June 2, 1959 S. SEGAL 2,888,934

LOOSE LEAF BINDER

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Fig. 1

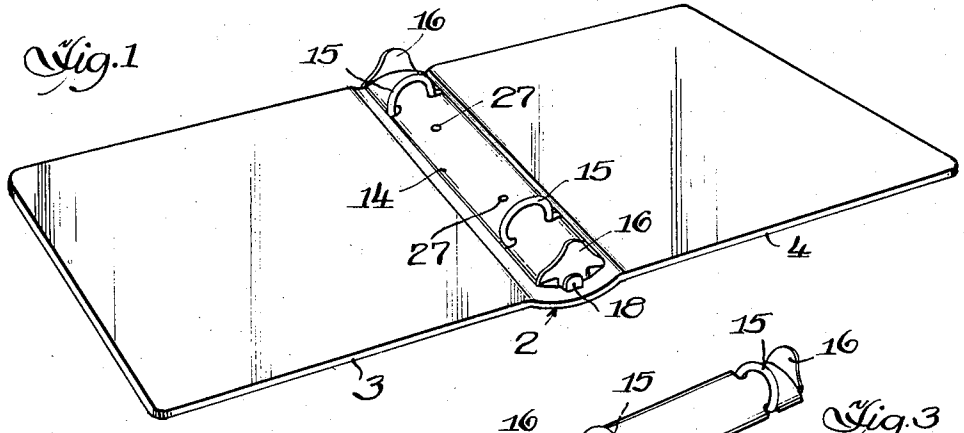


Fig. 3

Fig. 2

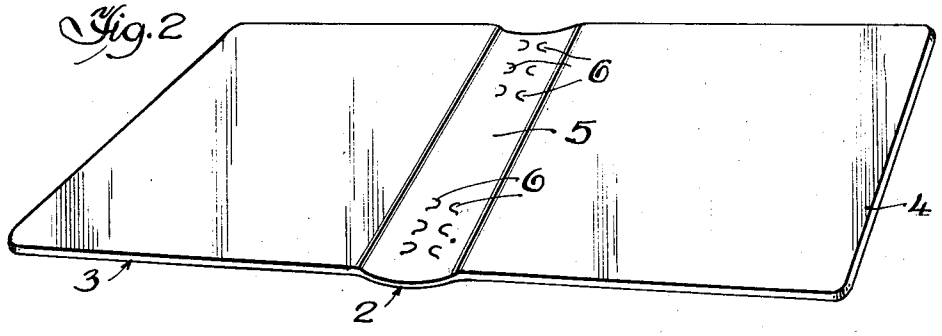


Fig. 4

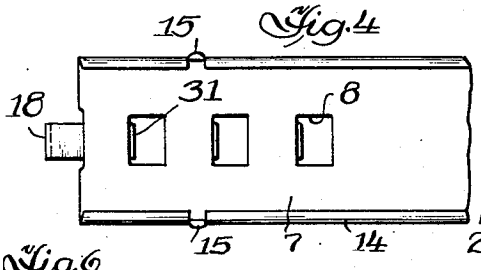


Fig. 5

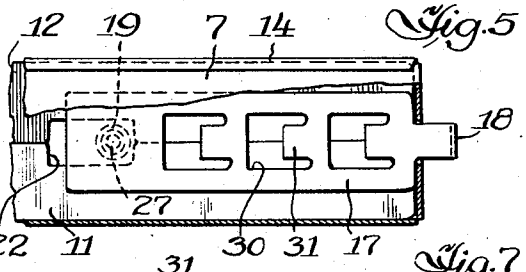


Fig. 6

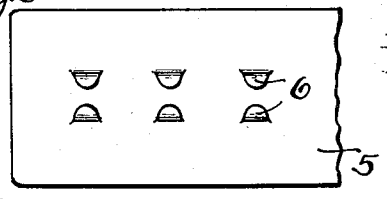


Fig. 7

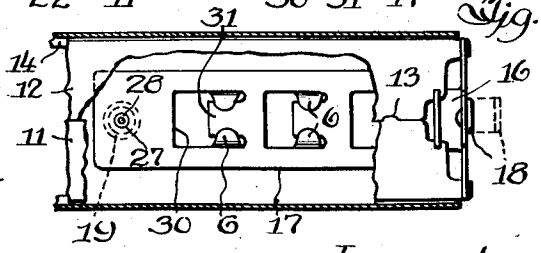
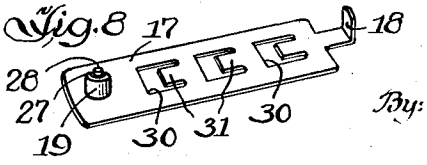


