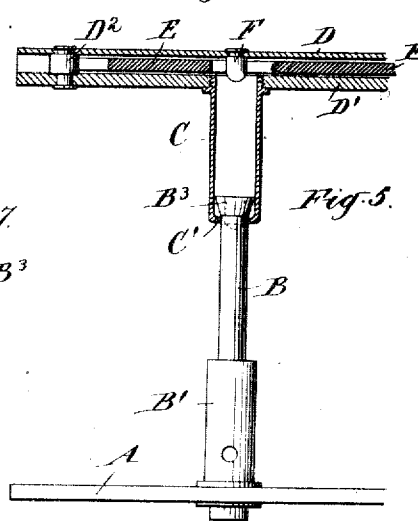
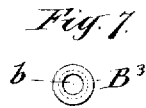
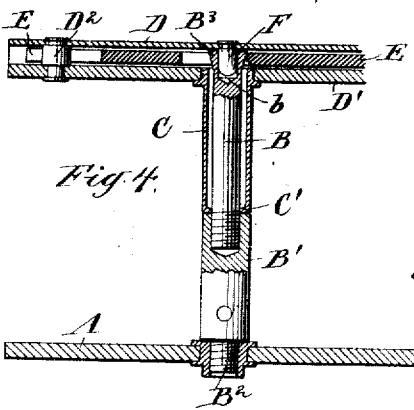
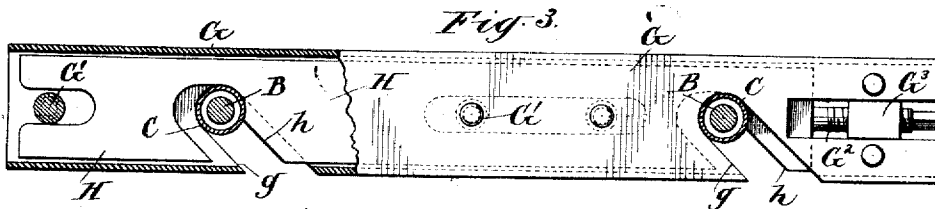
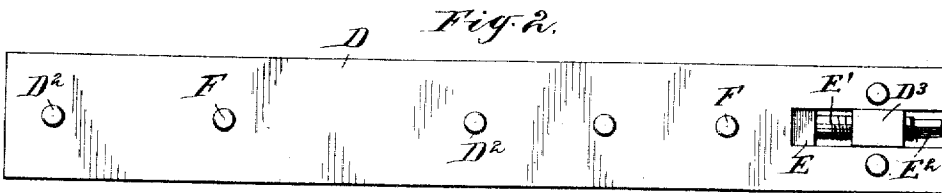
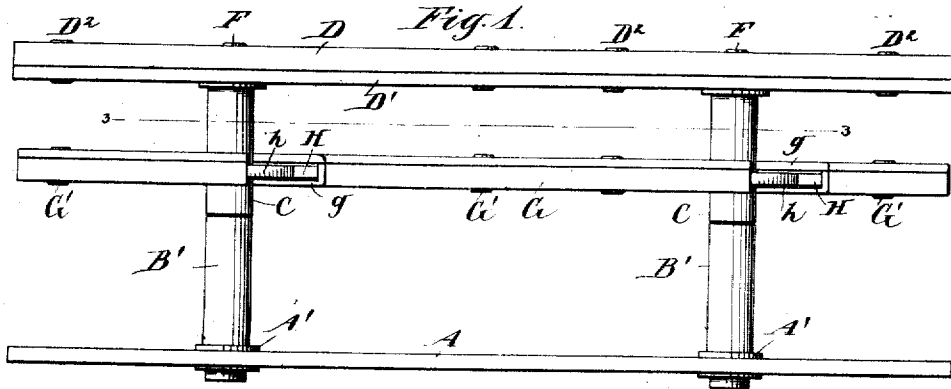


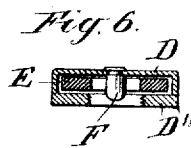
L. E. SHIPMAN.
 LOOSE LEAF BINDER.
 APPLICATION FILED JULY 29, 1909.

