

L. M. MOREHOUSE.
LOOSE LEAF BINDER.

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1,018,125.

Patented Feb. 20, 1912.

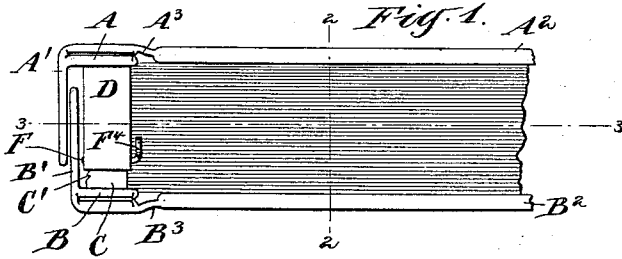


Fig. 2.

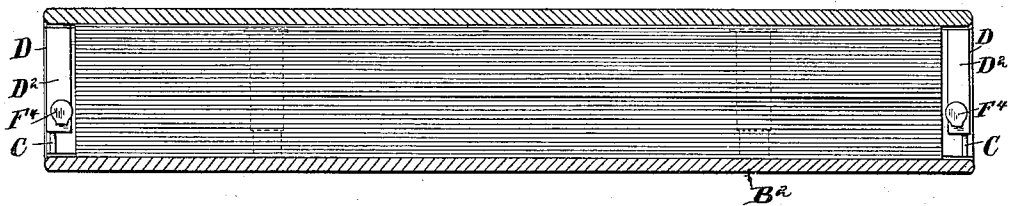


Fig. 3.

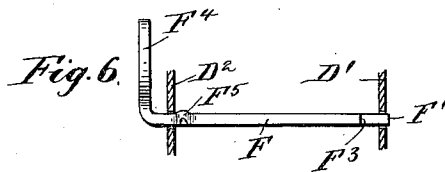
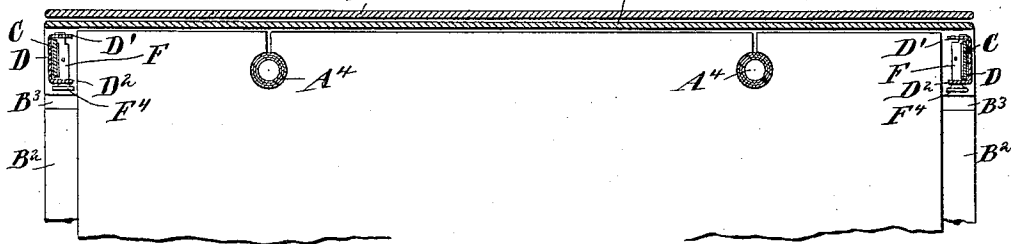


Fig. 5.

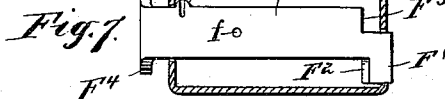
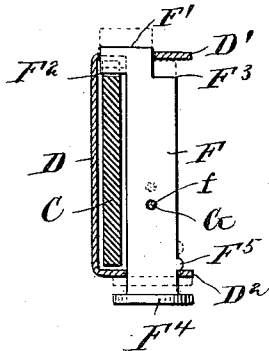


Fig. 7.

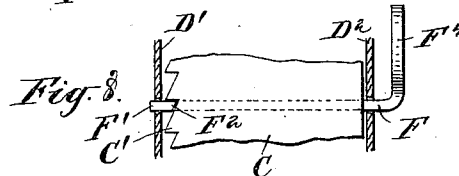


Fig. 8.

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UNITED STATES PATENT OFFICE.

LEONARD M. MOREHOUSE, OF NEWARK, NEW JERSEY.

LOOSE-LEAF BINDER.

1,018,125.

Specification of Letters Patent.

Patented Feb. 20, 1912.

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To all whom it may concern:

Be it known that I, LEONARD M. MOREHOUSE, a citizen of the United States, residing in Newark, in the county of Essex and State of New Jersey, have invented a certain new and useful Improvement in Loose-Leaf Binders, of which the following is a specification.

