Nov. 6, 1923. 1,473,247

G. W. NEWMAN

QUICK RELEASE MEANS FOR LOOSE LEAF BOOKS

Filed Oct. 27, 1921

FIG. 1

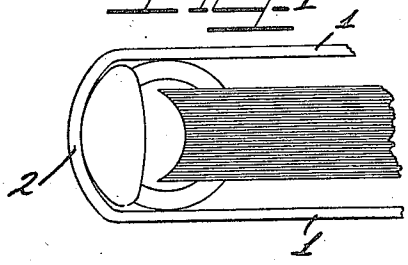


FIG. 6

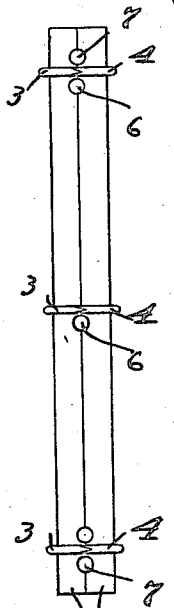


FIG. 5

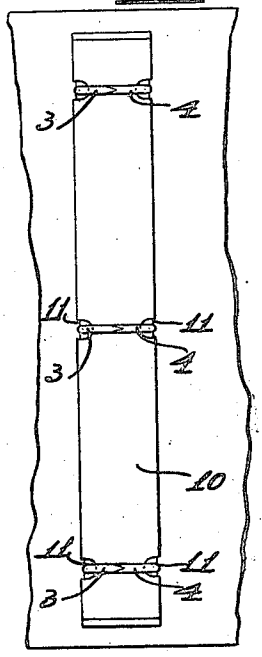


FIG. 2

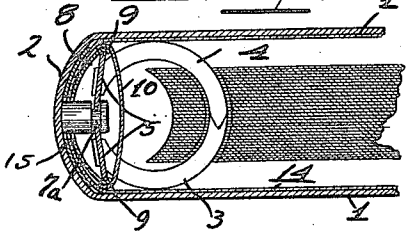


FIG. 3

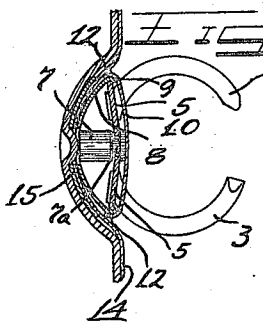


FIG. 7

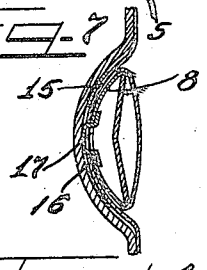
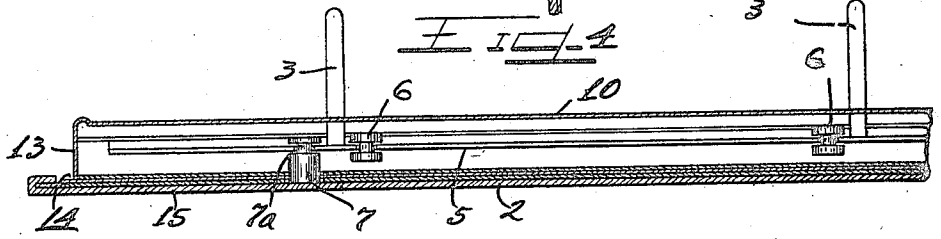


FIG. 4



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE W. NEWMAN, OF CHICAGO, ILLINOIS, ASSIGNOR TO WILSON-JONES LOOSE LEAF COMPANY, A CORPORATION OF ILLINOIS.

QUICK-RELEASE MEANS FOR LOOSE-LEAF BOOKS.

Application filed October 27, 1921. Serial No. 510,868.

To all whom it may concern:

Be it known that I, GEORGE W. NEWMAN, a citizen of the United States, and a resident of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Quick-Release Means for Loose-Leaf Books; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the numerals of reference marked thereon, which form a part of this specification.

This invention relates to loose leaf books of the ringbook type in which a plurality of ring members are adapted to be simultaneously opened and closed for receiving and retaining the loose leaves, such as are illustrated in the patents to Pitt, Nos. 778,070 and 806,913.

It is an object of this invention to generally improve the construction of such binders and provide a novel mechanism for operating the ring members, that is effectively concealed and does not destroy the appearance of the book.

With these and other objects in view which will become more apparent in the following description and disclosures in the drawing, my invention comprises the novel features of construction and mechanisms hereinafter described and more particularly pointed out and defined in the appended claim.

In the accompanying drawings which illustrate a preferred embodiment of my invention and in which similar reference numerals refer to similar features in the different views:

Figure 1 is a fragmentary end elevation of a loose leaf binder to which my invention is adapted.

Figure 2 is a transverse fragmentary section illustrating the ring members in locked position within the loose leaves.

Figure 3 is a fragmentary view illustrating the ring members in open position.

Figure 4 is a fragmentary longitudinal section through the back of the binder.

Figure 5 is a fragmentary front plan view of the ring members and frontal plate.

