

R. KRUMMING.
ATTACHMENT MEANS FOR BINDER POSTS.
APPLICATION FILED JAN. 4, 1908.

933,714.

Patented Sept. 7, 1909.

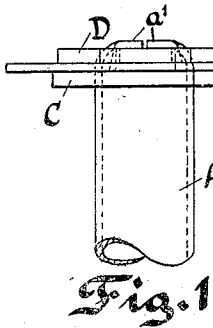


Fig. 1

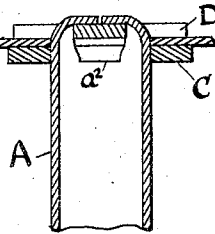


Fig. 3

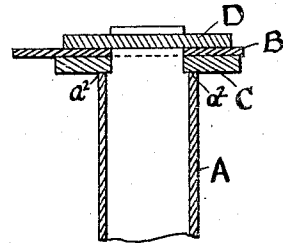


Fig. 4

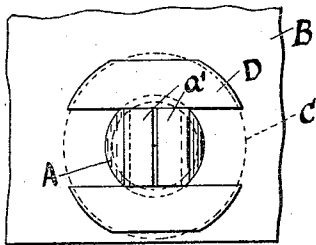


Fig. 2

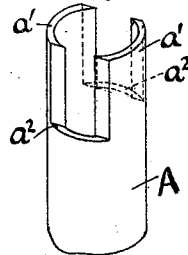


Fig. 9

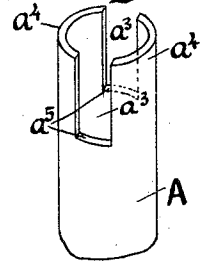


Fig. 10

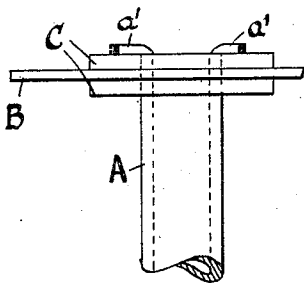


Fig. 5

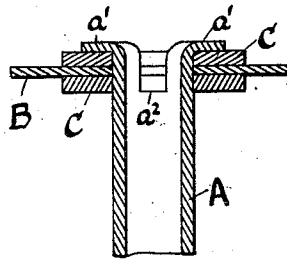


Fig. 7

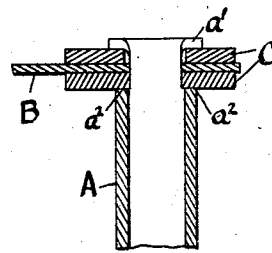


Fig. 8

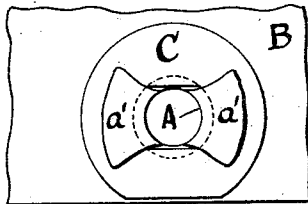


Fig. 6

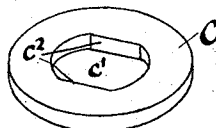


Fig. 11

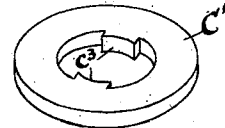


Fig. 13

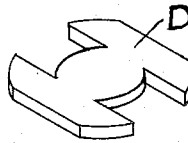


Fig. 12

Reinhold Krumming,
Inventor,

By

[Signature]
Attorney

Witnesses

[Signature]

[Signature]

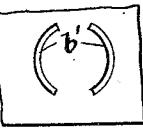


Fig. 14

UNITED STATES PATENT OFFICE.

REINHOLD KRUMMING, OF MILWAUKEE, WISCONSIN.

ATTACHMENT MEANS FOR BINDER-POSTS.

933,714.

Specification of Letters Patent.

Patented Sept. 7, 1909.

Application filed January 4, 1908. Serial No. 409,273.

To all whom it may concern:

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

This invention consists of an improved form of the means of attaching sectional posts to the backs of loose-leaf binders which is disclosed in my copending application for United States Letters Patent No. 308,168, filed March 26, 1906, which application contains generic claims covering both forms. As explained in the specification forming a part of said application, the object of such attachment means is to form a stronger foundation connection between the post and metal of the back, whereby the post is not subject to sudden breaking off in case of shocks, as by dropping the book upon the floor; and such attachment means consists, in general, of two clamping-plates secured to the end of a post or post-section, with the metal of the binder-back clamped between them, which metal is preferably made of bendable sheet-metal, so that any sidewise jaw upon the post will be relieved by the bending of the back at the base of the post, and not by the breaking of the post itself, which cannot bend. The form of the invention shown in my said application comprises more particularly two flat nuts (which form the aforesaid clamping-plates) screwed upon the end of the post-section with the metal of the binder-back between them. The present improved form on the other hand, which forms the subject of this application, provides both a simpler, cheaper and stronger attachment means than the threaded nut, while at the same time preserving the principle above enunciated.

