R. KRUMMING.
ATTACHMENT MEANS FOR BINDER POSTS.
APPLICATION FILED AUG. 22, 1908.

970,510. Patented Sept. 20, 1910.

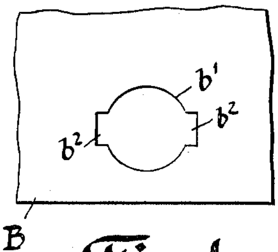

Fig. 1

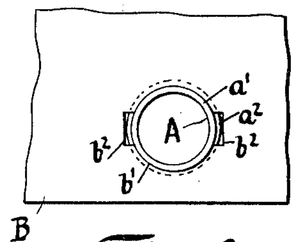

Fig. 3

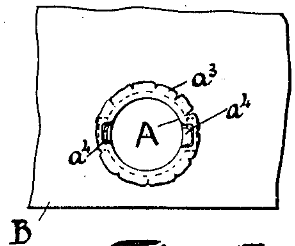

Fig. 5

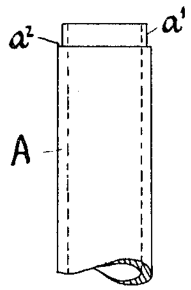

Fig. 2

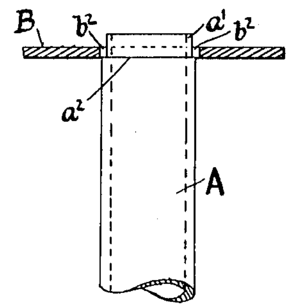

Fig. 4

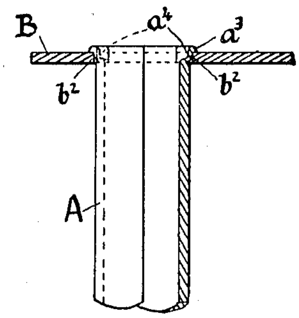

Fig. 6

Fig. 7

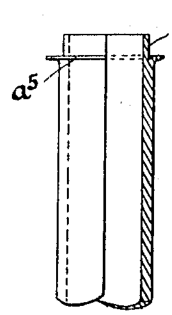

Fig. 8

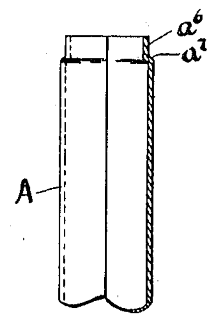

Fig. 9

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UNITED STATES PATENT OFFICE.

REINHOLD KRUMMING, OF MILWAUKEE, WISCONSIN.

ATTACHMENT MEANS FOR BINDER-POSTS.

970,510. Specification of Letters Patent. Patented Sept. 20, 1910.

Application filed August 22, 1908. Serial No. 449,828.

To all whom it may concern:

Be it known that I, REINHOLD KRUMMING, of Milwaukee, Wisconsin, have invented an Attachment Means for Binder-Posts, of which the following is a specification.

This invention is a device for attaching sectional binder-posts to back-plates of loose-leaf binders such as are used for catalogues, account-books, and loose-leaf books generally, and has relation more particularly to what is known as screw-posts, that is to say those posts consisting of a fixed tubular element and screw-engaging female threads therein for adjusting the length of the post and clamping the leaves in the binder.

The object of the invention is, first, to provide a positive means for preventing the fixed part of the post from rotating with relation to the back-plate to which it is secured; and secondly, to provide means for securing tubular posts to back-plates which may dispense with the use of solder. At the present time such posts are generally fixed to the back-plates by means of solder, which has several disadvantages. In the first place the operation is costly and inconvenient to carry out, and in the second place it does not secure the posts with sufficient firmness; and the post, being subjected in ordinary use to a considerable degree of torsion in tightening up the screw, often becomes loose and rotates with the latter, so that it is impossible to clamp the screw tightly and sometimes impossible to loosen it again.

In my invention I provide a positive engagement between the post and back-plate of the binder in the form of a key which prevents relative rotation; and I further provide means for positively securing the post to the plate without the use of any solder whatsoever.

The nature of my invention may best be understood from a consideration of the following description of a concrete form thereof taken in connection with the accompanying drawings, wherein,

Figure 1 is a plan of a portion of a back-plate provided with a hole ready to receive a post-end; Fig. 2 is a side elevation of a post-end of simple form ready for insertion in the hole of Fig. 1; Fig. 3 is a plan view showing the post-end inserted in the hole in the back-plate ready for riveting. Fig. 4 is a side elevation thereof, the back-plate being shown in axial section through the hole; Fig. 5 is a plan view of the completed joint; Fig. 6 is a longitudinal section therethrough, the post being shown in part elevation; Fig. 7 is a perspective view of a tool suitable for performing the locking-operation; Fig. 8 is a side elevation partly in section of an improved manner of forming the post-end; and Fig. 9 is a similar view showing a special form of post-end adaptable to posts of very thin section.

In these drawings every reference letter and numeral refers always to the same part.

