H. C. MILLER.

LOOSE LEAF BINDER.

APPLICATION FILED MAR. 27, 1911.

1,040,377. Patented Oct. 8, 1912.

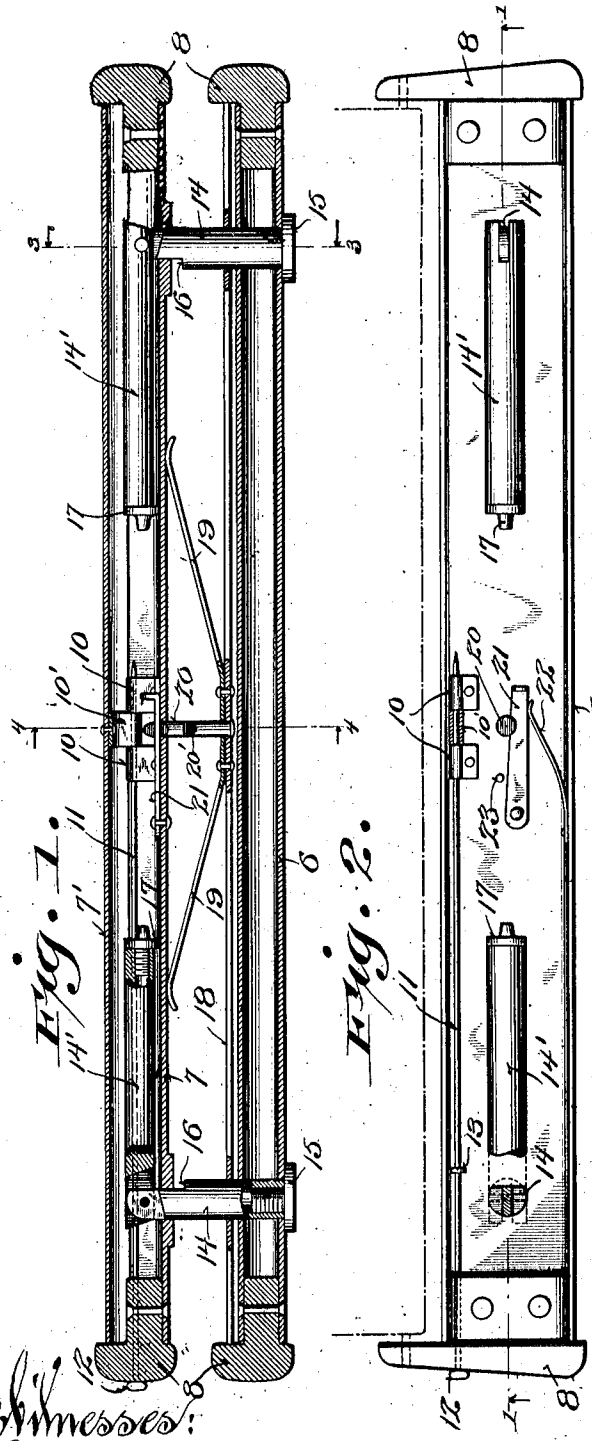


Fig. 1.

Fig. 2.

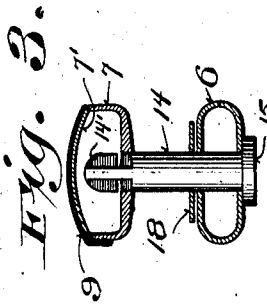


Fig. 3.

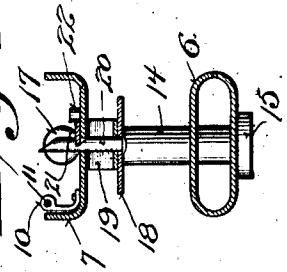


Fig. 4.

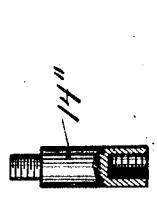


Fig. 5.

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UNITED STATES PATENT OFFICE.

HENRY C. MILLER, OF MILWAUKEE, WISCONSIN.