Coming now to the description of a concrete form, reference is to be had to the accompanying drawings, wherein,

Figures 1 to 4 inclusive illustrates a form for a closed-end post; of which Fig. 1 is an elevation, Fig. 2 a plan, Fig. 3 a longitudinal section in the plane of Fig. 1, and Fig. 4 a longitudinal section in the plane at right-angles thereto. Fig. 5 to 8 inclusive illustrate the form to be used for open-ended posts or post-sections; of which Fig. 5 is an elevation, Fig. 6 a plan, Fig. 7 a longitudinal section in the plane of Fig. 5, and Fig. 8 a longitudinal section in the plane at right-angles thereto. Figs. 9 and 10 show in perspective two forms of cut-away end of the

post-section to be attached; Figs. 11 and 12 show in perspective two forms of clamping-plate, the former to be used for either open-ended or closed-ended posts, the latter to be used only for closed-ended posts; and Fig. 13 shows an alternative form of the clamping-plate of Fig. 11. Fig. 14 shows an alternative form of perforations for the binder-back for use where the clamping-plates are dispensed with.

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

There are but four parts involved in the structure, to wit, the post A, the binder-back (consisting of sheet-metal) B, and the two contact-plates, designated C and D respectively.

It will be understood that this attachment means is intended exclusively for posts of the tubular variety, the post A being therefore shown tubular and it is made to pass through a hole of the same diameter in the binder-back B.

The first step in the process of attachment consists in planing off the end of the post-section A on opposite sides as shown in Fig. 9, forming two opposite tabs a' between which are flats a^2 ; or else in cutting a transverse slot or notch a^3 at the end of the post as shown in Fig. 10, forming in this case likewise a pair of upstanding tabs a^4 with intervening flats or shoulders a^5 , which serve the same purpose as the flat a^2 in Fig. 9.

The inside clamping-plate C, Fig. 11, where the form of Fig. 9 of the post A is used, consists of a disk having a hole c' which fits the cut-away end of the post, having segmental portions c^2 on opposite sides which rest upon the flats or shoulders a^2 , the latter forming abutments therefor. Where the form of the post A shown in Fig. 10 is used, the projection c^2 should of course be altered to fit the flats or shoulders a^5 as shown at c^3 in Fig. 13; or instead thereof, the clamping-plate D, Fig. 12, may be used, which fits inside the cut-away end of the member A, as clearly shown for example in Fig. 2. For the outside clamping-plate, Fig. 1, likewise either the form C or D may be used; but generally speaking, I prefer to use the plate D for closed-ended posts, as it makes a neater and stronger job in the latter case. The projecting ends of the tabs a' or a^4 are hammered down and clenched over the substance of the outer-clamping-plate, that is to say, toward the inside where plate

D is used, and toward the outside where plate C is used.

In the case of telescoping binder-posts, the inside section is generally made open at both ends for the insertion of a clamping-screw in the center. For this purpose, only the open form of clamping-plate C can be used, as will be obvious. Therefore in this case the projecting ends of the tabs a' or a'' must be hammered down outwardly, assuming the form shown in Fig. 6.

This means of attachment forms, as will be obvious a very cheap and very strong method. I have illustrated herein several of the various forms which it may take, and it will be readily understood that others may be devised consistent with the same principles. I do not therefore consider my invention further restricted than will be obvious from the proper scope of my claims.

The hole or aperture in the plate B for the insertion of the post-end should be made of the same form as the hole c' in the plate C or C', *i. e.*, with flats c'' or projections c''' so that the post A is at the same time prevented from turning relatively to the plate B.

In smaller binders which have smaller posts and where less strain comes upon the post by reason of the smaller size of the leaves, I find it practicable to omit the inner plate C altogether, the shoulder a'' or a''' being then brought directly against the face of the plate B. It is even possible, consistently with the main principle of my invention, to omit both clamping-plates, the ends of the tabs a' being then turned over on the outside of the hole as shown in Fig. 6, directly upon the outer face of the binder-back B. In this case however, it would be necessary for practical purposes to make the back B so thick as to be no longer bendable.

Where two or more posts are fastened to the same binder-back, I may replace the individual washers or plates C by a single plate having non-circular holes punched in it for the posts at the proper intervals; but in this case also the back would be no longer bendable.

The closed-end form, as shown in Figs. 1 to 4 inclusive is better than the open-end form, because in the latter case the tabs are apt to tear at the edges while being bent over, but this is not possible with the closed-end form, and the latter is therefore much stronger. Moreover it forms a simple and improved method of closing the end of a post, replacing soldered plugs and the like which have been heretofore used.

