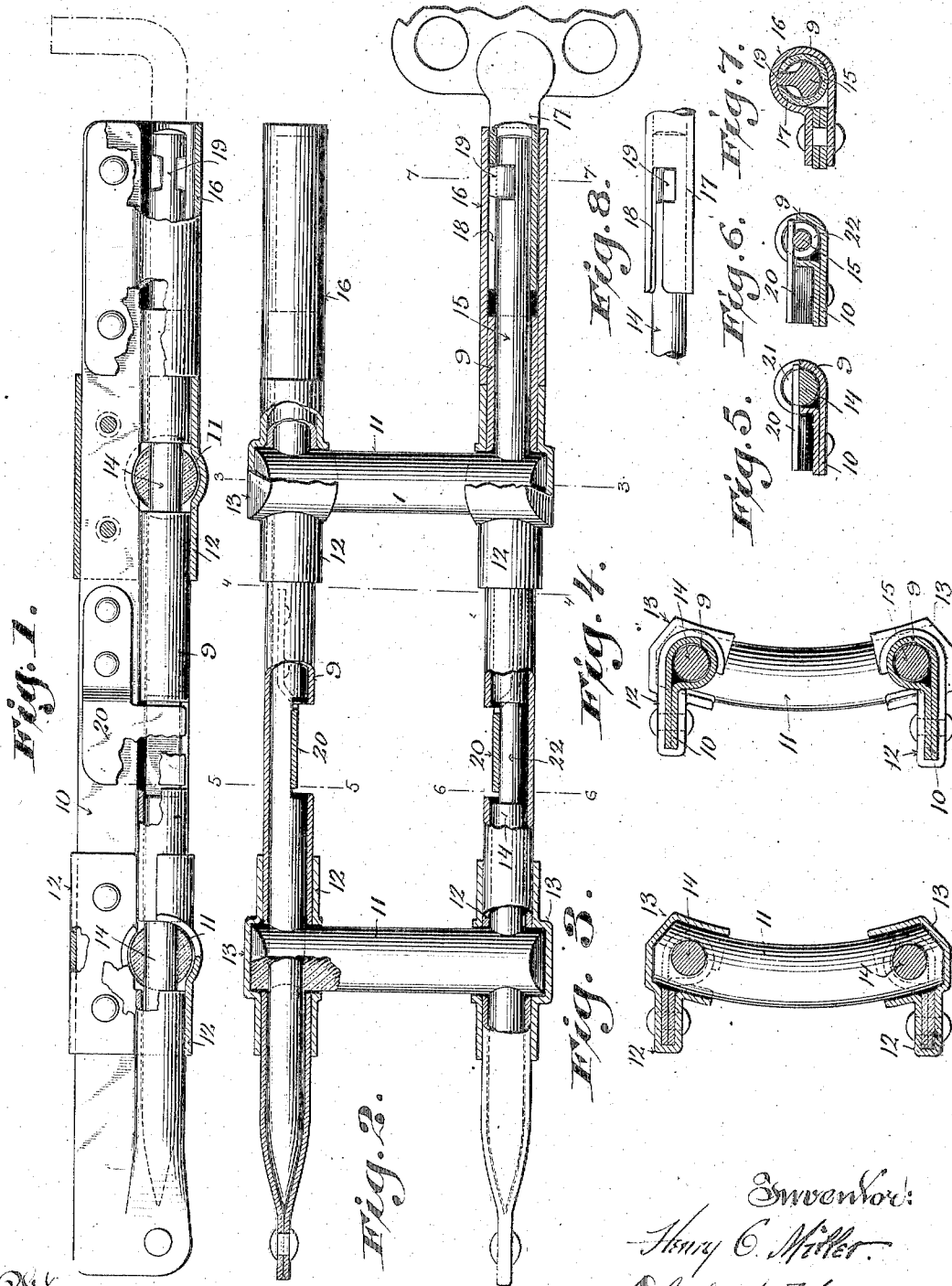


H. C. MILLER.
 LOOSE LEAF BINDER.
 APPLICATION FILED MAR. 2, 1910.

967,538.

Patented Aug. 16, 1910.



Witnesses:
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UNITED STATES PATENT OFFICE.

HENRY C. MILLER, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO H. C. MILLER CO., OF MILWAUKEE, WISCONSIN.

