Nov. 29, 1949 J. J. BUCKNER 2,489,448

LOOSE-LEAF BINDER

Filed June 21, 1946. 3 Sheets-Sheet 1

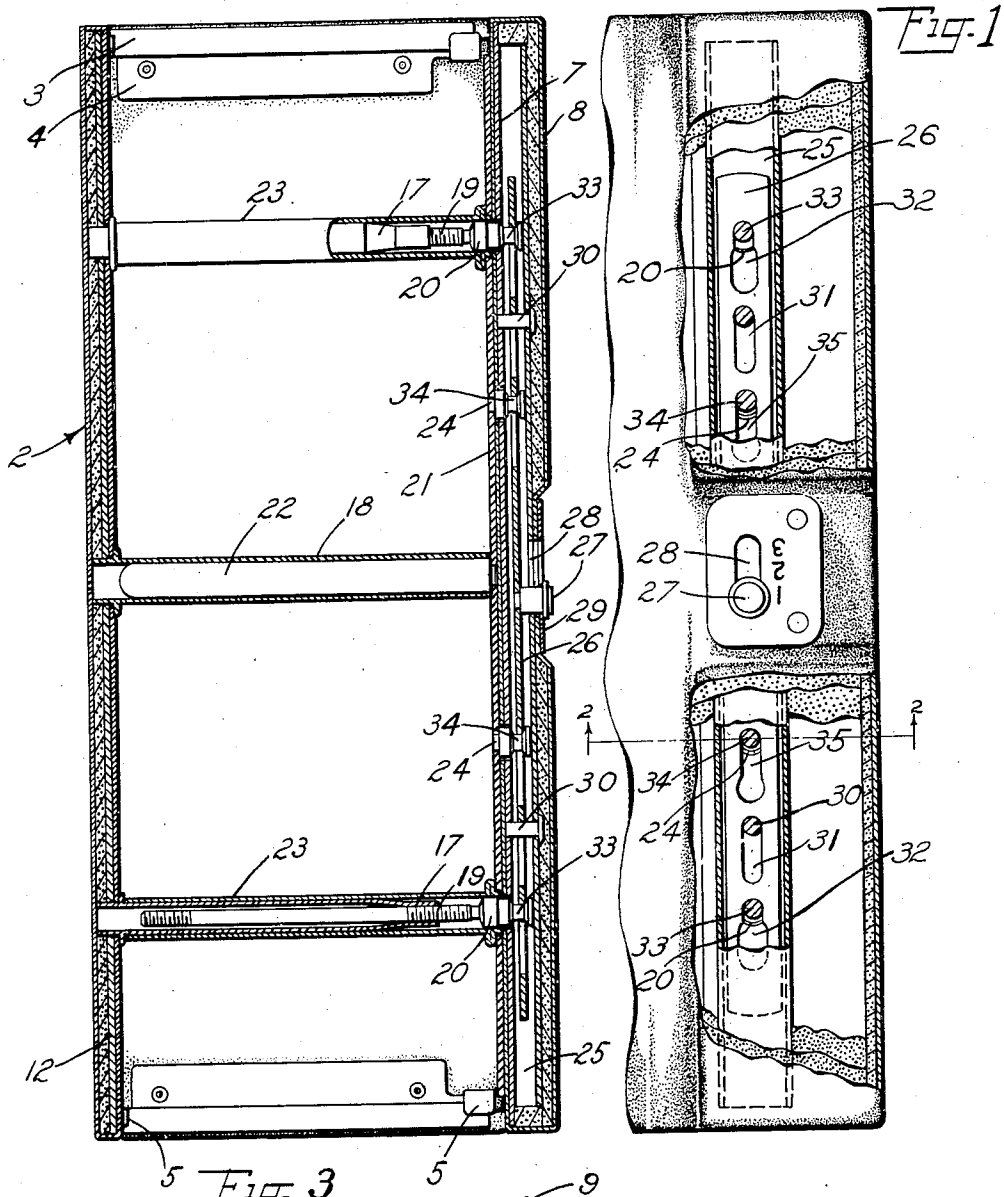


Fig. 1

Fig. 3

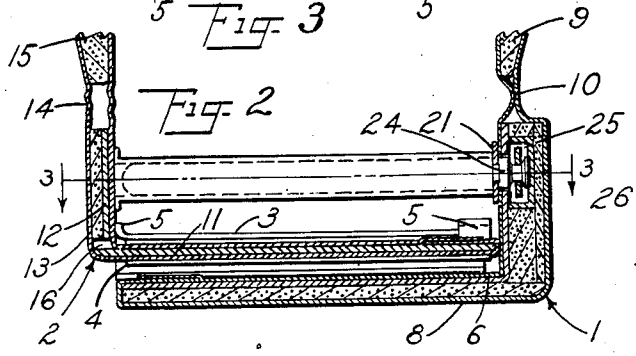


Fig. 2

