Oct. 13, 1936. G. H. DAWSON ET AL 2,057,514

LOOSE LEAF BINDER

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Fig. 1

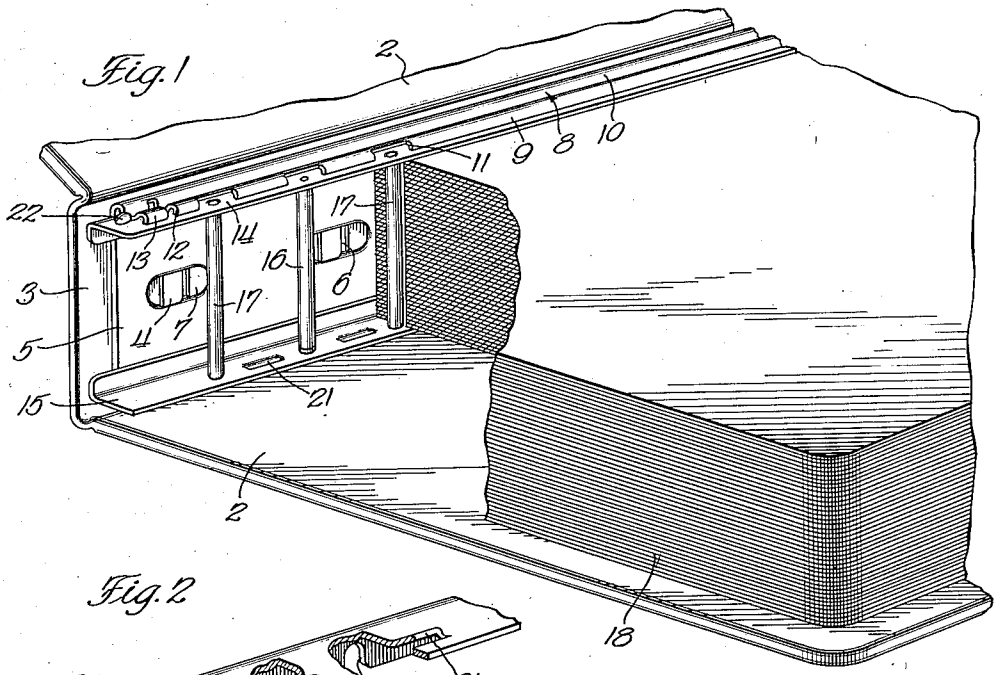


Fig. 2

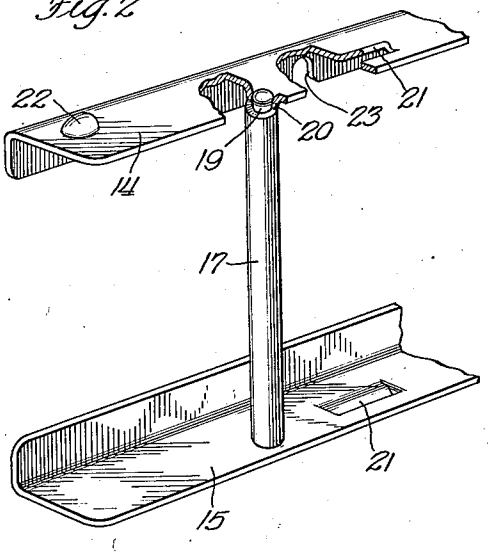


Fig. 4

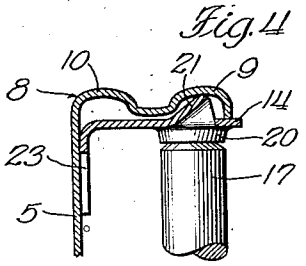


Fig. 5

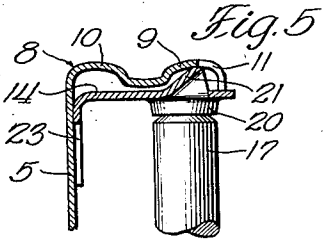
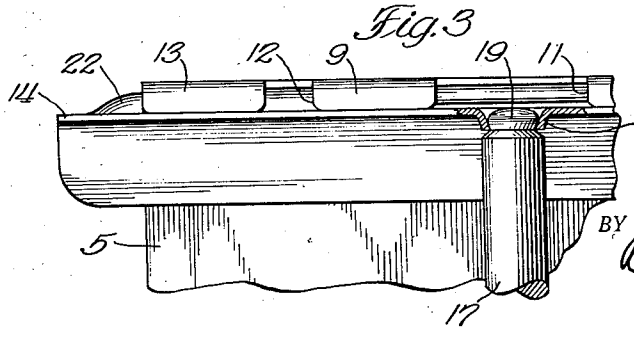


Fig. 3



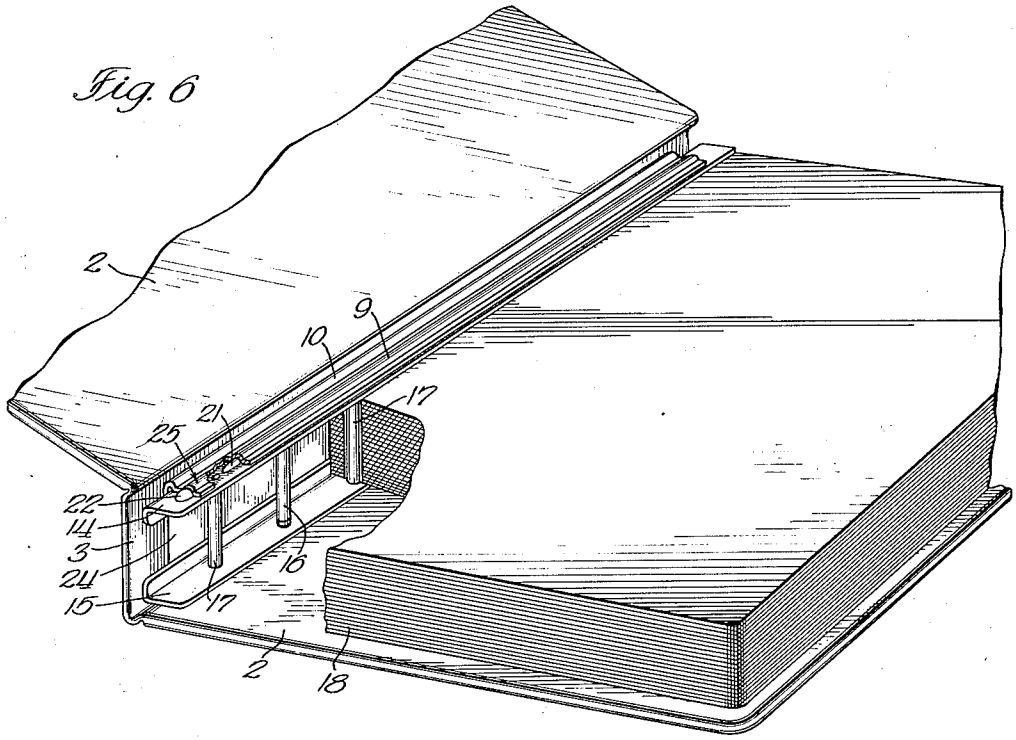
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Fig. 6



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Patented Oct. 13, 1936

2,057,514

UNITED STATES PATENT OFFICE

2,057,514

LOOSE LEAF BINDER

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Application March 15, 1934, Serial No. 715,600

7 Claims. (Cl. 129—1)

This invention relates to a loose leaf binder having a metal channel adapted to securely hold removable sheet retaining means within the binder.