The invention relates to binders of that class in which the inner margins of the leaves are compressed between bars or members and the latter held together adjustably by the engagement of ratchet teeth on one member with latches or pawls on the other.

The object of the invention is to provide a simple, efficient, easily operated mechanism for this purpose, which will engage automatically, hold the bars reliably, present the disengaging means conveniently, and which shall be of few parts, economically manufactured and assembled.

The invention consists in certain novel features, and in details of construction and arrangement by which the above objects are attained, to be hereinafter described and pointed out in the claims.

The accompanying drawings form a part of this specification and show an approved form of the invention.

Figure 1 is an elevation of the rear portion of the improved binder. Fig. 2 is a transverse section, taken on the line 2—2 in Fig. 1. Fig. 3 is a section taken horizontally, or in the plane of the leaves, on the line 3—3 in Fig. 1. Fig. 4 is an elevation of the engaging means at one end as seen from within, with the bars in transverse section, and on a larger scale. Fig. 5 is a cross-section through the ratchet-plate and its housing, and shows the latch in plan view. Fig. 6 is an edge or side view of the latch, with the housing in section. Fig. 7 is a view of the under face of the latch. Fig. 8 is an elevation corresponding to Fig. 6 and showing a portion of one of the ratchet-plates and its latch.

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

A and B are the bars, of thin metal bent angularly to produce flanges A¹ and B¹ which overlap and form the back of the binder. They are thickened by strips of bookboard or the like, not shown, and covered with leather or other binding material to produce an attractive appearance. The leather is continued to the covers A² and B² and forms the hinges A³ and B³ for the latter.

The bars and covers are longer than the leaves to be inclosed, the small remaining space at the top and bottom thus provided being utilized to contain the engaging means for holding the bars together upon the leaves.

At each end of the upper bar A is a housing D having flanges D¹ D² continued as legs D³ D³ which pass through suitable openings in the bar and are folded thereon to hold the channel-shaped housing in place with its open face presented toward the leaves, and on each end of the lower bar B is a plate C matching within the housings and guided thereby. The rear edge of each plate is provided with ratchet teeth C¹.

F is a latch or slide extending across the housing D and through both flanges D¹ D² in which it has a limited endwise movement. The latch is stamped from sheet metal by suitable dies or otherwise, and each has a lateral wing F¹ extending through the inner flange D¹, on which is a beveled tooth F² adapted to engage any of the teeth C¹, on the ratchet-plate C, and a shoulder or offset F³ arranged to abut against the flange D¹ to limit the releasing movement of the latch. A spring G of wire extending through a perforation *f* in the latch tends to hold the latter in yielding engagement with the ratchet. The opposite protruding end of each latch is turned up to present a thumb-piece or button F⁴ by which pressure may be exerted to slide the latch and disengage it from the ratchet when it is desired to separate the bars for the introduction or removal of leaves. To prevent the withdrawal of the latch each is treated, after the parts are assembled, by a suitable pinching tool which produces a swell F⁵ on one edge, large enough to abut against the inner face of the flange D² to prevent the escape of the latch and limit its outward movement when not in engagement with the ratchet teeth.

The spring G projects through the bar A and is bent down thereon beneath the leg D³ and with the latter is secured by soldering to the bar. Each plate C is rounded or beveled at the upper end on the serrated edge to facilitate engagement with the housing and latch. The leaves may be understood to be of the slotted type engaged with the telescopic posts A⁴ as usual.

It will be noted that the plates C C are received in the housings D D and guided by the latter and their flanges D¹ D² on

three sides, the remaining face of each lying adjacent to the latch F, so that the latter and the toothed edge of the plate are maintained in operative relation in all positions.