Fig. 8



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Fig. 9

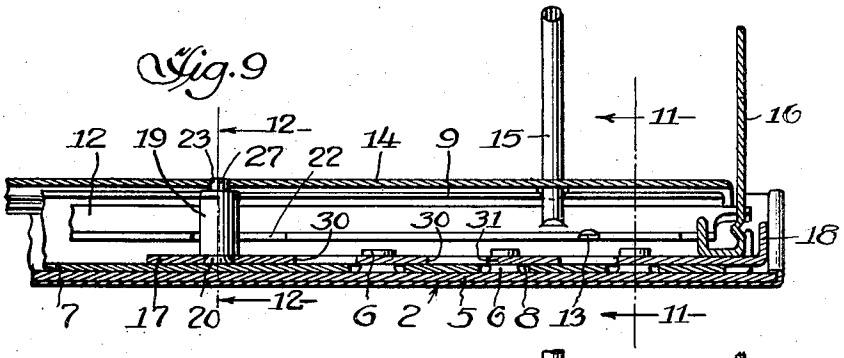


Fig. 10

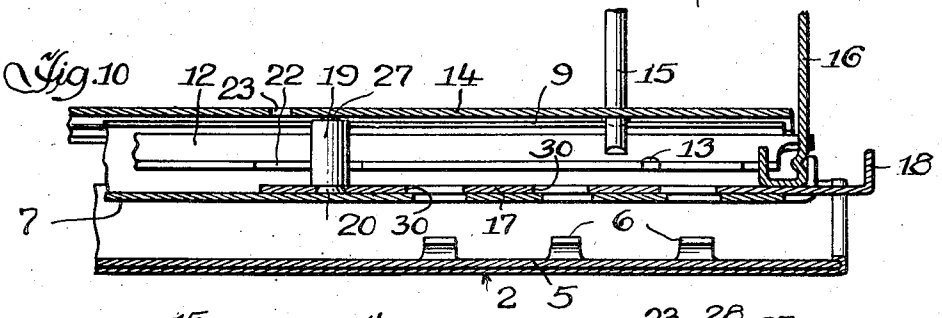


Fig. 11

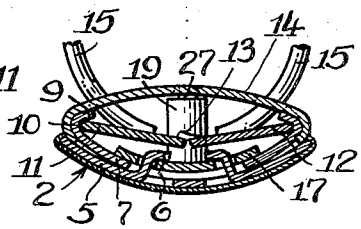
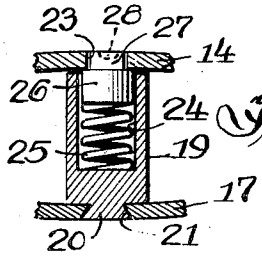


Fig. 12



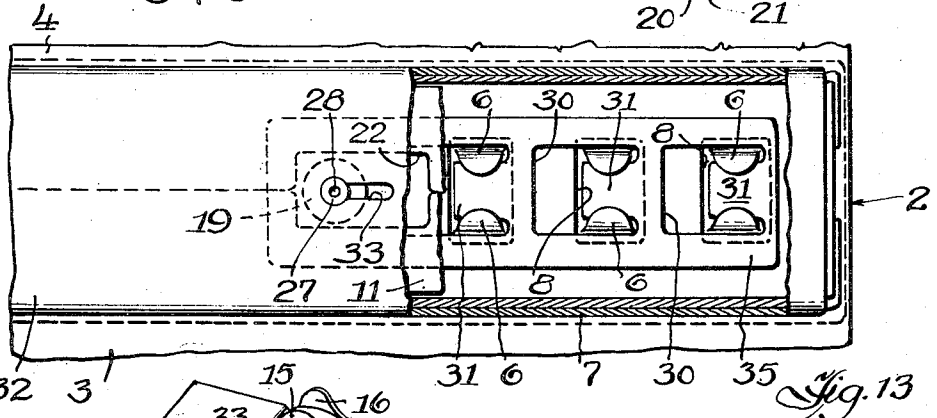
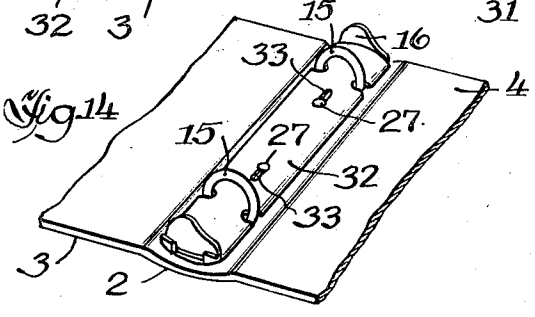