In Figs. 1 to 6 the post is designated A and the back-plate B. In forming the joint I first punch a hole b' in the back-plate in the proper position, said hole being substantially circular except for one or more recesses or notches b^2 made in its margin. These recesses or notches may be of any convenient number and size; herein two oppositely disposed notches are shown, this being the most simple and convenient arrangement. On the end of the post A, which is tubular and of sufficiently thick section to admit of the operation, I form a reduced nipple a' at the base of which is a shoulder a^2. The hole b' is of the same diameter as the nipple a', so that the latter fits therein and the shoulder a^2 abuts against the under face of the plate. When so formed the nipple a' is inserted in the hole b' and the protruding end thereof riveted over as shown at a^3, Fig. 5. This forms the joint; but to prevent rotation as aforesaid the metal of the nipple a' is depressed opposite the notches b^2, as shown at a^4; this operation being performed by any convenient means, as for example a tool similar to that shown in Fig. 7. The metal of the nipple a' being forced into the recesses b^2 acts as a key to prevent relative rotation between the two elements; all as clearly shown in Figs. 5 and 6. The manner of shaping the post-end shown in Fig. 2 is the simplest method; but it is preferable as a rule, instead of cutting away the metal to form the nipple a', to turn it over by means of a suitable tool in the form of a flange or annular fin a^5 as shown in Fig. 8.

In the case of a post A' made of a very thin section, Fig. 9, such as will not admit of the necessary reduction by cutting down, the end of the post is subjected to a drawing process by which it is reduced in section to the form of a nipple a^6 having a shoulder a^7

at its base. The remainder of the process is carried out in the same manner as above described.

Various changes and modifications in the constructions as herein shown may be made without departing from the spirit of my invention, and I wish it understood therefore that the latter is not otherwise limited than by the reasonable scope of my claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. The process of attaching tubular posts to binder-backs consisting in forming a reduced end or nipple on the end of the post having a shoulder at its base, forming a circular hole in the binder-plate adapted to fit said nipple and having one or more notches or recesses in the margin thereof, inserting said nipple in said hole, riveting the protruding end of said nipple over the face of the back-plate, and finally depressing the metal of said nipple into said recesses.

2. The process of attaching tubular posts to binder-backs consisting in forming a nipple of reduced section on the end of the post by making a longitudinal annular cut and turning up the metal to form an annular projecting fin at the base of said nipple, forming a hole in the back-plate adapted to fit said nipple, inserting said nipple in said hole, and riveting the protruding end of said nipple over the face of said back-plate.

3. The process of attaching tubular posts to binder-backs consisting in forming a nipple of reduced section on the end of the post by making a longitudinal annular cut and turning up the metal to form an annular projecting fin at the base of said nipple, forming in the back-plate a circular hole adapted to fit said nipple and having one or more marginal notches therein, inserting said nipple in said hole, riveting the protruding end of said nipple over the face of said back-plate, and depressing the metal of said nipple into said notch or notches.

4. The combination of a tubular binder-post having a reduced end, and a back-plate having a circular hole fitting said reduced end and provided with one or more marginal recesses, said reduced end being riveted over the face of said back-plate and the metal thereof depressed into said recess or recesses.

5. The combination of a binder-post having a reduced end and an annular flange at its base formed integrally with said reduced end, and a back-plate having a circular hole fitting over said reduced end, the metal of said reduced end being riveted over the face of said back-plate.

6. The combination of a binder-post having a reduced end and an annular flange at its base formed integrally with said reduced end, and a back-plate having a circular hole fitting over said reduced end and one or more marginal notches therein, the metal of said reduced end being riveted over the face of said back-plate and depressed into said notch or notches.

7. The process of attaching tubular posts to binder-backs consisting in forming a reduced end or nipple on the end of the post having a rectangular shoulder at its base which abuts against the inner flat face of the back-plate, forming a circular hole in the back-plate adapted to fit said nipple and having one or more notches or recesses in the margin thereof, inserting said nipple in the hole, upsetting the protruding end of said nipple over the outer flat face of the back-plate sufficiently to cover said recess or recesses, and finally depressing the upset metal into said recess or recesses.

8. The combination of a binder-post having a reduced tubular end and a rectangular shoulder at the base of said end, and a back-plate having a circular hole fitting said reduced end and provided with a marginal recess, said reduced end being upset over the outer flat face of said back, so as to overlie and cover said marginal recess, and the metal thereof being depressed into said recess.

9. The combination of a binder-post having a reduced tubular end and an abrupt shoulder at its base, and a back-plate having a circular hole fitting said reduced end and provided with a pair of marginal notches on its opposite sides, said reduced end being upset so as to overlie the outer face of said back-plate and cover said notches and the metal of the upset portion being depressed into said notches so as to fill the same.

In witness whereof, I have hereunto set my hand this nineteenth day of August, 1908.

REINHOLD KRUMMING.

Witnesses:

GEORGE WETMORE COLLES,

MINNIE D. SCHIENBEIN.