Oct. 23, 1928. 1,689,080

A. H. NERO

BINDING POST

Filed Jan. 14, 1921

Fig. 1.

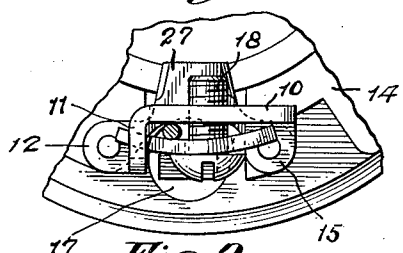


Fig. 3.

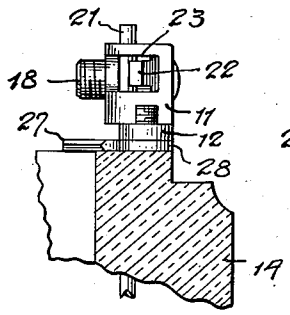


Fig. 2.

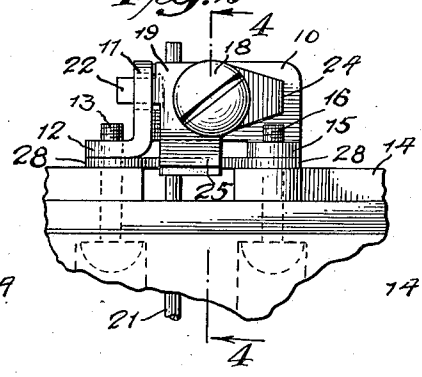


Fig. 4.

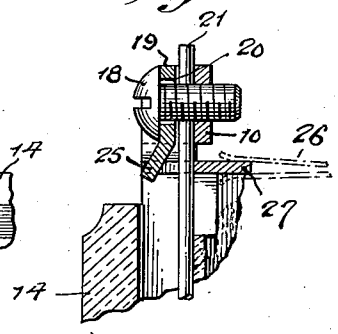


Fig. 6.

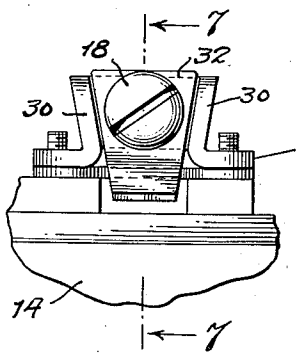


Fig. 5.

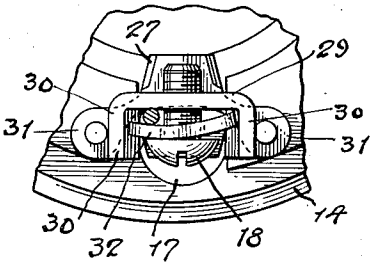


Fig. 7.

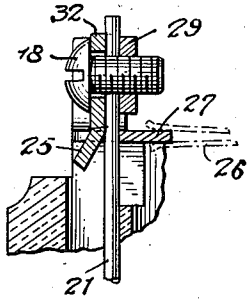
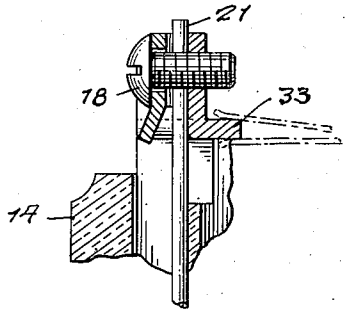


Fig. 8.



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UNITED STATES PATENT OFFICE.

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BINDING POST.

Application filed January 14, 1921. Serial No. 437,134.

My invention relates to binding posts, and particularly to a binding post for electric switches, the object of my invention being to provide a post of exceptionally rugged construction adapted to securely grip one, or a plurality of lead wires, while at the same time maintaining a compact construction, rendering the binding post suitable for use on a switch base of relatively small diameter. This is a particularly desirable characteristic inasmuch as switches for controlling heater units of electric ranges, or other resistance heaters, are necessarily compact by reason of limited available space, while at the same time having a large current-carrying capacity to control the current employed in the heater device.

In the accompanying drawings—

Fig 1 is a plan view of a binding post in which my invention is embodied in one form;

Fig. 2 is a front elevation thereof;

Fig. 3 is a side elevation thereof;

Fig. 4 is a section on the line 4—4, Fig. 2;

Fig. 5 is a plan view of a modified construction;

Fig. 6 is a front elevation thereof;

Fig. 7 is a section on the line 7—7, Fig. 6; and

Fig. 8 is a section similar to Figs. 4 and 7 showing a further modification of one element applicable to either of the constructions shown in the foregoing figures.

Referring first to the constructions shown in Figs. 1 to 4, the present binding post comprises a flat standard 10 having at one side a marginal flange 11 from the lower end of which a supporting foot 12 is offset and tapped to receive one of the securing screws 13 by which the binding post is mounted upon the switch base 14. A second foot 15 is offset from the base of the standard 10 and is similarly tapped to receive a second securing screw 16. The supporting feet 12 and 15 are spaced apart to straddle the hole 17 formed in the switch base, through which the wires are passed upward to the binding post. In order to clamp the wires to the binding post the standard 10 is tapped to receive a relatively heavy binding screw 18. A clamping plate 19 with a relatively large aperture 20 to freely accommodate the shank of the binding screw 18 is pressed by the latter toward the standard 10 and engages the wire or wires 21 between the juxtaposed faces of the clamping plate and standard. In order to hold the clamping plate in proper relation to the standard during the preliminary positioning of the lead wires, while the binding screw is turned out, a lug 22 is provided at one margin of the plate which engages freely in a slot 23 in the marginal flange 11 of the standard 10. This slot is of such dimensions that it permits free play of the lug 22 during the clamping action, while restraining the clamping plate from too great angular displacement during the preliminary adjustment of the lead wires with relation to the binding post. The opposite end of the clamping plate is offset to afford a bearing point at 24 against the standard 10, so that upon the tightening of the binding screw 18, where there is but a single wire inserted between the clamping plate and standard, a lever action is secured which affords a very firm grip upon the inserted wire end.

