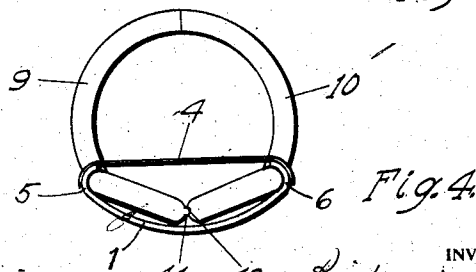
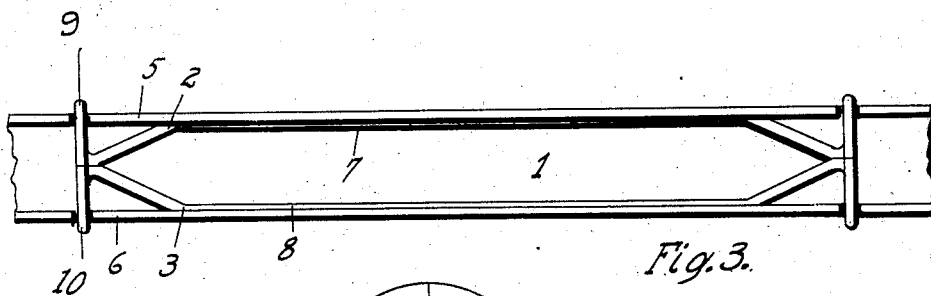
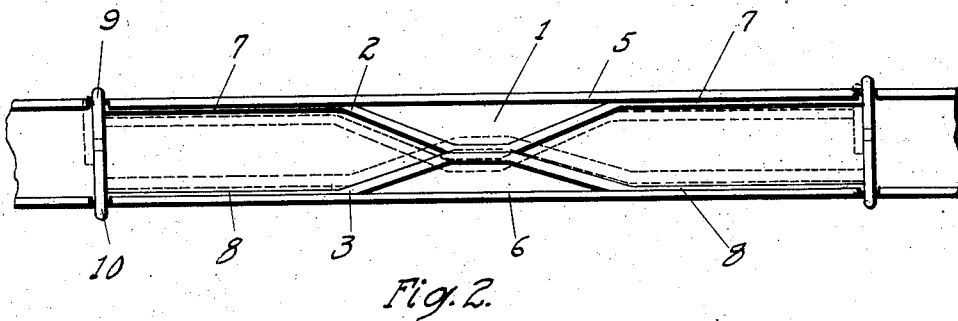
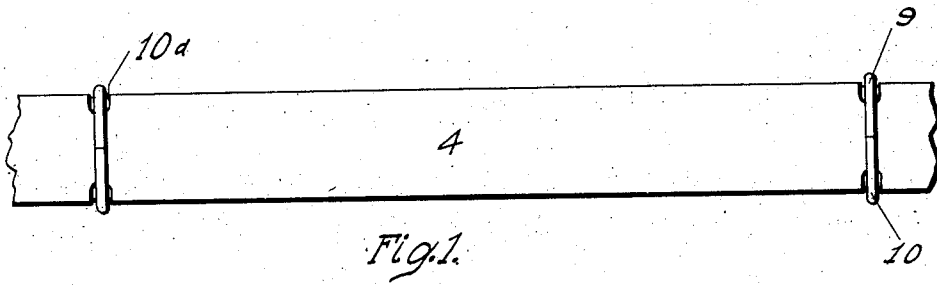


R. M. WATSON.
 LOOSE LEAF BINDER.
 APPLICATION FILED APR. 11, 1912.

1,049,785.

Patented Jan. 7, 1913.



WITNESSES
 Paul A. R. Kroesing, jr.
 Lotta Lee Bray.

INVENTOR
 Richard M. Watson
 BY
 Raymond A. Parker
 ATTORNEY

UNITED STATES PATENT OFFICE.

RICHARD M. WATSON, OF DETROIT, MICHIGAN.

LOOSE-LEAF BINDER.

1,049,785.

Specification of Letters Patent.

Patented Jan. 7, 1913.

