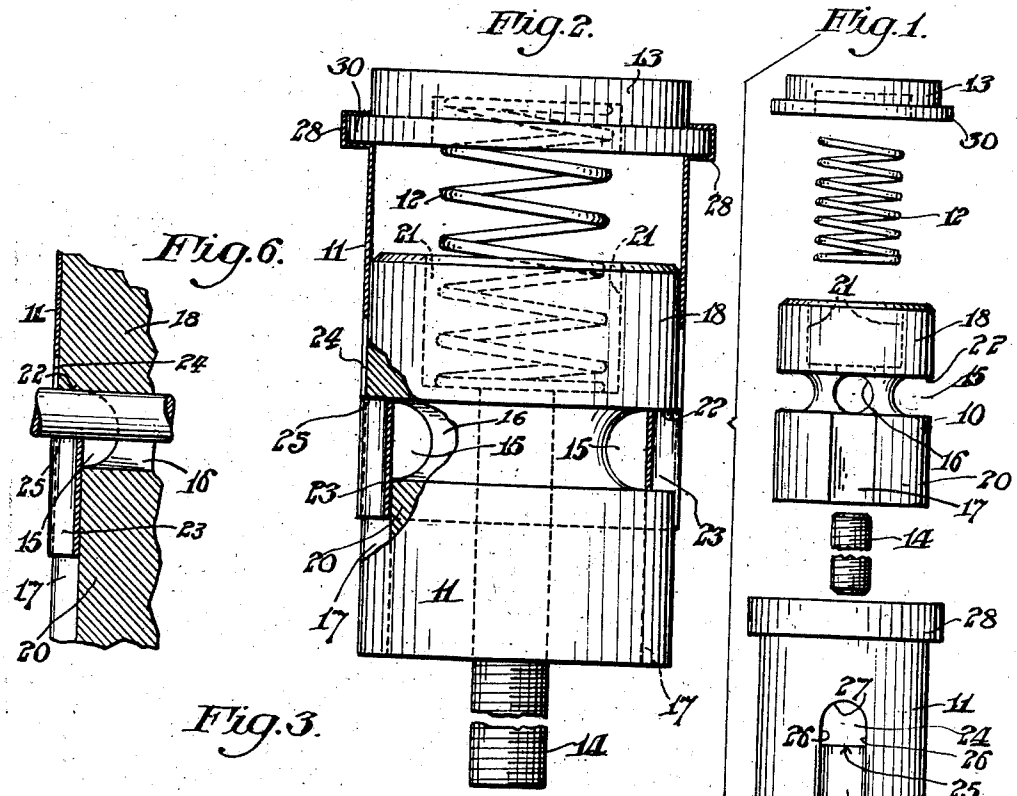
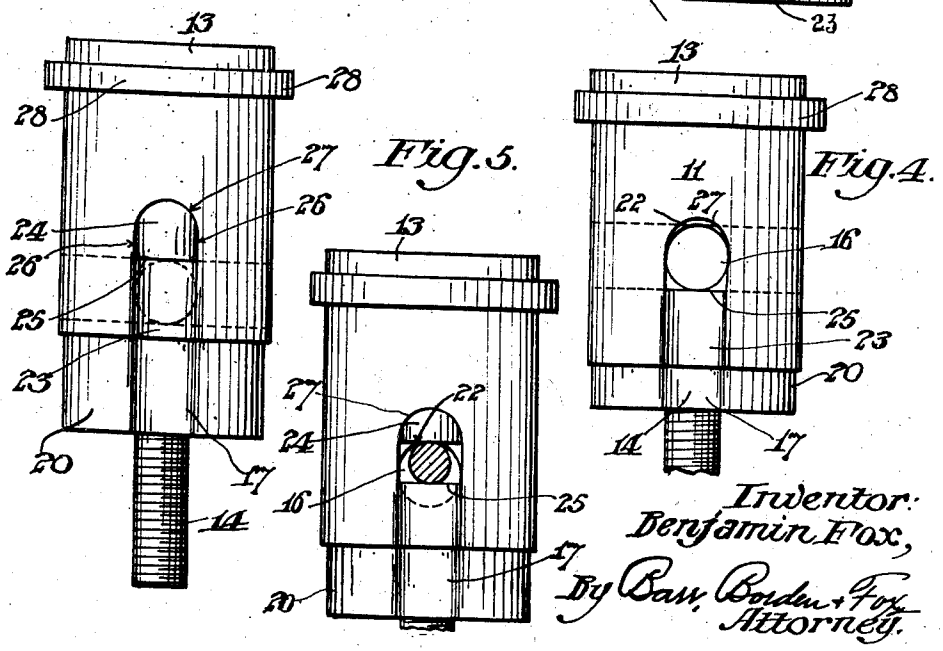
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SPRING BINDING POST