Preferably, the offsetting of the clamping plate is attained by imparting to it a slight curvature from one end to the other, with the result that a spring action is also attained when the binding screw is tightened, and the clamping plate acts further as a lock washer serving by its tension to prevent accidental loosening of the binding screw.

To facilitate the entry of the lead wire or wires 21 to clamping position, the clamping plate is provided with a downwardly extending lug 25 flared away from the standard to afford a deflecting surface which guides the wire to clamping position between the plate and standard. It further facilitates the insertion of the lead wires if the binding screw 18 is located as shown viz to one side of the axis of the hole 17 in the switch base, thus removing the relatively heavy stem of the binding screw from obstructing position directly in line with the axis of the hole 17 in the switch base 14.

As will be noted the stock from which the standard and clamping plate are struck is exceptionally heavy. Where the switch is of the type having spring switch blades 26 (Fig. 4) the latter would be permanently sprung apart and afford poor contact with the switch terminal were they forced to straddle a terminal of the thickness of metal used in the construction of the standard. In order to avoid this objection, I provide an independent switch terminal plate 27 of lighter weight metal, having lugs 28 which underlie the feet 12 and 15 of the standard and are clamped beneath the latter by the securing screws 13 and 16. This is a matter of considerable importance where the

binding post is mounted on switches of small diameter, and in which the length of the switch blades 26 is necessarily so short that but a slight spread is possible without permanent separation of the blades, with resulting poor contact between the blades and the terminal.

In Figs. 5, 6 and 7 I have shown a modified construction embodying the underlying thoughts of the construction just described in a slightly different form. Thus, the standard 29 has side flanges 30 at each side margin, and feet 31 offset from the lower margin of each of the side flanges. The clamping plate 32, while curved for the same purpose as that above described, is not provided with a guide lug since it fits sufficiently closely between the side flanges 30 of the standard to maintain its position during the adjustment of the lead wires. The side flanges 30 are upwardly flared apart to afford ample room to accommodate the lead wires in the rear of the binding screw, and a wedgeshape is imparted to a clamping plate 32 to follow the flares of the side flanges. In other respects the constructions are substantially identical.

In Fig. 8 I have indicated a switch terminal 33 integral with the standard. This construction may be used on switches of greater diameter where the switch blades are of sufficient length to permit of such spreading strains without permanent injury thereto.

The construction shown, while simple and rugged, has the advantage of affording a light weight switch terminal, where necessary, with a heavy weight binding screw and standard. The offset clamping plate affords (*a*) clamping lever action, (*b*) accommodation to wires of different diameters, (*c*) relief from side strains on the binding screw when clamping wires of different sizes, (*d*) a lock nut action by reason of its spring engagement with the head of the binding screw.

Where a construction such as shown in Figs. 1 to 4 is used, the arrangement of the binding screw out of line with the axis of the hole through the switch base is a feature of value in facilitating the entry of the wires into clamping position, as is also the flared lug at the lower margin of the clamping plate, which is found in all the constructions.

This binding post is particularly valuable in installations using heavy lead wires 21, which are not readily bent around the binding screw. The construction affords the advantage of merely engaging the bared end of the wire without twisting the latter. This not only facilitates wiring, but has the advantage of permitting one switch to be replaced by another should defect occur, without the difficulties which would be experienced were it necessary to bend the heavy wires around the shanks of the binding screws. Of course in using lighter wires, they can be wrapped around the binding screw in the usual fashion, if desired, but the clamping plate, being freely mounted on the binding screw and thus taking various angular positions with respect to the standard, will engage and grip the wires of different diameters simultaneously and without any side strain on the binding screw itself.

Various modifications in general outline and shape of the parts will readily occur to those skilled in the art, while still embodying in the structure the underlying thoughts of my invention, as indicated in the accompanying drawing, or as pointed out in the following claims.

I claim—

1. A binding post comprising a standard tapped to receive a binding screw and having an apertured side flange, an apertured independent clamping plate facing the standard and provided with a marginal lug freely engaged in the aperture in the side flange of the standard, together with a binding screw passing freely through the aperture in the clamping plate and engaging the tapped standard to press the clamping plate toward the standard.

2. A binding post comprising a standard tapped to receive a binding screw and having an integral side flange, an independent clamping plate facing the standard and having a side lug loosely fulcrumed on the side flange of the standard, the lower margin of said plate being flared away from the standard to guide an associated wire into position between the standard and clamping plate, together with a binding screw passing freely through the clamping plate and engaging the tapped standard to press the clamping plate toward said standard.

3. A binding post comprising a standard tapped to receive a binding screw, and having an integral side flange, an independent dished clamping plate having its concave face toward the standard, and its lower margin flared away from the standard to guide an associated wire into position between the standard and plate, together with a binding screw passing freely through the clamping plate and engaging the standard to press the clamping plate thereagainst.

4. A binding post comprising a standard tapped to receive a binding screw, and provided with an integral offset side flange, an independent clamping plate facing the standard but extending below the lower margin of the latter, the lower portion of said plate being flared away from the standard, together with a binding screw passing freely through the clamping plate and engaging the tapped standard to press the clamping plate toward said standard.

In testimony whereof I have signed my name to this specification.

ARVID H. NERO.