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W. J. SCHULTZ & H. GERDING.

LOOSE LEAF BOOK BACK.

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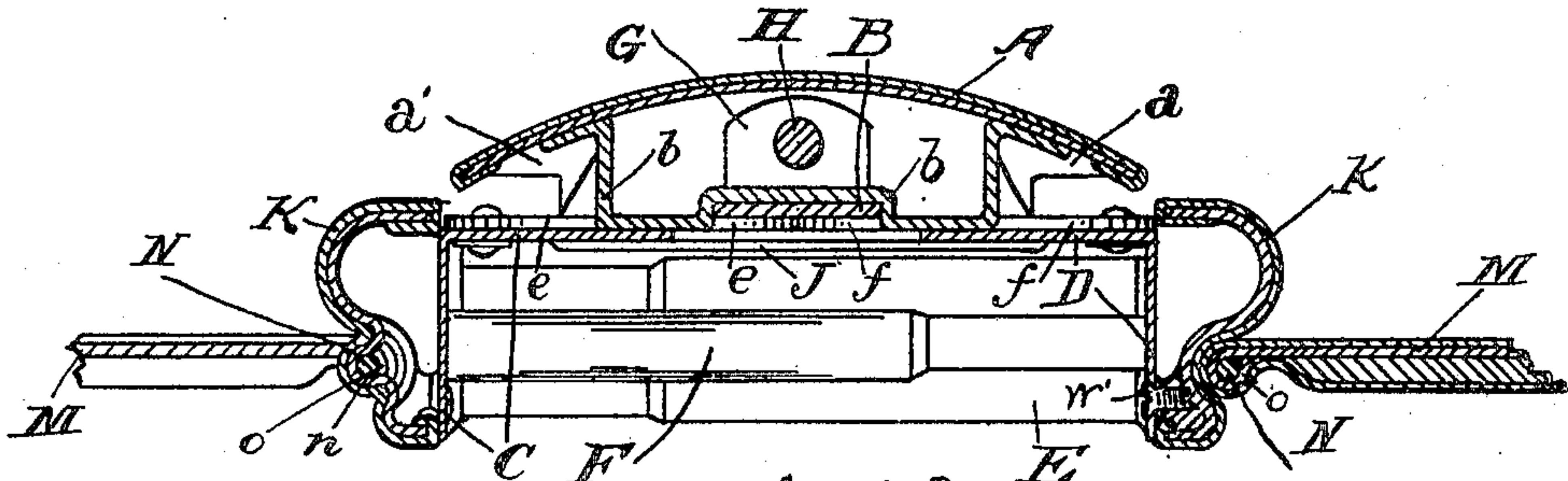


Fig. 3.