LOOSE-LEAF BINDER.

1,040,377. Specification of Letters Patent. Patented Oct. 8, 1912.

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To all whom it may concern:

Be it known that I, HENRY C. MILLER, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Loose-Leaf Binders; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention consists in what is herein particularly set forth with reference to the accompanying drawings and pointed out in the claims of this specification, its object being to provide simple, economical and efficient loose-leaf binders, each having in the frame thereof certain advantageous novel features of construction, especially a box in which to cover and hold down folding sections of post-members that are preferably made to provide seats for one of a pair of parallel bar-members, as well as to prevent the turning of the posts in the bars and to facilitate manipulation of their folding sections.

The binder herein shown also discloses a spring-compressor for bound leaves and means for holding the compressor out of working position to facilitate the inserting of leaves in said binder or their removal from the same.

Figure 1 of the drawings represents a partly sectional view of a loose-leaf binder frame in which the novel features of my invention are embodied, the plane of the section being indicated by line 1—1 in the figure that is next in numerical order; Fig. 2, a plan view of the box-bar member of the frame uncovered and other parts of said frame therewith, the keeper of the hinged cover portion of the bar being shown in horizontal section engaged by a locking-rod; Figs. 3 and 4 detail sectional views respectively indicated by lines 3—3 and 4—4 in Fig. 1, and Fig. 5, an elevation of a post-member extending section partly broken away.

Referring by numerals to the drawings, 6 indicates one and 7 the other of a pair of parallel bars of my improved binder-frame. The bar 7 is necessarily hollow, and the bar 6 may be likewise, as is herein shown, both bars being preferably made from sheet-steel blanks. Riveted or otherwise fastened in the ends of the hollow bars aforesaid are blocks 8 with which to pivotally connect covers for bound leaves, a portion of one of the covers being shown, by dotted lines, in Fig. 2. The upper portion 7′ of the bar 7 is a cover-piece for the remainder of said bar to which it is ordinarily hinged, and this upper bar constitutes the box to which reference is had in the foregoing. The hinging of the cover 7′ to the remainder of the box-bar 7 is shown in Fig. 3, as being effected by a strip 9 of leather, canvas or other suitable flexible material cemented in place, but it may be otherwise variously accomplished without departure from what is herein claimed. The bar 7 is shown provided with a pair of inner guides 10, for a sliding rod 11 that is also guided in one of the blocks 8 and provided with a head 12 as well as a stop-lug 13 that oppose said block to limit adjustment of the rod in opposite directions. The hinged cover 7′ of the bar is provided with a keeper 10′ that engages between the rod-guides 10 when said cover is swung down, and the rod 11 is caught in said keeper and both of said guides to secure the aforesaid cover in closed position. However various means may be employed for locking the bar-cover 7′ in closed position.

The post-members of the binder-frame extend through the bar 6 and the bottom of the bar 7 of the binder-frame. Each of the posts comprises at least two sections 14, 14′, in rule-joint union or otherwise articulated to have the uppermost section thereof fold down into the box aforesaid where it is held by the box-cover 7′ locked in closed position. However it is to be noted that the jointing and disposition of said post-sections is such that there is no leverage of the folding-section thereof upon the adjacent bar when said folding section is swung down. It is also to be noted that the posts may be indefinitely extended by means of sections similar to the one 14″ shown by Fig. 6, extensible posts being common in the art of

loose-leaf binders. The bar 6 is shown opposed by heads of screws 15 that engage the lowermost sections of the posts, and these screws may be employed to extend said posts of which they are virtually sections and common in the art aforesaid. It is practical and also old in the art to employ posts having lower sections thereof rigid in the lower bar of the binder. The post-sections 14 are shown horizontally shouldered and flattened on one side adjacent to their rule-joint unions with the post-sections 14′, whereby stop seats 16 are provided for the box-car 7 that is apertured to match fit the angular portions of the post-sections first aforesaid and preferably thickened where said apertures occur. The post-sections 14′ are also flattened to match the apertures in the bar 7, and the post-sections 14 of which latter they form continuations when swung up. Because of the angular fit of the binder-posts in the bar 7, said posts are prevented from turning. To provide for ready manipulation of the folding section of each post, the free outer end of the same is pointed so that a finger of the operator may be readily inserted under the point to elevate said post-section, and said point may be upon a stop-cap 17 in screw-thread connection with this post-section of which it forms a part, as herein shown.