LOOSE-LEAF BINDER.

967,538.

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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 for economical construction of simple, durable and efficient temporary and permanent locking loose-leaf binders that are especially designed for typewritten records, each binder being constructed to provide for ready removal and insertion of leaves at either side of same prior to permanent locking.

Figure 1 of the drawings represents a plan view partly in horizontal section of a binder-frame of my improved construction; Fig. 2, an elevation of the same having parts thereof broken away and in section, one of a pair of post-securing rods being omitted and a locking-rod key shown in this view engaging the other of said rods; Figs. 3, 4, 5, 6 and 7 transverse sectional views respectively indicated by lines 3-3, 4-4, 5-5, 6-6 and 7-7 in Fig. 2, and Fig. 8, an elevation of a locking rod and a portion of a key engaged therewith.

The improved loose-leaf binder-frame comprises a pair of bar-members, a plurality of post-members, and means for holding the bar-members in engagement with the ends of the post-members, all of the various parts of said frame being preferably of steel. The major portion of each bar member results, from shaping and folding a primarily flat strip to form a sleeve 9 and a flat ledge 10 from which the sleeve is preferably offset, the fold being secured by riveting or other suitable means.

At suitable intervals of its length the sleeve 9 of each of the frame bars is cut away to provide for clearance of the ends of the posts 11 of said frame, these posts being preferably curved. Riveted or otherwise rigidly secured on each frame bar are clips 12, each clip being shaped to conform to the contour of the relative bar and to provide a socket 13 that registers with a post-clear-

ance interruption of the sleeve portion of said bar. The ends of the posts 11 engage the sockets 13 when the binder-frame is assembled, and, adjacent to their ends, said posts are provided with eyes through which to pass securing rods of which two forms 14 and 15 are herein shown.

The sleeve portion 9 of each bar is cut away, back of one end of said bar, for a suitable distance and a sleeve-clip 16 substituted, flanges of this clip being riveted or otherwise rigidly secured on the ledge 10 of the same bar. The sleeve portion of each of the clips 16 is of greater diameter than that of the sleeve portion 9 of the relative frame bar to provide sufficient clearance for the tubular shank 17 of a key engageable with a post-securing rod that has snug fit in said sleeve portion of said bar, and the key-shank is provided with a bayonet-slot 18 for engagement with a stud 19 with which said rod is provided adjacent to its outer end, the stud being preferably obtained by a swaging operation upon the rod. The inner end of each rod is preferably pointed and the sleeve portion of each of the frame bars is preferably shaped to form a tapered socket for said end of the rod engaged therewith.

At any convenient point, longitudinally thereof, the sleeve portion 9 of each frame bar is notched to provide clearance for the free end of a spring-latch 20 riveted or otherwise rigidly secured to the ledge portion 10 of said bar, said end of the latch being laterally extended, and each of the post-securing rods is provided with a latch-engaging seat. The engagement of a latch with a seat in a rod is automatic when said rod is pushed home in a sleeve portion of the frame bar to which the latch is secured.

The rod 14 is shown as having an angular notch 21 as the latch-seat therein, and the rod 15 is shown provided with an annular latch-seat 22. Hence it will be understood that rods similar to the one 14 may be turned to raise and clear relative latches 20, but when rods similar to the one 15 are caught by said latches they are permanently held in the bars of the binder-frame.

Rods similar to the one 14 are employed for temporary locking of the bars to the posts of the binder-frame while rods similar to the one 15 are employed for permanent locking of said bars to said posts, a key

similar to the one herein specified being employed to manipulate rods of either form. The aforesaid key being engaged with a rod of either form, and the stud of the rod caught in the transverse portion of the bayonet-slot with which the key-shank is provided, said rod may be pushed home in the sleeve-portion of a bar of the binder-frame and automatically locked by means of the latch with which said bar is provided, after which said key is slightly turned to permit of its ready withdrawal. To withdraw a temporary locking rod, the key is caught thereon, the rod turned to clear its latch and then withdrawn with said key, the operation being simple and expeditious. When temporary locking rods are employed either bar of the binder-frame may be detached from the posts of said frame to permit of loose record leaves (not shown) being put on or taken off said posts, the permanent locking rods being employed when the binder is filled with records.