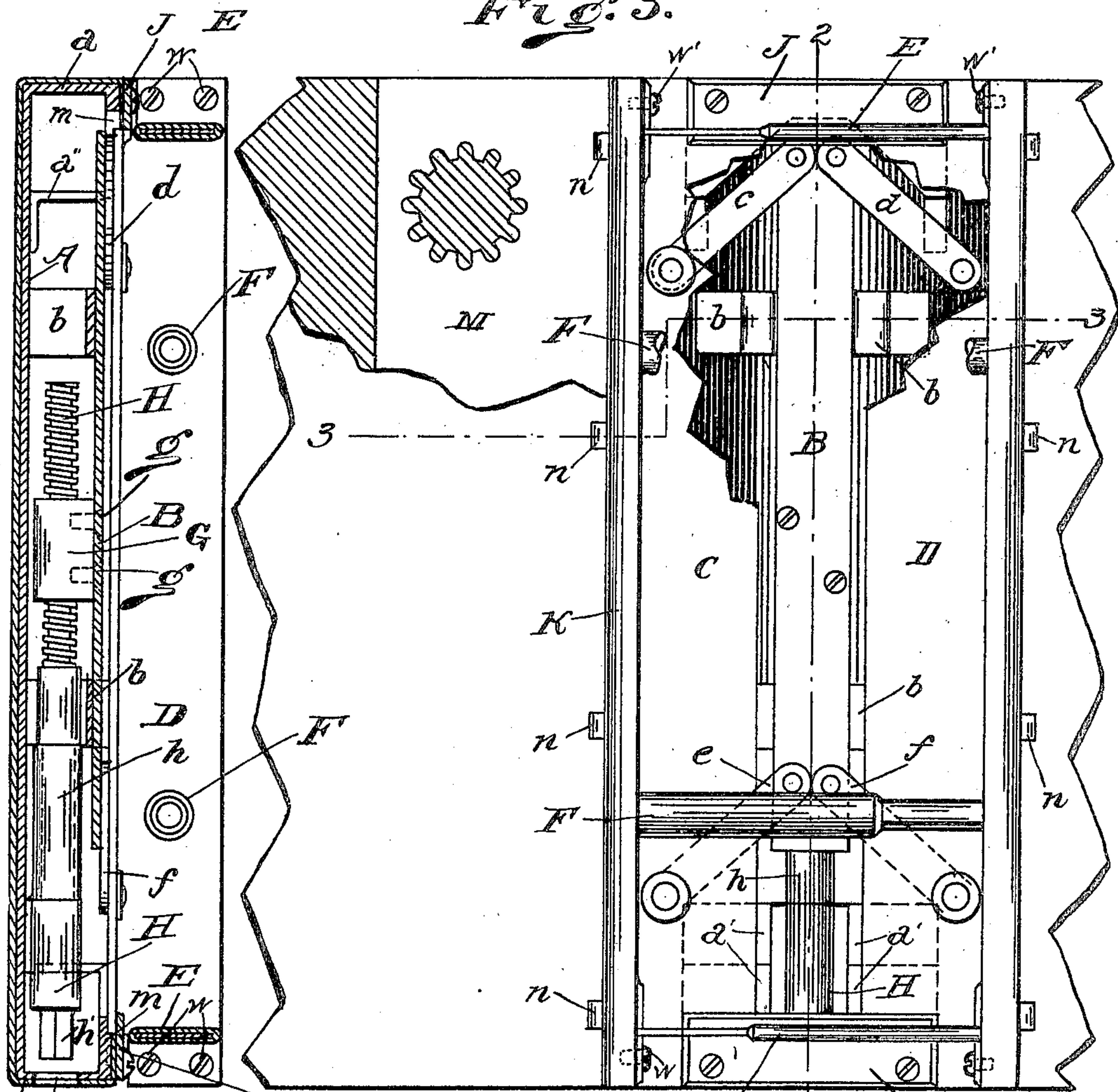


Fig. 1.

Fig. 2.

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# UNITED STATES PATENT OFFICE

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## LOOSE-LEAF BOOK-BACK.

No. 812,602.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that we, WILLIAM J. SCHULTZ, a resident of Cincinnati, in the county of Hamilton, State of Ohio, and HERBERT GERDING, a resident of Newport, in the county of Campbell, State of Kentucky, citizens of the United States, have invented a certain new and useful Improvement in Loose-Leaf Book-Backs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of our specification.

The invention relates to what is known as a "loose-leaf book-back" of the round-back description, and has to do with the method of operation and is more especially intended for use in connection with account-books, such as ledgers, &c., so that leaves may be inserted and withdrawn therefrom as occasion requires.

The invention also relates to the novel construction of the hinge for the covers.

The purpose of the invention is to provide a book-back whereby the results desired may be obtained, and which will not only be simple in construction, but positive in its action and the costs of manufacture greatly reduced.