Fig. 13

Fig. 14



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Fig. 15

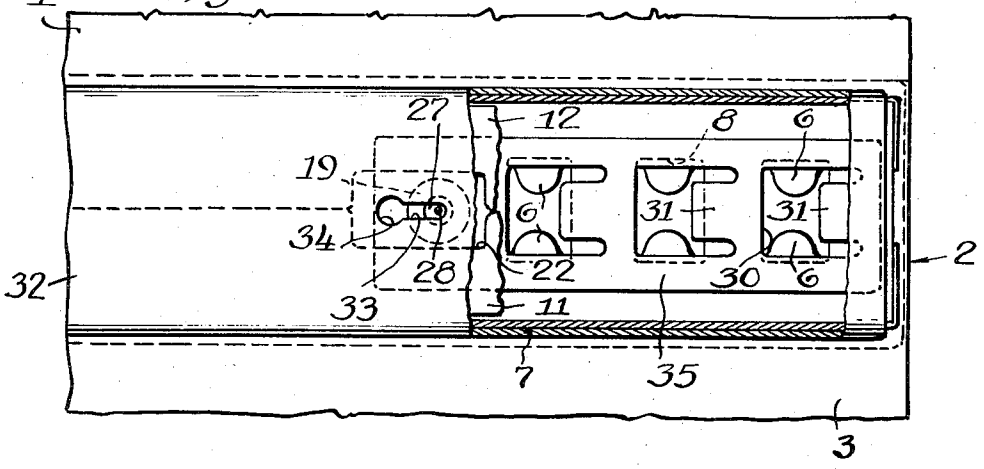


Fig. 16

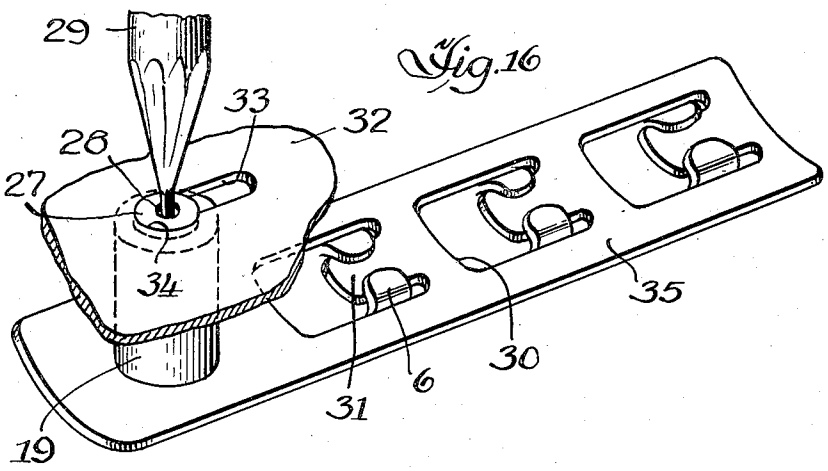
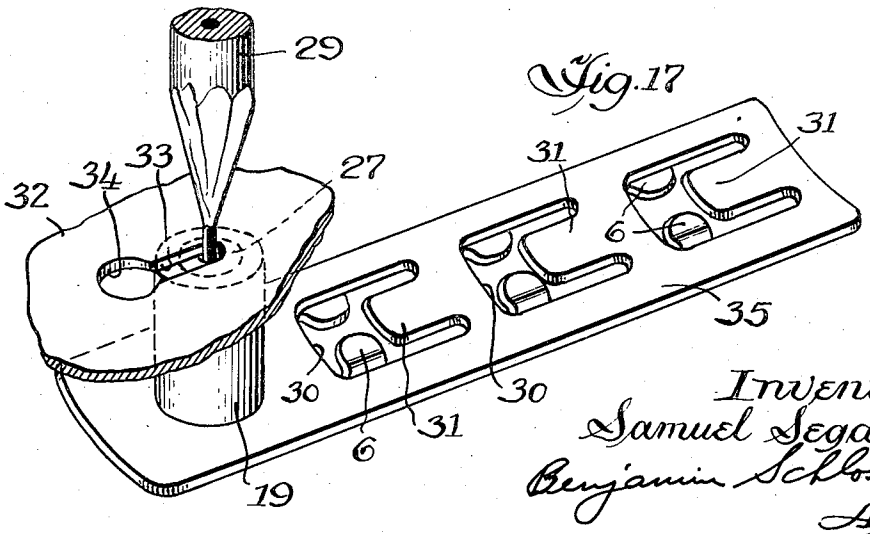