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LOOSE-LEAF BINDER

Filed June 21, 1946 3 Sheets-Sheet 2

Fig. 5

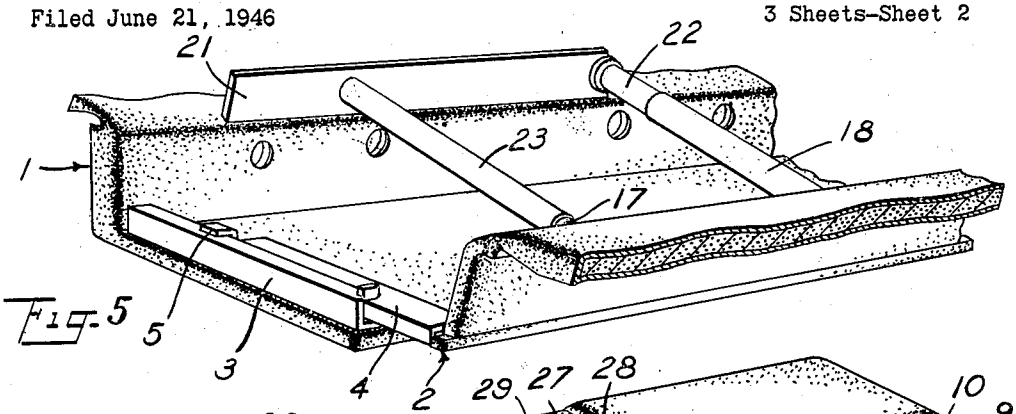
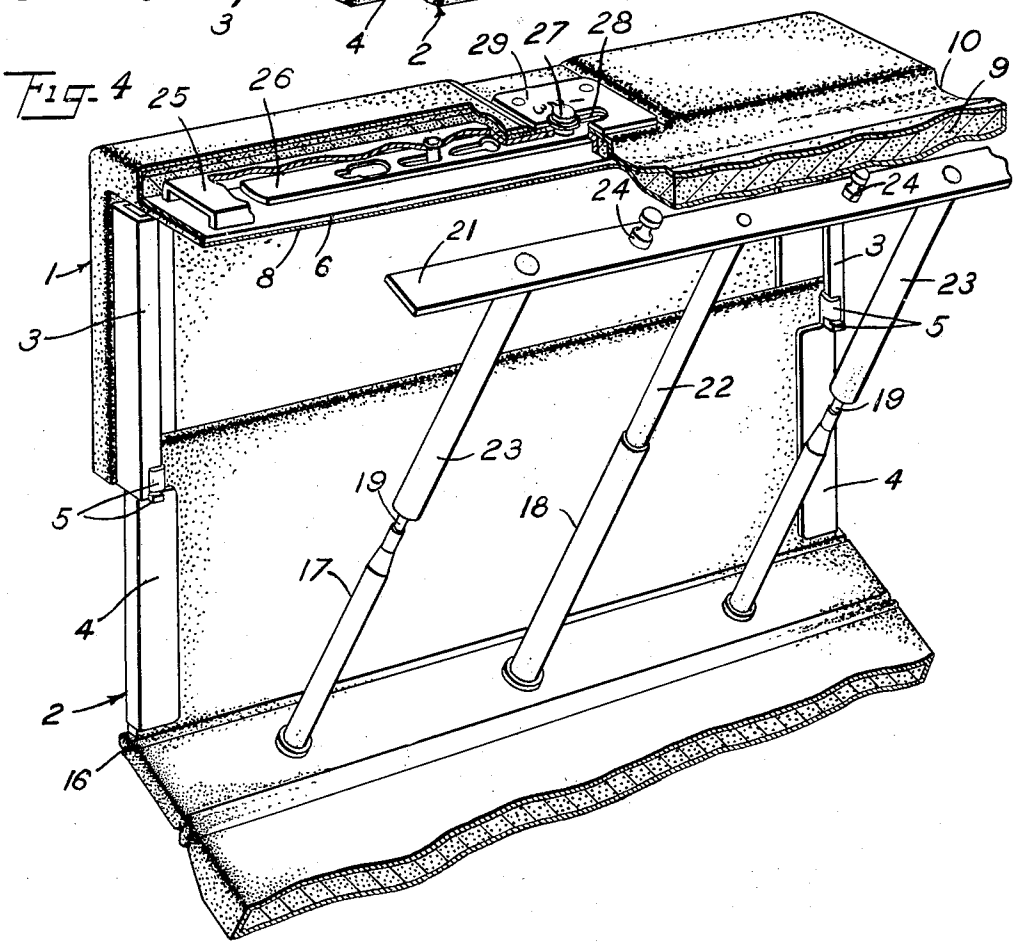