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To all whom it may concern:

Be it known that I, RICHARD M. WATSON, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Loose-Leaf Binders, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to loose-leaf book binders and has for its object an improved loose-leaf book binder which accomplishes a better result in affording ample space for the leaves, free from obstructions and accomplishes this result in a more efficient and economical way. The economy is in the construction of a binder of four pieces, comprising a back plate having bearings, a face plate acting as a cover and a pair of wires which form clasp rings and which afford the stress to keep the half rings in open or closed position.

In the drawings:—Figure 1, is an elevation of the assembled binder. Fig. 2, shows the binder with the cover or face plate removed. Fig. 3, shows the modified form of clasp members. Fig. 4, is an end view of the assembled binder.

The binder comprises four members, the back plate 1, the clasp members 2 and 3 and the cover or front plate 4. The back member is convex on the outside and concave on the inside and its edges are bent up as at 5 and 6, to form channel bearings in which are journaled the parallel bearing portions 7 and 8 of the clasp members. In the form shown in Fig. 2, the half rings 9 and 10 rise directly from the parallel bearing portions 7 and 8 and when opened out afford a larger space for the portions of the leaves which lie between the half rings. This is, therefore, my preferred form. The toggle is at the center of the binder and is afforded by the wires converging inward and toward each other. The dotted lines show how the wires would ordinarily cross, if not put under stress, but when the wires are located so that the bearings engage in the bearing channels of the back plate, the converging portions assume the position shown in the full lines and hence are put under stress. The toggle is maintained by the engagement of the cog 11 that engages

with a cog-recess 12. This affords a toggle which furnishes the resiliency to keep the half rings in open or closed position. The toggle, in the form shown in Fig. 3, is at each end and is brought about by the ends of the bearings 7 and 8 converging toward each other, so that ordinarily they would cross, but they engage together under stress so as to afford the necessary spring action for the half rings.

The cover 4 comprises a flat strip of metal turned over at each edge, as shown in Fig. 4, so as to engage over the bent over edges 5 and 6 of the back plate. The cover readily fits in place when the half rings are opened by passing it through the half rings, the half-circular recesses 10^a of the cover fitting about the half rings.

From the above description, it is seen that the binder is constructed of four pieces without staples or housing members. The cover plate 4 coöperates with the cog and cog-recess to hold the clasp members in toggle relation, by limiting the upward movement of the converging portion of the wires. It affords both a cheap and convenient way of housing the clasp members.

In the housings it will be seen that the cover 4 is flat on its face portion, whereas covers heretofore have been more or less convex. It is very desirable to make the cover flat as it allows a greater room for the play of the leaves between the cover and the ends of the half rings, but it has not been possible to make it flat for the reason that the spring action heretofore has been taken from the back plate and it has been necessary to make the cover convex in order to allow it to draw out when the back plate straightens.

What I claim is:—

1. A loose-leaf binder, having in combination, a back plate provided with long parallel bearings adjacent the side edges, a pair of wires bent to form half ring portions, bearing portions and converging portions, the bearing portions being rotatably held in the long parallel bearings adjacent the edge of the back plate and the converging portions of the two wires meeting to form a toggle at the side of the bearing portions farther from the half ring portions, whereby the half ring portions rise at the edges of the back plate from the parallel bearing portions, substantially as described.

2. A loose-leaf binder, having in combina-

tion, a back plate, provided with turned-over edges forming channel bearings, a pair of wires bent to form half ring portions, bearing portions and converging portions, 5 the bearing portions being rotatably held in the parallel bearings formed by the turned-over edges of the back plate and the converging portions of the two wires meeting to form a toggle in which the spring action 10 necessary to keep the half ring portions open and closed resides, substantially as described.

3. A loose-leaf binder, having in combination, a back plate, having turned-over edges 15 forming channel bearings, a pair of wires bent to form half ring portions, bearing portions and converging portions, the bear-

ing portions being rotatably held in the long parallel bearings formed by the turned-over edges of the back plate and the converging 20 portions of the two wires meeting to form a toggle in which resides the spring action necessary to keep the half rings open or closed, and a flat cover plate capable of engaging with the edges of the back plate by 25 reason of the residence of the spring action in the converging wire portions, substantially as described.

In testimony whereof, I sign this specification in the presence of two witnesses.

RICHARD M. WATSON.

Witnesses:

STUART C. BARNES,
VIRGINIA C. SPRATT.

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