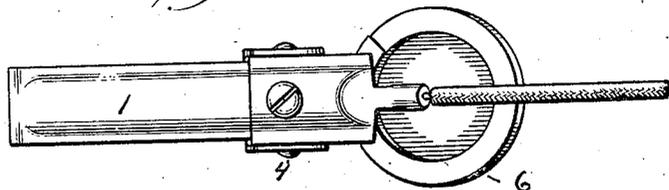
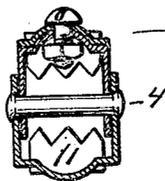


Fig. 4.



WITNESSES

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JAMES K. ELDERKIN, OF NEWARK, NEW JERSEY, ASSIGNOR TO FOREST ELECTRIC COMPANY, OF NEWARK, NEW JERSEY, A CORPORATION OF NEW JERSEY.

TERMINAL CLIP.

Application filed May 19, 1922. Serial No. 562,160.

To all whom it may concern:

Be it known that I, JAMES K. ELDERKIN, a citizen of the United States, residing in the city of Newark, county of Essex, and State of New Jersey, have invented certain new and useful Improvements in Terminal Clips, of which the following is a specification.

This invention relates to terminal clips for making electrical connections, and more particularly to a clip intended to be used for making temporary electrical connections with a storage battery terminal for the purpose of charging.

It has been the usual practice in making connections with the terminals of a storage battery, when charging the latter from a source of direct current, to place a spring clip over the said terminal for making electrical connections. It has also been the usual practice in using a battery for test purposes to use spring clips for making electrical connections between a pair of test wires and the battery terminals. Sometimes, it has been the practice to merely wrap a bare wire around the terminal post, and to use this wire as a connecting means. Very often, this latter results in a bad connection, owing to the presence of oxide, sulphate, dirt, or paint on the terminal causing insufficient contact.

Spring clips are unsatisfactory for making connections to battery terminals because the acid fumes attack the springs causing them to lose their spring quality. The spring such as generally used on spring clips does not have sufficient strength to cause the jaws of the clip to penetrate the corrosion, or sulphate, which readily forms on the battery terminals, so that a poor connection or no connection at all results. Often a group of batteries is connected in series and left over night connected to a charging line, all connections being made with spring clips. At night while no attendant is present some of these clips will lose their contact with the battery terminal thereby opening the circuit from the charging line, and it is not discovered until the next day, with the result that a great deal of time is lost in charging the batteries due to faulty connections.

The present invention is designed to obviate these difficulties, and consists of pivotally connected gripping levers operated by a helical cam in such a way as to make con-

nection not only rapid but secure. Said gripping levers are preferably provided with serrated gripping jaws so that they may be able to pierce any surface dirt, oxides, paint or other poor conducting coating that may be on the electrodes, and thus insure a good metal to metal contact.

In the accompanying drawings:—

Figure 1 is a side view of my improved clip in its open position;

Figure 2 in side view shows the same applied to a battery terminal;

Figure 3 is a plan view of the clip; and

Figure 4 is a vertical section thru the pivot on the line 4—4, Figure 2.

In carrying out my invention, I preferably construct the gripping levers of pressed steel provided with jaws 1 and 2. Said gripping levers are further provided with ears 3, 3, by means of which said levers are pivotally connected intermediately of their ends by a pivot or pintle 4. The lower gripping lever, according to Figures 1 and 2, is provided with an extension 5, within which is journaled a cam 6 provided with a helical camming surface, said cam being rotatable on an axis transverse to pintle 4, by means of a butterfly knob 7. The corresponding arm of the other gripping lever carries a cam follower 8 suitably arranged to slidably engage the helical camming surface of the cam 6. A charging wire 9 may be connected to the upper gripping lever by means of a short terminal 10.

It will be seen that upon applying the clip to a battery terminal 12, as shown in Figure 2, the serrated edges 11 may be made to bite into the metal of the terminal with considerable force owing to the powerful action of the helical cam 6. The advantages to be derived from the use of this clip are as follows:—It requires less than one complete turn of the cam to secure any desired degree of pressure upon the gripping levers, the pitch of the cam surface permitting a ready application of power and the friction between cam and follower being well adapted to lock the gripping levers in gripping position. At the same time, the gripping levers are readily released by turning the cam in either direction.

I claim:—

1. A terminal clip comprising pivotally connected gripping levers provided with oppositely arranged gripping jaws on one

side of the pivotal axis of said gripping levers, an adjustable cam mounted on one of said gripping levers on the other side of said pivotal axis, and a cam follower mounted on the other of said gripping levers on the same side of the axis as said cam.

2. A terminal clip comprising pivotally connected gripping levers provided with cooperating gripping jaws on one side of the pivotal axis of said levers, one of said gripping levers being provided with an extension on the other side of said pivotal axis, a cam journaled in said extension, a cam follower mounted on the other of said gripping levers on the same side of the pivotal axis as said cam, and a terminal for an electric wire mounted on one of said gripping levers.

3. A terminal clip comprising gripping levers pivotally connected by a pintle arranged between and intermediately to the

sides of said levers, said gripping levers being provided with cooperating gripping jaws on one side of the axis of said pintle, a helical cam journaled in one of said gripping levers on the other side of said pintle, and a cam follower mounted on the other of said gripping levers on the same side of the pintle as said cam, said cam having a helical cam surface slidably engaging said follower.

4. A terminal clip comprising pivotally connected gripping levers, each of said levers being provided with a gripping jaw on one side of the pivotal axis and one of said levers being provided on the other side thereof with an extension, a cam journaled in said extension and provided with outwardly presented means for manual adjustment, and a cam follower mounted on the other of said levers to cooperate with said cam.

JAMES K. ELDERKIN.