Figure 6 is a plan view of the ring members and plates to which they are secured.

Figure 7 is a fragmentary transverse section illustrating an anchoring means that may be used.

In the accompanying drawings, I have illustrated a suitable book to which my invention may be applied, the same comprising the sides or covers 1 and flexible back 2 which may consist of a single piece of leather or the like. The leaves are adapted to be removably secured in said book by ring members anchored to the inner side of the back 2.

These ring members comprises a series of spaced and rigid arciform wires or hook members 3 suitably anchored to a ring plate 5 and an opposed series of similarly spaced and rigid arciform wires 4 likewise anchored to an adjacent ring plate 5. The upper or meeting ends of these wires or hook members are provided with the usual interfitting tongues and grooves to securely retain them from relative lateral movement when in locked position.

The inner abutting edges of these ring plates are provided with notches for receiving the shanks of double headed fasteners or rivets 6 which hold the plates sufficiently loose for conjoint upward or downward tilting movement in their abutting plane, whereby the ring members are opened or closed. The upward tilting movement is effected by a pair of push buttons 7 loosely anchored between said plates or in their abutting plane and extending through the spring plate 8 and anchor plate 15 to the back of the cover of the book, being thus wholly within the book and concealed. These push buttons are preferably mounted near the ends of the book, and they are provided at their inner ends with opposed annular shoulders formed by a groove or reduced portion 7^a which fits in circular notches in the abutting edges of the plates 5. The annular shoulders are sufficiently spaced to allow conjoint upward and downward tilting movement of said plates in their abutting plane. The length of these push buttons 7 is so designed that when said plates are tilted upwardly, the spring plate 8 can be assembled as will later appear.

The ring plates 5 are yieldingly held in abutting relation by means of a spring plate 8 which is slightly concaved downwardly and provided with inturned flanges 9 upon its lateral edges adapted for receiving the outer edges of the ring plates 5 by a sliding movement thereof. These ring plates thuswise supported can be deflected upwardly or

downwardly at their inner edges to close or open the ring members. In order to provide a smooth surface for the lower edges of the leaves, a second upwardly bowed spring plate or cover 10 having notches 11 for receiving the ring members and downwardly extending inturned flanges or lips 12 adapted to be sprung over the lateral edges of the spring plate 8 is provided, which may be attached in position by an edgewise movement thereof through the ring members when the same are in open position. The ends of the spring cover plate 10 are preferably provided with inturned flanges 13 for improving the appearance of the book.

The assembled device comprising the oppositely bowed plates 8 and 10 and the ring plates 5 comprise a unit which is anchored to the inner surface of the back 2 of the binder in any well known way. In the drawing, I have shown an inner lining 14 glued to the inner sides of the covers, and extending around the spring plate 8, and a back plate 15 anchored beneath said lining. This back plate may be interlocked with the spring plate 8 by mutually engaging tongues 16 and sockets 17 as shown in Figure 7.

When the ring members are in closed position as shown in Figure 2, the push buttons 7 extend through the spring plate 8, lining 14 and back plate 15 which are provided with suitable apertures for this purpose, and in this position locks them from relative longitudinal movement. It is possible to spread or open the ring members by pressing inwardly on the buttons through the back of the cover, and forcing the projections 7 upwardly for deflecting or tilting the inner edges of the ring plates 5 in an upward direction as shown in Figure 3. As the push buttons 7 simultaneously engage both ring plates near the inner abutting edges thereof, but little force is required to deflect or tilt them upwardly, and this force will always be directed at the abutting edges which afford the greatest leverage no matter how lopsided the book may become. The ring members cannot be readily spread or opened by dropping the book so that its back will strike the top of the desk because of the fact that the ends of the buttons are flush with the back. To open the book, it is only necessary to force the inner edges of the ring plates 5 a trifle beyond the horizontal plane containing said plates by a slight pressure of the finger on the push button, the spring plate 8 will then act to snap the ring plates 5, the remaining distance. In order to close the ring members, it is only necessary to pinch a pair of them together as is obvious.

It will accordingly be obvious that I have provided a novel and effective way of securing and operating said ring plates, whereby the operating thrust will always be directed at the most efficacious points, whereby the ring members can be spread or opened by a slight pressure on the button through the back and in which the operating means is concealed.

I am aware that numerous details of construction may be varied through a wide range without departing from the principles of this invention, and I therefore do not purpose limiting the patent granted otherwise than necessitated by the prior art.

I claim as my invention:

In a loose leaf book, a pair of abutting toggle plates, a downwardly bowed resilient plate engaging the outer edges of said toggle plates, means extending between the abutting edges of said toggle plates for securing the same for conjoint tilting movement, a stud operatively connected between said toggle plates and extending through said bowed plate, when said toggle plates are in leaf locking position, and a flexible cover on said book extending over the outer end of said stud and concealing the same.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

GEORGE W. NEWMAN.

Witnesses:

CARLTON HILL,

JAMES M. O'BRIEN.