Fig. 4



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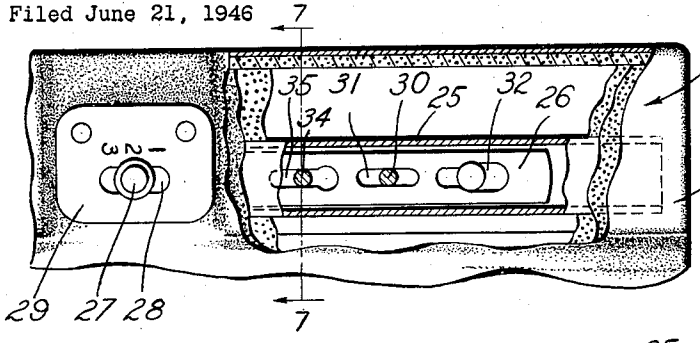


Fig. 6

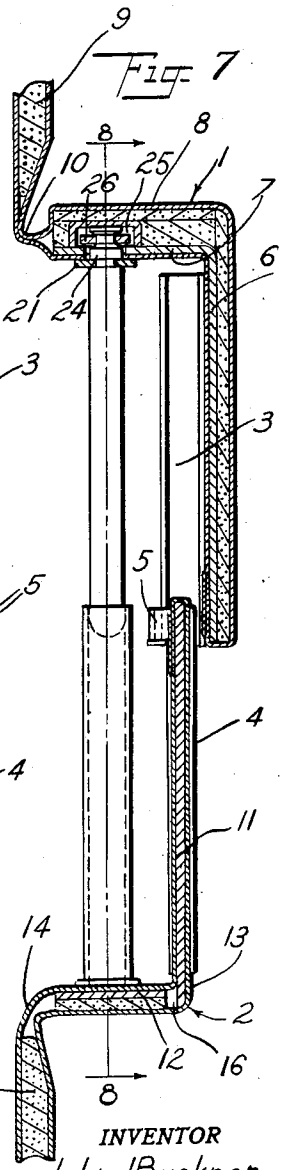


Fig. 7

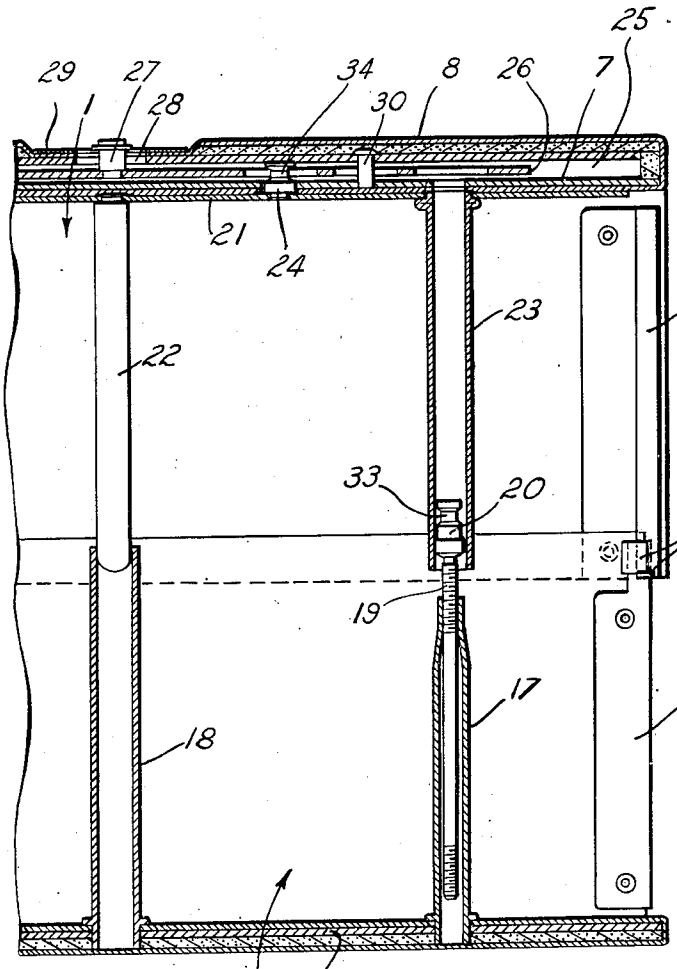


Fig. 8

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2,489,448

LOOSE-LEAF BINDER

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Application June 21, 1946, Serial No. 678,465

3 Claims. (Cl. 129—8)

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The invention relates to loose leaf binders particularly binders of the type having leaf-engaging posts mounted on a binder bar and an associated detachable transfer bar carrying leaf-engaging posts.

The invention provides a binder having a binder bar and back construction adjustable between sheet binding and expanded positions with sheet-engaging posts mounted on one binder bar, a multi-position latch means on the other binder bar and a transfer bar provided with sheet engaging posts, wherein these posts are arranged for cooperation so that the latch in one position secures the binder bars in sheet binding relation by engaging both the binder bar carried posts and the transfer bar, the latch means having a second position disengaged from the binder bar carried posts but engaged with the transfer bar providing for movement of the binder bars from sheet-binding position to the extended position limited by suitable means on the expandable back members so the sheets may be opened to lie substantially flat, and a third position in which the latch means releases both the sheet-engaging posts on the binder bar and the transfer bar so that the transfer bar may be used independently in manipulating the sheets to transfer, remove and insert sheets on the binder bar carried sheet-engaging posts in a convenient manner.

