July 18, 1933. E. F. BUENGER 1,918,451

CHAIN POST BINDER

Filed Oct. 4, 1930

Fig. 1

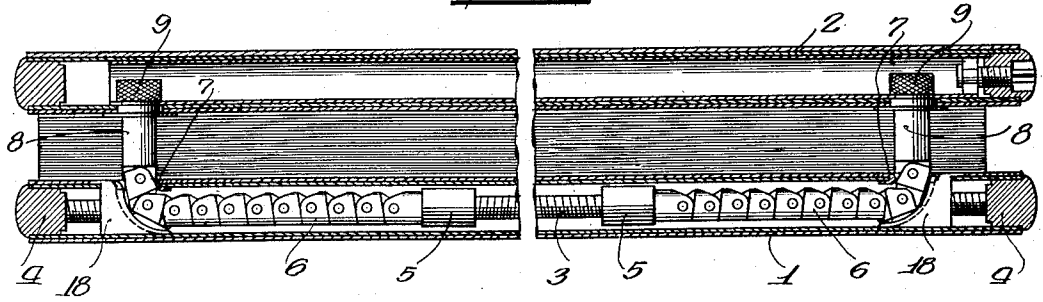


Fig. 2

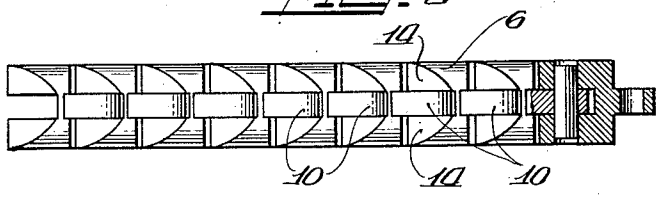


Fig. 3

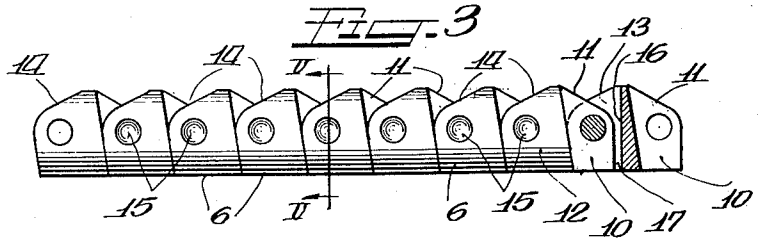


Fig. 4

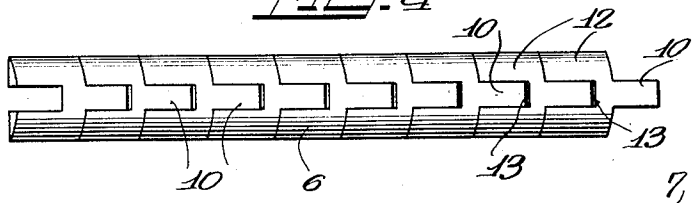


Fig. 5

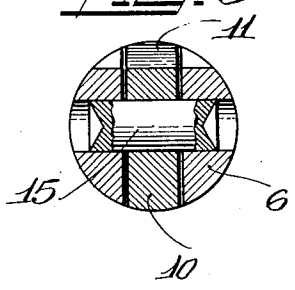
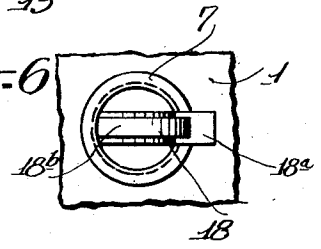


Fig. 6



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UNITED STATES PATENT OFFICE

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CHAIN POST BINDER

Application filed October 4, 1930. Serial No. 486,411.

This invention relates to a chain for chain post binders.

In the past, it has been customary in the type of chain herein involved to connect the links by means of pivots located beyond the center line thereof in order to allow the links to properly flex or tumble when entering the hollow clamping member of the binder, a movement which requires the chains to flex at substantially a right angle. It will be appreciated that when the links are connected adjacent one side and the chain is flexed, the links will separate more widely upon the other side and present a broken and very uneven surface due to the outward projection of the connecting tongues of the links.

The primary object of this invention is to overcome this objection, and, to this end, the links are pivotally connected substantially upon the center line of the chain and the connecting tongues and opposite ends of the links are beveled in order that the chain may flex as desired. This construction reduces the uneven broken effect upon the upper or outer sides of the chain that frequently tears or mutilates the sheets.