Fig. 17



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United States Patent Office

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LOOSE LEAF BINDER

Samuel Segal, New York, N.Y., assignor to Wilson-Jones Company, Chicago, Ill., a corporation of Massachusetts

Application May 29, 1957, Serial No. 662,528

8 Claims. (Cl. 129—24)

This invention relates to a loose leaf binder, and is particularly concerned with means for detachably securing a ring metal to a binder case.

The advantages of a detachable ring metal are obvious. The ring metal may be removed from the binder case and filed with the contents intact. Storage space is conserved, and the binder case may be re-used with another ring metal. If a binder case becomes worn too badly it may be replaced without the expense of a new metal. The binder case may be sent out for repair or rebinding and the contents of the binder kept available to the user without the necessity of providing special temporary binding means. Small shops which customarily make their own binder cases may assemble the ring metals with the cases much easier and cheaper because no skilled labor is required for the assembly operation. Additionally, in the event of damage, either in manufacturing or shipping, the salvage operation is much easier.

It is an object of this invention to provide a ring metal that may be easily assembled with a binder case without tools or skilled labor. It is a further object to provide readily releasable means for firmly holding a ring metal assembled with a binder case against accidental separation. A further object of the invention is to provide a ring metal with a permanently secured slidable latch bar for detachably holding the ring metal assembled with the binder case.

The structure by means of which the above mentioned and other advantages of the invention are attained will be described in the following specification, taken in conjunction with the accompanying drawings, showing two preferred illustrative embodiments of the invention, in which:

Fig. 1 is a perspective view of a loose leaf binder embodying the invention;

Fig. 2 is a perspective view of the binder case member showing strap members projecting upwardly from the back plate;

Fig. 3 is a perspective view of the ring metal adapted to be removably secured in the case member;

Fig. 4 is a fragmentary bottom plan view of the ring metal;

Fig. 5 is a fragmentary bottom plan view of the ring metal with parts broken away to illustrate the interior structure;

Fig. 6 is a fragmentary top plan view of the back plate;

Fig. 7 is a fragmentary top plan view of the loose leaf binder with the ring metal secured in place, parts being broken away to illustrate the interior structure;

Fig. 8 is a detail perspective view of the latch bar;

Fig. 9 is a fragmentary longitudinal sectional view of the loose leaf binder with the ring metal secured in place;

Fig. 10 is a fragmentary longitudinal sectional view, similar to Fig. 9, showing the ring metal separated from the back plate;

Fig. 11 is a cross sectional view, taken along the line 11—11 of Fig. 9;

Fig. 12 is a cross sectional view through the ring metal, showing the means for holding the latch bar in latching position;

Fig. 13 is a fragmentary top plan view of a modified embodiment of the invention, with the latch bar in latching position, and with parts broken away to illustrate the interior structure;

Fig. 14 is a fragmentary perspective view of a loose leaf binder with the ring metal secured in the case member by the modified embodiment of the invention;

Fig. 15 is a fragmentary perspective view, similar to Fig. 13, with the latch bar in unlatched position;

Fig. 16 is a detail perspective view showing the latch bar in latching position; and

Fig. 17 is a detail perspective view showing the latch bar in unlatched position.

Referring to the drawings, the reference numeral 2 indicates the back of a loose leaf binder having a pair of covers 3 and 4 hinged to opposite longitudinal edges. The back includes a back plate 5 bound in any suitable manner and having a plurality of transversely extending strap members 6 spaced longitudinally along the center of the back plate. The strap members may be in the form of closed loops, but preferably comprise a plurality of pairs of spaced lugs with the free end of each lug extending towards the free end of the opposite lug. The strap members project upwardly from the upper surface of the back plate to provide clearance for the tongues of a pair of latch bars hereinafter described. The strap members are preferably arranged in groups of three adjacent the opposite ends of the back plate, with the strap members of each group uniformly spaced, but they may be spaced in any desirable manner and positioned anywhere along the length of the back plate.

