B. FORD.

STRAP OR CONNECTION FOR SECONDARY OR STORAGE BATTERIES.

APPLICATION FILED JAN. 25, 1911.

1,073,670. Patented Sept. 23, 1913.

FIG. 1.

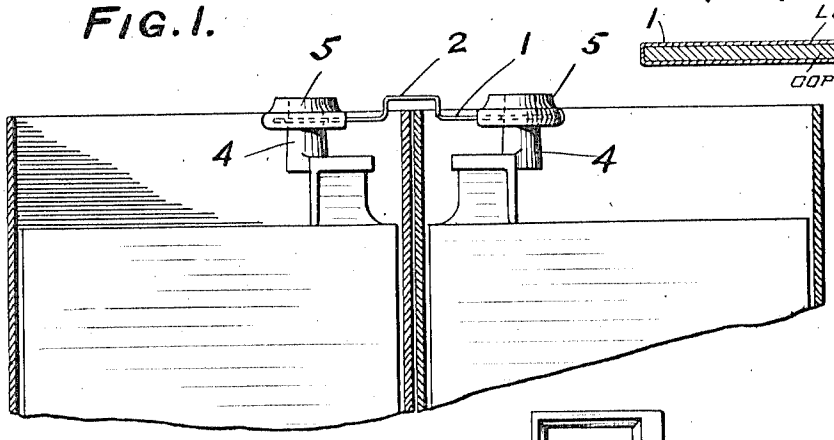


FIG. 6.

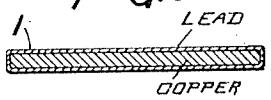


FIG. 2.

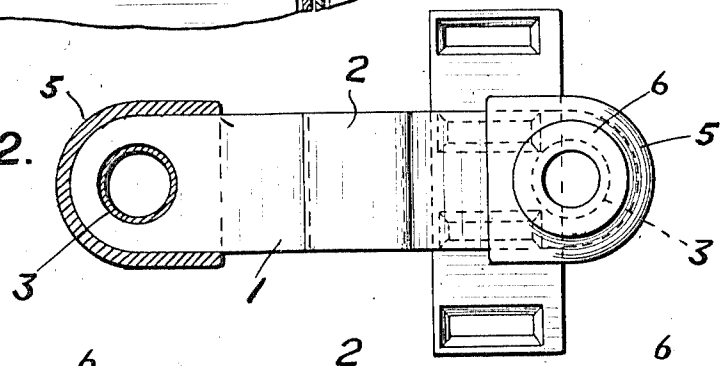


FIG. 3.

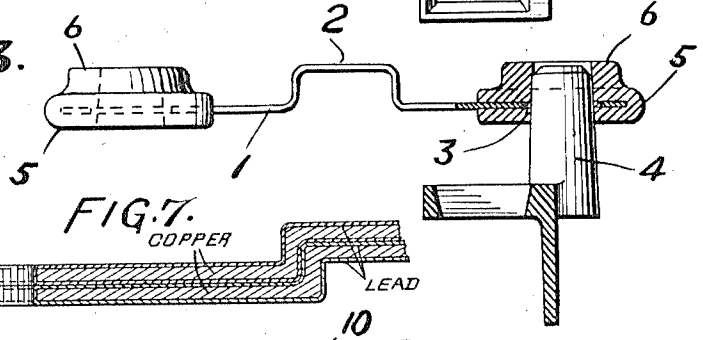


FIG. 7.

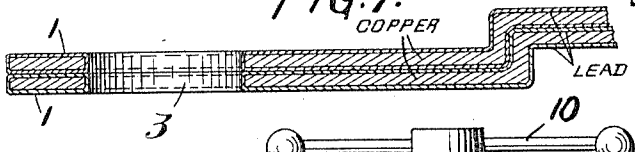


FIG. 4.

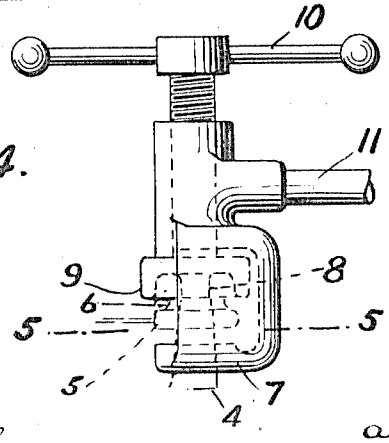
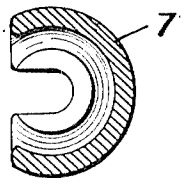


FIG. 5.



