I. SPINNER & G. E. PERRY.

LOOSE LEAF BINDER.

APPLICATION FILED SEPT. 22, 1915.

1,227,685.

Patented May 29, 1917.

2 SHEETS—SHEET 1.

Fig. 1

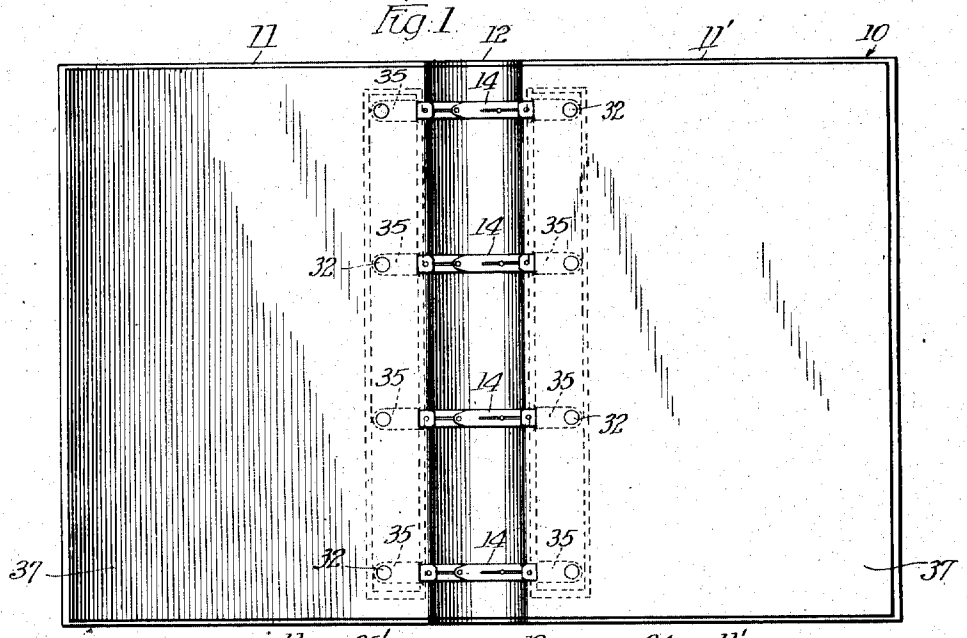
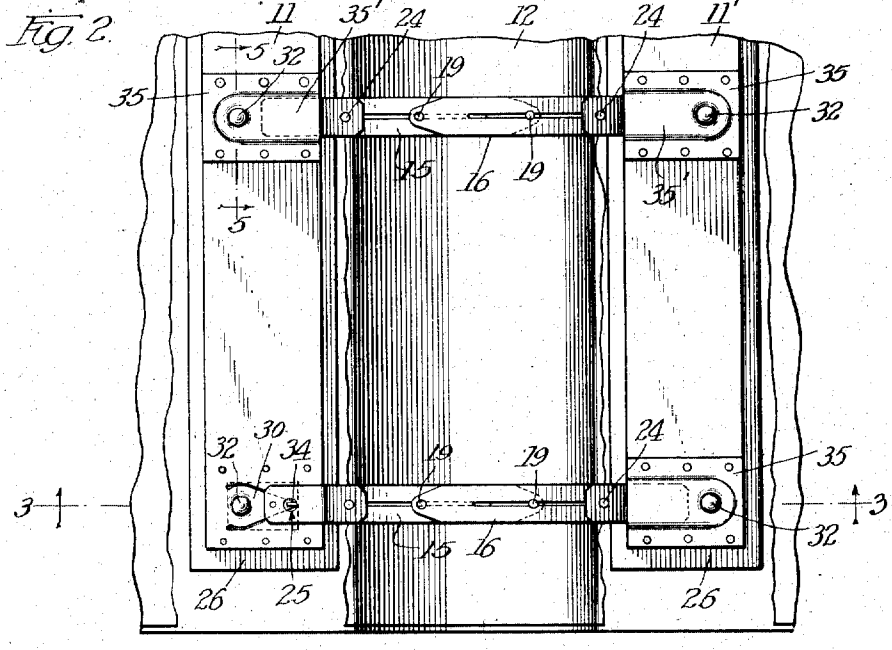


