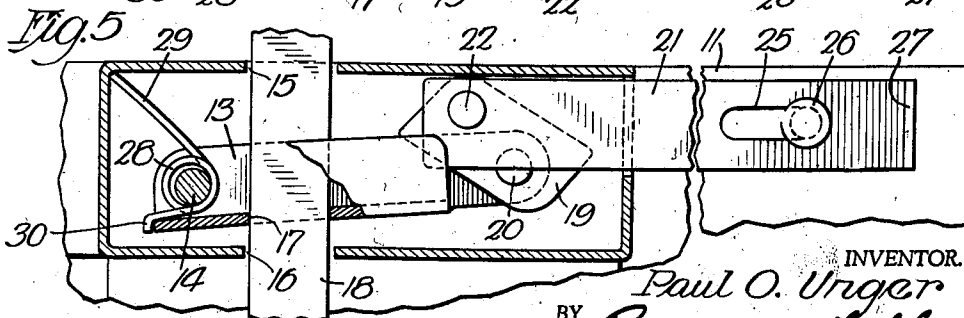
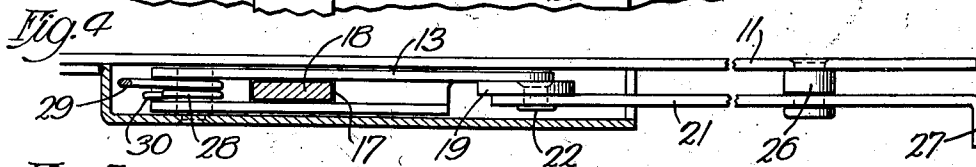
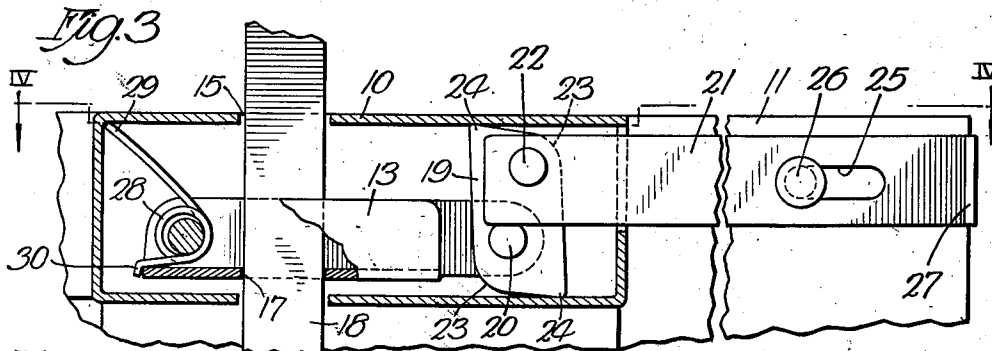
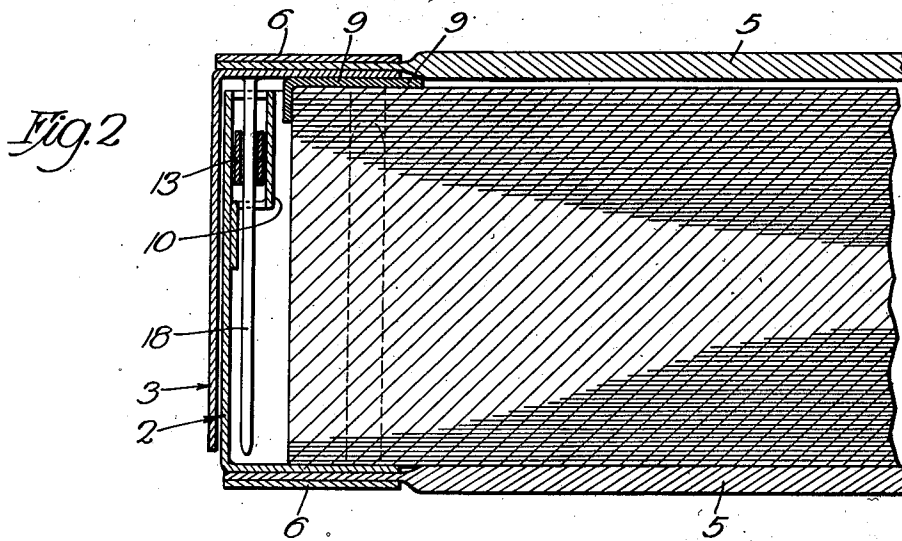


March 30, 1943.

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LOOSE LEAF BINDER
Filed May 2, 1941

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2 Sheets-Sheet 2



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LOOSE-LEAF BINDER

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6 Claims. (Cl. 129—13)

This invention relates to a post binder and particularly to means for holding the back sections against movement in an outward direction.

It is an object of my invention to provide easily operated means for locking the back sections of a binder against expansion or releasing them to permit such movement. Other objects of the invention will become apparent upon reading the following description taken in conjunction with the accompanying drawings, in which:

Figure 1 is a perspective view of a binder embodying the invention, showing the various parts in disassembled position;

Figure 2 is a cross sectional view taken through the locking mechanism;

Figure 3 is a longitudinal sectional view showing the locking mechanism in unlocked position;

Figure 4 is a sectional view taken along the lines IV—IV of Figure 3; and

Figure 5 is a view similar to Figure 3 showing the locking mechanism in locking position.

