Aug. 30, 1932. J. C. DAWSON 1,874,031

LOOSE LEAF BINDER

Filed June 27, 1930

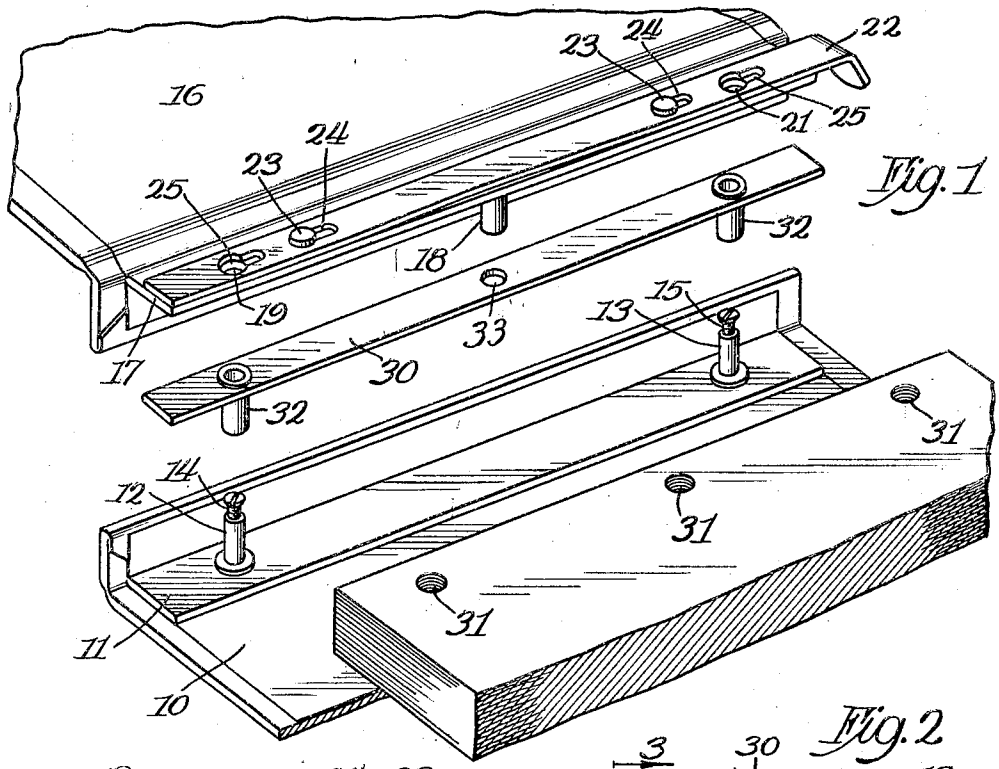



Fig. 1

Fig. 2

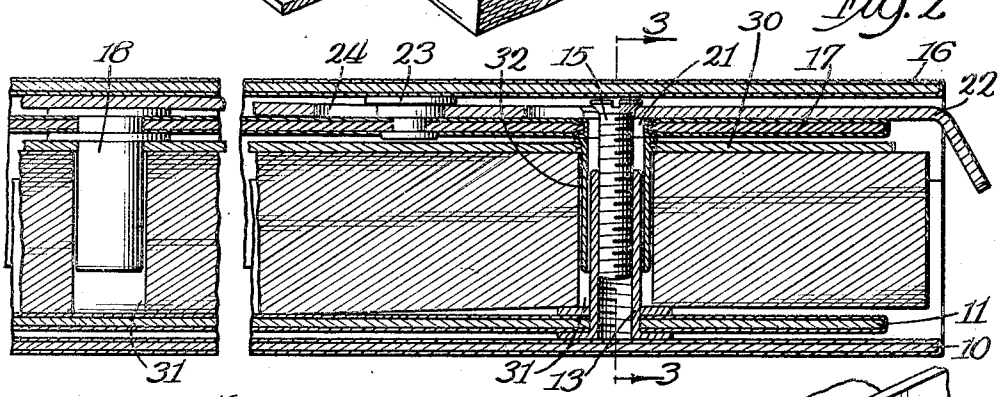
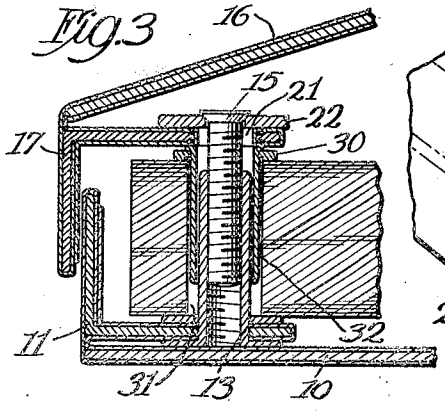



