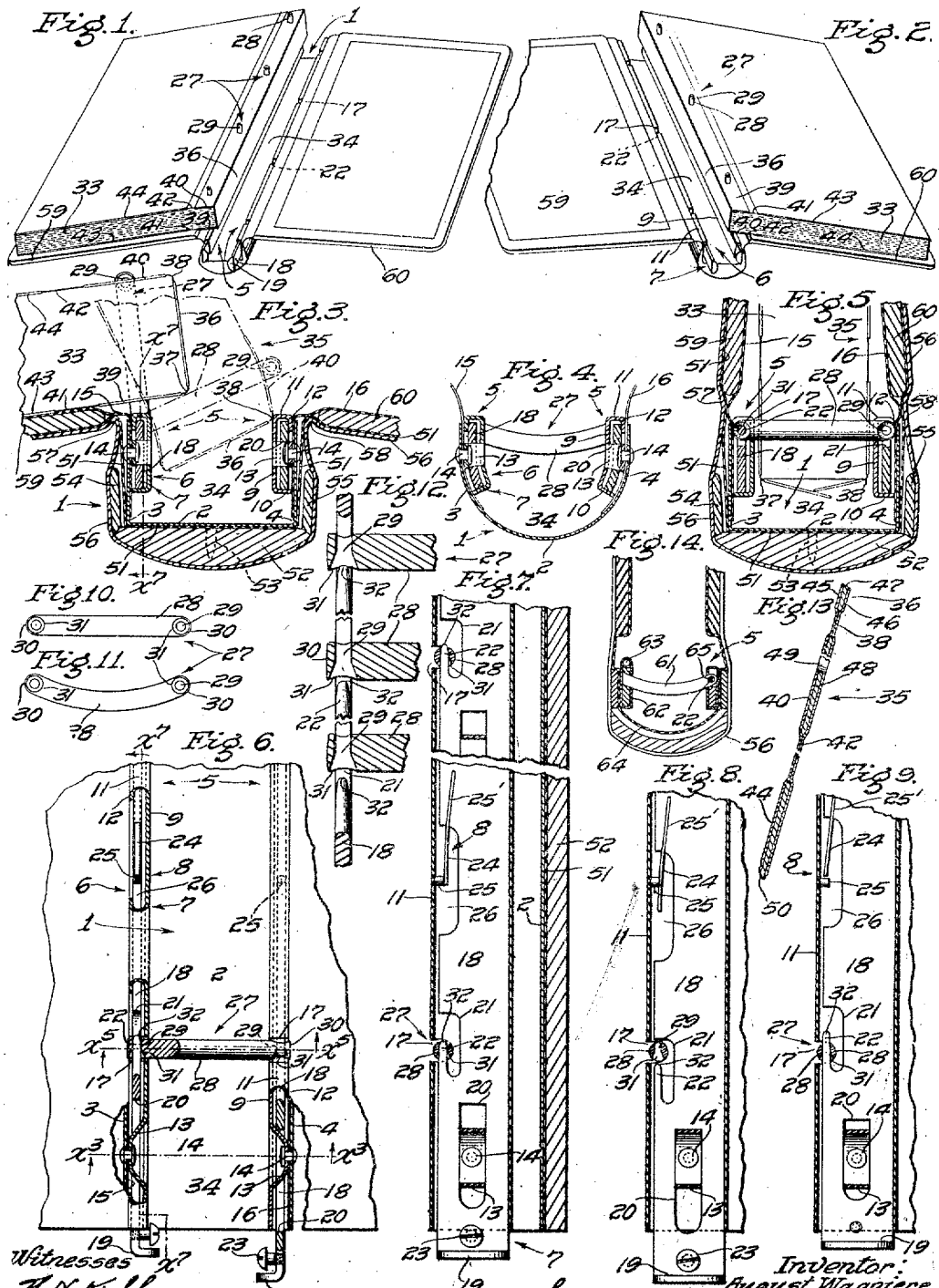


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LOOSE LEAF BINDER.  
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986,609.

Patented Mar. 14, 1911.



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# UNITED STATES PATENT OFFICE

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## LOOSE-LEAF BINDER.

986,609.

Specification of Letters Patent.

