Oct. 2, 1928. 1,685,957

A. RUBIN

LOOSE LEAF BINDER

Filed Aug. 16, 1926 2 Sheets-Sheet 1

Fig. 1.

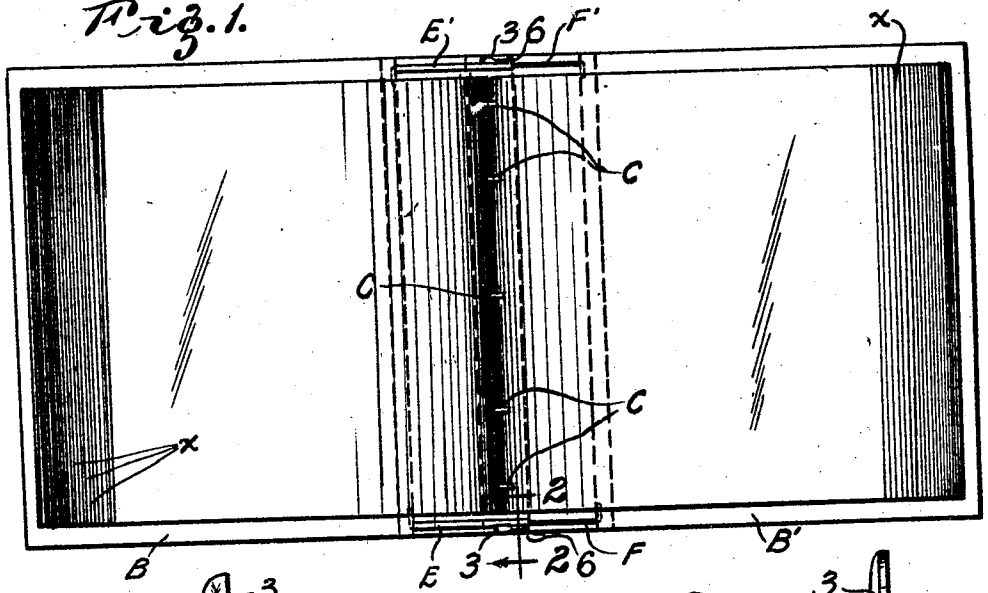


Fig. 2.

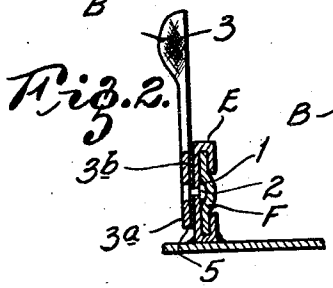


Fig. 3.

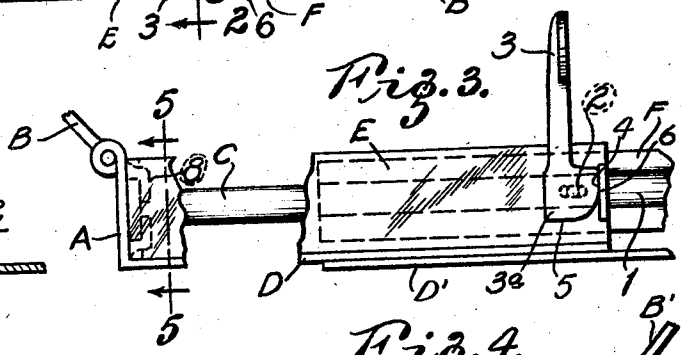


Fig. 5.

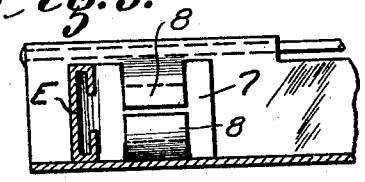


Fig. 4.

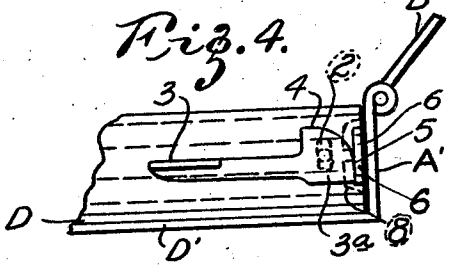


Fig. 7.