The ring metal includes a spring back 7 having a plurality of openings 8 of suitable size and arranged to fit over the strap members 6. The longitudinal edges of the spring back are bent inwardly, as indicated at 9, to provide fulcrums 10 for the outer longitudinal edges of a pair of prong plates 11 and 12. The prong plates are mounted in edge to edge relationship in the spring back with their outer longitudinal edges confined against the fulcrums 10 and their inner longitudinal edges provided with lugs 13 providing a toggle joint between the inner longitudinal edges of the prong plates.

A cover plate 14 embraces the outer edges of the spring back 7 to prevent excessive movement of the prong plates and provide a neat, attractive appearance for the top of the ring metal. Sheet retaining ring sections 15 are rigidly secured to each of the prong plates, as shown in Fig. 11, and project upwardly through apertures (not shown) in the cover plate 14. The free ends of the ring sections meet above the cover plate to form closed rings, as shown in Fig. 1. A lever or trigger 16 is operatively connected to the prong plates adjacent each end thereof, and is operable to open or close the ring sections.

A latch bar 17 is slidably mounted in the ring metal between the spring back 7 and the prong plates. The latch bar has a finger piece 18 extending beyond the end of the loose leaf binder to facilitate sliding the latch bar longitudinally of the ring metal. The latch bar is held against the upper surface of the spring back 7 by the bottom of the trigger 16 and by a holding member 19 secured to the latch har and extending upwardly therefrom. The holding member 19 may be secured to the latch slide in any suitable manner. In Fig. 12 it is shown as having a projection 20 swaged into a tapered opening 21 provided therefor in the latch bar.

The holding member 19 is cup shaped and its upper edge abuts the underside of the cover plate 14. The prong plates 11 and 12 are recessed at their inner edges to form an opening 22 through which the holding member 19

extends. The cover plate **14** is provided with an aperture **23** concentrically aligned with the holding member. A vertical recess **24** extending downwardly from the top of the holding member **19** forms a housing for a compression spring **25** seated on the bottom of the recess. A button **26** of larger diameter than the aperture **23** is seated in the recess **24** on top of the spring **25**. The button has a tit **27** of reduced diameter adapted to fit within the aperture **23**. The resilience of the spring **25** urges the button **26** upwardly against the underside of the cover plate **14** to cause the tit **27** to snap into the aperture **23** whenever it is aligned therewith.

The holding member **19** is so located on the latch bar **17** that when the tit **27** is aligned with the aperture **23** the latch bar is in its latching position, and is resiliently held in the latching position by the spring **25**. The top of the tit **27** is provided with a recess **28** adapted to receive a pencil **29** or similar pointed implement by means of which it may be pushed downwardly to displace the tit **27** below the plane of the cover plate so that the latch bar may be slid out of latching position.

The latch bar is provided with cut-outs **30** spaced to conform to the spacing of the strap members **6** and each large enough to fit over one strap member. The cut-outs **30** are shaped to provide a tongue **31** projecting longitudinally from one end of each cut-out toward the opposite end thereof. The distance between the opposite end of each cut-out **30** and the outer end of each tongue **31** is at least as great as the dimension of the strap member taken longitudinally of the back plate, so that the strap members fit into the cut-outs when the latch bar is in unlatched position. In other words, when the ring metal is first positioned on the back plate the strap members **6** will project into the cut-outs **30** without interference from the tongues **31**.

As the latch bar **17** is slid into latching position, each tongue **31** moves under one of the strap members, and the resilient holding member moves the tit **27** into the aperture **23** to hold the latch bar in said latching position. In this position the ring metal is securely held in the case member. The ring metal may be readily removed from the case member by merely pulling both latch bars **17** longitudinally outwardly of the back plate and then lifting it from the strap members.

In the modified embodiment of the invention shown in Figs. 13 to 17 of the drawings, most of the structure is a duplicate of the structure previously described, and the description will not be repeated. The same reference numerals are used to indicate duplicate parts.

The cover plate **32** is provided with an elongated slot **33** having an enlargement **34** at one end equal to the aperture **23** in the first embodiment. The slots **33** preferably extend in opposite directions from the enlargements **34**, as shown in Fig. 14, but they may both extend in the same direction. The spring pressed tit **27** fits in the enlargement **34** to hold the latch bar **35** in latching position. The finger piece **18**, used in the first embodiment to slide the latch bar **17** longitudinally of the back plate, is omitted, and a pencil **29** or similar implement fitting into the recess **28** is pressed downwardly to depress the tit **27** below the plane of the cover plate **32**, and the pencil is then slid longitudinally through the slot **33** to move the latch bar from latching to unlatched position. The spring pressure holds the tit **27** against accidental displacement when it is removed from the enlargement **34** and the pencil **29** is removed.

