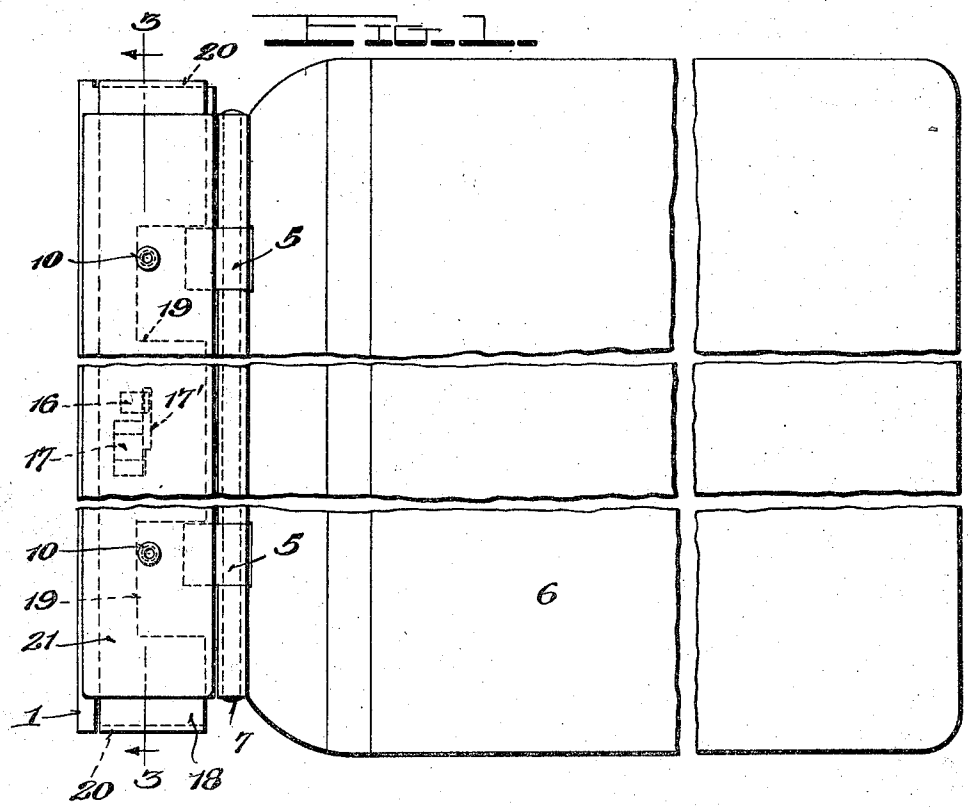
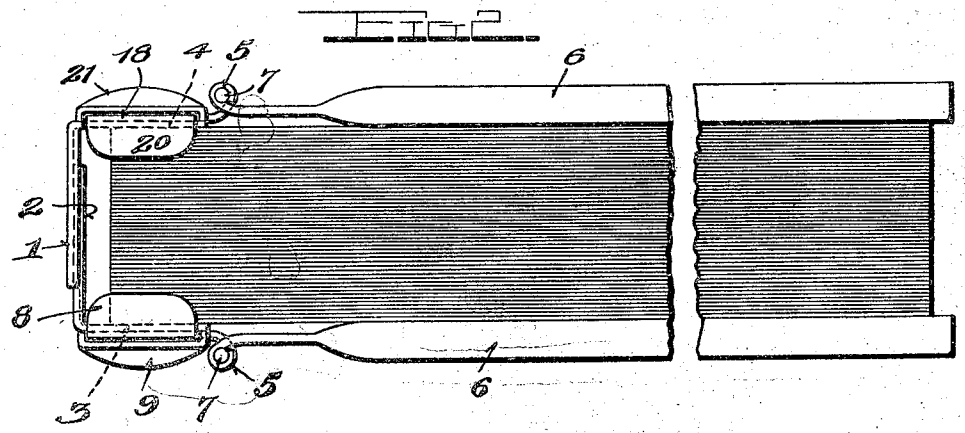
July 15, 1924. 1,501,243

J. SCHADE

LOOSE LEAF BINDER

Filed Jan. 17, 1922 2 Sheets-Sheet 1





Inventor

John Schade

By

Attorney

July 15, 1924. 1,501,243

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LOOSE LEAF BINDER

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Fig. 2.