Where the clamping-plates are dispensed with entirely, as above referred to, I may punch the binder-back with arcuate slots b' to receive the tabs a' , as shown in Fig. 14. In this case the tabs may be turned over on the inside.

Having thus described my invention, what

I claim as new and desire to secure by Letters Patent is:

1. An attachment means for binder-posts comprising, in combination, a post-section having the end thereof cut away to form a plurality of disconnected upstanding tabs leaving shoulders between them, a clamping-plate fitting over said cut-away end and having a part thereof abutting against said shoulders, a binder-back fitting over said cut-away end above said clamping-plate, a second clamping-plate fitting over said binder-back, and means for securing said second plate to the end of said post.

2. An attachment means for binder-posts comprising, in combination, a post-section having the end thereof cut away to form a plurality of disconnected upstanding tabs leaving shoulders between them, a clamping-plate fitting over said cut-away end and having a part thereof abutting against said shoulders, a binder-back fitting over said cut-away end above said clamping-plate, and a second clamping-plate fitting over said binder-back, the projecting ends of said tabs being turned down over said second clamping plate.

3. An attachment means for binder-posts comprising, in combination, a post-section having projecting tabs on its end, a clamping-plate secured to said post-section near the base thereof, a binder-back overlying said clamping-plate, and a second clamping-plate overlying said binder-back, the projecting ends of said tabs being turned down over said second clamping-plate to secure the latter in place.

4. An attachment means for binder-posts comprising, in combination, a post or post-section having tabs or extensions on the ends thereof, a laterally extending clamping-member secured to said post or post-section at the base thereof and adjacent to the binder-back through a hole in which the end of said post passes, and a second member overlying said binder-back, said tabs being turned down over said second-clamping-member.

5. An attachment means for binder-posts comprising, in combination, a post or post-section having its ends cut away to form independent tabs or extensions alternating with shoulders, a clamping-member abutting against said shoulders, a binder-back having a hole through which the cut-away end of said post passes and lying against said clamping-member, and a second clamping-member overlying said binder-back; said tabs being turned down over said second clamping-member.

6. An attachment means for binder-posts comprising, in combination, a post or post-section having its ends cut away to form independent tabs or extensions alternating with shoulders, a clamping-member abut-

ting against said shoulders, a binder-back having a hole through which the cut-away end of said post passes and lying against said clamping-member, and a second clamping-member overlying said binder-back; and means securing said tabs to said second clamping-member.

7. An attachment means for binder-posts comprising, in combination, a post or post-section having its end cut away on opposite sides forming a pair of independent tabs separated by shoulders at their base, a flattened clamping-member passing over the end of said post and lying against said shoulders as abutment, a binder-back having a hole therein fitting over the end of said post next above said clamping-member, and a second clamping-member engaging over the end of said post just above said binder-back, the projecting ends of said tabs being turned down over said second clamping-member.

8. An attachment means for binder-posts comprising in combination a post section having its end cut away to form projecting tabs separated by open spaces, a perforated clamping-member surrounding said post at the base of said cut-away end and abutting thereupon, and a binder-back having a hole through which said cut-away end passes, said hole being of non-circular shape to engage said tabs and prevent the post from turning relative thereto; the ends of said tabs being turned over above said binder-back to hold it in place.

9. An attachment means for binder-posts comprising, in combination, a post-section having its ends cut away to form projecting tabs separated by open spaces, a perforated clamping-member surrounding said

post at the base of said cut-away end and abutting thereupon, a binder-back having a hole through which said cut-away end passes, said hole being of non-circular shape to engage said tabs and prevent the post from turning relative thereto; and a second clamping-member overlying said binder-back; the ends of said tabs being turned over and engaging with said second clamping-member.

10. An attachment means for binder-posts comprising, in combination, a post-section having its end cut away to form a plurality of disconnected upstanding tabs leaving shoulders between them, and a binder-back having a non-circular hole therein, fitting over said cut-away end and abutting against said shoulders, the ends of said tabs being turned over on the outer side of said binder-back.

11. An attachment means for binder-posts comprising, in combination, a post-section having its end cut away to form a plurality of disconnected upstanding tabs leaving shoulders between them, a binder-back having a non-circular hole therein fitting over said cut-away end and abutting against said shoulders, and a plate having a central bar closing the opening in said post and overlying said binder-back and between said tabs, the ends of said tabs being turned over on the outer face of said binder-back.

In witness whereof I have hereunto set my hand this thirty-first day of December, 1907.

REINHOLD KRUMMING.

Witnesses:

GEORGE WETMORE COLLES,
MINNIE D. SCHIENBEIN.