

W. S. PROUDFIT, JR.
 LOOSE LEAF BINDER.
 APPLICATION FILED NOV. 24, 1906.

1,037,315.

Patented Sept. 3, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

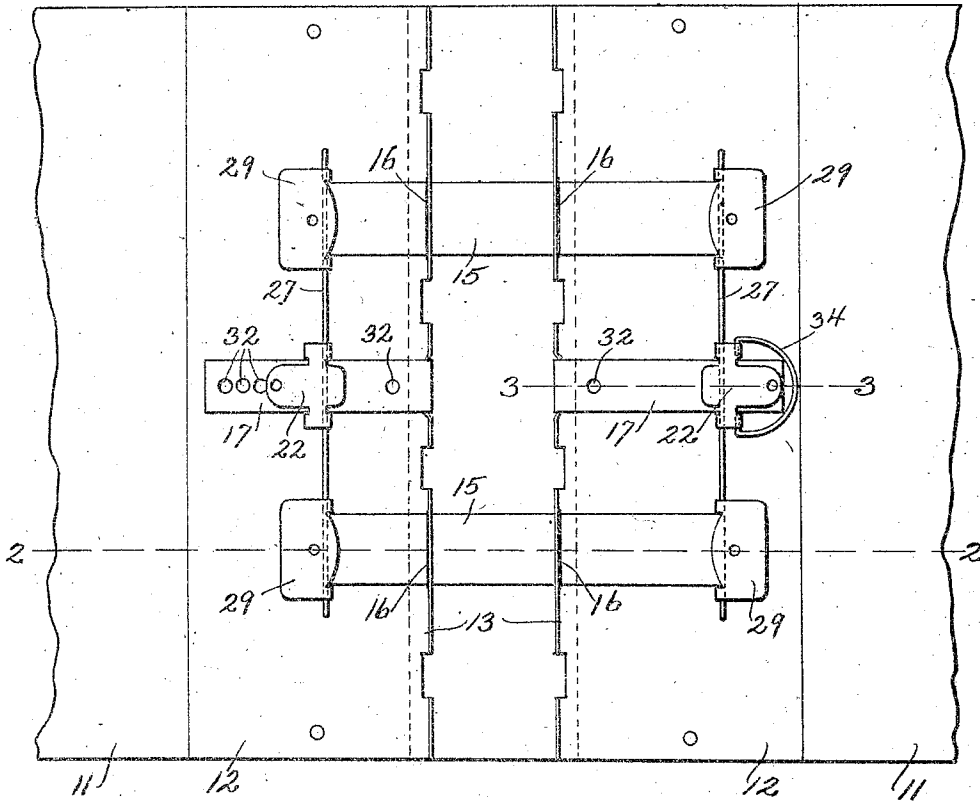
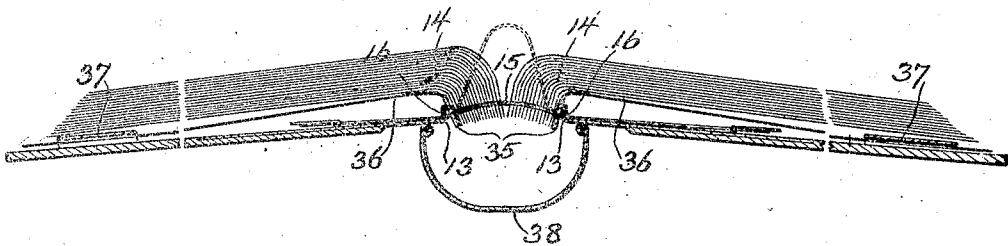


Fig. 2.