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

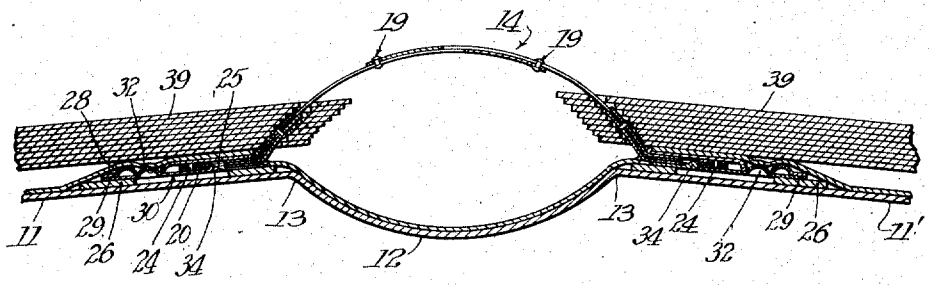


Fig. 4.

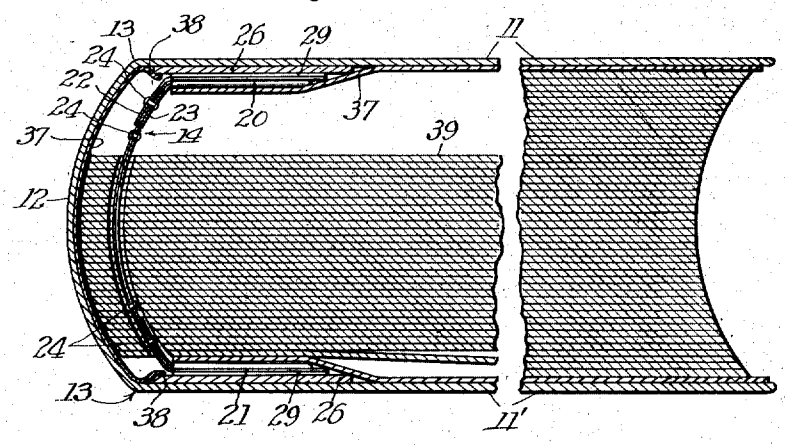


Fig. 5.

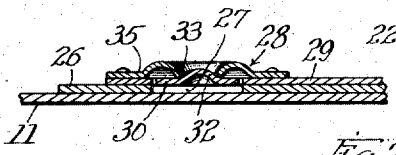


Fig. 6.

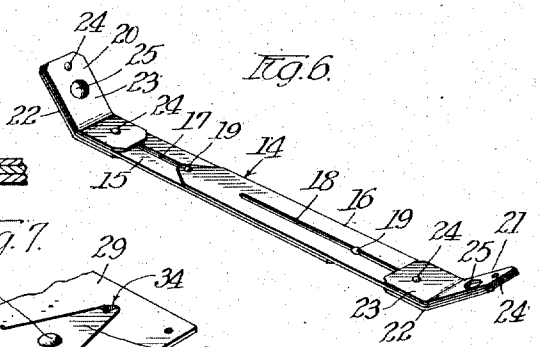
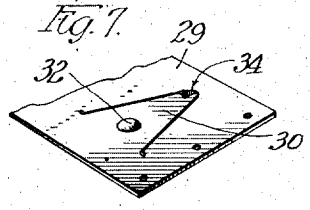


Fig. 7.



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UNITED STATES PATENT OFFICE.

