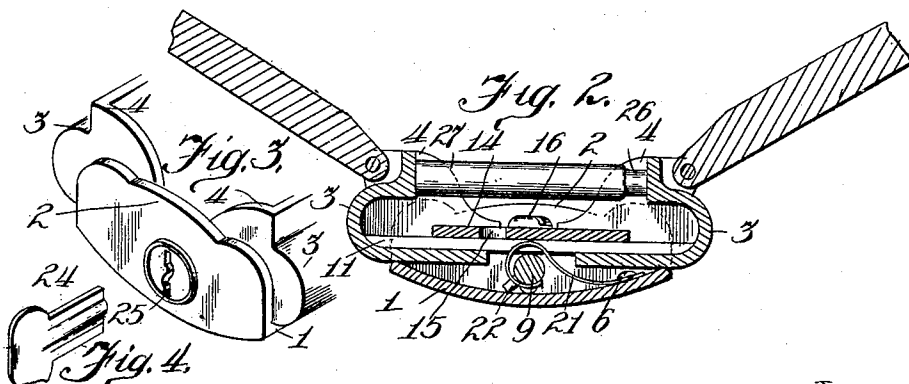
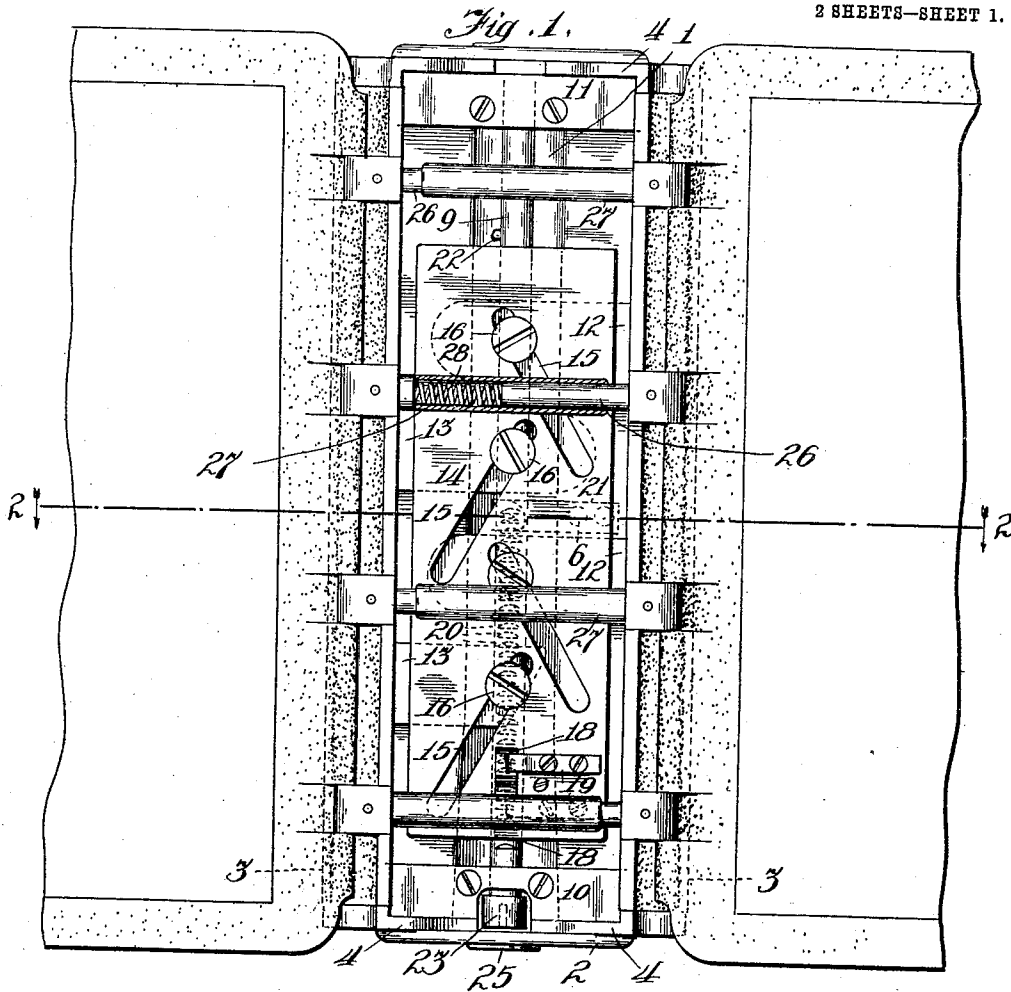


J. J. DIEHL.
 TEMPORARY OR TRANSFER BINDER.
 APPLICATION FILED SEPT. 18, 1908.

935,591.

Patented Sept. 28, 1909.
 2 SHEETS—SHEET 1.