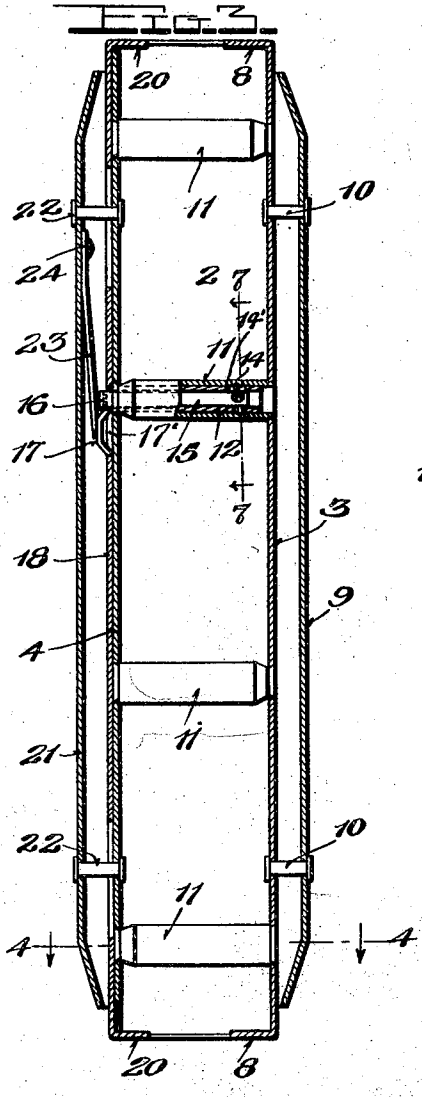


Fig. 5.

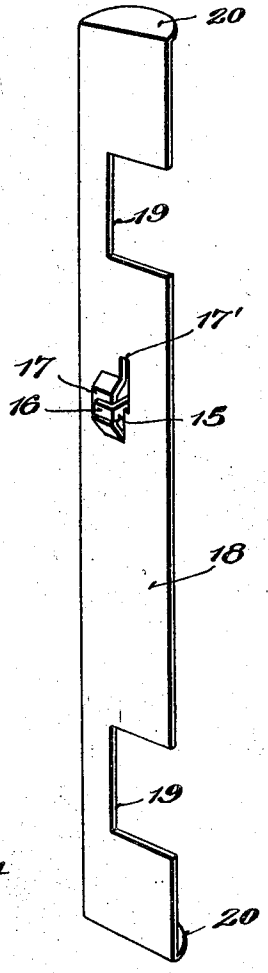


Fig. 6.

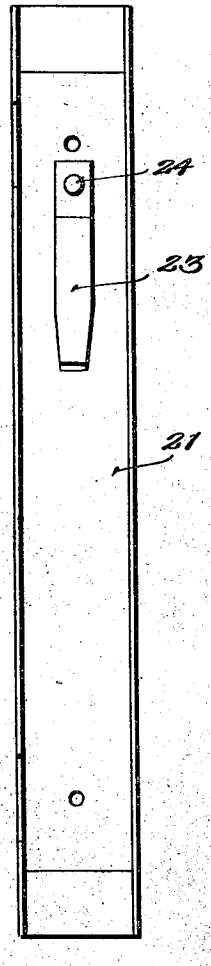


Fig. 4.

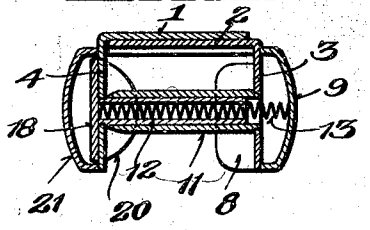
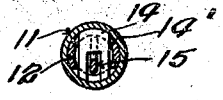


Fig. 7.