WITNESSES:

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UNITED STATES PATENT OFFICE.

BRUCE FORD, OF PHILADELPHIA, PENNSYLVANIA.

STRAP OR CONNECTION FOR SECONDARY OR STORAGE BATTERIES.

1,073,670. Specification of Letters Patent. Patented Sept. 23, 1913.

Application filed January 25, 1911. Serial No. 604,503.

To all whom it may concern:

Be it known that I, BRUCE FORD, a citizen of the United States, and a resident of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Strap or Connection for Secondary or Storage Batteries, of which the following is a specification.

The principal object of the present invention is to provide a strap or connection which shall be mechanically strong and of good electrical conductivity, which shall be capable of resisting any corrosive action to which it is, in use, exposed, which shall be sufficiently elastic or pliable for resisting the shocks and jars to which it is subjected, and which shall be capable of convenient attachment and detachment when required.

The invention will be claimed at the end hereof, and although modifications may be made in details of arrangement and construction, it will be described in connection with the embodiment of it chosen for illustration in the accompanying drawings, in which—

Figure 1, is a side view, partly in section, illustrating a strap or connection embodying features of the invention in application to a secondary or storage battery. Fig. 2, is a top view, drawn to an enlarged scale, and partly in section of the strap or connection shown in Fig. 1, together with portions of a terminal. Fig. 3, is a side view, partly in section, of the device shown in Fig. 2. Fig. 4, is a side view of a tool in connection with which the strap is useful, Fig. 5 is a sectional view, taken on the line 5—5 of Fig. 4. Fig. 6 is a cross-sectional view of a single strip, and Fig. 7, is a similar view of superposed strips.

In the drawings 1, is a strip as of copper, coated as with lead or lead alloy and corrugated or off-set as at 2, intermediate of its ends. One strip is shown, but, if desired, more than one strip may be employed and in that case the strips can be superposed. The ends of the strip are provided with holes or openings 3 which are somewhat larger than the lugs 4 of the terminals. At the ends of the strip there are heads 5 as of lead alloy and these heads have through them holes or openings of less diameter than the holes or openings in the ends of the strip 2, so that the material of the heads incloses the rim of the openings in the ends of the strip. The heads in comparison with the strip are relatively thick and massive and they are provided around their openings with projecting flanges 6, the purpose of which will be presently described.

In use the openings in the heads receive the terminal lugs and are burned or puddled thereto so that good conductivity is insured. The strip so far as it consists of material, as copper, subject to corrosion or attack in use, is coated with lead or the like. The copper adds strength and elasticity along with good conductivity. The off-set or corrugation 2 makes the strap springy or elastic and thus protects it from breakage in use. It is often necessary to remove the strap from the terminal connections, and in this connection the flange 6 on the heads is useful. To explain this, reference is made to Figs. 4 and 5, in which the claw-like jaw 7 has screw-and-thread connection with the punch 8 that is surrounded by a skirt 9. In use the claw 7 underlies the head 5, the punch 8 bears upon the top of the terminal post 4 and the skirt 9 encircles the flange 6. When one of the parts of the tool is moved and the other is held still, as by means of the handles 10 and 11, the skirt 9 passing over the flange 6 is guided thereby, so that the punch 8 is kept in line with the post 4 and the strap is stripped from the lug.

What I claim is:

1. A connecting strap for secondary or storage batteries, comprising a flexible strip perforated at its ends and permanently provided thereat with perforated heads, said perforations being co-incident, substantially as described.

2. A connecting strap for secondary or storage batteries comprising a leaden coated copper strip perforated at its ends, and perforated massive leaden heads applied to and inclosing the ends of the strip and the rim of openings therein.

3. A connecting strap for secondary or storage batteries comprising a flexible strip having a protective coating and perforated at its ends and permanently provided thereat with massive perforated heads, said perforations being co-incident, substantially as described.

4. A connecting strap for secondary or

storage batteries, comprising a flexible strip perforated at its ends and permanently provided thereat with perforated heads said perforations being co-incident, and said ends provided with tool-guide flanges surrounding the perforations, substantially as described.

In testimony whereof I have hereunto signed my name.

BRUCE FORD.

Witnesses:
GEO. M. HOWARD,
EDGAR LONGAKER.