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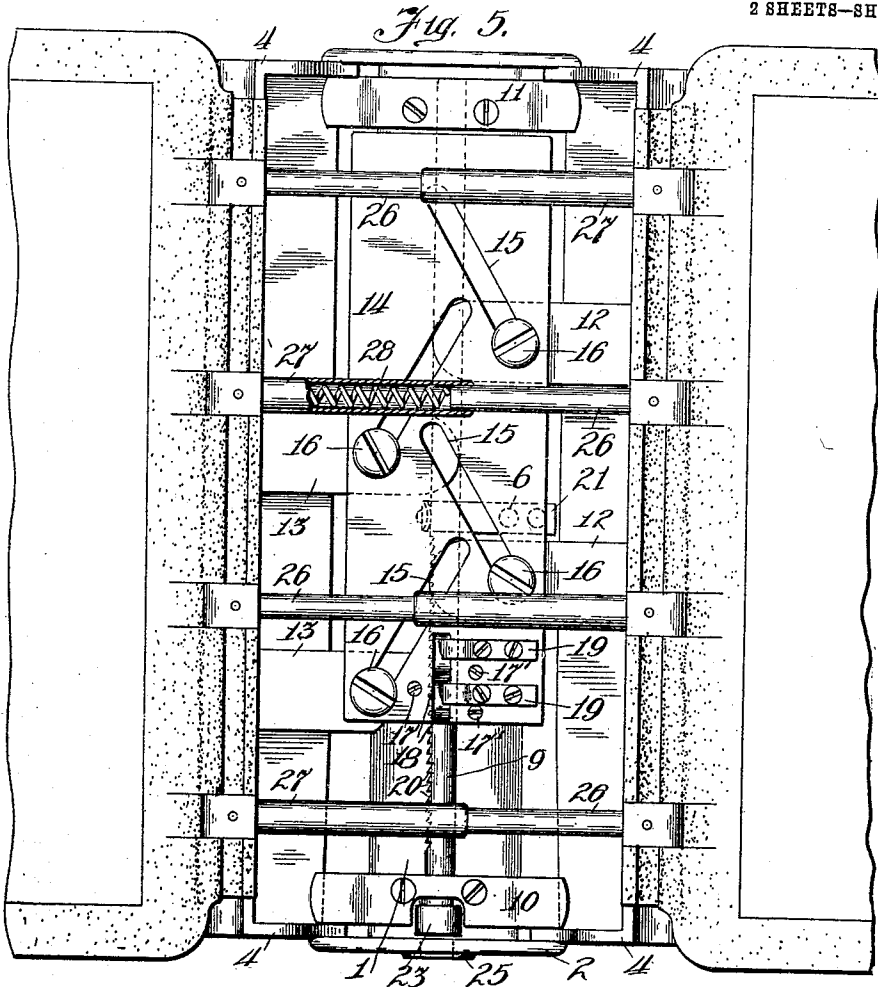
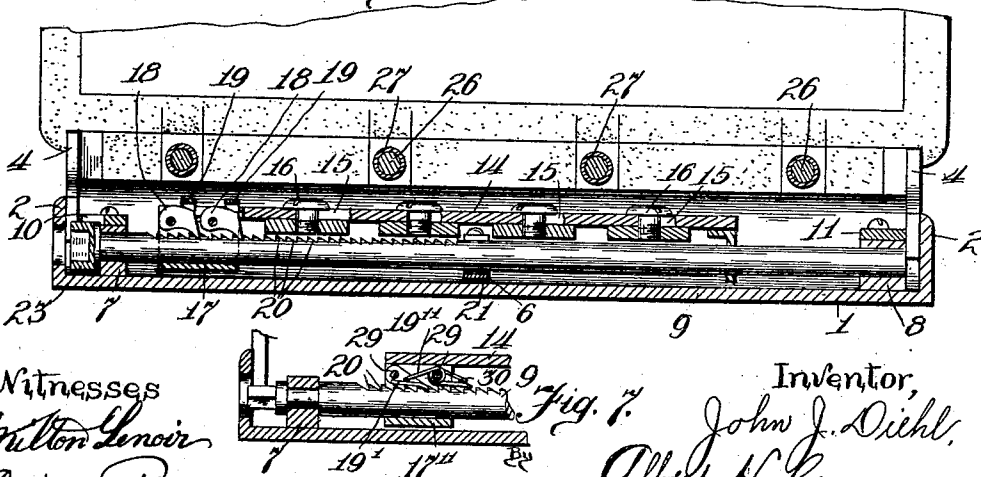


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN J. DIEHL, OF CHICAGO, ILLINOIS.

TEMPORARY OR TRANSFER BINDER.

935,591.

Specification of Letters Patent. Patented Sept. 28, 1909.

Application filed September 18, 1908. Serial No. 453,641.