The invention comprises a sectional casing provided with attaching-tubes which are arranged to telescope, and this sectional casing having its seat or rest on the outside casing or round back; the sectional casing being controlled by a connecting plate or piece which is operatively connected therewith and this plate adapted to be controlled by a screw-threaded rod, which is operated by a key. The casing is expanded or contracted by turning the screw-threaded rod, as will be readily understood from the specific description of the device to be hereinafter set forth. In order to more thoroughly illustrate the device, it has been shown without the leaves to be inserted, and only a portion of the covers are shown. It is understood, of course, that the entire outside casing and covers are to be bound in leather or other suitable material, as is usual with devices of this kind, to give it a finished book appearance; but this forms no part of the invention, and is therefore not specially shown, although in Fig. 3 it may be seen in section.

In the drawings, Figure 1 is a plan view of

the inside of the casing or book-back with a portion of the sectional casing broken away at the one end so as to show the operating mechanism beneath and with a portion of one of the covers shown in place, a portion of this cover being broken away to show the cover member between. Fig. 2 is a sectional view taken on the line 2 2 of Fig. 1 with the screw-rod and central arm and its riding-block shown in full. Fig. 3 is a cross-sectional view taken on the line 3 3 of Fig. 1 and also showing the book-back with a binding or covering of leather or other suitable material.

Like letters of reference indicate identical parts in the respective figures.

A represents the outside casing or back, which is rounded or of convex shape externally and is made of a length to correspond with the size of the book. This outside casing or back is made by having its ends bent up and inwardly, so as to form the supporting-shoulders *a a'*. (See Fig. 2.) These ends are also bent downward, as at *a''*, so as to give them stiffness or rigidity, and thus permit them to have support or rest on the inside of the outside casing. The outside casing is provided at suitable points with the supporting brackets or bridges *b*, which are preferably constructed, as shown in Fig. 3, with the depressed centers and are located at suitable points, as shown in Fig. 1. These brackets or bridges may be soldered or secured in any suitable manner to the outside casing A and provide support or rest for the plate or connecting-piece B. Near the ends of this connecting plate or piece B are pivotally secured the bars or links *c, d, e, and f*, which are also pivotally secured to the two portions of the sectional casing, links *c e* being secured to parts C, while links *d f* are secured to part D of the sectional casing. The sectional casing, comprising the angular portions C and D, is provided with ends secured at right angles thereto, which are preferably made to telescope, as can be seen at E E. (See Fig. 1.)

F F represent the telescopic attaching-tubes whereby the leaves are secured or held in place. These attaching-tubes, of which one part is secured to the side of one side of the sectional casing while the other part is secured to the other or opposite portion of



the sectional casing, are constructed by making the one portion which is secured to the sectional casing C sufficiently large to take over the portions secured to the sectional casing D, as will be clearly seen in the drawings, and are of the well-known construction.

Secured to the plate B and between it and the outside back or casing A by the screws *g* is a rider or block G, which is provided with a screw-threaded opening through which the screw-rod H takes. (See Figs. 2 and 3.) This rod H is held in place by providing it with shoulders, which take against a collar *h*, which is secured to the inside of the outer casing or back A, as can be seen in Figs. 1 and 2. The screw-rod H is provided with a squared end, as at *h'*, which comes opposite a keyhole or opening *l* in the end of the outside casing A. (See Fig. 2.) The squared end is intended to receive a key whereby the rod H may be turned. It will be seen that by reason of the shoulders on rod H, which take against the collar *h*, the rod H will remain at the same place in the casing, but will force the block or rider G to move up or down, depending upon the direction in which rod H is turned. The block G being secured to the plate or connecting-bar B by the screws *g* will compel the connecting-plate B to move in the same direction as block G, and it in turn will draw the links *c*, *d*, *e*, and *f* with it. It will be seen upon looking at Fig. 1 that if connecting piece or plate B is moved toward the end of the casing at the upper end of the figure links *c*, *d*, *e*, and *f* will draw the sectional casing together and that if the rod H is turned in the opposite direction, drawing plate B with it, the links *c*, *d*, *e*, and *f* will expand the sectional casing.