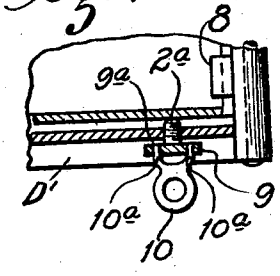
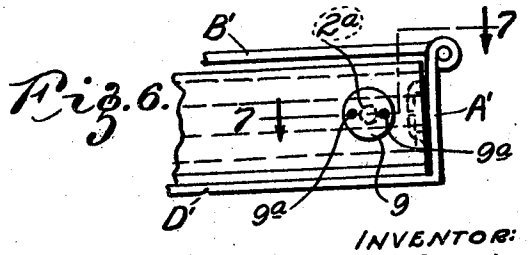


Fig. 6.



INVENTOR:
ADOLPH RUBIN.

BY Bakewell & Church
ATTORNEYS

Oct. 2, 1928. 1,685,957

A. RUBIN

LOOSE LEAF BINDER

Filed Aug. 16, 1926 2 Sheets-Sheet 2

Fig. 8.

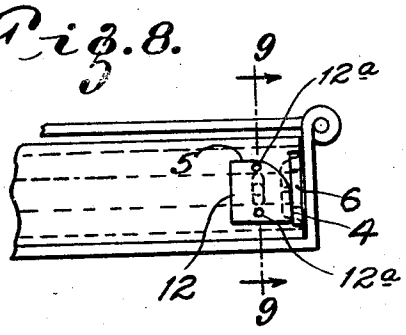
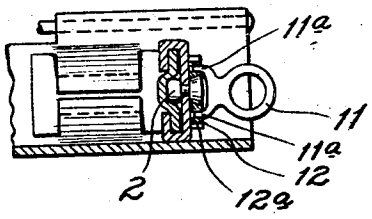


Fig. 9.



INVENTOR:
ADOLPH RUBIN.
BY Bakewell & Church
ATTORNEYS

Patented Oct. 2, 1928. 1,685,957

UNITED STATES PATENT OFFICE.

ADOLPH RUBIN, OF ST. LOUIS, MISSOURI, ASSIGNOR TO SIEBER PRODUCTS MANUFACTURING COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

LOOSE-LEAF BINDER.

Application filed August 16, 1926. Serial No. 129,416.

This invention relates to loose leaf binders of the post type, and has for its main object to provide an inexpensive binder of simple design that is easy to operate and of such construction that there is no possibility of the leaf-clamping members slipping or moving relatively to each other so as to relieve the clamping pressure on the leaves when the binder is in its locked condition. My invention is applicable to closed back and open back binders and various changes can be made in the construction of the cooperating parts of the binder without departing from the spirit of my invention.

Figure 1 is a top plan view of a closed back binder constructed in accordance with my invention, showing the covers of the binder open.

Figure 2 is a detail sectional view, taken on the line 2—2 of Figure 1, looking in the direction indicated by the arrow.

Figure 3 is a fragmentary end view of the binder, showing the binder unlocked and the leaves removed.

Figure 4 is a fragmentary end view, showing the binder locked.

Figure 5 is a sectional view, taken on the line 5—5 of Figure 3, illustrating one means that can be used for connecting the cooperating channel-shaped guides and slides to the leaf-clamping members.

Figure 6 is a fragmentary end view, illustrating another form of my invention.

Figure 7 is a sectional view, taken on the line 7—7 of Figure 6.

Figure 8 is a fragmentary end view, illustrating still another form of my invention, and

Figure 9 is a sectional view, taken on the line 9—9 of Figure 8.