To all whom it may concern:

Be it known that I, JOHN J. DIEHL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Temporary or Transfer Binders, of which the following is a specification.

This invention relates to improvements in temporary or transfer binders and refers more specifically to a binder of that general type in which the leaves are secured upon impaling posts and are so slotted that when the clamping sides of the binder are released the leaves or any one or more of them may be withdrawn from the posts without passing over the ends of the latter.

In this art it is common to provide binders having a plurality of impaling posts composed of telescoping members, combined with a ratchet mechanism which automatically locks the binder halves in clamping position to hold the leaves and which ratchet mechanism may be released by a key or release mechanism to permit the expansion of the binder.

Among the salient objects of the present invention are to provide a post binder having telescoping post members and locking mechanism so organized that the approaching movement of the two clamping portions of the binder imparts movement to a controlling member which travels lengthwise of the back of the binder and this controlling member is automatically locked in any position of its travel, thereby locking the sides of the binder against expansion; to provide in a mechanism organized as last above mentioned means for automatically effecting the expansion of the binder when unlocked; to provide in a binder of the character referred to an improved, durable and efficient ratchet mechanism for locking and unlocking the controlling member; to provide improvements in the details of construction and arrangement whereby the relatively approachable and retractable side frame members are guided and confined in their working operations; to provide a construction in which the ratchet bar to which the key is directly applied in releasing the bar has no bodily movement so that the hand of the operator is not jerked or jolted by the springing open of the binder when the latter is unlocked; and in general to provide a neat,

efficient and durable binder of the character referred to.

To the above ends the invention consists in the matters hereinafter described and more particularly pointed out in the appended claims.

In the drawings—Figure 1 is an inside plan view of the binder with the binder covers thrown back into open position and the frame or clamping members closed nearly to their innermost limits. Fig. 2 is a cross sectional view on line 2—2 of Fig. 1 and looking in the direction of the arrows. Fig. 3 is a perspective view of the fragmentary portion of the key end of the binder back. Fig. 4 is a perspective view of the key. Fig. 5 is a view similar to Fig. 1 with the binder members fully expanded. Fig. 6 is a longitudinal sectional view taken approximately on line 6—6 of Fig. 1 and looking in the direction of the arrows. Fig. 7 is a sectional detail of a modified construction of the ratchet mechanism.

Referring to the drawings 1 designates a metal or other suitable rigid back frame strip provided at each end with guide flanges 2.

3, 3 designate the two relatively movable back frame members, which for convenience will be hereinafter termed the clamping members since they serve to compress and hold the leaves. These members are roughly of C-shape in cross section as seen clearly in Fig. 2, terminating at each end in guide flanges 4 which fit and slide just inside of the corresponding end flanges 2 of the back member, and the flat back flanges 5 of the members 3 fit and slide upon corresponding guide ledges 6 at each end, and formed as parts of said back member 1.

At each end of the back frame member 1 coincident with the median line of the latter is provided a pillow block as 7, 8 (see Fig. 6) and in these pillow blocks is rotatably journaled a ratchet shaft 9; said shaft being headed at its ends so that it is confined against endwise movement and being held within the pillow block seats by means of overlying straps as 10 and 11. Straps 10 and 11 are desirably made of spring metal and their end portions overlie and confine the bottom flanges 6—6 of the clamping members during the reciprocatory movements of the latter.

Each clamping member 3 is provided

upon its inner face with slightly elevated ribs as 12, 12 and 13, 13 the upper faces of which are all in the same plane and upon these ribs is mounted to slide endwise, *i. e.* in the direction of the length of the back, a controller plate 14. The plate 14 is provided with a series of slots 15 arranged in two oppositely obliquely disposed pairs, the slots of each pair being parallel. These slots are in effect cam slots and endwise movement of the plate is effected by approaching or receding movement of the clamping members. To this end cam screws 16 are inserted, one through each slot and into the corresponding under-lying rib 12 or 13; said cam screws serving both as cam studs and as confining screws which retain the plate in position.

The controller plate carries at one end a ratchet mechanism which comprises a sleeve 17 mounted upon the under side of the plate so as to fit over the ratchet bar 9 and secured to the plate by means of screws 17', a pair of pawls 18 and a corresponding pair of pawl springs 19 which are secured to the outer face of the plate and over-lie the pawls and press upon the latter. The ratchet bar is provided in one side only with ratchet teeth as indicated at 20 from which it follows that when rotated to carry the teeth out of register with the pawls the controller plate is free to slide without engaging the ratchet.

The ratchet bar is normally held with its teeth in register with the pawls by means of a spiral spring 21 (see Figs. 1 and 2) having one end attached to the bar and its opposite end attached to the back member 1; the bar being held at its limit of rotation under the tension of the spring by means of a stop pin 22 inserted in the bar and normally engaging the back member 1. In order that the ratchet bar may be rocked to release the ratchet mechanism, it terminates at one end in an enlarged head 23 which is slotted to receive the key 24. The key works through an escutcheon plate 25 journaled in the end flange 2 as seen clearly in Fig. 3.