Another feature resides in the entrance guides to the hollow clamping members for the chain.

The invention comprises the novel structure and combination of parts hereinafter described and more particularly pointed out and described in the appended claims.

In the accompanying drawing, which illustrates a preferred form of this invention and in which similar reference numerals refer to similar features in the different views:

Figure 1 is a sectional view through the clamping members of a binder showing the chains in elevation.

Figure 2 is a fragmentary bottom or inner plan view of a chain partly broken away involving this invention.

Figure 3 is a fragmentary side elevational view of said chain.

Figure 4 is a fragmentary top or outer plan view of said chain.

Figure 5 is an enlarged sectional view taken upon the line V—V of Figure 3.

Figure 6 is a fragmentary plan view of one of the entrance holes in the clamping member for the chain.

In referring to the drawing, it will be noted that the chain involving this invention has been illustrated in connection with the hollow clamping members 1 and 2 of a binder. A screw 3 having right and left-hand threads is journalled in the end caps 4 of the clamping member 1. Suitable travelling nuts 5 are threaded upon the right and left-hand threaded sections of the screw and the inner end of a chain 6 involving this invention is attached to each nut. These chains emerge through suitable ferrules 7 in the inner side of one of the clamping members. It will be noted that these ferrules are slotted at their upper ends in those parts which are nearest to the ends of the binders, and the arcuate guides 18 have curved tongues 18*a* seated in such slots and overlapping the clamping members. These arcuate guides have central grooves 18*b* for receiving the tongues 10 of the links of the chains as they pass through the apertures. This construction provides a solid and durable backing for the chains when tumbling into and out of the clamping members. Posts 8 are pivoted to the outer ends of the chains and extend through the loose sheets and through apertures in the clamping member 2. Headed nuts 9 are threaded upon the outer ends of the posts 8 and engage the clamping member 2 for clamping the same upon the loose sheets.

The structure of the chain involving this invention is more fully illustrated in Figures 2 to 5, and, in referring to these figures, it will be noted that each link of the chain has a tenon or tongue 10 that is beveled upon its bottom as indicated at 11 and a body portion 12 provided with a mortise or groove 13 for receiving the tenon of an adjacent link, the walls of the mortise or groove being also beveled upon the bottom as indicated at 14. These beveled portions are oppositely inclined. These links are pivoted together by pivot pins 15 that extend through the links in substantially the center line of the chain.

With this construction, the chain can flex at approximately a right angle for passing into and out of the clamping member 1 as

shown in Figure 1, for it will be obvious that each link can swing upon its pivot until the sloping surface 11 of its tenon engages the rear wall 16 (Fig. 3) of the mortise of the adjacent link. It will be noted that the ends of the tongues 10 are sufficiently spaced from the rear walls 16 of the mortises, as indicated at 17 (Fig. 3), and that the beveled surfaces 14 on the mortised bodies are so fashioned as to allow such swinging and pivotal movement.

Due to the fact that the pivots 15 are centrally located instead of adjacent the inner part of the chain, the break or separation between the links upon the outer side of the chain when the same flexes will be much less and the tenons will project less, whereby the tendency to tear the sheets will be largely eliminated and at the same time the chains will pass more readily through the perforations of the sheets.

I am aware that many changes may be made and numerous details of construction may be varied through a wide range without departing from the principles of this invention, and I, therefore, do not desire limiting myself in the patent granted hereon otherwise than necessitated by the prior art.

I claim as my invention.

1. In a loose leaf binder, a hollow clamping member, a screw within said clamping member, said clamping member having apertures with ferrules therein, the upper portions of said ferrules being slotted, arcuate post guides within said clamping member and having portions extending thru said slots and overlapping portions of said clamping member, chain posts attached to said screws and extending through said apertures, a second clamping member, and means for attaching said chain posts to said second clamping member.

2. In a loose leaf binder, a hollow clamping member having apertures, ferrules in said apertures, arcuate guides in said clamping member and extending through said apertures and having grooves, take-up mechanism in said clamping member, and chains attached to said take-up mechanism and extending through said apertures, said chains consisting of links having tongues adapted for entering the grooves in said guides when said chains pass through said ferrules.

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