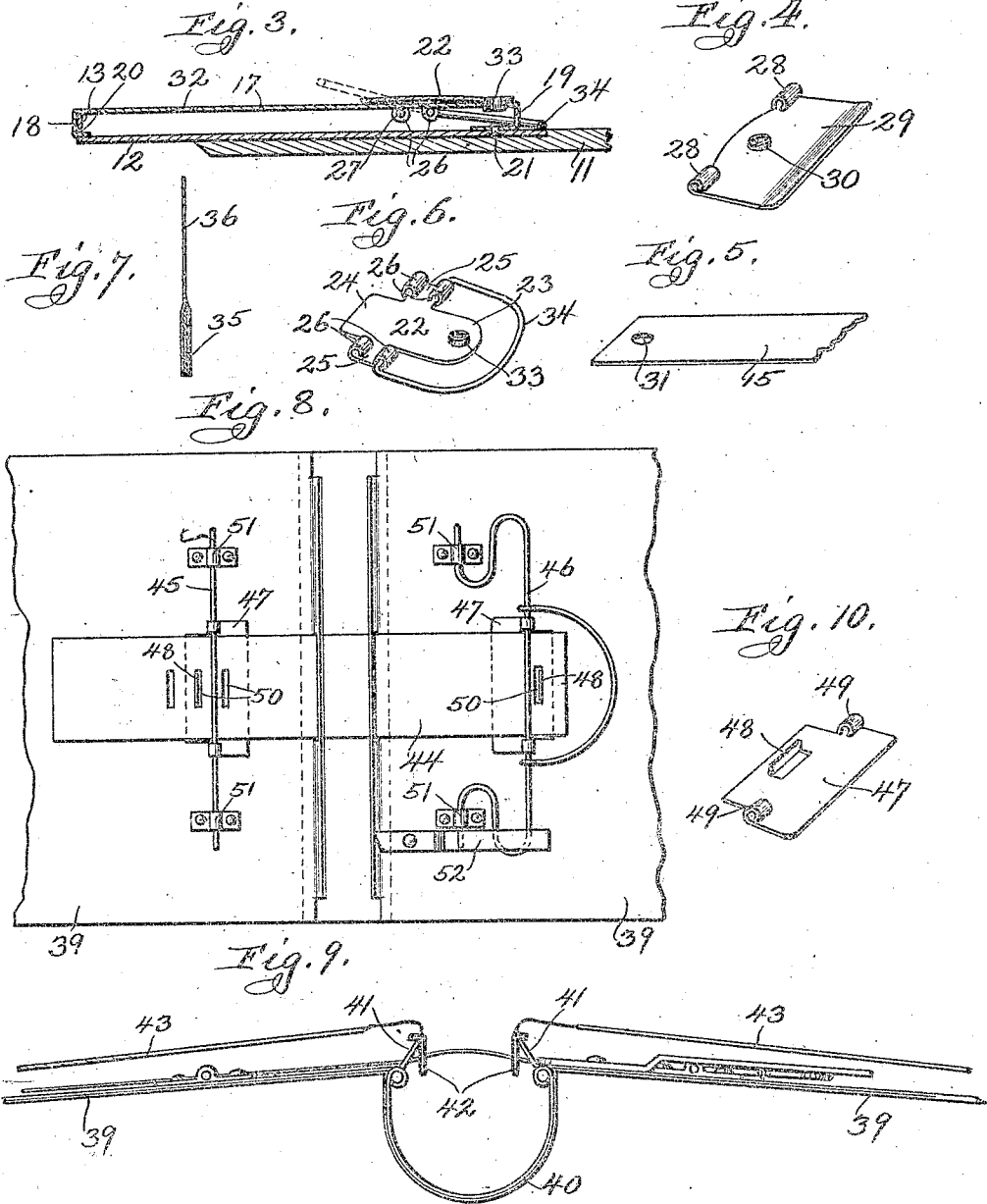
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Inventor:
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UNITED STATES PATENT OFFICE.

WILLIAM S. PROUDFIT, JR., OF CHICAGO, ILLINOIS.

LOOSE-LEAF BINDER.

1,037,315.

Specification of Letters Patent.

Patented Sept. 3, 1912.

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To all whom it may concern:

Be it known that I, WILLIAM S. PROUDFIT, Jr., a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Loose-Leaf Binder, of which the following is a specification.

My invention relates to loose leaf binders having two covers connected by one or more resilient leaf holding strips; and the objects of my improvements are, first, to enable the easy and rapid removal of any leaf without disturbing the others; second, to bind the leaves firmly together; third, to provide what is known as a flat opening book; fourth, to adjustably secure the leaf holding strips in position under spring tension; fifth, to provide a novel means for releasing the leaf holding strips from one cover and securing them into position again, sixth, to make a light, cheap, efficient and durable binder and other objects to become apparent from the description to follow.