J represents reinforcing-plates, which are secured by screws or otherwise to the shoulders *a a'* and take over the ends of the sectional casing C D. (See Figs. 1 and 2.) In order that these plates will not fit down too tightly on the sectional casing, the shoulders *a a'* are given a small shoulder or protruding point, as can be seen at *m*, Fig. 2. The purpose of these plates J is to reinforce the sectional casing C D, especially when it has been expanded to the fullest extent, as when thus expanded and the book is thrown open there is considerable strain placed on the ends of the sectional casing, which might have a tendency to buckle, making it difficult to contract the casing again.

K represents back members, which are made rounded, as shown in Fig. 3, in order to give a finished effect to the book-cover and at the same time give strength and also freedom to the hinge of the covers. These back members K are shown in one of the preferred forms and are secured by screws to the upwardly-extending flange or portion of the sectional casing C D, as at *w* and *w'*, Figs. 2 and 3. The back members K are slit or cut

away at places, so as to permit the portions intervening to be bent up or forced outwardly, as shown at *n*, Figs. 1 and 3, to form a part of the hinge.

M represents cover members, which are metallic plates with ends or sides bent upon themselves, as shown at *o*, (see Figs. 1 and 3;) and take into the depressed or concaved part of the member K, as shown in Fig. 3. The bent sides or edges of the cover members M are cut away at places registering with the upwardly or outwardly bent portions of the back members K in order to receive them, as can be seen in Fig. 3.

N represents a pin or rod which extends through the bent-around or curled sides of the metallic cover members M and the parts *n* of the back members K, thus forming the hinge for the cover.

The metallic plates M are intended to be placed between cardboards which form the covers and are preferably constructed and secured by providing the metallic plates with burs or roughened edges, slightly bent, so that the burs or roughened edges may take into the cardboards between which the metallic plate is placed, which cardboards are secured in place by glue or other adhesive substance.

We have shown and described what we believe to be the best and simplest construction; but it will be readily understood that a number of changes may be made without departing from the spirit of our invention—as, for instance, the riding-block G may be made integral with plate B, and instead of having the ends of the outside casing A forming the shoulders or rests for the sectional casing and reinforcing-plate these shoulders may be made by using a separate piece of metal or providing them on the plate itself, and the screw-rod may be differently mounted in the casing—and we do not wish to be understood as limiting ourselves to the exact construction shown and described.

It is understood, of course, that the entire outside casing and members are covered or bound with leather or other suitable material, as is customary with devices of this kind, to give them a finished book effect; but it is not necessary to describe or further illustrate this, although in Fig. 3 the back is shown with a binding or covering.

What we claim as our invention, and wish to secure by Letters Patent, is—

1. A loose-leaf book-back, comprising an outside casing, a sectional casing provided with rods, the outside casing formed to provide a shoulder for supporting the sectional casing, a plate or bar, links pivotally connected with said plate or bar and the sectional casing, and a screw-rod having controlling connection with said plate or bar whereby upon its operation the plate is moved and the sectional casing expanded or contracted.



2. A loose-leaf book-back comprising an outside casing having its ends provided with shoulders or rests, a sectional casing having its support on said shoulders, a plate or bar intermediate of the outside casing and sectional casing and having pivotal connection with the latter, a rotative rod having operative connection with said plate or bar, and means whereby said rod may be rotated from the outside of the casing.

3. A loose-leaf book-back comprising an outside casing whose ends are bent upon themselves to form shoulders, a sectional casing adapted to rest on said shoulders, the sectional casing being provided with attaching tubes or rods, a connecting plate or bar, links having pivotal connection with the sectional casing and the connecting-plate, a rotative rod having its bearing in the outside casing and controllingly connected with said connecting-plate, whereby, upon the rotation of said rod, the sectional casing will be expanded or contracted through the medium of the connecting plate or links.