Fig. 3



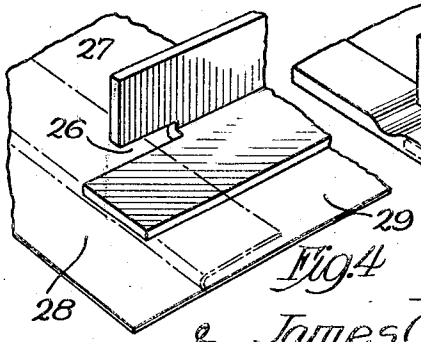




Fig. 4

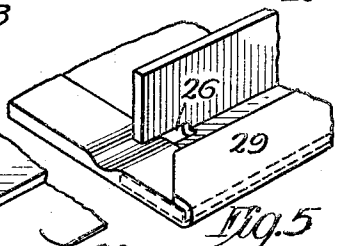



Fig. 5

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# UNITED STATES PATENT OFFICE

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## LOOSE-LEAF BINDER

Application filed June 27, 1930. Serial No. 464,231.

This invention relates to loose leaf binders and particularly to the construction of angle back binders. Previously when cloth or thin leather has been used as the covering material for the book, it has been necessary to cut the margin to allow the material to be folded over the angle back. When fabric covering material is used, this is extremely undesirable since the selvage of the material must be cut.

Heretofore, when no paper was in the binder, considerable looseness and play has existed between the two cover portions of the binder. This has elicited criticism from the would-be purchaser and requires considerable explanation on the part of the salesman.

Again, in binders where a screw threaded in an axial bore of the paper-holding post is used as the post extension element, an undesirable play is allowed to those sheets which engage only the screw portion of the post.

It is an object of this invention to provide means for folding margins of the fabric or leather covering material over the angle back without the necessity of cutting the material.

It is an object of this invention to prevent play from occurring between the two cover sections at any time and it is a further object of the invention to provide means for preventing any play between the posts and paper which otherwise exists when screw extensions to the post are used.

These and other objects of the invention will become apparent from the following specification and the annexed drawing, in which

Fig. 1 is a perspective exploded view of my improved angle-back binder;

Fig. 2 is a longitudinal section through one end of the assembled binder;

Fig. 3 is a vertical section through the binder on the line 3—3 of Fig. 2;

Fig. 4 is a detail showing of one end of the improved binder bar; and

Fig. 5 illustrates the same bar with the fabric properly folded over into place.

With reference to Fig. 1, the lower cover section, generally indicated by 10, bears an angle binder bar 11 on which are carried the two paper-holding posts 12 and 13. The posts are provided with axial bores into which are threaded the screws 14 and 15 which form adjustable extension members for the posts.

The upper cover, generally indicated by 16, carries an angle binder bar 17. This bar carries a paper-holding dummy post 18 at an intermediate position. The post 18 is solid and non-extensible. The binder bar 17 is provided with apertures 19 and 21 which give clearance to the heads of the screws 14 and 15. Along the upper surface of the binder bar 17 is placed a locking bar 22 which is slidably held in place by means of the rivets 23 and the elongated slots 24. Key-hole like apertures 25 in the locking bar allow the heads of the screws 14 and 15 to protrude therethrough and when the bar 22 is pushed home, the restricted portion of the apertures engages with the shank of the screws, thus locking the binder.

With reference to Fig. 2, the post 18 is substantially equal in diameter to the lower sections of the posts 12 and 13. The holes 31, 31, provided in the paper, are substantially equal to the diameter of the posts. When the upper binder bar is not in place, it is evident that there will be considerable play allowed to the uppermost sheets, since the diameter of the holes in the paper is necessarily greater than the diameter of the shanks of the screws 14 and 15. When the upper binder bar is in place, the dummy post engages with the intermediate hole filling it completely and, therefore, all play of the paper sheets is removed.

