May 8, 1934. B. A. LUNDY ET AL 1,958,196

TERMINAL

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Fig. 1.

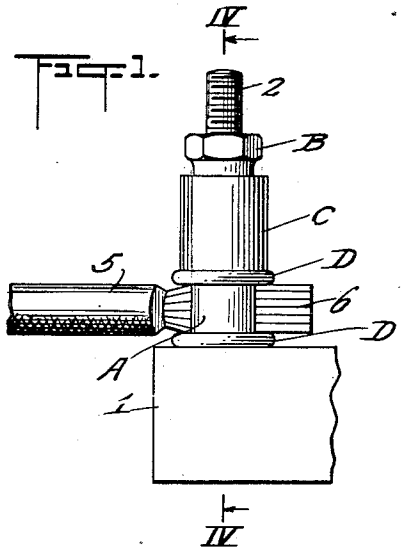


Fig. 2.

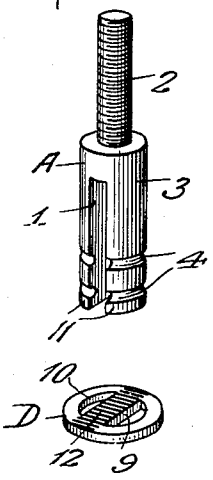
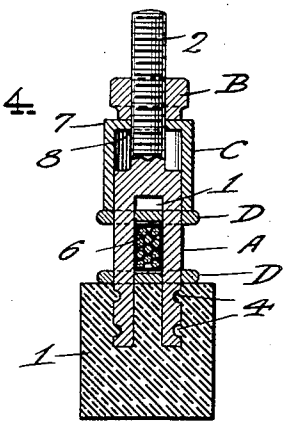


Fig. 3.

Fig. 4.



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TERMINAL

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2 Claims. (Cl. 173—259)

This invention relates to electricity, particularly to conductors therefor, and more especially to conductors known as connectors, specifically as binding posts.

Those skilled in the electrical art know that binding posts for electrical conductors are generally either of two well known types: one, so constructed that the bared end of the electrical conductor to be connected thereto must be formed into a loop or eye; the other, constructed with an orifice into which the straight bared end of the electrical conductor is inserted.

The first mentioned type is objectionable because it requires the formation of a loop or eye in the end of the conductor. This is so because it is difficult to shape a well formed and efficient eye when the conductor is of any considerable size. Furthermore, when the conductor is of some considerable size the nuts usually used for binding the conductor on the usual binding posts do not give a sufficiently extensive metallic contact, and the upper one must be removed entirely in order to remove the conductor from the binding post.

The second mentioned form of binding post, that is, the one having an orifice therein for the reception of the bared end of the conductor, is objectionable because the orifice cannot be readily made to receive all of the possible conductors which may be connected thereto. This difficulty arises particularly in connection with the larger size of conductors. If the binding post has an orifice sufficient to receive the end of such large conductors, the orifice is so large that the binding post is very considerably weakened by reason of the small amount of metal left surrounding the orifice.

A principal object of the present invention is to provide a binding post which will be of such construction that both small and large size conductors may be equally efficiently held.

A further object of the invention is to provide a binding post of such construction that a suitable and metallic contact will be made with any conductor connected thereto and held thereby.

Other objects and advantages will appear as the description of the particular physical embodiments selected to illustrate the invention progresses, and the novel features will be particularly pointed out in the appended claims.

In describing the invention in detail, and the particular physical embodiments selected to illustrate the invention, reference will be had to the accompanying drawing and the several views thereon in which like characters of reference will designate like parts throughout the several views, and in which:

Figure 1 is a side elevational view of a binding post embodying the invention together with a fragment of a base upon which the post is mounted, and a fragment of a conductor connected to the post; Fig. 2 is a perspective view of a pillar forming part of the invention; Fig. 3 is a perspective view of an apertured disc forming part of the invention; Fig. 4 is a cross-sectional view of the device as shown by Fig. 1 on the plane indicated by the line IV—IV, viewed in the direction of the arrows at the ends of the line.

The preferred form of the improved binding post includes four elements: a pillar A; an apertured disc D, used in duplicate; a sleeve formed with an end wall or thimble C; and a threaded nut B.

The part represented by the elongated body or pillar A may be of various forms and construction, but must include as an essential element a slot 1 for the reception of a conductor, and a threaded portion 2 for receiving a member such as a nut D for exerting pressure against the conductor attached to the post.

The pillar A, insofar as the portion 3 below the threaded portion 2 is concerned, may be of any desired form. It is preferred to have the portion 3 circular in cross-section, although it is not intended to exclude a pillar, as A, having the portion, as 3, of any other form in cross-section, such as square.

The portion 3 of the pillar A may be formed in any suitable manner at its lower end so that it may be properly mounted upon its base, such as 1, shown in Fig. 1. Applicants prefer to have the portion 3 of circular form in cross-section throughout and to form circumferential grooves, as 4, near its lower end, that is, the portion received within the base 1. This circumferential groove construction is particularly desirable where the base 1 is made of some one of the well known forms of molded installations which are solidified by heat and pressure because in such case the pillar A may be placed in the die and the material solidified thereabout so that it will adhere to the material of the base 1, entering the grooves 4, as shown in Fig. 4.