Loose on the post-sections 14 below the stop-seats 16 of the same is a leaf-compressor plate 18, and riveted or otherwise fastened to this plate, midway of its ends, is the central portion of a flat spring 19 having the ends thereof in opposition to the underside of the bar 7. A notched stem 20, rigid with the plate, midway of its ends extends upward through the spring and the bottom of the adjacent bar, its upper end being preferably beveled to readily clear a latch 21 pivoted to said bar inside the same and held against the stem by a suitably arranged spring 22 that expands to engage the latch with the stem-notch 20′ when opportunity is afforded. By the engagement of the stem by the latch, the compressor-plate is held out of working position so that leaves may be readily inserted in the binder or withdrawn from the same, and to limit throw of the latch by expansion of the spring 22, when the bar 7 is clear of said stem, a stop 23 is arranged in said bar. The compressor plate having been locked out of working position, the box-bar 7 therewith will be limited in its descent upon the post-sections 14 by the stop-seats 16 of the same, and the same result occurs if said plate is not employed as a part of the binder.

As is usual in the art, my improved binder-frame will be covered with leather or other bookbinding material, the binding being such as to countersink the screws 15, if any, so as to have them clear a desk or table upon which said binder is used, and the hinge-strip 9 herein specified may constitute part of said binding, the cover 7′ of the box-bar 7 in closed position preventing automatic lifting of the swung down post-sections 14′ and marring of said desk or table.

I claim:

1. In a loose-leaf binder, a frame-bar constituting a box provided with a hinged cover, posts engaging the bar and having sections that fold within the same, and means for locking said cover in position to close said bar over the folding sections of said posts therein.

2. In a loose-leaf binder, a frame-bar constituting a box provided with a hinged cover, posts engaging the bar and having sections that fold within the same, guides within said bar, a keeper on the cover, and a guide supported sliding rod engageable with said keeper to hold said cover in position to close the aforesaid bar over the folding sections of said posts therein.

3. In a loose-leaf binder, a frame-bar constituting a box provided with a cover, posts having angular sections thereof that engage matching apertures in the bottom of the bar, other post-sections matching those aforesaid with which they are united to be swung down within said bar, and means for holding said cover in position to close the aforesaid bar over swung down post sections therein.

4. In a loose-leaf binder, a frame-bar constituting a box provided with a cover, posts having angular terminals engaging matching apertures in the bottom of the bar and stop-shoulders under the same, other post sections matching said terminals of those aforesaid with which they are united to be swung down within said bar, and means for holding said cover in position to close the aforesaid bar over swung-down post-sections therein.

5. In a loose-leaf binder, a frame-bar constituting a box, post sections engaging the bottom of the bar, and pointed post-sections articulated with those aforesaid to fold within said bar.

6. In a loose-leaf binder, a frame-bar constituting a box, post-sections engaging the bottom of the box, other post-sections articulated with those aforesaid, to fold within said bar, and pointed stop-caps in detachable connection with the outer free ends of the folding post-sections.

7. In a loose-leaf binder, a frame-bar, posts with which the bar has sliding engagement, a plate loose on the posts, a spring intermediate of the plate and bar, a notched stem rigid with said plate midway of the ends of the same and extending through

said bar, and a spring-controlled latch in pivotal connection with the aforesaid bar in opposition to the stem to automatically engage the notch therein when the aforesaid plate is moved out of working position.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee in the county of Milwaukee and State of Wisconsin in the presence of two witnesses.

HENRY C. MILLER.

Witnesses:
R. E. GEHRKE,
FERD KNEYSE, Jr.