The invention provides a loose leaf binder having sheet-engaging posts arranged to normally bind the sheets in the binder with means for controlling the operation of the binder to lock the sheets in compressed relation in one position of said means, provide for relative movement of the binder members and sheet-binding posts between sheet-binding position and an expanded position when the binder is open, so that the sheets are loosely bound and arranged for opening movement into a position where they will lie flat for reference, and a third position wherein the transfer bar may be disengaged from the binder to provide for the removal of sheets from posts, as well as their transfer from one position to another and to allow for the insertion of new sheets.

The invention provides a three position latch on one binder bar of a loose leaf binder arranged for movement of the binder bars between sheet

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binding and expanded position in which the latch cooperates to secure a transfer bar having sheet-engaging posts thereon, when the sheet-engaging posts on the other binder bar are engaged by said latch, in one position to retain the binder in sheet-binding relation. The latch has a second position wherein the sheet-engaging posts carried by the other binder bar are released to provide for movement of the binder bars to the expanded position while the transfer bar is retained in latched position with the sheet-engaging posts thereon overlapping the sheet-engaging posts on the binder bar to hold the sheets in loosely bound relation in the extended position to lie substantially flat. A third position of the latch releases both the transfer bar and the binder bar carried posts to provide for the insertion, removal and transfer of sheets.

In the drawings:

Fig. 1 is a fragmentary plan view of the back portion of a binder incorporating the invention, having portions broken away and shown in section to illustrate details of construction of the latch.

Fig. 2 is a cross-section taken on line 2—2 of Fig. 1.

Fig. 3 is a cross-section taken on line 3—3 of Fig. 2.