Patented Mar. 14, 1911.

Continuation of application Serial No. 388,430, filed August 13, 1907. This application filed February 17, 1909. Serial No. 478,522.

### *To all whom it may concern:*

Be it known that I, AUGUST WAGNIERE, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Loose-Leaf Binder, of which the following is a specification.

An object of this invention is to provide an improved loose leaf binder in which the binder may be filled with blank leaves and the leaves conveniently removed for type-writing from time to time and replaced until the record is complete, and then the book may be permanently locked so that it cannot be unlocked without breaking.

The loose leaf binder herein described embraces the features shown in my application for loose leaf binder for record books, filed August 13, 1907, Serial No. 388,430, and of which application this is a continuance with relation to the patentable features of said former application.

The accompanying drawings illustrate the invention.

Figure 1 is a perspective showing a book constructed in accordance with the principles of my invention, the binder-posts being disconnected at their back ends so as to allow the removal or replacement of the back sheets of the book. Fig. 2 is a view analogous to Fig. 1 and showing the book open for the removal or replacement of the front sheets. Fig. 3 is an enlarged cross-section on line  $x^s$ , Fig. 6 and showing the channel-back rectangular in cross-section. Fig. 4 is a view analogous to Fig. 3 and showing the channel-back curved in cross-section. Fig. 5 is a view analogous to Fig. 3 and taken on line  $x^s$ , Fig. 6; the book being closed. Fig. 6 is a plan of the parts shown in Figs. 3 and 5, parts being broken away to economize space, and parts being shown in section to illustrate the construction. Fig. 7 is a longitudinal vertical section on line  $x^r$ , Figs. 3 and 6 and illustrating the use of the stop to prevent the permanent locking of the binder-posts, and showing the parts temporarily latched. Fig. 8 is a view analogous to Fig. 7 and showing the parts unlatched. Fig. 9 is a view analogous to Figs. 7 and 8 and showing the stop removed and the parts permanently locked. Fig. 10 is an elevation showing a straight binder-post. Fig. 11 is an elevation showing a curved binder-

post. Fig. 12 is a sectional detail of a set of binder-posts and the locking-bar, drawn for the purpose of illustrating the progressive action of the locking fingers, the farthest entering the opening in the post first, then the middle finger, and then the nearest finger. Fig. 13 is an enlarged fragmental sectional detail showing the construction of the fly-leaf. Fig. 14 is a cross-sectional detail of a modified construction.

Referring to the drawing in detail, the frame-work 1 of the channel-back comprises the central portion 2 and the side portions 3 and 4 formed of sheet metal and producing a channel which is rectangular in cross-section as shown in Fig. 3, or curved as shown in Figs. 4 and 14.

The locking bar mechanisms 5 are secured one to the side portion 3 and another to the side portion 4, or as shown in Fig. 14 only one locking bar mechanism may be used. Each locking bar mechanism comprises a casing 6, a slide 7, and a lock-mechanism 8. The casing 6 comprises the facing 9, the flange 10 extending from the lower edge of the facing, the flange 11 extending from the upper edge of the facing parallel with the flange 10, and the flange 12 extending from the flange 11 parallel with the facing 9; there being spacing bearing blocks 13 cut and pressed from the body of the facing 9 at intervals, and rivets 14 inserted through the spacing bearing blocks and through the side portions 3 and 4 to hold the locking bar mechanisms in place.

The inner binder-flaps 15 and 16 are placed against the inner faces of the side portions 3 and 4 before the locking-bar mechanisms are placed in position, so that by attaching the locking-bar mechanisms the binder-flaps are held.

Notches 17 are cut in the upper edges of the casing 6 to receive the ends of the binder-posts. The slides 7 are mounted in the casing 6 before the casings are secured in position, each of said slides comprising a piece of the metal 18 of the desired length and of a width and thickness to fit and slide readily in its casing, the near end of the metal being bent laterally and suitably finished to form the handle 19 for moving the slide back and forth, and there being bearings 20 punched at suitable intervals to fit the spacing bearing blocks 13, and there being notches 21

punched at suitable intervals to match the notches 17 to receive the ends of the binder-posts, and there being elongated projections as fingers 22 projecting toward the notches to enter the perforations in the binder-posts.