950,247.

Patented Feb. 22, 1910.



Witnesses:
 J. G. Greene.
 J. J. Peterson



Inventor:
 Lester E. Shipman,
 by his attorney,
 Charles R. Seale.

UNITED STATES PATENT OFFICE.

LESTER E. SHIPMAN, OF NEW YORK, N. Y., ASSIGNOR TO ASA L. SHIPMAN'S SONS, OF NEW YORK, N. Y., A FIRM.

LOOSE-LEAF BINDER.

950,247.

Specification of Letters Patent.

Patented Feb. 22, 1910.

Application filed July 29, 1909. Serial No. 510,275.

To all whom it may concern:

Be it known that I, LESTER E. SHIPMAN, a citizen of the United States, residing in the city of New York, borough of Manhattan, in the county and State of New York, have invented a certain new and useful Improvement in Loose-Leaf Binders, of which the following is a specification.

The invention relates to that class of binders in which the notched leaves are received on posts and held between bars attached to the latter, and the object of the invention is to provide a binder in which the bars may be separated for the introduction or removal of leaves without detaching the parts, and in which the posts may be lengthened or shortened to accommodate a greater or less number of leaves as required.

Another important object is to provide means for insuring against accidental separation of the parts, and for compressing and holding the leaves.

The accompanying drawings form a part of this specification and show an approved form of the mechanism employed, with the leaves and inclosing covers omitted.

Figure 1 is an elevation showing the posts, bars, and compressor conditioned for service. Fig. 2 is a plan view of the top-bar. Fig. 3 is a horizontal section through the posts on the line 3-3 in Fig. 1, showing the compressor in plan view, partly in horizontal section. Fig. 4 is a vertical section, partly in elevation, showing one of the posts, and portions of the top-bar and bottom-bar, in the locked condition. Fig. 5 is a similar view showing the same parts in the open or expanded condition. Fig. 6 is a transverse section through the top-bar. Fig. 7 is a top view of one of the posts.

Similar letters of reference indicate the same parts in all the figures.

The bottom-bar A is shown as a strip of metal of suitable thickness having sockets A¹ screw-threaded internally to receive the correspondingly threaded lower ends of the posts which are thus secured to the lower bar.

The posts B are short rods screw-threaded to match to the sockets A¹ or, as shown, to match to similar screw-threaded axial holes in extension sections B¹ of larger diameter than the rods B and having nipples B² received in the sockets or another extension section, by thus joining several extension

sections together and to the lower bar A the posts may be lengthened as found necessary. Each post B is inclosed by a tube or sleeve C of the same external diameter as the extension B¹, having its lower edge curled inwardly to form an internal flange C¹ closely encircling the body of the post. At the upper ends the sleeves are threaded and received in corresponding holes drilled and tapped in the lower plate D¹ of the top-bar. The upper plate D is of sheet metal rolled in channel form and is held to the lower plate by stud-rivets D², thus providing a space in which is located a locking-slide E moved longitudinally by a screw E¹ having a squared end E² for the reception of a corresponding key, not shown, by which the screw is turned in its fixed nut D³.

On the upper end of each post B is a flared head B³ of a diameter at the top to match the interior of the sleeve C to permit the post to move telescopically therein while prevented from complete withdrawal by the engagement of the head with the flange C¹, and the flat upper face of the head is drilled axially as at b to receive a spur F riveted to the interior of the upper plate D of the top-bar.

When the top and bottom-bars are forced toward each other to the limit permitted by the posts B the latter are anchored to the upper plate by the engagement of the spurs F with the recesses b and the lateral strains due to the thrust of the slotted locking-slide E against the heads are thus strongly resisted.

By reason of the flared or conical form of the heads the posts are effectually held against withdrawal when engaged by the locking-slide and accidental release is thus prevented while the reinforcement afforded by the spurs permits the locking-slide to be very firmly thrust against the heads without danger of distortion or other injury.