Fig. 4 shows the back portion of the binder in expanded position in perspective, with portions broken away and shown in section to illustrate details of construction and with the transfer bar shown in detached, partially removed position.

Fig. 5 shows a fragmentary portion of one end of a binder in perspective with the back portions in partially expanded position and the transfer bar in released position, elevated so that it may be detached from the binder in sheet transferring operation.

Fig. 6 is a fragmentary view of one end of the back portion of a binder similar to that shown in Fig. 1 with portions broken away and shown in cross-section to illustrate a different position of the latch from that shown in Fig. 1.

Fig. 7 is a cross-section taken on line 7—7 of Fig. 6 with the back members shown in expanded position.

Fig. 8 is a cross-section taken on line 8—8 of Fig. 7, the latch being in the position of Fig. 6.

A pair of back members 1 and 2 are mounted for sliding movement relative to each other between sheet binding and extended positions, as illustrated in Figs. 3 and 8 respectively. Outer back member 1 is provided with a pair of guide channels 3 arranged one at each end of the back member to slidably receive guide rails 4 on the ends of inner back member 2. Guide channels 3 and rails 4 are provided with interengaging stop members 5 for normally retaining the back members against complete detachment at an outer limit of sliding movement defining the extended position of the back members. Outer back member 1 is formed of an angular metal back plate 6 having a flange 7 forming a binder bar. Suitable cover material 8 is applied over the inner and outer faces of back member 6, with the use of filler as desired, and is also extended to provide the covering for cover member 9. Covering material 8 is arranged on back member 1 and cover 9 so that it will provide a hinge portion between cover 9 and the back member, as indicated at 10.

Back member 2 has a metal back plate 11 and a separate binder bar 12 united by covering material 13 to form an angle back member, the covering material forming a hinge 14 between binder bar 12 and cover 15 over which it extends, as shown for example, in Figs. 2 and 7. With this construction, binder bar 12 is hingeable at 16 relative to the remaining portion of the back member formed by the covered back plate 11 to facilitate the operation of the sheet-engaging posts in a manner that will be hereinafter described.

Inner back member 2 has two sets of sheet-engaging posts 17 and 18 respectively, secured at one end to binder bar 12, and each having the opposite end extending inwardly toward the other back member in spaced parallel relation. In the drawings, two posts 17 are illustrated as arranged near opposite ends of binder bar 12 and one post 18 is illustrated in the central portion of binder bar 12. It is to be understood that additional posts may be added to each set and arranged in spaced parallel relation for engaging in perforations in the binding edges of a plurality of loose leaf sheets, in a manner well-known in the art. Posts 17 are of tubular construction and are internally threaded to threadedly receive extensible post sections 19, having a latch engaging member 20 on the free end of each extensible post section. Sheet-engaging post 18 is of tubular form, as clearly illustrated in Figs. 3 and 8.

A transfer bar 21 is provided with a central post 22 for slidable engagement in tubular post 18 and tubular posts 23 positioned thereon to receive posts 17 in slidable relation therein. Extensible post sections 19 are arranged to slide in posts 23 so that latch-engaging member 20 on each section will extend through apertures in the transfer bar for engagement by the latch mechanism to be described. Transfer bar 21 has a pair of latch-engaging members 24 mounted thereon in positions intermediate posts 22 and 23 and extending outwardly for engagement with the latch mechanism.

The latch mechanism is mounted on outer back member 1 and has a channel member 25 secured to the outer face of flange or binder bar 7 for cooperation therewith to provide a latch housing for slidably receiving latch bar 26. At the central portion, latch bar 26 is provided with an operating button 27 extending through a slot 28 in channel member 25, covering material 8 and

position indicating plate 29 on the outside of the binder where it is accessible for manual operation to slide the latch bar back and forth into three different positions. The three positions are indicated on position indicating plate 29, by numerals "1," "2" and "3," as shown for example in Figs. 1 and 6 where button 27 is shown in two different positions. Rivets 30, see Figs. 3 and 8 secure channel member 25 and binder bar 7 together in assembled relation and in addition, extend through slots 31 in latch bar 26 for guiding and limiting the sliding movement of the latch bar relative to the binder bar.