This binder can be made with either a spring back or a flexible back as one made of leather or cloth and if desired the back may be discarded altogether. The construction is such that the necessary amount of slack to the leaf holding strips to enable the removal of any leaf, can be instantly made thus materially aiding in the rapid manipulation of the binder. I provide a spring between either one or both ends of the leaf holding strips and the cover or covers which causes a constant tension on said strips and thus firmly binds the leaves together; the relationship of the covers, leaf holding strips and the leaves held thereby is such that when the binder is opened the binding edges of the leaves are elevated so that the book will open practically flat; and the amount of metal parts necessary to accomplish this construction are so few that the entire completed binder is very light.

To enable others skilled in the art to which this invention pertains to make and use the same I will describe it with reference to the illustrations on the accompanying two sheets of drawings forming a part of this specification, in which:

Figure 1, is a plan view of a binder embodying my invention in an open position and with a portion of each cover broken away; Fig. 2 is a cross section on line 2—2

of Fig. 1; Fig. 3, is a section on 3—3 of Fig. 1; Fig. 4, is a perspective view of a clip or cap forming a part of my invention; Fig. 5, is a view of a portion of a leaf holding strip; Fig. 6, is a perspective portion of a leaf holding a part of my invention; Fig. 7, is a section through the binding edge of the first or fly leaf used in the binder; Fig. 8, is a plan view of a binder in an open position with a portion of the covers broken away showing a modification; Fig. 9, is an end view of the same and Fig. 10, is a perspective of a clip shown in Fig. 8.

Similar reference characters refer to similar parts throughout the several views.

The covers 11 are preferably made of binders board of the desired size and have their binding edges reinforced by the metal plates 12 which are riveted or otherwise secured to the covers. The one edge of each plate 12 preferably extends a short distance beyond the cover 12 where it is bent in an angle as seen at 13 to engage the leaves held in the binder and assist in throwing the leaves up when the binder is in an open position.

The leaves 14 are provided in their binding edge with proper notches to fit the resilient leaf holding strips 15 which pass loosely through the slots 16 provided in plates 12 at the angle 13. Both ends of each strip 15 are connected to the covers 11 preferably in such manner that the intermediate portion between the covers can be adjusted to different lengths easily, and without the use of a key. The leaf holding strips 15 are preferably made laterally resilient and longitudinally nonextensible and are attached to the covers 11 in such a manner that the attached ends will swing with the covers and flex the intermediate portion toward the back of the book as the covers are closed and in an opposite direction as the covers are opened. I have shown and will describe a preferred construction, which is to adjustably secure the strips 15 to both covers and have the parts on both covers as near duplicate as possible to simplify and cheapen the construction. The parts being duplicate I will describe those on one cover only.

The plate 12 is provided at about its center with the guide piece 17 which is formed of a flat strip of metal having its ends bent into hooks 18 and 19, see Fig. 3.

The hook 18 is passed through a slot 20 in the plate 12 at angle 13 and the hook 19 is riveted securely to the plate 12 by rivet 21. The piece 17 serves as a guide and fastening for the clip 22 which is made of spring metal and formed as shown in detail in Fig. 6, having the forward extension 23, the rearward extension 24, the intermediate pair of oppositely extending ears 25 provided with the eyes 26. The clip 22 is made to fit on the guide 17 with the eyes 26 extending below the opposite surface of said guide and a spring rod 27 is passed through the eyes 26 in such a way as to retain the clip in close contact with the guide 17 and still permit of its sliding along thereon. Both ends of the rod 27 extend out away from the clip 22 and are passed through eyes 28 on caps 29 provided on the ends of the strips 15. The caps 29 are connected to the ends of the strips 15 by having a laterally extending lug 30 extending into a perforation 31 provided in said strips; the same being prevented from leaving the perforation by the rod 27 passing through eyes 28, the strip 15 being held between said rod 27 and cap 29. It is clear that the clip 22 and the caps 29 are secured in their respective positions on the guide 17 and strips 15 by the rod 27 and if said rod 27 be withdrawn from the eyes 26 and 28 the several parts will be disassembled. In actual use when there are leaves bound in the binder the intermediate portion of the strips 15 between the covers 11 must be prevented from lengthening to accomplish the purpose of the binder, and to do this, I provide means for retaining the clip 22 in any desired position along on the guides 17. The guide 17 is provided with perforations 32 and the forward extension 23 of the clip 22 is provided with a laterally extending lug 33 arranged to enter the perforations 32. The clip is made of spring metal and is so formed as to normally retain the lug 33 in one of the perforations, so that the extension 23 has to be lifted against the tension of the spring in clip 22 before the lug 33 can be withdrawn from the perforation. The bar 27 is preferably made of spring material so that it will allow a slight movement of the strips when the binder is manipulated.