The removable stop 23 consists of a screw screw-seated in the metal 18 just inside of the handle 19 to engage the end of the casing and limit the inward movement of the slide, so that while the stop is in place the back can only be temporarily latched or locked as required to remove and replace the leaves.

The locking-bar mechanisms 5 may be flat or rectangular in cross-section, as shown in Fig. 3, or they may be curved as shown in Fig. 4. Each locking-bar mechanism contains a concealed lock mechanism 8 comprising a spring detent 24 mounted in a slot 25 formed in the metal 18, the free end of the spring operating in a notch 26 in the metal 18, and the stop 25 extending downwardly from the flange 11 into the casing so that when the parts are assembled the spring detent 24 is depressed and slides against the end of the stop 25 while the removable stop 23 is in place, so that the slide 7 may be moved backwardly and forwardly as desired to latch and unlatch the binder-posts, and so that when the removable stop 23 is removed and the slide pushed into the casing far enough the free end of the spring detent 24 will pass beyond the stop 25 and spring up behind the stop, and then the slide is permanently locked and cannot be unlocked or operated except by breaking some of the parts, there being no access to the spring detent 24 either by key or otherwise.

In laying off the locking bar mechanisms the parts may be so proportioned that the fingers 22 will all enter perforations in the binder-posts simultaneously, or the parts may be so arranged that the fingers will enter the perforations successively, so that a finger may be started into one post, and then started into the next, and then into the next, as illustrated in Figs. 7 and 12.

The binder-posts 27 each comprises a section 28 of rod, preferably round in cross section and having perforations 29 in each end, and the end face 30 adjacent the perforation being preferably concentric to the perforation, and the forward end 31 of each perforation being enlarged or funnel-shaped.

The binder-posts may be straight pins, as shown in Fig. 10, or they may be curved pins as shown in Fig. 11. The points 32 of the fingers or projections 22 are preferably rounded or tapered so as to find their way easily into the flaring ends 31 of the perforations 29, and said fingers are preferably of the relative size and shape that will cause the binder-posts 28 to straighten as the fingers are pressed well into the posts; it being desirable that when the posts are placed in the notches 17 and the slide is operated to

cause the fingers 22 to enter the posts, the posts will straighten up so that the perforations in the free ends of the posts will be in line parallel with the fingers. Then when a stock of paper 33 forming the book-leaves previously perforated, is placed upon the posts and manipulated to bring the paper into the channel 34 of the back the free ends of the posts will pass down into the notches 17 with their perforations in line to receive the fingers 22 of the slide. The stock of paper 33 is composed of loose flat sheets, each sheet being free to be removed, as for instance, to take a blank sheet from the front, typewrite the sheet and place it in the back.

The fly-leaf construction 35 comprises the back portion 36, the hinge portions 37 and 38, the eye-portions 39 and 40, the hinge portions 41 and 42, and the leaf portions 43 and 44. The back portion 36 is preferably two pieces of cloth 45 and 46 with a reinforcement 47 pasted between the pieces so as to make the back section very firm, and said back section is of a width slightly less than the double capacity of the channel 34. The hinge portions 37 and 38 are formed by pasting the cloth-pieces together without the reinforcement, and the eye-portions 39 and 40 are formed by placing a reinforcement 48 between the cloth-pieces, and the eyes 49 are punched through the eye-portions to receive the binder-posts 28; the object being to produce eye-portions which are very firm and strong so as not to be liable to tear around the eyes 49. The hinge-portions 41 and 42 are formed by bringing the cloth-sections together as in the hinge-portions 37 and 38, and then the leaf-portions 43 and 44 are formed by inserting the leaves 50 between the edges of the cloth-pieces; the object of this fly-leaf construction being to produce a suitable and convenient covering for the bunch of book-leaves.