In some instances, especially for demonstrating purposes, each temporary locking rod of the binder may have a cranked end, as indicated by dotted lines in Fig. 1, to obviate the necessity for employing a key for the manipulation of said rod.

I claim:

1. In a loose-leaf binder, a bar having a sleeve portion, posts with which the sleeve of the bar engages, a rod engageable with the sleeve and posts therein, and a spring-latch on said bar engageable through said sleeve with a seat provided in the rod.

2. In a loose-leaf binder, a pair of bars each having a sleeve portion, posts with which the sleeves of the bars engage, rods engageable with the sleeves and posts therein, and spring-latches on said bars engageable through the sleeves thereof with seats provided in the rods.

3. In a loose-leaf binder, a bar having a sleeve portion, posts with which the sleeve of the bar has primary detachable engagement, interchangeable rods engageable with the sleeve and posts therein, one of the rods being provided with an angular seat and the other with an annular seat, and a spring-latch on the bar engageable through the sleeve thereof with the seat of either of said rods employed to connect said bar and the posts therein.

4. In a loose-leaf binder, a pair of bars each having a sleeve portion, posts with which the sleeves of the bars have primary detachable engagement, interchangeable rods engageable with each sleeve and posts therein, one of the rods being provided with an angular seat and the other with an annular seat, and spring-latches on the bars engageable through the sleeves thereof with seats of the rods employed to connect said bars and the posts therein.

5. In a loose-leaf binder, a bar having a sleeve portion, posts with which the sleeve of the bar engages, a rod engageable with the sleeve and posts therein and fashioned at one end for the engagement of a manipulating key, and a spring-latch on said bar engageable through the sleeve thereof with a seat provided in the rod.

6. In a loose-leaf binder, a bar having a sleeve portion, posts with which the sleeve of the bar engages, a sleeve and post connecting rod provided with a stud and seat, and a spring-latch on said bar engageable through the sleeve thereof with the seat in the rod, the stud of said rod being adjacent to one end of the same for engagement with a manipulating key.

7. In a loose-leaf binder, a bar having a sleeve portion, a spring-latch in connection with the bar and extending into the sleeve of same, posts with which the sleeve of the bar engages, and a rod engageable with the sleeve, posts and latch against withdrawal independent of a key by which to manipulate the rod clear of said latch, said rod being fashioned at one end for engagement with the key.

8. In a loose-leaf binder, a bar having a sleeve portion, a spring-latch in connection with the bar and extending into the sleeve of same, posts with which the sleeve of the bar engages, a rod engageable with the sleeve, posts and latch; and a stud on the rod, the stud being for engagement with a bayonet-slot in a tubular key shank that has slip fit on one end of said rod to provide for manipulation of the same for clearance of said latch, posts and sleeve.

9. In a loose-leaf binder, a bar having a sleeve portion provided with sockets in register with apertures therein, posts that extend through the apertures into the sockets, a rod engageable with the sleeve and posts, and a spring-latch in connection with said bar for engagement through the sleeve of the same with a seat provided in the rod.

10. In a loose-leaf binder, a pair of bars each having a sleeve-portion provided with sockets in register with apertures therein, posts that extend through the apertures into the sockets of each bar, rods engageable with the sleeves and posts, and spring-latches in connection with said bars for engagement through the sleeves of the same with seats provided in the rods.

11. In a loose-leaf binder, a bar having sleeve and ledge portions, the sleeve portion being of less length than the ledge portion and cut away at intervals of its length to provide post clearance and a notch; bar-embracing clips provided with post-sockets in register with the post-clearance interruptions of the sleeve, another bar-embracing clip having a sleeve-portion of greater diameter than the sleeve aforesaid of which

it constitutes an extension, and a notch-engaging spring-latch attached to the ledge of the bar.

12. In a loose-leaf binder a pair of bars
5 each having sleeve and ledge portions, the sleeve portion being of less length than the ledge portion and cut away at intervals of its length to provide post clearance and a notch; bar-embracing clips provided with
10 post-sockets in register with the post-clearance interruptions of the sleeve, another bar-embracing clip having a sleeve-portion of

greater diameter than the sleeve aforesaid of which it constitutes an extension; and a notch-engaging spring-latch attached to the 15 ledge of the bar.

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:

V. E. GETCHE,
JUSTUS CAHN.