I prefer to have a plurality of perforations 32 in one of the guides 17 but only two of said perforations in the other guide 17, so that the one clip 22 will be used to adjust the intermediate portion of the strips 15 to any desired length and the other clip 22 will be used to release the binder; the clip 22 sliding a sufficient distance on the guide 17 for this purpose, until the lug 30 drops into the perforation 32, near the binding edge of the cover and locks the clip in such position.

To enable the operator to release the clip

22 with ease and allow it to slide on the guide 17 I prefer to attach a small bail 34 to said clip in such a way that when the bail is turned over as shown in dotted lines in Fig. 3, and pressed down with the hand it will act to lift the extension 33 out of the perforation 32.

To prevent the abrasion of any leaf that may come adjacent to either cover I provide a binding strip 35 preferably made of metal adjacent the binding edge of each cover, which is perforated to permit of the passage of the leaf holding strips 15, and is preferably attached to the binding edge of a heavy fly leaf 36 which may conveniently be held adjacent the cover 11 by having its free end fit into a band or pocket 37 secured to the cover 11.

While I have shown a spring back 38 connecting the covers 11 it will be understood that the binder can be made and used without the back. If it is desired to loose the strips 15 to place a leaf in the book with the back on, the clip 22 is released from the guard 17 as described and the operator takes hold of the fly leaf 36 and pulls in a direction away from the cover, which will cause a loop in the strips 15 intermediate the two covers; or a strap of any suitable material may be attached to the strips between the covers for the purpose of pulling the strips into a loop intermediate the covers if the back is not on, the attendant simply pulls out on the cover which slides the cover out on the strips 15, so as to permit the removal or insertion of the leaves. The binding strip 35 is preferably secured to the fly leaf 36 by wrapping the leaf around said strip as shown in Fig. 7.

In Figs. 8, 9 and 10 is shown a modification of my invention, which construction is preferred for very small binders, as for pocket note books, etc. The covers 39 are made of any suitable stiff material and are connected by the back 40 which is preferably made of spring material. The binding edges of the covers are bent into an angular extension 41 which engages the binding strips 42 secured to the fly leaves 43. In the drawing only one leaf holding strip 44 is shown, which has its ends connected to the covers 39 through the medium of the spring rods 45 and 46 being secured to said rods by the clips 47. The clips 47 are provided with the lateral extending lugs 48 and the eyes 49 through which the rods 45 and 46 pass to secure the parts together as previously described. The strip 44 is provided with perforations 50 to receive the lugs 48 on clips 47 and passes through perforations in the angular extensions 41. The rods 45 have their ends secured to the covers 39 preferably by passing the same through the eyes or loops 51 which are secured to the covers 39 by rivets or otherwise. The rod 46 has its

ends bent before inserting them into the loops 51 so that the extreme ends which rest in the loops 51 will be concentric and their axial line will be about parallel with the axial line of that portion of the rod 46 which rests in the eyes 49. This construction of the rod 46 provides for the necessary slack in the leaf holding strip 44 to permit of the removal or insertion of the leaves; which is accomplished by swinging the rod 46 in an arc about the loops 51 in which the ends of said rod 46 are pivoted. The position of the loops 51 may be such with relation to the direction of pull on the strip 44, that the constant pull on said strip 44, caused by the binding effect on the leaves, will serve to hold the rod 46 with the clip 47 down against the cover 39, but I prefer to insure retaining said rod 46 in such position against the cover 39 by providing an arm 52 pivotally secured to cover 39 to swing over a portion of spring 46. When it is desired to swing the rod 46 about its pivot the arm 52 is swung about its pivot away from the rod 46. A bail may be attached to the rod 46 to enable the more easy operation of the same.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:—

