

F. E. CAUFIELD, JR.
 LOOSE LEAF BINDER.
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1,111,134.

Patented Sept. 22, 1914.

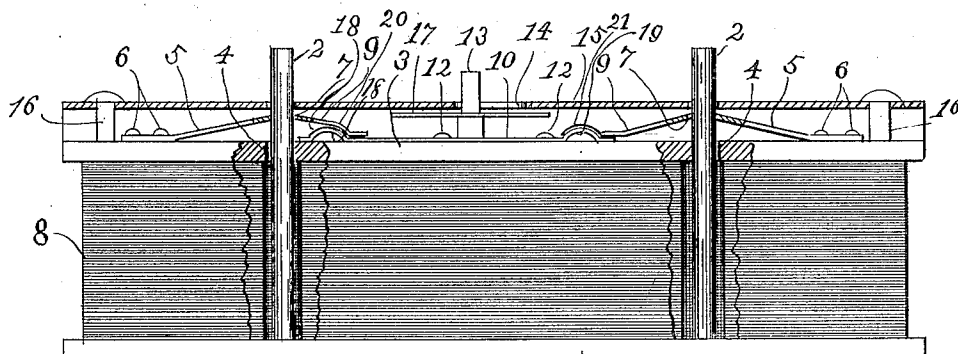


Fig. 1.

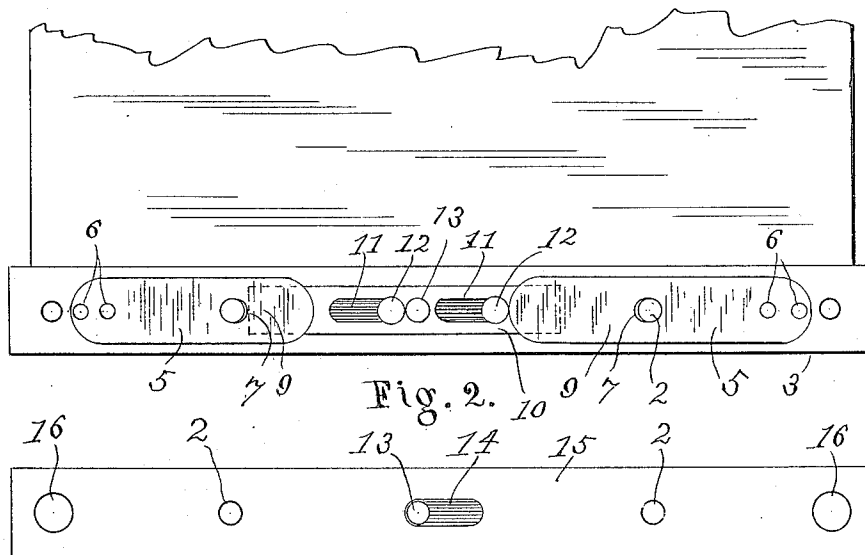


Fig. 2.

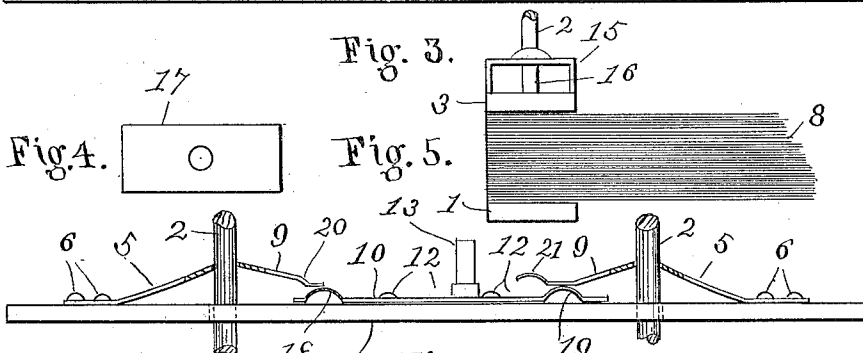


Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Witnesses:
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UNITED STATES PATENT OFFICE.

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LOOSE-LEAF BINDER.

1,111,134.

Specification of Letters Patent.

Patented Sept. 22, 1914.

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To all whom it may concern:

Be it known that I, FRANK E. CAUFIELD, Jr., residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Loose-Leaf Binders, of which the following is a description, reference being had to the accompanying drawings, forming a part of this specification, in which corresponding letters of reference in the different figures indicate like parts.

The object of my invention is to provide a simple, cheap and effective loose-leaf binder which shall be so constructed as to cause it to be locked automatically when the binding member is moved into place.

A further object is to so construct the locking means and releasing mechanism that the former may be released or permitted to lock as a result of a single movement of the latter.

To these ends, my invention consists in the combination of elements hereinafter more particularly described and definitely pointed out in the claims.

In the drawings, Figure 1 is a rear elevation embodying the features of my invention, portions thereof being shown in central longitudinal section; Fig. 2 is a plan view thereof with the covering shield or housing removed; Fig. 3 is a plan view as it would appear with the housing in place; Fig. 4 is a plan view of the covering plate inclosed within the shield; Fig. 5 is an end view, and Fig. 6 is an edge view of the movable binding member showing the locking and releasing members in reversed positions respectively as compared with those shown in Fig. 1.