While I have described two preferred embodiments of my invention in considerable detail, it will be understood that the description is intended to be illustrative, rather than restrictive, as many details may be modified or changed without departing from the spirit or scope of my invention. Accordingly, I do not desire to be restricted to the exact details of construction described, except as limited by the appended claims.

I claim:

1. A loose leaf binder comprising a back plate having upwardly projecting strap members and a ring metal having openings to receive said strap members, said ring metal having a cover plate provided with an aperture, a slide in said ring metal having tongues engageable with said strap members to hold said ring metal and back plate against separation, said slide having resilient means engaging said aperture to prevent accidental displacement of said slide.

2. A loose leaf binder comprising a back plate having upwardly projecting strap members and a ring metal having openings to receive said strap members, said ring metal having a cover plate provided with an aperture, a slide in said ring metal having tongues engageable with said strap members to hold said ring metal and back plate against separation, said slide having a spring pressed member engaging said aperture to prevent accidental displacement of said slide, the top of said spring pressed member being recessed to receive one end of an implement by means of which it may be moved downwardly to release said slide for longitudinal movement and thereby permit separation of said ring metal from said back plate.

3. A loose leaf binder comprising a back plate having upwardly projecting strap members and a ring metal having openings to receive said strap members, said ring metal having a cover plate provided with an aperture, a slide in said ring metal having tongues engageable with said strap members to hold said ring metal and back plate against separation, said slide having resilient means engaging said aperture to prevent accidental displacement of said slide, said resilient means being movable downwardly to release said slide for longitudinal movement and thereby permit separation of said ring metal from said back plate, and means on said slide to prevent separation of said slide from said ring metal.

4. A loose leaf binder comprising a back plate having upwardly projecting strap members and a ring metal having openings to receive said strap members, said ring metal having a cover plate provided with an aperture, a slide in said ring metal having tongues engageable with said strap members to hold said ring metal and back plate against separation, an upstanding cup rigidly secured to said slide, and a spring pressed tit in said cup, said tit engaging said aperture to prevent accidental displacement of said slide when said tongues and straps are interengaged.

5. A loose leaf binder comprising a back plate having upwardly projecting strap members integral with said back plate and a ring metal, said ring metal including a spring back having openings to receive said strap members, a latch bar permanently secured in sliding engagement with said spring back, said latch bar having integral tongues projecting therefrom, said tongues being engageable with said strap members to hold said ring metal against separation from said back plate.

6. A loose leaf binder comprising a back plate having upwardly projecting strap members and a ring metal having openings to receive said strap members, said ring metal having a cover plate provided with an aperture, a latch bar permanently secured in sliding engagement with said ring metal, said latch bar being engageable with said strap members to hold said ring metal against separation from said back plate, said latch bar having releasable means engaging said aperture to prevent accidental longitudinal displacement of said latch bar relative to said strap members.

7. A loose leaf binder comprising a ring metal having a spring back provided with longitudinally aligned openings, and a back plate having transversely extending strap members projecting into said openings, a latch bar permanently secured to said ring metal in sliding engagement with the inner surface of said spring back, said latch bar being engageable with said strap members to hold said

ring metal against separation from said back plate, and releasable means for holding said latch bar in engagement with said strap members.

8. A loose leaf binder comprising a back plate, a plurality of transversely extending rigid strap members projecting upwardly from said plate and aligned longitudinally of said back plate, and a ring metal, said ring metal consisting of a spring back, a pair of toggle plates in said spring back, a cover plate secured to said spring back, a slide disposed in said spring back below said toggle plates, a cup projecting upwardly from said slide, and a spring pressed tit positioned in said cup, said spring back having a plurality of openings in registration with said

rigid strap members, said slide having a plurality of longitudinally extending tongues adapted to fit under said strap members to secure said ring metal to said back plate, said cover plate having an aperture, said tit being engageable with said aperture to hold said slide against accidental longitudinal displacement when said tongues and strap members are interengaged.

References Cited in the file of this patent

UNITED STATES PATENTS

1,675,301	Dawson	June 26, 1928
2,465,179	St. Louis	Mar. 22, 1949