1. In a loose leaf binder, covers, a guide strip secured to each of said covers, a spring rod slidably connected to each of said guide strips by a clip having laterally extending eyes, through which said rod extends, a leaf holding strip movably connected to said covers at or near their binding edges with an intermediate portion lying between said covers, said leaf holding strip having its ends connected to said spring rods by clips having lugs extending through perforations provided in the ends of said leaf holding strip and eyes through which said spring rod extends.

2. In a loose leaf binder, covers, a guide strip secured to one of said covers, a rod slidably connected to said guide strip to permit of its being moved toward and away from the binding edge of said cover and a leaf holding strip having one end secured to said rod, and the other end to the other of said covers.

3. In a loose leaf binder, covers, a guide strip secured to one of said covers, a spring rod slidably connected to said guide strip to permit of its being moved toward and away from the binding edge of said cover, and a leaf holding strip having one end secured to said rod, and the other end to the other of said covers.

4. In a loose leaf binder, covers, a guide strip secured to one of said covers, a rod slidably connected to said guide strip to permit of its being moved toward and away from the binding edge of said cover, and a

leaf holding strip passing loosely through a slot at or near the binding edge of said cover, having one end attached to said rod, and the other end attached to the other of said covers.

5. In a loose leaf binder, two covers, a longitudinally non-extensible resilient leaf holding strip provided with perforations bridging the space between the covers, a clip provided with laterally extending eyes and a laterally extending lug to enter said perforations in said strip and a rod passing through said eyes whereby said lug is held in one of said perforations, another portion of said rod being connected to one cover.

6. In a binder, a cover, leaf holding strips adjustably attached to the binding edge of said cover with a portion extending away from the cover on which the leaves are mounted, a guide strip secured to said cover extending along on the cover substantially at right angles away from the binding edge of said cover provided with perforations, a clip to which said leaf holding strip is connected having a laterally extending lug to enter said perforations when brought into cooperation therewith, means for holding said clip in sliding engagement with said guide strip whereby the leaf holding strips can be adjusted, and a member connecting the free ends of the leaf holding strips extending away from the cover.

7. In a loose leaf binder, the combination of a thin flat metallic resilient leaf holding strip provided with perforations at each end, a clip provided with eyes and a laterally extending lug to enter said perforations and a rod passing through said eyes to fasten the clip and strip together.

8. In a binder, covers, leaf holding strips, spanning the space between the covers and adjustably attached to the covers, a guide strip secured to each cover extending along on the same substantially at right angles away from the binding edge provided with perforations, a clip on each cover to which the ends of said leaf holding strips are connected having a laterally extending lug to enter the perforations in said guide strips when brought into cooperation therewith and means for holding said clips in sliding engagement with said guide strip whereby the leaf holding strip can be adjusted.

9. A cover, a leaf holding strip and means for holding the end of said strip in sliding engagement with said cover comprising a guide strip extending at right angles to the binding edge of and secured to the cover—means for connecting one end of said leaf holding strip to said guide strip, and a second cover connected to the other end of said leaf holding strip.

10. In a binder, a cover, leaf holding strips adjustably attached to the binding edge of said cover with a portion of each

strip extending away from the cover on which the leaves are mounted, sliding means on the cover for securing the leaf holding strips with their ends in a position farthest
5 from the binding edge of the cover means for securing said sliding means in such manner that the leaf holding strips are free to be moved longitudinally into a position with their ends nearest to the binding edge of the
10 cover when said sliding means is unsecured,

and a second cover connecting the free ends of the leaf holding strips.

In testimony whereof I have signed my name to this specification in presence of two subscribing witnesses this 12th day of No- 15
vember, 1906, at Chicago, Illinois.

WILLIAM S. PROUDFIT, JR.

Witnesses:

DAVID GRIER,

R. J. JACKER.