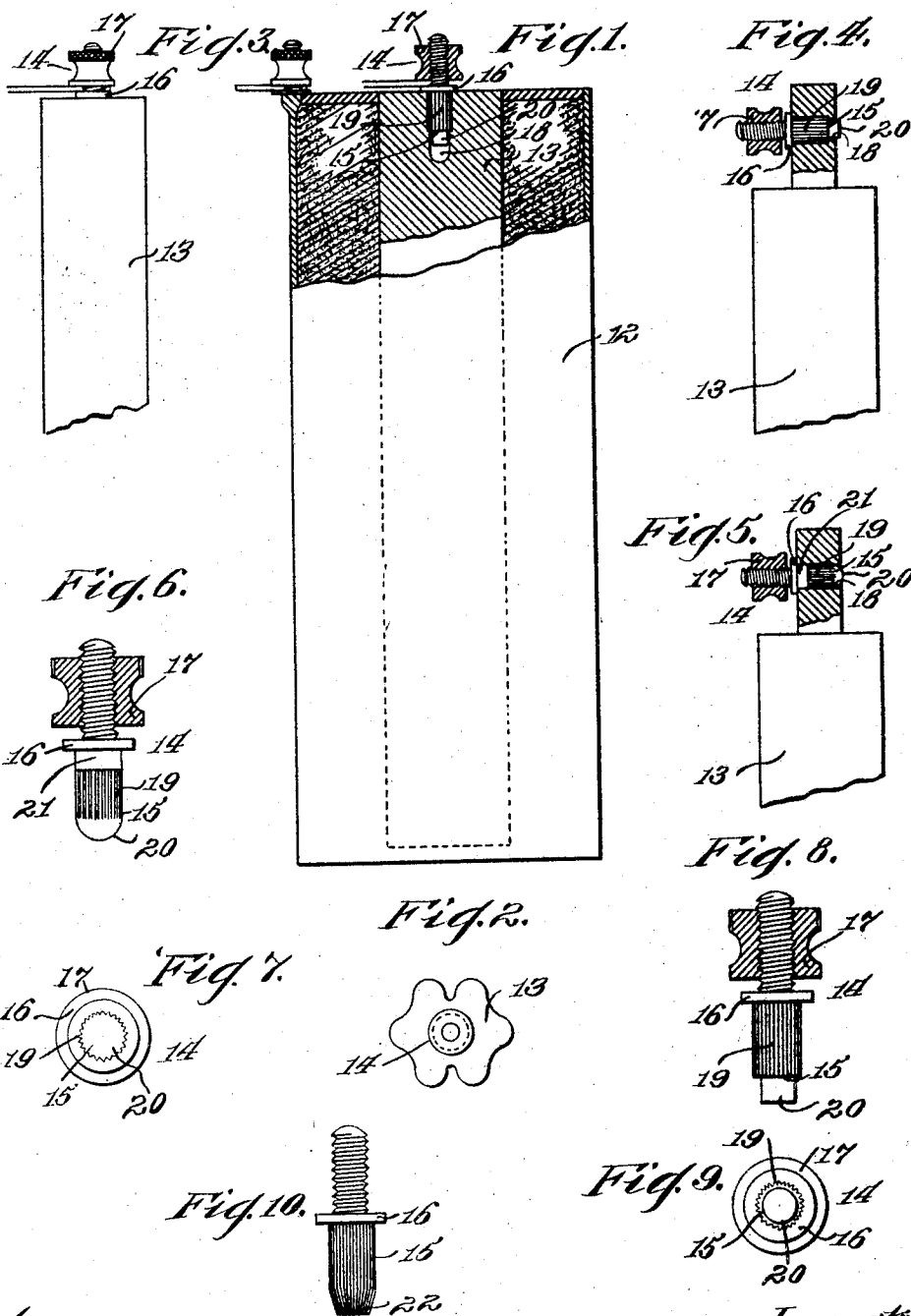


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E. C. HENN.
BINDING POST.

APPLICATION FILED MAY 9, 1905.



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UNITED STATES PATENT OFFICE.

EDWIN C. HENN, OF CLEVELAND, OHIO.

BINDING-POST.

No. 813,093.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDWIN C. HENN, a citizen of the United States, residing in Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Binding - Posts, of which the following is a specification.

This invention has reference to the means for attaching electrical conductors, such as copper wires, to one of the elements of an electric battery-cell.

One of the objects of the invention is to provide a form of binding-post that can be secured to the battery element by merely making a suitable aperture in the element and thereupon forcing the engaging portion of the binding-post into the aperture by a straight movement without the necessity of screwing it in.

A further object of the invention is to provide a binding-post with means for having a locking or retaining engagement with the walls of a cylindrical bore in the non-metallic element of a cell and providing it with an intermediate member that will limit its movement into the bore in the element and at the same time serve as one of the clamping portions for attaching a conductor to the projecting portion of the binding-post.

In the accompanying drawings are shown embodiments of my invention, in which—

Figure 1 represents a battery-cell, partly in elevation and partly in section, having a binding-post secured thereto. Fig. 2 is an end view of the battery element before the post is secured thereto. Fig. 3 is a side elevation of the element and binding-post in position thereon. Fig. 4 shows the binding-post of the battery element secured to a side face instead of the end. Fig. 5 is a view similar to Fig. 4, showing a slightly-modified form of binding-post. Fig. 6 is a side elevation of the binding-post separate shown in Fig. 5, the nut being shown in section. Fig. 7 is an elevation of the binding-post from the inserting end. Fig. 8 is a side elevation of the form of binding-post shown in Fig. 1. Fig. 9 is an end elevation of the binding-post shown in Fig. 8, and Fig. 10 shows another modification.