Referring to the drawings, 1, Figs. 1 and 5 indicates a flat metal bar such as is ordinarily used in binders of this type, to which is rigidly attached the usual upright binding-posts 2, 2. A movable binding member 3, similar to the part 1, has bores 4, 4, Fig. 1, therein for the reception of the posts 2, which bores are shown as being somewhat larger in diameter than that of the posts with their inner edges fitted to bear against the inner edges of the posts so as to form abutments therefor for the purpose hereinafter stated. Bent spring clamping members 5, 5, have their outer ends riveted as shown at 6, 6, to the bar 3, near the outer ends of the latter, the free ends of said

clamping members being arranged to point toward each other. Each of said clamping members is provided with an opening therein for the reception of one of the posts 2, said openings being somewhat elongated in the manner shown at 7, 7, Fig. 2, so as to permit the inner ends of said springs to be lifted as and for the purpose hereinafter set forth. Said openings are so adjusted that in the normal or depressed position thereof, the outer edges of said openings will bear against the outer faces of the posts as shown in Figs. 1 and 2, so as to press the posts against the inner faces of the bores 4, thereby forming frictional clamps to lock the bar 3 against movement away from the bar 1, while leaving it free to be moved toward said bar so as to clamp upon and bind together intervening matter, such, for example, as the leaves 8.

The springs 5 are bent upwardly from the point of fastening and thence downwardly as shown at 9, until the inner or free ends rest upon a thin metal slide generally designated by 10. The slide is provided with longitudinal slots 11, 11, Fig. 2, through which guide studs 12, 12, are projected and rigidly attached to the bar 3. A stud 13 is rigidly attached to said slide to enable the same to be operated, said stud being arranged to project upwardly through a slot 14 in a housing 15, which is secured to the bar 3 by means of rivets 16. A plate 17, Figs. 1 and 4, is attached to the stud 13, immediately beneath the slot 10. The slide 10 is provided with upwardly curved or raised portions 18, 19, which are adapted to lie beneath the free ends of the clamping springs 5, but in such relation thereto that when the slide is in one extreme position, said raised portions will be so located as to permit said springs to descend to normal or locking positions, and when in the other extreme position, the free ends of said springs will be raised thereby to release them from engagements with the posts 2. When in the locked position shown in Fig. 1, in the example illustrated, the raised portion 18 will lie under the body of the one spring while the part 19 will lie beneath the free end of the other. Upon reversing said slide, the parts 18 and 19 will assume the respective positions shown in Fig. 6, thereby raising said springs to releasing positions to permit the bar 3 to be raised upon the posts or removed

therefrom. I prefer to shape the free ends of the springs 5 by so bending the same as shown at 20 and 21 respectively, as to enable them to fit over and conform to the raised portions 18 and 19 of the slide, thereby locking them against such displacement as might result from a jar in handling were this provision omitted.

As above stated, the inner faces of the posts 2 bear against the inner edges of the bores in the movable binding member, thereby rigidly bracing said posts against any lateral movement toward each other, and inasmuch as the outer edges of the openings in the clamping springs normally bear against the outer faces of said posts, the effect is to press the posts firmly against the inner faces of the bores in the bar 3, thereby firmly locking the latter against upward movement. Upon raising the free ends of the springs however, by moving the slide 10 to an abnormal position, the contact portions of the openings in the locking springs are caused to move upwardly in the arc of a circle, thereby releasing them from engagement with the posts and permitting the locking-bar to be raised.

It will thus be seen that a single movement only of the slide 10 is required to lock or release the movable binding member.

Having thus described my invention, I claim:

1. The combination in a loose-leaf binder of opposing binding members, one stationary and the other movable, said members being adjustably connected to each other by means of binding posts rigidly attached to one and passing loosely through bores in the other, of locking springs attached to said movable member, the same having bores therein for the reception of said posts, said springs being bent upwardly in planes oblique to that of the member to which they are attached, while the edges of the openings therein are arranged to press normally against the faces of said posts in opposing relation to each other, and a slide arranged to lie beneath the free ends of said springs, said slide having raised portions thereon formed to lift the free ends of said springs when said slide is in an abnormal position.

2. In a loose-leaf binder, the combination of opposing binding members, binding posts rigidly attached to one, while passing loosely through bores in the other, clamping springs attached to said last mentioned member, said springs having bores therein to receive said posts, and being bent in planes oblique to that of said member, the bores in said springs being of greater diameter than that of said posts, one edge in each being arranged to normally engage the post passing therethrough, the springs being in opposing relation to each other and a slide upon said secondary member beneath the free ends of said springs, said slide having raised portions thereon for lifting the free ends of said springs when said slide is in an abnormal position.

3. In a loose-leaf binder, the combination of opposing members, binding-posts rigidly attached to one while passing loosely through bores in the other, the inner faces of said posts being arranged to bear against the inner faces of said bores, clamping springs attached to the upper face of the movable binding member at points at a predetermined distance outside of the binding posts, said springs being arranged in planes oblique to that of said member with the parts outside of said posts bent upwardly and the free ends inclined downwardly and having bores therein larger than the diameter of said posts, the inner edges of said bores being arranged to bear normally against the outer faces of said posts, and a slide mounted upon said movable member between the free ends of said posts with portions thereof beneath the free ends of said springs, said slide having raised portions thereon adjusted to permit said springs to descend to clamping positions or to be released therefrom according as said slide is in one or another extreme position.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses, this fourth day of December 1913.

FRANK E. CAUFIELD, JR.

Witnesses:

DAVID H. FLETCHER,
ANNA NEIL.