It is desirable that the length of the post 18 shall equal that of the fixed portion of the posts 12 and 13. It should, in any case, equal the permissible extension given by the screws 14 and 15. To make the insertion of new sheets easy and to hold the sheets which must be removed for this operation in proper order, the paper divider 30 is employed. By providing the separator bar or paper divider 30 which bears the sleeves 32, 32, and a clearance hole 33, the upper portion of the binder is always held rigidly whether the binder be full of paper sheets or not. In this case, the diameter of the posts 12 and 13 is reduced sufficiently to allow them to telescope within the sleeves 32 and the outside diameter of

these substantially equals the diameter of the holes 31, 31, punched through the paper sheets. It also substantially equals the diameter of the hole 33 formed through the bar 30. Since the sleeves 32 fit over the posts 12 and 13 without play and since the post 18 fits into the hole 33, there can be no relative movement between the two halves of the binder after the locking bar 22 is pushed home.

With reference to Fig. 4, which is a general showing of the ends of either the binder bar 17 or the binder bar 11, it will be seen that the bar is provided with a slot 26 cut along its apex inwardly from the end. The covering which is understood may be of leather, fabric, or other suitable flexible substance, is indicated at 27. The marginal strip of the fabric may be turned over upon itself to form a hem and secured in its folded-over condition with an interposed reinforcing sheet if a stiff cover is desired, or without such sheet if a flexible cover is desired. In Fig. 5 the presence of the enclosed reinforcing sheet is indicated merely by the thickness given to the cover. The strip 28 along the transverse margin of the cover may then be folded back and affixed either to the fabric or the reinforcing member without the necessity of cutting the selvage or margin which otherwise would be necessary to give clearance to the binder web of the binder bar. The longitudinal margin 29 is then folded along the back web of the binder bar, as shown in Fig. 5. For the purpose of clarity, the fabric covering which usually encloses the metal is not indicated on these figures.

With reference to Figs. 1 and 5, it will be seen that the cover is hinged parallel and immediately adjacent to the apex of the binder bar. Heretofore when the material was cut, the constant working of the hinge caused fraying, weakness and bad appearance at the very point at which it was necessary to have the greatest strength.

It will be noticed that the present construction materially increases the strength of the fabric, leather, or other material which is in the hinge.

I claim as my invention:

1. In an angle back binder, a cover comprising a sheet of flexible material, an angle binder bar affixed to the sheet adjacent and parallel to a longitudinal edge thereof, the marginal zone of the sheet being folded over and made fast to the inner surface thereof, said binder bar having a slot in the apex thereof adjacent each end to give clearance to the folded transverse margins of the sheet.

2. A binder bar for an angle back loose leaf binder comprising a member angular in cross-section and having a slot extending inwardly from the ends along the apex thereof and adapted to receive the inturned hem of the flexible covering material of the binder.

3. In a loose leaf binder, a binder bar, paper-holding posts mounted on the bar and having extensible portions thereon, a separator bar bearing sleeves adapted to fit over the posts and having an aperture therethrough, an opposing binder bar, a non-extensible post thereon, adapted to pass through the aperture and to fit closely within it whereby play between the parts of the binder is eliminated.

4. In a loose leaf binder, a binder bar, paper-holding posts mounted on the bar each having an axial bore and a headed screw therein to form a post extension member of reduced diameter, a separator bar bearing sleeves adapted to fit over the posts and having an aperture therethrough, an opposing binding bar, a non-extensible paper-holding post on said bar adapted to pass through the aperture and to fit closely within it, and means carried on the opposing bar engaging the screw heads to lock the binder.

5. In a loose leaf binder of the angle back type, an angle bar having a slot at either end thereof extending inwardly along the apex of the bar, a flexible cover attached to the bar adjacent to said apex and having inturned hem portions extending through the slots, and a plurality of paper-holding posts mounted on the bar.

6. In a loose leaf binder, an angle bar, a sheet of flexible covering material attached to the bar adjacent the apex thereof and having inturned side hem portions passing through slots cut along the apex of the bar at the ends thereof.

7. In an angle back binder, a cover comprising a sheet of reinforcing material, a sheet of flexible covering material extending beyond the reinforcing sheet on all of its margins, and an angle binder bar, an end margin of the flexible material being folded over the bar whereby the bar and the reinforcing sheet are secured together, side margins of the flexible material being folded over and made fast to the inner surface of the reinforcing sheet, and the apex of the binder bar being slotted adjacent each end to give clearance to the folded side margins of the sheet of flexible material.

In testimony whereof I affix my signature.

JAMES C. DAWSON.