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SPRING BINDING POST

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1 Claim. (Cl. 173—259)

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This invention relates to binding posts, and is particularly directed toward improvements on the binding post shown in United States Patent No. 2,293,719 of Hugh H. Eby.

The binding post according to this patent has been characterized by the provision of a solid fixed base having a peripheral groove, two (preferably) axial grooves in the outer surface intersecting the peripheral groove, and a through bore intersecting the meeting point of the axial and peripheral grooves. A sheet metal cap having round apertures and a closed end was mounted over the end of the base compressing a spring between the closed end and the base and was held in this position while axially extending external grooves forming internal ribs extending into the axial grooves of the base were forced into the metal cap.

The binding post of the said patent is very effective and efficient but in manufacture certain difficulties have been encountered which militate somewhat against the speed and economy of production of the posts. For instance, the use of the base as the anvil against which the cap was compressed to form the axial ribs sometimes forced the cap out of round so that an extra operation was necessary to force the cap away from the ribs, back into cylindrical form. Of more importance was the fact that, as the wire-receiving apertures of the cap, the lower surfaces of which formed the upper end of the ribs, were arcuate, the actual contact with the upper surface of the peripheral groove was practically only by a pair of spaced points defining with an arc a segment, so that in some cases a thin wire inserted through the wire-receiving apertures and the transverse bore when in registry, failed to establish a good tight contact because of disposition within the segment when the spring was allowed to force the cap upwardly to bring the upper end of the rib against the upper surface of the peripheral groove.

It is among the objects of this invention: to improve the art of binding posts; to improve the structure of the said Eby Patent No. 2,293,719; to make a binding post of extreme economy of construction and of utmost facility of assembly; to provide a binding post which will establish a firm electrical contact with any size of wire which it is designed to receive; and many other objects will become apparent as the description proceeds.

In the accompanying drawings, Fig. 1 represents an exploded elevation of one form of the present invention; Fig. 2 represents on a larger scale an elevation in part section of the assembled binding post; Fig. 3 represents an elevation of the

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binding post turned ninety degrees from the position shown in Fig. 2; Fig. 4 represents the elevation shown in Fig. 3, but with the parts compressed to expose the through bore ready to receive a conducting wire; and Fig. 5 represents the elevation shown in Fig. 4 with a conducting wire clamped in place; and Fig. 6 represents a fragmentary section of the post illustrated in Fig. 2 with a wire gripped by the post.

Referring to the drawings, one form of the present invention consists of a five-part binding post including a base or anvil member 10, a sleeve 11, a compression spring 12, a closure 13, and a threaded stem 14. The base 10 is generally cylindrical in shape and is formed with a peripheral groove 15, a through bore 16 in the plane of the groove 15, and two diametrically opposite axially disposed relatively narrow channels or grooves 17. The groove 15 subdivides the base 10 into an upper head 18 and a lower skirt 20, which latter has its circumference interrupted by the aforesaid channels 17. The head 18 is internally cupped to form a seat 21 for one end of the compression spring 12, while its lower marginal edge 22 forms a narrow plane overhang above the groove 15. In other words, the radius of the groove 15 is such as to merge into the head appreciably within the diameter of the head 18. This is important, as will later appear.

In order to mount the binding post on a panel or other support, the stem 14 is threaded coaxially into the base, and projects therefrom a sufficient distance for the intended purpose.

For cooperation with the base 10, the sleeve 11 has an internal diameter suitable for telescopic sliding co-action with the base 10, and a length to receive the spring 12 and hold it under compression when the parts are operatively assembled. The head-engaging end of the body portion of the sleeve 11 is preformed with two inwardly disposed diametrically opposite tongues or ribs 23, which are complemental in dimensions to the channels 17 and ride freely therein. Wire-receiving holes 24 are formed in the sleeve 11 and respectively intercept the inner ends of the tongues 23 to provide two transverse plane edges 25 as terminations respectivly of the tongues 23. Each hole 24 has two parallel sides 26 extending axially of the sleeve and merging into an arc 27 spaced from the edge 25 a sufficient distance to permit the insertion of a conducting wire of the maximum diameter to be used with the binding post.