ISIDORE SPINNER AND GEORGE ELLIOT PERRY, OF CHICAGO, ILLINOIS; SAID PERRY ASSIGNOR, BY MESNE ASSIGNMENTS, TO JAMES H. ROOK, OF CHICAGO, ILLINOIS.

LOOSE-LEAF BINDER.

1,227,685. Specification of Letters Patent. Patented May 29, 1917.

Application filed September 22, 1915. Serial No. 51,911.

To all whom it may concern:

Be it known that we, ISIDORE SPINNER and GEORGE ELLIOT PERRY, citizens of the United States, both 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 specification.

Our invention relates to improvements in loose leaf binders for books.

One of the objects of our invention is to provide a relatively flat, thin, flexible and extensible binding member adapted for removable connection with the covers of a book to permit the leaves of the book to lie flat when the book is open, as a result of the longitudinal extension of the binding member and its outward flexing, and adapted to contract when the book is closed and flexed inwardly to cause the leaves of the book to assume the usual book-shape with the front edges of the leaves presenting a concaved, "round" surface and the back binding edges, as a whole, outwardly extending, presenting a convexed "round" surface.

Another object of our invention is to generally improve books of this character whereby the leaves of the books may be quickly inserted and removed; the strength of the binding members increased, when the book is closed, and the binding member being flat and flexible is not obtrusive and in the way when the book is open.

Other and further objects of our invention will become readily apparent to persons skilled in the art from a consideration of the following description when taken in conjunction with the drawings, wherein:—

Figure 1 is a plan view showing the binding structure open without the presence of the insertible leaves.

Fig. 2 is an enlarged plan view of the parts of the structure shown in Fig. 1, showing parts broken away to expose the inner parts of the binder-holding or latching mechanism.

Fig. 3 is a section taken on line 3—3 of Fig. 1 showing some of the leaves in place.

Fig. 4 is a transverse section through the book when it is closed.

Fig. 5 is an enlarged section taken on line 5—5 of Fig. 2.

Fig. 6 is a perspective view of one of the flexible and extensible binding members.

Fig. 7 is a part of the spring latch to engage and hold the binding members in the covers of the book.

In all the views the same reference characters are employed to indicate similar parts.

10 indicates generally, a book composed of the covers 11—11′ and the back 12. The covers 11—11′ are hinged to the back 12, as at 13, as usual in books. 14 indicates generally one of the binding members composed of two major portions 15 and 16, each portion longitudinally movable with reference to each other, each being slotted, as at 17 and 18 respectively, the terminal end of each member having a headed pin 19 which passes into the slot 18 of the other member so that the device, as a whole, may be longitudinally extended or contracted. The free ends of the members 15 and 16 are each upturned, as at 20 and 21, and each terminal end is provided with a reinforcing piece 22 and 23, one on each side thereof and secured to the respective members, as by rivets 24. The reinforced end is then perforated, as at 25, to provide attaching means in association with coöperating attaching or latching means secured to the covers of the book. The entire member 14 is preferably made of spring steel, or bronze, which has considerable resiliency and strength. Secured to the inside of the covers 11 and 11′, and near the hinge 13 is a board 26 provided with a perforation 27 for each binding member, immediately under each of the fastening members 28. A strip of spring metal 29 is placed upon the board 26 and a tongue 30 is cut from the sheet 29, as shown in Fig. 7, and is placed immediately over the slot 27, so that the tongue may be depressed, by pressure upon the button 32, which projects through an opening 33 in a clip 35, that is placed immediately over the tongue. The clip 35 is provided with a raised portion under which the terminal 20 of the binding member 14 is insertible. The tongue 30 has a portion of its end turned up as at 34 to enter the perforation 25 of the binding member and to hold it in place. The upturned part 34 of the tongue 30, is tapered so that when the end 20 or 21 of the binding member is inserted under the clip 35 the tongue 30 is depressed into the slot 27 until the hole or perforation 25 registers with the upturned portion of the tongue when the latter will snap into the perforation and hold the