The cell 12 is shown as having a positive pole element 13, that is usually made of carbon of substantially cylindrical shape, but having corrugated surfaces; but this carbon rod may be of rectangular or oblong cross-section or any preferred form within the

scope of my invention. The rod is shown as not extending beyond the cell, but flush with the end, but may project beyond, if preferred.

The binding-post (denoted generally by 14) is designed to be inserted in a suitable bore in the upper end of the rod 13, and this bore may be vertical, as shown in Fig. 1—that is, in the end of the rod—or the bore may be arranged horizontally, as set forth in Figs. 4 and 5. The binding-post in the present instance comprises a shank 15, that has at an intermediate part an annular flange or collar 16. Between this flange and one end of the shank, that is preferably of cylindrical contour, are formed a plurality of projections or ribs 19, that extend longitudinally and which are preferably disposed adjacent. These ribs are preferably made angular or V-shaped. At the other end portion of the shank from the collar 16 may be arranged any suitable or desired form of conductor-attaching means. In the present instance the shank at this end of the post is screw-threaded to engage a suitable milled nut 17. The conductor to be attached to this element can be tightly clamped between the nut and the flange 16 in the usual and well-known manner.

The battery element 13 has a bore 18 formed in it of a cylindrical form, whose diameter is slightly less than that of the binding-post at its ribbed portion 19, whereby upon the binding-post being forced into said bore until the collar 16 engages the end of the carbon rod the ribs will engage the wall of the bore and slightly furrow the wall, thereby not only securing the binding-post to the element, but effectually resisting the twisting of the binding-post in the bore by the screwing action of the nut 17 to clamp the conductor in position. To facilitate the insertion of the binding-post in the bore 18, the end portion 20 may be slightly reduced, so as to easily enter the bore and act as a guide to insure the proper entrance of the ribbed portion 19, or the post may have the ribs extending from the flange 16 to the extremity and have the end portion tapered slightly, as shown at 22 in Fig. 10. In the modification shown in Figs. 5 and 6 the ribs do not extend from the collar downward, but a cylindrical portion 21 is left between the collar and the ribs that is of a diameter to snugly engage the bore in the carbon rod.

From the above it will be observed that the binding-post is formed of but one member in

addition to the screw-nut that clamps the conductor-wire and that no separate means whatever are needed to secure the binding-post to the carbon element. Another advantage of this form of post is that but a simple cylindrical bore is required to be made in the carbon element, and the binding-post is secured to the element by merely forcing it straight into the socket without any screwing or twisting motion or without the use of any means, such as a lock-nut or the application of solder, to securely and effectually retain the binding-post in proper position on the end of the battery element.

This binding-post is of great utility whenever it is desired to secure a conductor to a non-metallic body of rigid material, such as carbon. It forms a very convenient method of connecting the wires to the carbon-brushes used on dynamos and motors.

Having thus described my invention, what I claim is—

1. An element for an electric battery-cell consisting of a rod of non-metallic substance having a bore in its outer end portion, a binding-post comprising conductor-attaching means at one end, and having at its other end portion longitudinally-extending ribs, said ribbed portion of the binding-post being inserted in said bore in the rod, the bore being of a diameter less than that of the engaging portion of the binding-post, whereby the ribs will have a retaining engagement with the wall of the bore.

2. An element for an electric battery-cell consisting of a rod of non-metallic substance having a bore in its outer end portion, a binding-post having a shank provided with a collar at an intermediate portion, the post being screw-threaded from said collar to one extremity of the post, a nut engaging said threaded portion, the binding-post at the other side of said collar being provided with adjacent longitudinal extending ribs, said latter portion of the binding-post being inserted into said bore with the collar engaging the rod adjacent the bore, the said bore being of a diameter less than that of its engaging portion of the post, whereby said ribs will have a retaining engagement with the walls of the bore.

3. An element for an electric battery-cell consisting of a rod of non-metallic substance having a bore in its outer end portion, a binding-post having at one end portion longitudinally-extending ribs, said ribbed portion of the binding-post being inserted in said bore

in the rod, the bore being of a diameter less than that of the engaging portion of the binding-post, whereby the ribs will have a retaining engagement with the wall of the bore.

4. The combination of a rigid non-metallic body having a bore therein, a binding-post comprising conductor-attaching means at one end and having at its other end portion longitudinally-extending ribs, said ribbed portion of the post being inserted in said bore in the body, the bore being of less diameter than that of the engaging portion of the post whereby the ribs will have a retaining engagement with the wall of the bore.

5. The combination of a rigid non-metallic body having a bore therein, a binding-post having a shank provided with a collar, the post being screw-threaded from the collar to one extremity, and nut on said threaded portion, the post at the other side of the collar being provided with longitudinally-extending ribs, said ribbed portion of the post being inserted in said bore with the collar engaging the body adjacent the bore, said bore being of a diameter less than that of the engaging portion of the post whereby the ribs will have a retaining engagement with the wall of the bore.

6. A binding-post provided with conductor-attaching means, at one end, and having a cylindrical shank at the other end portion provided with a circular series of longitudinally-extending ribs, disposed parallel with the axis of the shank.

7. A binding-post provided with conductor-attaching means at one end, and having a cylindrical shank at the other end portion provided with a circular series of longitudinally-extending ribs, disposed parallel with the axis of the shank, the end portion of the shank being made tapering.

8. A binding-post comprising a shank having a flange at an intermediate portion, the post from said portion to one end being screw-threaded, a nut engaging such threaded portion, the shank of the post at the other side of the flange being substantially cylindrical and provided with a circular series of adjacent ribs extending substantially parallel with the axis of the shank.

Signed at Cleveland, Ohio, this 4th day of May, 1905.

EDWIN C. HENN.

Witnesses:

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