In the form of my invention shown in Figures 1, 2, 3 and 4 the binder comprises two opposed leaf-clamping members A and A′, hinged covers B and B′ carried by said leaf-clamping members, solid posts C on the respective leaf-clamping members arranged in staggered relation, and adapted to pass through holes in the rear edge portions of the leaves x, so as to prevent the leaves from shifting relatively to the leaf-clamping members, and back members D and D′ carried by the leaf-clamping members A and A′, respectively, and disposed at substantially right-angles to same so as to form a solid back for the binder that protects the rear edges of the leaves. When the binder is in its normal closed condition the leaf-clamping members A and A′ firmly bind the leaves together, and when it is desired to open the binder preparatory to removing or inserting leaves, said leaf-clamping members are separated or moved apart so as to withdraw the posts C from the holes in the rear edge portions of the leaves.

My invention consists of a novel means for preventing relative movement of the leaf-clamping members A and A′ when the binder is locked or closed. Said means, briefly described, consists of a guide carried by one of the leaf-clamping members, a slide reciprocatingly mounted in said guide and carried by the other leaf-clamping member, and a device for clamping said slide in said guide. The particular shape of said guide and slide is immaterial; various kinds and forms of devices may be used to clamp the slide in the guide, the binder may be provided with one cooperating guide and slide, or a plurality of cooperating guides and slides, and said guides and slides may be arranged in various ways on the leaf-clamping members.

In the binder shown in Figures 1 to 4 of the drawings, the leaf-clamping member A is provided at its ends with two laterally-projecting guides E and E′ that are disposed at right-angles to same, as shown in Figure 1, and the leaf-clamping member A′ is provided at its ends with two right-angularly-disposed slides F and F′ that are reciprocatingly mounted in said guides. Said guides are preferably of the cross-sectional shape shown in Figure 2, so that they will embrace the slides and hold them in telescoped relation, and means is provided for locking the slides so as to prevent them from moving longitudinally of the guides. As shown, in the drawings, said locking means consists of locking devices on the guides arranged in longitudinally-disposed grooves 1 in the slides and constructed so that they can be turned or oscillated so as to exert frictional pressure on the walls of said grooves. The locking device 2 of each guide is carried by the guide in which the slide moves. Said locking device 2 is oscillatingly mounted in the guide, and it is provided with a lever 3 or other operating member by which it can be set in one position, referred to as its unlocked position, wherein it is disposed in such relation with the groove 1 in the slide that it will

not exert any appreciable friction on same, or set in another position, referred to as its locked position, wherein it bears tightly against the walls of the groove 1, and thus effectively prevents the slide from moving relatively to the guide. When the binder is unlocked, as shown in Figure 3, the locking devices 2 are disposed longitudinally of the grooves 1 in the slides F and F′, thereby permitting said slides to be moved longitudinally of the guides E and E′ to move the leaf-clamping members A and A′ towards or away from each other, and when the binder is in its closed or locked condition, as shown in Figure 4, the locking devices 2 are disposed crosswise of the grooves 1, so that the ends of same will exert sufficient pressure on the walls of said grooves to securely lock the slides F and F′ in the guides E and E′. The operating levers 3 are arranged on the outer sides of the guides E and E′ in a position where they can be easily manipulated, and each of said levers is preferably provided with a head piece 3^a that has two flat faces 4 and 5 thereon, which are adapted to cooperate with a flat-faced abutment 6 on the guide with which the lever is associated. A friction washer 3^b is preferably arranged between each of the head pieces 3^a and the adjacent surface of the guide so as to assist in holding the locking device in the position into which it has been moved. When the locking devices are manipulated to unlock the binder the flat faces 4 on the head pieces of the operating levers 3 strike against the abutments 6, and thus determine the position of the locking devices 2 in the grooves 1, and when said levers are turned into the position shown in Figure 4 so as to render the locking devices 2 operative, the flat faces 5 on the head pieces or said levers strike against the flat-faced abutments 6, thus indicating to the operator or user that the locking devices 2 have been turned far enough to lock the slides. The guides and slides are herein illustrated as being connected to the leaf-clamping members that carry same, by laterally-projecting portions 7 at the ends of said guides provided with notches for receiving lugs 8 on the leaf-clamping members that are bent into overlapping relation with said portions 7, as shown in Figure 5.