binding member in place until the tongue 34 is depressed by application of pressure upon the button 32 to remove the binding member. As the ends of the binding member 14 are substantial duplicates the same sort of clip or fastening member is applied to each of the covers, 11 and 11′ in opposite positions, as clearly shown in Fig. 2. Cloth 37 of suitable character, is placed over the fastening devices that are secured to the covers 11 and 11′ and is passed around the inside of the back 12 to provide a suitable finish. The cloth is provided with a slot, opposite each of the fastening members 28, as at 38, through which the terminals 20 and 21 are adapted to be inserted in placing them in the fastening members 35.

To remove a leaf 39, or to insert another leaf, it is only necessary to release like ends of all of the binding members 14, contained in the book. To accomplish this, pressure is applied to the button 32, which depresses the front end 34 of the tongue 30 into the slot 27, thereby removing the projection 34 from the path of its terminal 20 or 21 of the binding member when the same should be quickly taken from its position under the clip 35.

When the binding members have been thus released from their coöperating latches they automatically straighten up into practically the shape shown in Fig. 6 when the leaves may be easily and quickly inserted over the free ends of the members, or withdrawn therefrom, after which the members may again be readily and quickly placed into their former position.

When the book is open, as shown in Fig. 3, the member 14 is flexed outwardly, and when it is closed, it is contracted and flexed inwardly as shown in Fig. 4. When it is outwardly flexed, and extended it is in the proper position to enable the leaves 39 to be easily and quickly turned from one side to the other, and it is held as closely to the back 12 as can be to permit the easy movement of the leaves. When the book is folded the arch shape of the members 14 contribute considerably to their strength to hold the leaves in place.

While we have herein shown a single embodiment of our invention, for the purpose of clear disclosure, it is manifest that considerable change in the configuration and arrangement of the parts may be made within the scope of the appended claims.

Having described our invention, what we claim is:—

1. In combination with the cover members of a book, of a removable binding member comprising a flexible, axially extensible structure having attaching members at its terminal ends and coöperating attaching members carried by the book covers near their hinged edges for rigidly gripping the terminal ends of said extensible structure.

2. In combination with the cover members of a book, of a removable binding member comprising a flexible, axially extensible structure, having a perforation near each of its terminals and coöperating, attaching members comprising a spring latch to engage said perforations and a guide for said ends adapted to be carried by the book covers near their hinged edges.

3. In combination with the cover members of a book, of a removable flexible, axially extensible binding member, comprising two flat thin members slidably secured together; reinforced terminals bent at an angle to the body part and coöperating attaching clips secured to said covers near the hinged portions thereof for rigidly securing the terminals to the covers.

4. A binding member for a loose leaf binding book comprising two relatively narrow thin strips of spring metal slidably secured together; the outer end of each strip being bent at an angle to its body part and perforated to provide a latching member.

5. The combination with hingedly connected covers and back of a book, of a plurality of flexible axially extensible binding members, a plurality of latch members carried on the inner face of each cover near its hinge connection with the back for individual coöperation with the ends of the binding members, each said latch member being individually releasable.

6. The combination with hingedly connected covers and back of a book, of a plurality of binding members each comprising a pair of slidably connected, thin metallic springs, the outer free ends of such springs being deflected at an angle to their body part, and a plurality of latch members carried on the inner face of each cover hinge connection with the back for clamping the deflected ends rigidly to the covers.

7. The combination with hingedly connected covers and back of a book, of a plurality of binding members each comprising a pair of slidably connected thin metallic springs, the outer free ends of such springs being deflected at an angle to their body parts, and means for clamping the said deflected spring ends rigidly to the inner faces of the covers near their hinge connections with the back.

In testimony whereof we hereunto set our hands.

ISIDORE SPINNER.
GEORGE ELLIOT PERRY.

In the presence of—
STANLEY W. COOK,
MARY F. ALLEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."