A conductor, such as 5, to be connected to a binding post will have its end 6 bared as usual, and then inserted in the slot 1. If the conductor end 6 is of a diameter too great to be inserted in the slot 1, then it is flattened, as by squeezing or hammering, so that it becomes somewhat in the shape of a rectangle in cross-section, as shown

in Fig. 4. Herein lies the great advantage of applicants' invention. Not only may a conductor small in diameter be inserted in the slot 1, but a conductor very much too large in diameter to be inserted in the slot 1 may, by being squeezed or hammered, become so drawn out in one direction and condensed in the other that it may be successfully inserted in the slot 1. In short, the slot 1 provides a means by which conductors of very widely varying diameter may be accommodated, even if the diameter is such that the conductor may not be inserted in the slot 1 before being manipulated, as by hammering or squeezing.

After the conductor end, as 6, has been inserted in the slot 1, it is necessary to retain it therein by some compressive means. A preferred form selected by applicants includes a threaded portion 2 of the pillar A together with a nut B cooperating therewith. In order to provide for the great variations in the size of the conductor end 6, applicants prefer to provide a sleeve with an end wall or thimble C. The thimble is made of such internal diameter that it will fit nicely over the portion 3 of the pillar A and the end wall 7 is orificed at 8 to receive the threaded portion 2 of the pillar A. The end wall 7 of the thimble C also serves as an abutment for the nut B so that by screwing down the nut B, the thimble C may be brought to bear upon the end 6 of the conductor, but applicants prefer a wider and more extensive contact than would be given merely by the end of thimble C so that applicants interpose a disc D between the thimble C and the conductor 6. In order to increase this metallic contact, and also provide more resistant surface against which to press the end 6, applicants also provide a disc D below the conductor end 6.

The discs D are circular in contour as shown and are apertured as at 9 and 10 as shown in Fig. 3. These apertures 9 and 10 are of such size that each will nicely receive one of the limbs 11 of the pillar A. The disc D is knurled along the central portion 12. This knurling or serrating is quite pronounced and occurs at both sides of the central portion 12 and serves to prevent the conductor from slipping as the serrations or knurling bite into the material of the end 6 when the nut B is screwed down forcing thimble C against disc D, and disc D against the conductor end 6.

To increase facility in assembling the device applicants have bifurcated the pillar A so as to form the two limbs 11 and have formed the member D into the shape of a disc with two apertures, each one of which receives one of the limbs of the pillar A, but it is to be understood that this form is merely a preferred form and applicants do not intend to exclude by this particular showing other obvious arrangements which would result from introducing a flat serrated metallic member between the thimble C and the conductor end 6 and between the body 1 and the conductor end 6.

Applicants' device provides a simple, easily manipulated and efficient binding post for the attachment of electrical conductors whereby the forming of an eye or loop in the end of the conductor is avoided, but a substantially equivalent security of holding is afforded by the serrated discs D, and whereby a conductor of a diameter so large as to prevent its entrance into the orifices as usually furnished with such binding posts may, nevertheless, be accommodated by first increasing the size in one direction and decreasing it in a direction at a right angle thereto, but without cutting, shaving, or filing away material, so that the actual cross-sectional area of the structure remains substantially the same.

Althcugh we have described one particular physical embodiment of our invention and explained the principle, mode of operation and construction thereof, nevertheless, we desire to have it understood that the form selected is merely illustrative, but does not exhaust the possible physical embodiments of the idea of means underlying our invention.

What we claim as new and desire to secure by Letters Patent of the United States, is:

1. In a binding post, in combination: an elongated pillar having its lower portion bifurcated, forming a slot and two limbs, its upper portion being solid and reduced in diameter and threaded, said lower portion having a smooth exterior surface, a disc formed with two apertures and a central serrated portion therebetween, each of the apertures adapted to receive one of the limbs; a thimble provided with an orifice through which the reduced threaded portion extends and adapted to bear upon the disc; and a nut cooperated with the threaded portion for forcing the thimble against the disc and the central serrated portion of the disc against a conductor inserted in the slot.

2. In a binding post, in combination: a pillar having a lower bifurcated portion forming two limbs with a slot therebetween, an upper reduced solid threaded portion, said lower portion having a smooth exterior surface, and grooves formed in the lower portion whereby the pillar may be firmly imbedded in an insulating body solidly formed by heat and pressure; two discs, each having a serrated central portion, positioned in the slot and each having apertures, each of which is adapted to receive one of the limbs, said discs positioned one above and one below a conductor positioned in the slot; a thimble having an orifice through which the threaded portion of the pillar extends, and having its crificed end bearing against the upper of the two discs positioned in the slot; and a nut engaging with the threaded portion and bearing against the end wall of the thimble whereby a conductor positioned between the two discs is firmly held.

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