In the drawings the reference numerals 2 and 3 designate a pair of telescoping angle back members. The member 3 is provided at its ends with a pair of inwardly turned flanges 4 adapted to embrace the edges of the angle back member 2 when the angle back members are telescoped. A cover member 5 is secured to each angle back member by means of a reinforcing plate 6. A pair of sheet retaining posts 7 is secured to the angle back member 2 in any suitable manner. Sheet retaining posts, staggered in relation to the posts 7, may be secured to the angle back member 3. However, in my preferred construction a plurality of sheet retaining posts 8, staggered with relation to the posts 7, is mounted on a transfer bar 9. The transfer bar 9 is provided with a plurality of studs 10 adapted to fit into suitable recesses in the angle back member 3 to retain the transfer bar in position. All of the foregoing structure is conventional and it will be understood that any details thereof may be changed without affecting the efficiency of the locking device which constitutes the subject matter of applicant's present invention.

The locking mechanism includes a housing 10 secured to the upstanding wall 11 of the angle back member 2 by means of rivets 12. It is obvious that the housing may be secured to the angle back member by welding, or by any other suitable means. A locking plate 13 is pivotally mounted in the housing 10 by means of a stud 14. The locking plate is preferably U-shaped, as

illustrated in the drawings, but it will be understood that it may be of any suitable shape.

The top and bottom walls of the housing 10 are apertured, as indicated at 15 and 16, and the middle wall of the locking plate 13 is apertured in registration therewith, as indicated at 17, in order to permit a locking post 18, mounted on the angle back member 3, to project there-through. The size of the aperture 17 is such that the locking bar 18 may pass freely therethrough when the locking plate 13 is parallel to the top and bottom walls of the housing 10. When the locking plate 13 is tilted angularly with respect to the top and bottom walls of the housing 10, the edges of the middle wall of the locking plate adjacent the aperture 17 engage the locking post 18 to prevent relative outward movement thereof.

A toggle link 19 is pivotally secured to one end of the locking plate 13, as indicated at 20. The other end of the toggle link 19 is pivotally connected to a slide 21, as indicated at 22. The toggle link is slightly longer than the height of the housing 10 and has two opposite corners rounded off as indicated at 23 so that one of the sharp edges 24 will engage the top or bottom wall of the housing to prevent motion of the toggle link beyond a certain predetermined point.

The slide 21 is provided with a slot 25 which engages a stud 26 adapted to support the slide 21 away from the wall 11 so as to permit the flange 4 of the angle back member 3 to be positioned between the wall 11 and the slide 21. The slide 21 is provided with a finger piece 27 to facilitate manipulation of the device.

The pivot points 20 and 22 are so arranged that when the locking plate 13 is in the open position, indicated in Figure 3, the pivot 20 is closer than the pivot 22 to the locking post 18. When the slide 21 is pushed inwardly the pivot point 22 moves between the locking post 18 and the pivot 20. In this position of the toggle link the locking plate 13 is lockingly engaged with the locking post 18. As shown in Figure 5, when the toggle link 19 is in the locking position any attempt to move the locking post 18 outwardly with respect to the locking plate 13 merely increases the force with which the edges 17 of the locking plate engage the locking post 18. A spring 28 coiled around the stud 14 has one end 29 pressing against the top wall of the housing 10, and its other end 30 pressing against the locking plate 13, so as to urge the locking plate 13 towards locking position as indicated in Figure 5. When the locking plate 13 is in its unlocked position, indicated in Figure 3, the toggle link 19 prevents the

spring 22 from forcing the locking plate to locking position.

Although I have described one embodiment of my invention in detail, it will be understood that the description thereof is illustrative, rather than restrictive, as many details may be modified or changed without departing from the spirit or scope of the invention. Accordingly, I do not desire to be restricted to the exact details of the structure described, except as limited by the appended claims.

I claim:

1. In a loose-leaf binder, a pair of angle back members, a locking post mounted on one of said back members, a locking plate mounted on said other back member and adapted to engage said locking post, a toggle link secured to one end of said locking plate, and a handle mounted on said second mentioned back member engaging said toggle link to actuate said locking plate.

2. In a loose-leaf binder, a back member, a housing mounted on said back member, a locking plate pivotally mounted in said housing, a slide mounted on said back member, and a toggle link pivoted at one end to said slide and at the other end to said locking plate.

3. In a loose-leaf binder, a back member, a housing mounted on said back member, a locking plate pivotally mounted in said housing, a slide mounted on said back member, a toggle link connecting said slide and said locking plate, said toggle link being actuated through said slide to move said locking plate either to locking or un-

locked position, and a spring urging said locking plate towards locking position.

4. In a loose-leaf binder, a back member, a housing mounted on said back member, a locking plate in said housing, a slide mounted on said back member, and a toggle link connecting said slide and said locking plate, said toggle link being adapted to engage one wall of said housing to limit the movement of said link.

5. In a loose-leaf binder, a back member, a housing mounted on said back member, a locking plate in said housing, a slide mounted on said back member, and a toggle link pivoted to said slide and to said locking plate, said pivot points being so arranged as to provide a dead center through which said toggle link must pass to move said locking plate from either locking or unlocked position to the other position.

6. In a loose-leaf binder, a pair of angle back members, a locking post mounted on one of said back members, a housing mounted on said other back member, a locking plate mounted in said housing, said housing and said locking plate being apertured to receive said locking post, a slide mounted on said second mentioned back member, and a toggle link pivoted at one end to said slide and pivoted at its other end to said locking plate, said first mentioned pivot point being closer than said second mentioned pivot point to said locking post when said locking plate is in locking position and farther than it when said locking plate is in unlocked position.

PAUL O. UNGER.