For closing the open end of the sleeve 11, it is formed with a circumferential extension 28 of larger diameter than the body portion in order

to receive and seal a circumferential flange **30** on the closure **13**. With such closure **13** in place, the end portion of the extension **28** is spun inwardly to encompass the flange **30** and thus mount the closure **13** in closing position.

In forming and assembling the parts, it is to be understood that the apertures or diametrically spaced wire-receiving holes **24** are initially D-shaped in outline, with the D on its side to have its straight edge formed by planar edge surface **25** at the bottom. The D-shaped holes are either made first or at the same time that axial ribs **23** are formed, with the lower straight edge **25** forming the upper terminus of ribs **23**. The shell or sleeve **11** is open at both ends at the time of rib formation and the sleeve is assembled axially upwardly over the base **10** with the ribs **23** in axial grooves or channels **17**, after which the spring **12** and closure **13** are inserted and finally the upper edge of bead **28** is spun or swaged over the flange **30** to complete the assembly.

With the parts so assembled and with the closure **13** in place, the spring **12** is under compression and repels the base **10** with respect to the closure **13** so that in normal position of the parts, with no conducting wire in place, the head **18** closes both of the sleeve holes **24** completely.. It should pe noted that the base **10** is not expelled by the action of the spring **12**, because the two plane edges **25** of the tongues **24** in a common plane parallel to anvil planar surface **22** of head **18** are in a path of movement which intersects marginal edge **22** of the head **18**. Thus, at each side of the assembly there are two juxtaposed straight parallel edges resiliently forced together and which serve as jaws to grip any wire which traverses the holes **24** and passes through the bore **16**. Thus, regardless of the diameter of any, even the most minute, wire designed to enter the bore **16**, it will be gripped in a positive manner, between a flat end of the rib and a planar anvil surface on the base, in contrast to the loose or incomplete gripping which ordinarily occurs when a small wire is to be held by the binding posts of the prior art.

It will now be apparent that a complete unitary binding post has been devised wherein conductor wires of different diameters can be gripped with equal effectiveness and thereby the loose connections inherent in other binding posts are no longer present. Furthermore, the novel interengaging construction of the sleeve, closure and anvil, are so ingeniously correlated that the manufacturing steps have been reduced to a minimum with a consequent material saving in cost. Also, the provision of opposed flat jaw surfaces as a gripping means instead of the jaws, one of which was arc-shaped heretofore in use, ensures not only a good contact-making gripping bite of every size of wire, but prevents slipping and loose connection with the held wire, while precluding shearing stresses common to other types of binding posts.

Having thus described my invention, I claim:

A binding post comprising a relatively stationary base having a transverse bore and a circumferentially extending groove substantially U shaped in cross section of a depth appreciably greater than its dimension axially of the base intersecting at least one end of the bore to form an upper substantially planar surface against which a wire in the bore can be forced for gripping purposes, said base having an axially extending surface groove extending from the end of the bore toward the lower end of the base, a movable sleeve mounted on the base and having a pair of aligned holes each shaped at the lower end in a transverse straight edge, said sleeve having an indented rib generally U-shaped in transverse section extending from the hole to the end of the sleeve, with the straight edge of the hole forming a substantially planar upper edge of the rib in position to engage axially the said substantially planar surface as an anvil, whereby any size of wire that can be disposed in the registering holes and bore is clamped between the planar upper end of the rib and the planar upper surface of the base, and means for urging the base and sleeve in such relative axial directions as to cause such clamping action.

BENJAMIN FOX.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,293,719	Eby	Aug. 25, 1942
1,574,744	Aiken	Mar. 2, 1926

FOREIGN PATENTS

Number	Country	Date
140,047	Great Britain	1919

Certificate of Correction

Patent No. 2,424,444. July 22, 1947.

BENJAMIN FOX

It is hereby certified that the name of the assignee in the above numbered patent was erroneously written and printed as "Hugh H. Edy" whereas said name should have been written and printed as *Hugh H. Eby*, as shown by the record of assignments in this Office; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 2nd day of September, A. D. 1947.

[SEAL]

LESLIE FRAZER,
First Assistant Commissioner of Patents.