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Patented July 15, 1924. 1,501,243

UNITED STATES PATENT OFFICE.

JOHN SCHADE, OF HOLYOKE, MASSACHUSETTS, ASSIGNOR TO NATIONAL BLANK BOOK COMPANY, OF HOLYOKE, MASSACHUSETTS, A VOLUNTARY TRUST ASSOCIATION OF COPARTNERSHIP HAVING AS TRUSTEES F. B. TOWNE, E. S. TOWNE, J. M. TOWNE, AND F. W. WILSON.

LOOSE-LEAF BINDER.

Application filed January 17, 1922. Serial No. 529,838.

To all whom it may concern:

Be it known that I, JOHN SCHADE, a citizen of the United States, residing at the city of Holyoke, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Loose-Leaf Binders; and I do declare the following to be a full, clear, and exact description of the invention such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain new and useful improvements in loose leaf binders and pertains more especially to the metal back structure of binders of the ledger type.

The primary object of the invention is to provide a back construction in which an improved type of friction clutch is employed to hold the ledger sections or side pieces of the back in any position to which they may be adjusted.

A further object of the invention is to provide means for operating the clutch into and out of clutching position from an end of the metal back and to also provide means for causing the ledger sections to automatically move apart or be spread upon release of the clutch.

Still further, the invention aims to provide an improved structure of the back enabling the expeditious manufacture and assembly of the parts to form a structure of great strength and durability.

Further and other objects will be later set forth and manifested in the course of the following description.

In the drawings:

Figure 1, is a top plan view of the invention;

Figure 2, is an end edge elevation;

Figure 3, is a section on line 3—3 of Figure 1;

Figure 4, is a section on line 4—4 of Figure 3;

Figure 5, is a detail perspective view of the clutch-operating member and the end of the bar connected to the clutch disk; and

Figure 6, is an inside plan view of the cover plate of the angle plate having the clutch-operating member.

Figure 7, is a section on line 7—7 of Figure 3.

In proceeding in accordance with the present invention a ledger, comprising two separable sections carrying in slidable relation two angle plates, is preferably employed, the sides 1 and 2 of said plates overlapping while their sides 3 and 4 have hinge knuckles 5 to which the usual covers 6 are hinged by pins 7.

The side 3 has its ends turned inwardly at 8 and has a finishing plate 9 riveted thereto at 10.

Tubes 11 are secured at one end to each of the sides 3 and 4 and telescopically receive tubes 12 which latter are secured at one end to the sides 4 and 3 respectively, and in order to effect automatic separation or spreading of the two ledger sections, upon release of the clutch, now to be described, coil springs 13 are arranged in certain of the tubes 12 and abut finishing plate 9 and the slide 18. The clutch is of the friction type, and is housed in one of the intermediate telescopic pair of tubes. The clutch consists of a disk 14 having a slot received in a slot provided therefor in a shift bar 15, the clutch being projectable into and out of a slot 14′ in the tube 12 so as to frictionally bind or grip against the inner circumference of the outer tube 11, the bar extending through a slot 17′, the latter adjacent a preferably struck-out cam 17 formed in the clutch-separating slide or member 18 which latter has cut-outs 19 to permit of sliding without interference from the knuckles 5 of the side 4. The bar 15 has an angular end 16 engagable with cams 17, while the slide 18 has angular ends to afford finger grips so that the slide may be operated from either end of the metal back and to also provide a symmetrical appearing structure, in which ends 20 correspond to ends 8 as evidenced in Figure 2.

A cover or finishing plate 21 is riveted at 22 to the side 4 and serves to house the operating slide 18 of the friction clutch, a flat spring 23 being riveted at 24 to plate 21 and having its free end extending and always bearing against the end 16 of bar 15, to normally force the latter inwardly. The spring 23 further exerts constant tension against the slide 18 to hold the latter firmly against side 4 of the angle plate and while permitting of sliding of said slide holds the latter in any position to which it may be

slid so as to require the expenditure of comparative slight force in order to effect the movements of this slide.