5 When the leaves have been engaged with the posts A⁴ and piled upon the bar B, the upper bar A is applied with its portion of the posts properly engaged and the plates C C in position in the housings F. The bar
10 A is then pressed down, the latches riding over the teeth C¹, until sufficient compression is attained and the latches engaged with the last available teeth, thus holding the pile of leaves reliably. To release the
15 bars, pressure is applied to the buttons F⁴ to force the latches out of engagement and at the same time the upper bar is lifted and removed with its cover.

It will be observed that the engaging
20 mechanism is entirely self-contained and all exterior projecting parts, such as screws and posts, are avoided, permitting the binder to be smoothly and attractively finished on its outer surfaces; and the expansion is con-
25 siderable, depending on the length of the housings and ratchet-plates and the positions of the latches.

All the parts are easily formed and assembled and not likely to be broken or de-
30 ranged in service.

I claim:—

1. In a loose-leaf binder, an upper and a lower bar adapted to receive leaves between them, a channel-shaped housing at each end
35 of said upper bar and having inwardly projecting flanges, a plate at each end of said lower bar, received and guided in said housings, ratchet teeth on said plates, a latch in each housing slidably mounted in the said
40 flanges thereof and adapted to engage the teeth of the adjacent plate, and a thumb-piece on the protruding end of each latch, arranged to move the latter out of engage-
ment with said teeth.

45 2. In a loose-leaf binder, an upper and a lower bar adapted to receive leaves between them, a channel-shaped housing at each end of said upper bar and having inwardly projecting flanges, a plate at each
50 end of said lower bar, received and guided in said housings, ratchet teeth on said plates, a latch in each housing slidably mounted in the said flanges thereof and adapted to engage the teeth of the adjacent plate, a spring
55 arranged to hold said latch in yielding engagement with said teeth, and a thumb-piece on the protruding end of each latch, whereby the latter is moved to disengage said teeth in opposition to the force of said
60 spring.

3. In a loose-leaf binder, an upper and a lower bar adapted to receive leaves between them, a channel-shaped housing at each end

of said upper bar, having inwardly project-
ing flanges, a plate at each end of said lower
65 bar constructed to be received and guided in said housing, ratchet teeth on the rear edges of said plates, a latch in each of said housings arranged to slide in openings in
70 said flanges, and a tooth on each of said latches arranged to engage the teeth of said plates.

4. In a loose-leaf binder, an upper and a lower bar adapted to receive leaves between them, a channel-shaped housing at each end
75 of said upper bar, having inwardly projecting flanges, a plate at each end of said lower bar constructed to be received and guided in said housing, ratchet teeth on the rear edges of said plates, a latch in each of said hous-
80 ings arranged to slide in openings in said flanges, a tooth on each of said latches arranged to engage the teeth of said plates, and a spring carried by each of said hous-
85 ings and arranged to hold said latch in yielding engagement with said teeth.

5. In a loose-leaf binder, an upper and a lower bar adapted to receive leaves between them, a channel-shaped housing at each end
90 of said upper bar, having inwardly projecting flanges, a plate at each end of said lower bar constructed to be received and guided in said housings, ratchet teeth on the rear edges of said plates, a latch in each of said
95 housings arranged to slide in openings in said flanges, a tooth on each of said latches arranged to engage the teeth of said plates, and means carried by said latches co-acting with said flanges to limit the movements of
100 said latches.

6. In a loose-leaf binder, an upper and a lower bar adapted to receive leaves between them, a channel-shaped housing at each end
105 of said upper bar, having inwardly projecting flanges, a plate at each end of said lower bar constructed to be received and guided in said housings, ratchet teeth on the rear edges of said plates, a latch in each of said
110 housings arranged to slide in openings in said flanges, a tooth on each of said latches arranged to engage the teeth of said plates, a spring carried by each of said housings and arranged to hold said latches in yield-
115 ing engagement with said teeth, means carried by said latches co-acting with said flanges to limit the movements of said latches, and means on each of said latches by which the latter are moved in opposition to said
springs.

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

L. M. MOREHOUSE.

Witnesses:

HELEN V. RICE,
CHARLES R. SEARLE.