It is an object of this invention to provide a simple and inexpensive loose leaf binder adapted to securely hold a plurality of sheets and having means whereby the sheets can be handled as a unit in removal from or insertion into the binder. It is a further object of this invention to provide means for facilitating the handling of a plurality of sheets as a unit outside the binder in which said sheets are normally carried. Other objects of this invention will become apparent upon reading the following description taken in conjunction with the accompanying drawings, in which

Figure 1 is a fragmentary perspective view of a loose leaf binder embodying the invention;

Figure 2 is a perspective detail of one end of the sheet retaining means of Figure 1;

Figure 3 is a front elevational view of the top portion of the structure illustrated in Figure 1;

Figure 4 is a fragmentary cross section through the channel member and sheet holding means with the sheet holding means in its normal secured position;

Figure 5 is a view similar to Figure 4 showing the sheet holding means in position ready to be removed from the channel; and

Figure 6 is a view similar to Figure 1 illustrating a modification of the channel structure.

In the drawings, the reference numeral 2 indicates a pair of cover members connected to opposite sides of a back member 3 in any suitable manner. The back member is provided with a concealed metal plate (not shown) having a plurality of tongues 4 projecting through the inner surface of the back member. A metal channel member 5 is rigidly secured to the back member 3 by means of the tongues 4 which project through slots 6 in the channel member and are clinched against the channel member. The channel member 5 is provided with depressed portions 7 adjacent the slots 6 to prevent the bent ends of the tongues 4 from projecting above the surface of the channel back.

In each embodiment of the invention, the opposite side walls 8 of the channel member are each provided with a rib 9 which serves as a reinforcing rib and also as a retaining rib to cooperate with projecting portions of the sheet retaining means to securely hold the sheet retaining means in the binder. If desired, a second reinforcing rib 10 may be provided at the base of the side walls of the channel member to increase the rigidity of that member. In the embodiment illustrated in Figure 1, the side walls 8 are provided with a plurality of notches 11 extending to the crest of the rib 9, and a single notch 12 adjacent the end of the side wall extending nearly to the base of the channel member. The end portion 13 of the side wall 8, terminating at the notch 12, is preferably bent at a slight angle to increase the frictional contact between the channel member and the sheet retaining means.

The sheet retaining means illustrated in Figures 1 to 5, inclusive, consists of a pair of duplicate transfer bars 14 and 15. The bar 14 is provided with one sheet retaining post 16 at one end (Figure 1), and two similar posts at the other end (not shown). The bar 15 has two sheet retaining posts 17 disposed on opposite sides of the post 16 shown in Figure 1, and one similar post between the two posts at the other end of the transfer bar. Each sheet retaining post has its base riveted or permanently secured to one bar in any suitable manner.

It will be understood that the number and arrangement of the sheet retaining posts may be varied if desired, but the structure described is preferred because the transfer bars are interchangeable, that is no rights and lefts are required, and the sheets 18 impaled on the sheet retaining posts 16 and 17 may be punched with standard memo book punching. The head of each sheet retaining post is rounded, as indicated at 19, Figures 2 and 3. Each transfer bar is provided with an aperture having a depending flange 20 adapted to snap over each sheet retaining post head 19 to secure the two transfer bars together for handling as a unit outside the channel member 5.

Each transfer bar is provided with a plurality of longitudinally extending projections 21 spaced to be received within the rib 9 when the transfer bars are positioned in the channel member. As shown in Figures 2, 4, and 5, these projections are struck out of the metal of the transfer bars. However, the projections may be formed in any suitable manner. The sharp outer edge shown particularly in Figures 4 and 5 is preferred because it affords a more positive interengagement with the outer edge of the rib 9.

The number of projections 21 corresponds to the number of notches 11, and the spacing and length of the projections are such that the sheet retaining unit may be inserted into the channel member transversely with each of the projections

entering through one of the notches 11. The sheet retaining unit may then be slid longitudinally in the channel a predetermined distance to cause the projections to move from the position indicated in Figure 5 to that indicated in Figure 4 wherein the rib 9 is adapted to prevent any transverse movement of the projections 21.