The end portions of latch bar 26 in alignment with posts 17 and 23 are formed with keyhole slots 32 having the portion of smallest width at the left-hand end, as illustrated in Fig. 6 in a position corresponding to the first position or locked position of latch bar 26 and button 27 opposite the numeral "1" on position indicating plate 29. The remainder of keyhole slot 32 is of greater width than the dimension of the head portions on latch-engaging members 20, so that for the other two positions of latch bar 26, it will not be operative to have locking engagement with latch-engaging members 20. Therefore, whenever the binder back members are moved into a sheet compressing or binding position, latch-engaging members 20 will extend through keyhole slots 32 and post sections 19 are properly adjusted so that latch member 26 may be moved to the right, as shown in Figs. 6 and 8 to have the narrow portion of slot 32 receive the reduced portions 33 of latch-engaging members 20 for effectively latching the binder bars together through the medium of posts 17 and extensible post sections 19. In this position, the binder bars are held rigidly connected together against slidable movement of the back members relative to each other. When the parts are in this position, latch-engaging members 24 on transfer bars 21 will have the reduced portions 34 thereof extending through apertures in binder bars 7 and into keyhole slots 35 in latch bar 26 for engagement in the narrow portion of slots 35 in the manner shown in Fig. 1. It will be noted that the narrow portion of slots 35 extends through both the first and second positions for latch bar 26 with the enlarged end arranged in the third position only.

The above described construction of the latch mechanism therefore provides for the locking of the transfer bar and the binder bar carried posts on binder bar 12 to binder bar 7 when latch bar 26 is in the position indicated by the numeral "1" in Fig. 1. Fig. 1 shows latch member 26 and button 27 in the position described. The sheets engaged on the posts carried by the transfer bar and binder bar 12 are thus held in compact or compressed bound relation with the binder bars retained against relative movement to each other.

By moving button 27 manually to a central position in slot 28 opposite the numeral "2" on position indicating plate 29, as shown in Fig. 6, latch bar 26 will be moved into a position so that latch-engaging members 20 carried by post sections 17 may be disengaged from binder bar 7 and latch member 26 through the enlarged portions of slots 32. However, this position of latch bar 26 still retains latch-engaging members 24 in locked engagement with binder bar 7 so that transfer bar 21 may not be detached from binder back member 1. Under these circumstances, back members 1 and 2 may be slidably moved apart from the sheet binding position above described to the limit of movement provided for by guide

channels 3 and rails 4 until stop members 5 are engaged as shown in Figs. 4, 7 and 8. This retains the leaves carried by the several posts 17 and 18 in loosely bound relation against detachment from the binder and provides for the separation of sheets, so that when the binder is opened and laid upon a flat horizontal surface, the sheets in the loosely bound relation will lie substantially flat to provide for easy access to information adjacent the bound edges.

Should it be desired to remove, insert or transfer sheets bound by the posts in the binder, then button 27 is manually operated into the position indicated by the numeral "3" on position-indicating plate 29. This will move the larger end of keyhole slots 32 and 35 into position to release latch-engaging members 20 and 24. As a result, transfer bar 21 may be disengaged from back member 1 and moved away from the back member into positions, as indicated in Figs. 4 and 5, in which the posts on the transfer bar and also the posts on binder bar 12 will be moved into an inclined position with respect to the back member and binder bar 12 will be moved upon its hinge connection 16 relative to back plate 11.

The transfer bar may then be disengaged from the telescoping arrangement of posts 22 and 23 with posts 17 and 18 so that all, or any desired sheet or sheets, may be removed from engagement with the posts on the transfer bar and the posts 17 and 18. In addition, selective sheets may be removed from the binder by the manipulation of the sheets on the posts carried by binder bar 12 and the transfer bar. When the desired shifting, transfer, removal and insertion of sheets has been completed, the transfer bar then has its posts slidably engaged with posts 17 and 18 in the manner illustrated in the drawings, when it may be moved into position relative to binding member 1 to engage latch-engaging members 24 in slots 35 for attachment to binder bar 7 through the operation of latch bar 26 to lock the transfer bar to the binder bar.