In assembling the parts thus constructed the cover is opened as in Fig. 1, with the channel of the back in a vertical position; the binder-posts 28 are placed in the notches 17 of the front locking bar mechanism; the slide is manipulated to latch the binder-posts in place; the fly-leaf construction is opened and placed with the leaf 43 downwardly upon the front cover with the binder-posts extending through the eye-portion 39. Then the paper 33 is placed upon the binder-posts until the posts are filled to the desired extent; then the back leaf 44 of the fly-leaf construction is pulled tightly over into place, the paper being pressed downwardly upon the binder-posts, and the eye-portion 40 is brought into place upon the rear ends of the binder-posts with the posts extending through the eyes, thereby holding the paper firmly together in a bunch. Then by grasping the front cover of the book or the block of paper and swinging it upwardly, the

hinge portion 38 of the fly-leaf construction will strike the upper edge of the casing 9 and slide downwardly into the channel 34, as shown in Fig. 3, and the back ends of the binder-posts will pass downwardly into the notches 17, said posts being held in line to receive the fingers, and the handle 19 is manipulated to latch the posts in place.

The intermediate binder-flap 51 is placed against the outer face of the central portion 2 of the frame-work. The wooden pad 52 is placed against the binder-flap and secured in place by screws 53 inserted downwardly through the frame-work into the wood. Pads 54 and 55 are placed against the sides 3 and 4 of the frame-work outside of the flap 51, and the outer cover 56 is pasted upon the pads 52, 54 and 55 and then to the flaps 51 and the flaps 51 to the flaps 15 and 16 to form the hinge portions 57 and 58 of the cover, and the boards 59 and 60 are placed between the flaps 51 and the flaps 15 and 16, and the cover is completed in the usual way.

In Fig. 14 I have shown a cross-section of a book-binder like that shown in my Patent No. 842,361, dated January 29, 1907, and in this construction the binder-posts 61 are secured to a bar 62 which is connected by a hinge 63 to the channel-back 64, and perforations 65 are formed in the free ends of the binder-posts 61 to receive the fingers 22 of the slide; the difference between this construction and the construction shown in my former patent being that the fingers pass through perforations in the binder-posts, whereas in my former patent the fingers pass over the binder-posts.

In Fig. 5 I have shown the fly-leaf construction in two parts, the line of division being substantially at the center of the back 36, but in this construction the fly-leaf does not serve the purpose of binding the paper together into a block as in the construction heretofore described and shown in Fig. 3.

It is obvious that after the paper has been bound into a block as shown in Fig. 3, the front slide may be operated to release the binder-posts and the block of paper held together by the fly-leaf construction, and the binder-posts could be manipulated independently of the binder or cover.

The fingers or elongated projections 22 may be cylindrical as the preferable form of pivot for the binder posts or pins.

I claim:—

1. In a loose leaf binder, the combination with a bundle of loose leaves, of a fly leaf construction comprising two leaves each

provided with eyes, binder posts inserted through the eyes of both leaves, a back, and means outside the fly-leaves to pivotally and detachably fasten both ends of each binder post to the back.

2. In a loose leaf binder, the combination with two leaves and a channel-shaped back, of a casing at each side of said back, the upper edge of each casing being substantially even with the side of said channel and notched at intervals, a longitudinally movable slide mounted in each casing with its upper edge provided with elongated projections adapted to be moved into and out of register with said notches, and a plurality of straight, reversible pins adapted to extend across said channel, each with its ends in the opposite notches of said casings, each end being perforated through which perforations the projections on the slides are adapted to be moved back and forth to lock the pins against movement or to permit either end of each pin to be moved upward away from said channel when said end has been released by the withdrawal of the projections of the slide upon that side and the projections upon the other slide are within their respective perforations and are acting as pivots for the ends of the pins upon that side.

3. In a loose leaf binder, the combination with a substantially rectangular channel-shaped back and two cover-leaves hinged to the upper edges thereof, an open-sided, flat casing secured to each side of the back with its upper edge substantially even with the top of said side and recessed, the recesses of the two casings being opposite each other, a slide in each casing having its upper edge provided with cylindrical projections, each adapted to be moved longitudinally so as to span one of said recesses or to be withdrawn therefrom, and a plurality of straight pins removably mounted in said opposing recesses so as to extend from side to side of the back, each end of each pin being perforated for the reception of one of said projections, whereby either end of each pin may be released so as to be removed from its recess while the other end remains secured and acts as a pivot.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 10th day of February, 1909.

AUG. WAGNIERE.

In presence of—

JAMES R. TOWNSEND,  
M. BEULAH TOWNSEND.