The bar 14 is provided with another projection 22 adapted to abut against the end 13 to limit the longitudinal sliding movement of the sheet retaining unit in one direction. Since the bar 15 is a duplicate of the bar 14 it will have a projection (not shown) similar to 22 at the opposite end to limit the movement of the sheet retaining unit in the other direction. When the sheet retaining unit is inserted into the channel member, the projection 22 enters the notch 12. The sheet retaining unit is then slid longitudinally in the channel member until the projection 22 abuts the end 13, and the corresponding projection on the bar 15 abuts the end of the other side wall 8 of the channel member. Accordingly, when it is desired to remove the sheet retaining unit from the channel member, the end of one transfer bar adjacent the projection 22, or its duplicate, is bent inwardly a sufficient distance to enable the projection to ride inside the channel member until it reaches the notch 12. The resiliency of the transfer bar will cause the projection to spring into the notch 12 and thereby arrest sliding movement of the sheet retaining unit in proper position so that the sheet retaining unit may be removed transversely. The back wall of the transfer bar is provided with a notch 23 to facilitate the inward bending of the end of the transfer bar necessary to slide the sheet retaining unit into position for removal from the channel member.

The sheet retaining means of Figure 6 is an exact duplicate of that illustrated in Figures 1 to 5, inclusive, and will not be described in detail. The channel member 24 differs from the channel member 5 only in that its side walls 25 are not notched and it is necessary to slide the sheet retaining unit the entire length of the channel member to insert or remove the sheet retaining unit.

Although we have described two preferred embodiments of our invention in considerable detail it will be understood that various changes and modifications may be made in the structures described without departing from the spirit or scope of our invention. Accordingly we do not desire to be restricted to the exact details of construction described, except as limited by the appended claims.

We claim:

1. In a loose leaf binder, a metal channel member, said channel member being provided with a longitudinal groove in each side wall, a pair of bars, a plurality of sheet retaining posts rigidly secured to each of said bars, and integral means projecting from said bars in opposite directions from said posts to engage said grooves to retain said bars in said channel member.

2. In a loose leaf binder, a metal channel member, said channel member being provided with a longitudinal groove in each side wall, a pair of bars slidable in said channel member, a plurality of sheet retaining posts rigidly secured to each of said bars, integral means projecting from said bars into said grooves to retain said bars in said channel member, and means on said bars to prevent accidental longitudinal separation of said bars and channel member.

3. In a loose leaf binder, a metal channel member provided with a longitudinal groove in each side wall, sheet retaining means slidable in said channel member, portions of said sheet retaining means projecting into said grooves, and a projection on said sheet retaining means adapted to engage the end of said channel member to prevent accidental separation of said sheet retaining means and said channel member.

4. In a loose leaf binder, a metal channel member provided with a longitudinal groove in each side wall, and sheet retaining means slidable in said channel member, portions of said sheet retaining means projecting into said grooves, the side walls of said channel member being notched to permit transverse separation of said sheet retaining means and said channel member when the projecting portions of said sheet retaining means are in transverse alignment with said notches.

5. In a loose leaf binder, a metal channel member provided with a longitudinal groove in each side wall, sheet retaining means slidable in said channel member, means to prevent accidental sliding movement of said sheet retaining means, projections on said sheet retaining means engaging said grooves to prevent accidental transverse movement of said sheet retaining means, and notches in said side walls to permit transverse separation of said sheet retaining means and said channel member after said sheet retaining means has been moved a predetermined distance longitudinally of said channel member.

6. In a loose leaf binder, a metal channel member provided with a longitudinal groove in each side wall, sheet retaining means slidable in said channel member, resilient means to prevent accidental sliding movement of said sheet retaining means, and projections on said sheet retaining means engaging said grooves to prevent accidental transverse movement of said sheet retaining means.

7. In a loose leaf binder, a metal channel member, a longitudinal groove in each of the side walls of said channel member, notches in said side walls, sheet retaining means slidable in said channel member, means to prevent accidental sliding movement of said sheet retaining means, projections on said sheet retaining means engaging said grooves to prevent accidental transverse movement of said sheet retaining, means, and stop means to arrest longitudinal movement of sheet retaining means at the point where said projections are in transverse alignment with said notches, said sheet retaining means being removable from said channel member transversely through said notches.

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