The invention, therefore, provides a binder having a post 17 arranged to provide for extension to receive and bind a sheet body of variable size in which the binder bars may be rigidly connected together by posts 17 and extensions 19 thereof, to hold sheets in sheet-binding position. Then, through the release of one binder bar from posts 17, the back members may be moved into an expanded position through cooperation of the guide members so the binder may be laid upon a flat surface with the covers in open position. Then the sheets may be moved apart in loosely bound relation and opened into position to lie substantially flat and provide for convenient reference to all of the sheets in the binder.

The transfer bar provides for the convenient shifting and transfer of sheets in this binder construction when released from one binder bar, while at the same time, cooperating with the sheet-engaging posts on another of the binder bars to facilitate the support of the sheets in loosely bound relation. This cooperation between the transfer bar, the sheet-engaging posts, the latch means and the binder members, greatly facilitates the binding and reference to the sheets carried by the binder, as well as the convenient manipulation thereof to insert, remove and transfer the sheets.

The invention claimed is:

1. The combination in a loose leaf binder of a pair of binder bars, a transfer bar, a slidable multi-position latch means on one binder bar, at least two sets of leaf-engaging posts on the other binder bar, one set of said leaf-engaging posts having latch-engaging portions carried by sections of said posts adjustable to vary the effective post length, said transfer bar having latch-engaging portions and leaf-engaging posts thereon cooperating with the other set of leaf-engaging posts on said other binder bar for cooperation in binding sheets with, but independently of, said one set of leaf-engaging posts, and means carrying said binder bars adjustable between fixed limits, said multi-position latch means being provided with a plurality of elements constructed and arranged to selectively engage said latch-engaging parts on one said set of leaf-engaging posts and said transfer bar in a plurality of cooperative adjusted positions whereby said latch means engages said latch-engaging parts on both said transfer bar and one set of posts in one position to lock said binder bars and sheet-engaging posts in stationary sheet-binding position, said latch means releasing said one set of posts and engaging said latch portions on said transfer bar in another position for movement of said binder bars between limits controlled by said binder bar carrying means with sheets held in loosely bound relation when said binder bars are moved apart, and said latch means having another position wherein both said one set of posts and said transfer bar are disengaged from said binder bar carrying said latch means for releasing said sheets for transfer and removal from said binder.

2. The combination in a loose binder of a pair of binder bars, binder back means carrying said binder bars and adjustable between sheet binding and extended positions, one of said binder bars carrying two sets of sheet-engaging posts, one set of said posts having latch-engaging parts thereon, a transfer bar adapted for engagement with the other binder bar and having sheet-engaging posts thereon for cooperation with the other set of posts on said binder bar for binding sheets thereon in all positions of adjustment of said binder bars with said binder back means, latch-engaging parts on said transfer bar, and latch means on said other binder bar formed of a plurality of sets of parts, one set of said parts selectively engaging the latch-engaging parts on said one set of posts and said transfer bar in one position to lock sheets in said sheet-binding position between said binder bars, another set of said parts engaging only said latch-engaging parts on said transfer bar in a second position to retain sheets in loosely bound relation with said binder bars in said extended position, and another set of said parts having releasing engagement with both latch-engaging parts in a third position to provide for detachment of said transfer bar for sheet transfer and removal operations.

3. The combination in a loose leaf binder of a pair of binder bars, binder back means carrying said binder bars for adjustment between sheet binding and extended positions, one of said binder bars having sheet-engaging posts thereon provided with latch-engaging parts, a transfer bar associated with the other binder bar having sheet-engaging posts thereon cooperating with said sheet-engaging posts on said binder bars for binding sheets between said binder bars, latch-engaging parts on said transfer bar, and latch means on said other binder bar said latch means having a plurality of parts adapted to selectively engage said latch-engaging parts on

said sheet-engaging posts and said transfer bar in a plurality of adjusted positions, including a first position to lock said bars in said sheet-binding position, in a second position to engage only said latch-engaging parts on said transfer bar to retain sheets in loosely bound relation with said binder bars movable to said extended position, and in a third position to release both latch-engaging parts to detach said transfer bar and sheet-engaging posts from said other binder bar so that sheets may be removed, inserted and transferred.

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