In the form of my invention shown in Figures 6 and 7, the devices that are used to lock the slides in the guides consist of binding screws 2^a rotatably mounted in the guides and arranged so as to exert pressure on the slides in a direction tending to force said slides laterally away from their cooperating guides, and thus clamp said slides tightly against side walls on the guides that limit the outward movement or lateral movement of the slides. Each of said binding screws 2^a is provided at its outer end with a head piece 9 that can either be of non-circular shape so as to enable it to be turned with a wrench or the like, or if desired, said head piece can be provided with holes 9^a, as shown in Figure 6, for receiving pins 10^a, on a removable key 10, as shown in Figure 7.

In Figures 8 and 9 I have illustrated the guides of the binder equipped with locking devices 2 of the same kind as those used in the binder shown in Figures 1 to 4, but constructed in such a manner that a removable key 11 can be used to turn said locking devices into their locked or unlocked positions, said locking key having pins or prongs 11^a that are adapted to be inserted in holes 12^a in head pieces 12 attached to the locking devices and arranged on the outer sides of the guides in which the slides reciprocate. If desired, said head pieces can be provided with right-angularly-disposed flat faces 4 and 5 that are adapted to co-operate with flat faced abutments 6 on the guides.

A binder of the construction above described is easy to operate, it is inexpensive to manufacture and when it is locked, the leaf-clamping members cannot separate or move in a direction to reduce the clamping pressure on the leaves.

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

1. A loose leaf binder, comprising opposed leaf-clamping members, a guide attached to one of said members, a cooperating slide embraced by said guide and attached to the other leaf-clamping member, a locking device on said guide arranged so that when it is turned into a certain position it will exert sufficient pressure on said slide to prevent it from moving longitudinally of said guide, and means for limiting the turning movement of said locking device.

2. A loose leaf binder, comprising opposed leaf-clamping members, a guide attached to one of said members, a cooperating slide embraced by said guide and attached to the other leaf-clamping member, a locking device on said guide arranged so that when it is turned into a certain position it will exert sufficient pressure on said slide to prevent it from moving longitudinally of said guide, and means for limiting the movement of said locking device when it is turned into its locked position and into its unlocked position.

3. A loose leaf binder, comprising opposed leaf-clamping members, a guide attached to one of said leaf-clamping members, a cooperating slide attached to the other leaf-clamping member, and provided with a groove, and a locking device carried by said guide positioned in said groove and adapted to be turned so as to exert sufficient frictional pressure on the walls of said groove to hold said slide and guide against relative longitudinal movement.

4. A loose leaf binder, comprising opposed

leaf-clamping members, a guide attached to one of said leaf-clamping members, a cooperating slide attached to the other leaf-clamping member, and provided with a groove, a locking device carried by said guide positioned in said groove and adapted to be turned so as to exert sufficient frictional pressure on the walls of said groove to hold said slide and guide against relative longitudinal movement, an operating member for moving said locking device, and means that cooperate with said operating member to limit the movement of said locking device when it is turned into its locked position and into its unlocked position.

5. A loose leaf binder, comprising opposed leaf-clamping members, posts on said members that pass through the leaves, guides attached to one of said leaf-clamping members, slides attached to the other leaf-clamping member and reciprocatingly mounted in said guides, said slides having longitudinally-disposed grooves therein, rockable locking devices in said guides arranged in the grooves in said slides, operating members combined with said locking devices, and portions on said guides that cooperate with said operating members to limit the movement of said locking devices.

6. A loose leaf binder, comprising opposed leaf-clamping members, posts on said members adapted to pass through the leaves, laterally projecting guides at the ends of one of said leaf-clamping members disposed at substantially right-angles to same, laterally projecting slides at the end of the other leaf-clamping member reciprocatingly mounted in said guides, and locking devices on said guides adapted to be manipulated so as to frictionally connect said guides and slides together.

ADOLPH RUBIN.