4. A loose-leaf book-back comprising an outside casing provided with shoulders near its ends, a sectional casing adapted to rest on said shoulders, a plate having controlling connection with the sectional casing, a riding-block secured to said plate, a rotative rod having its bearing in the outside casing and taking through the riding-block, means whereby the rod may be rotated from the outside, and reinforcing-plates secured to the ends of the outside casing and taking over the ends of the sectional casing.

5. A loose-leaf book-back comprising an outside casing whose ends are bent back upon themselves to form shoulders, one of said ends provided with a key-opening, a sectional casing having its bearings on the shoulders, a connecting-plate, links having pivotal connection with the plate and the sectional casing, a rotative rod having operative connection with said plate, and reinforcing-plates secured on the outside casing ends and taking over the ends of the sectional casing.

6. A loose-leaf book-back comprising an outside casing whose ends are bent upwardly upon itself, one of said ends provided with a keyhole, bridges or rests secured within said casing, a sectional casing adapted to rest on the bent-up ends of the outside casing, a connecting-plate having its bearings on said bridges or rests, links having pivotal connection with the connecting-plate and the sectional casing, a rotative rod having controlling connection with the connecting-plate, whereby upon its rotation the connecting-plate is moved and the sectional casing expanded or contracted.

7. A loose-leaf book-back comprising an outside casing, bridges or rests secured on said casing, said bridges or rests formed to provide guide or slide ways, a sectional casing

provided with attaching-rods, said sectional casing adapted to rest on the outside casing, a plate intermediate of the outside casing and sectional casing and having pivotal connection with the sectional casing and adapted to slide in the guide or slide ways of said bridges or rests, a screw-rod in operative connection with said plate whereby the sectional casing may be expanded or contracted.

8. A loose-leaf book-back comprising an outside casing provided with transversely-extending bridges or rests, said bridges or rests being depressed at their centers to form guideways, a sectional casing, a connecting-plate adapted to slide in the guideways in said bridges or rests, links pivotally connected with the sectional casing and connecting-plate, a screw-rod having controlling connection with said connecting-plate, and means whereby the screw-rod may be turned and the sectional casing expanded or contracted.

9. In a loose-leaf book-back, comprising an outside casing, a sectional casing slidably mounted thereon, a screw-rod, a plate having operative connection with the sectional casing and adapted to be acted upon by said screw-rod, the combination with back members having portions bent out in opposite direction to that of the immediate surface, cover members having slots adapted to receive the bent-out portions of the back members, the edges of the cover members being curled or bent upon themselves, and a pin adapted to take through said portions of the back members and the cover members to form a hinge.

10. In a loose-leaf book-back, an outside casing, a sectional casing, a connecting-plate, links pivotally secured to the connecting-plate and sectional casing, a screw-rod in operative connection with said connecting-plate, back members secured to the sectional casing and having portions bent in an opposite direction to the contour of said members, cover members whose edges have slots to receive the bent portions of the back members and are curled upon themselves, and a pin adapted to pass through said portions of the back and cover members to form a hinge.

11. A loose-leaf book-back comprising an outside casing having bent-up ends, a sectional casing adapted to rest on said ends, a plate having controlling connection with the sectional casing, a screw-rod operatively connected with said plate, back members adapted to be secured to the sides of the sectional casing, said members provided with portions bent outwardly, a cover having a metallic member whose edge is curled upon itself and is provided with slots to receive the outwardly-bent portions of the cover members, and a pin adapted to pass through said curled edges and the outwardly-bent portions of the back members to form a hinge.

12. In a loose-leaf book-back, a hinge com-



prising a back member having adjacent slots  
extending transversely, the portions inter-  
mediate of the slots being bent outwardly, a  
cover member whose edge is curled or bent  
5 upon itself and cut away in places to receive  
the outwardly-bent portions of the back  
member, and a pin adapted to extend through

the curled edge of the cover member and  
bent-out portions of the back member.

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