In operation, either of the finger grips 20 is gripped in the fingers to move the slide 18 in one of its two directions of movem nt. If the clutch is to be moved to clutching position, the sliding of the part 18 causes coresponding movement of the cam 17 thereof and withdraws the latter from contact with the end 16 of the bar 15 as shown at Figure 3, thus, causing the spring 23 to force the bar 15 inwardly and thereby shift the disk 14 so that its diametrically opposite ends will be projected through openings in the tube 12, and into clutching engagement with the inner circumference of tube 11. Opposite sliding of the part 18 causes cam to engage the end 16 of bar 15 as shown at Figure 5, and effect a slight withdrawal of the latter, against the action of the spring 23, sufficient to shift the disk 14 so that its diametrically opposite ends will be fully within the peripheral surface of the tube 12, thereby enabling the tubes 11 and 12 to be moved freely.

The covers or finishing plates 9 and 21 conceal the secured or anchored ends of the tubes 11 and 12 and in the instance of plate 21 the latter affords a housing for the slide 18 and its asociated parts.

What is claimed is:

1. In a loose-leaf ledger back structure, a pair of separable sections, telescopic tubes carried by said sections and secured at one end to each, a friction clutch in one of the inner tubes engageable with the companion outer tube, a shift bar for the clutch having an angular part, a slidable member disposed in one section and carrying a cam and having a slot the latter receiving the shift bar so that the angular part of the latter is engageable by the cam, said slidable member having finger grips at its ends and a flat spring secured to one section and always bearing against the angular end of the shift bar to normally effect the clutching engagement of the tubes.

2. In a loose-leaf ledger back structure, a pair of separable sections, telescopic tubes carried by said sections and secured at one end to each, a friction clutch in one of the inner tubes engageable with the companion outer tube, a shift bar which carries said clutch, a slide on one section, cam means on the slide for controlling the operation of the clutch and a spring carried by one section and always bearing against said shift bar.

3. In a loose-leaf ledger back structure, a pair of adjustable back members, pairs of telescopic tubes between the members secured at one end to each, a friction clutch disk in one of the tubes of a pair movable into and out of engagement with the interior of the companion tube of said pair, a member for shifting the clutch, a slide, cam means on the slide to operate the clutch-shifting member to releasing position, and spring means always acting to effect the clutching position of said disk.

4. In a loose leaf binder, a pair of adjustable sections, connecting means for the sections, and means to latch the connecting means in adjusted position including a shift bar having an angular part, a slidable member having a cam, the angular part of the shift bar in one position of the parts being disposed to lie adjacent the cam and in substantially the same plane therewith, and a flat spring carried by one of the sections and in said position of the cam and angular part engaging each and upon movement of the slidable member engaging the angular part to hold the latter against the cam.

5. In a loose leaf binder, a pair of adjustable sections, connecting means for the sections, and means to latch the connecting means in adjusted position including a shift bar having an angular part, a slidable member having a cam, the angular part of the shift bar in one position of the parts being disposed to lie adjacent the cam and in substantially the same plane therewith, and spring means carried by one of the sections and in said position of the cam and angular part engaging each and upon movement of the slidable member engaging the angular part to hold the latter against the cam.

6. In a loose leaf binder, a pair of adjustable sections, connecting means for the sections, means to latch the sections together in adjusted position, a slidable member to actuate the latching means and spring means which at all times engages against the latching means and which in one position of the parts engages both the latching means and slidable member to directly tension each and which in a second position of the parts holds the latching means against the slidable member to indirectly tension the latter.

7. In a loose leaf binder, a pair of adjustable sections, connecting means for the sections, means to latch the sections together in adjusted position, a slidable member to actuate the latching means, and spring means affixed to one section for effecting constant tension on both the latching means and the slidable member.

In testimony whereof I affix my signature hereto.

JOHN SCHADE.