The impaling posts are mounted upon the clamping members in a usual manner; there being four in the preferred construction shown, each composed of two telescoping parts designated respectively 26 and 27. Inside of one or both pairs of posts are inserted coiled expansion springs 28 so arranged that as the posts are telescoped together the springs will be compressed and when the ratchet mechanism is released will automatically expand the binder.

The operation of the binder will be obvious from the foregoing description but may be briefly stated. By simply forcing the clamping members toward each other the cam studs or grooves impart a longitudi-

dinal movement of the controller plate which carries with it the pawls; the latter engage the ratchet bar at whatever point the approach of the clamping members ceases. Ordinarily this occurs when the bunch of leaves within the binder is sufficiently compressed. To remove one or more leaves the operator simply inserts the key into engagement with the ratchet bar and turns the latter sufficiently to disengage the ratchets whereupon the springs cause the binder to spring open to its full extent. The opening and closing movements are therefore each accomplished almost instantly and leaves may be inserted or withdrawn with the utmost despatch or facility.

In Fig. 7 is shown a slightly modified construction in the ratchet mechanism. The pawls are in this construction mounted within the sleeve or yoke 17' corresponding to the sleeve 17 of the first described construction and similarly mounted upon the under side of the controller plate. Pivot pins 29 extend through the upper side of the yoke to carry the pawls, and the wire spring 30 mounted on one of these pivot pins has its respective ends arranged to bear upon the respective pawls 19' and 19''. In other respects the constructions are alike.

It will be obvious that the details of construction of the invention may be modified without departing from the spirit of the invention.

I claim as my invention:

1. In a binder, the combination with a pair of clamping frame members, of telescoping impaling posts extending there-between, of locking mechanism comprising a controller member guided to reciprocate lengthwise of the back of the binder, cam connections between said controller member and one of said impaling frame members whereby approaching or receding movements of the clamping frame members impart reciprocatory movement to the controller member, a ratchet member arranged to extend longitudinally of the binder back, and a coöperative pawl carried by said controller member.

2. In a binder, the combination with a pair of clamping frame members and telescoping impaling posts extending therebetween, of locking mechanism comprising a controller plate guided to reciprocate longitudinally within the back of the binder, cam connections between said controller plate and a clamping frame member whereby approaching and receding movements of the clamping frame members impart reciprocatory movement to said controller plate, a ratchet bar mounted to extend longitudinally of the back of the binder and susceptible of rocking movement, coöperative ratchet mechanism carried by the controller plate and one or more extension springs arranged to force the clamping frame members away from

each other when the ratchet mechanism is disengaged.

3. In a binder, the combination with a pair of clamping frame members and telescoping impaling posts extending therebetween, of one or more expansion springs arranged within the impaling posts, a back frame member, a controller plate guided to reciprocate longitudinally of the back frame member and provided with obliquely and oppositely inclined cam slots, cam studs mounted upon the respective clamping frame members and engaging said cam slots, one or more pawls carried by said controller plate, a shaft provided at one side with a series of ratchet teeth, a spring arranged to normally hold said ratchet shaft in proper register with the pawl or pawls of the controller plate and means for rocking the shaft to effect disengagement of the ratchet mechanism.

4. In a binder, the combination of a pair of clamping frame members each of channel or trough shape in cross-section and each provided at each end with transversely extending guide flanges, a back frame member provided with guide ways engaged by the side flanges of said clamping frame members and provided at each end with transverse end flanges, a plurality of telescopic impaling posts mounted to extend between the clamping frame members, extension springs arranged in a plurality of said impaling posts, a controller plate guided to reciprocate

longitudinally of the back frame member and provided with obliquely disposed and oppositely inclined cam slots, cam studs carried by the respective clamping frame members and engaging the several cam slots, a ratchet bar arranged to extend longitudinally of the back frame member and journaled to afford oscillatory movement within the latter, the said ratchet bar being provided at one side with a series of ratchet teeth and one or more spring pressed pawls carried by the controller plate and adapted to cooperate with the ratchet bar, said ratchet bar being provided at one end with a key socket, a spring acting on the said ratchet bar to normally hold its ratchet teeth in register with the pawl or pawls carried by the controller plate and a key adapted to engage and operate the ratchet bar.

5. In a binder, the combination with a pair of clamping frame members, of impaling posts extending therebetween, a controller plate provided with a plurality of cam slots, cam studs mounted upon the clamping frame members and engaging said slots, a rock shaft extending longitudinally of said binder and limited against longitudinal movement, ratchet teeth carried by said shaft, and a cooperating ratchet member carried by said controller plate.

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