G is a compressor-bar through which the posts extend, composed of two plates or sections separated by stud-rivets G¹ and containing a locking-plate H operated by a screw G² in a fixed nut G³, similar to the locking-slide E above described. The function of the compressor-bar is to hold the leaves beneath it in close contact with the bottom-bar and each other when the number is less than sufficient to fill the space between the top and bottom-bars. The com-

pressor-bar is notched on one edge, as at *g*, to permit its application to and removal from the posts, and the locking-plate is similarly notched, as at *h*, for the same purpose.

- 5 The notches *g* are preferably inclined or angular the better to resist direct strains and the notches *h* are each similarly inclined and formed with an offset partially encircling the post when adjacent thereto, thus permitting the compressor-bar to be raised or lowered on the posts by slackening the grip of the locking-plate *H* thereon while still maintaining engagement therewith sufficient to insure against complete removal; the compressor-bar may be freed for such removal when desired by turning back the screw *G*² far enough to allow the straight sides of the notches *h* to coincide with those of the notches *g*, thus affording sufficient space for the passage of the posts as the compressor-bar is drawn away in an angular direction.

Modifications may be made in the forms and proportions without departing from the invention, and parts may be used without the whole. Other forms of compressor-bars may be substituted for the bar shown, and other forms of locking devices may be used in place of the locking-slide and locking-plate illustrated and described.

30 I claim:—

1. In a loose-leaf binder, a bottom bar, a top bar, posts secured to said bottom bar and movable with relation to the top bar, conical heads on said posts received in said top bar, and locking means carried by said top bar and constructed to engage the conical portions of said heads.

2. In a loose-leaf binder, a top bar, a bottom-bar, posts secured thereto, a sleeve inclosing the upper portion of each of said posts and secured to said top-bar, a head on each of said posts arranged to move telescopically in said sleeve, and locking means carried by said top-bar and constructed to engage said heads.

3. In a loose-leaf binder, a bottom-bar, a top-bar, posts secured to said bottom-bar, said posts received in said top-bar and having axial cavities therein, spurs in said top-bar arranged to be received in said cavities, and locking means carried by said top-bar and constructed to engage said posts.

4. In a loose-leaf binder, a bottom-bar, a hollow top-bar, posts secured to said bottom-bar, flared heads on said posts received in said top-bar and having cavities in their upper faces, spurs in said top-bar arranged

to be received in said cavities, and a locking-bar movable in said top-bar and constructed to engage said heads.

5. In a loose-leaf binder, a bottom-bar, a top-bar, posts secured to said bottom-bar, heads on said posts, each received in said top-bar, a sleeve on each of said posts, telescopically inclosing the upper portion thereof and secured to said top-bar, a flange on said sleeve matching said post beneath said head, and locking means carried by said top-bar and constructed to engage said heads.

6. In a loose-leaf binder, a bottom-bar having screw-threaded sockets therein, a top-bar, posts screw-threaded at their lower ends to match to said sockets, heads on said posts each received in said top-bar, a sleeve on each of said posts, telescopically inclosing the upper portion thereof and secured to said top-bar, a flange on said sleeve matching said post beneath said head, locking means carried by said top-bar and constructed to engage said heads, and extension post-sections of the same diameter as said sleeves, a screw-threaded nipple on each of said post-sections received in said sockets and having screw-threaded holes at their upper ends adapted to receive said posts or additional post-sections.

7. In a loose-leaf binder, a bottom-bar, a top-bar, posts extending from the former to the latter, a removable compressor-bar slidable on said posts and having angular notches, and locking means carried by said compressor-bar and having angular notches and constructed to engage said posts.

8. In a loose-leaf binder, a bottom-bar, a top-bar, posts extending from the former to the latter, a compressor-bar having angular notches in which said posts are received, a slidable locking-plate in said compressor-bar having angular notches arranged to coincide with the notches in said compressor-bar and having recesses matching to said posts, and means for sliding said locking-plate relatively to said compressor-bar, whereby the latter is locked to said posts, is partially freed therefrom to permit vertical adjustment, and completely freed to permit removal from said posts.

In testimony that I claim the invention above set forth I affix my signature, in presence of two witnesses.

LESTER E. SHIPMAN

Witnesses:

PAUL REVERE,

CHARLES R. SEARLE.