March 31, 1936. F. S. SCHADE 2,035,571

COMBINED LOOSE LEAF BINDER AND PENCIL BOX

Filed March 9, 1935 2 Sheets-Sheet 1

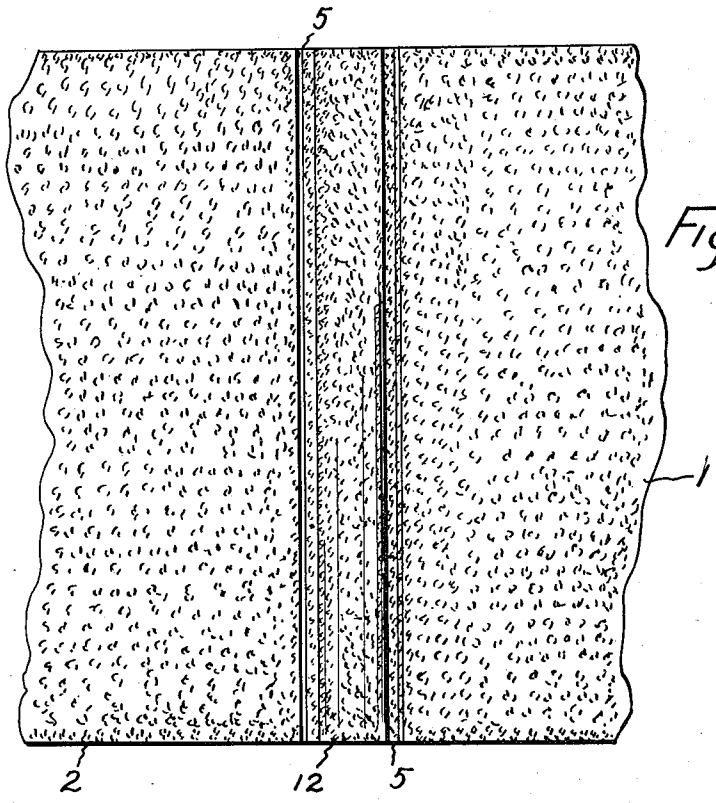


Fig 1

Fig 2

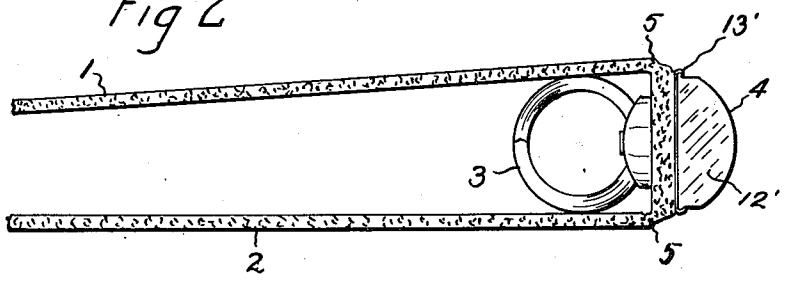
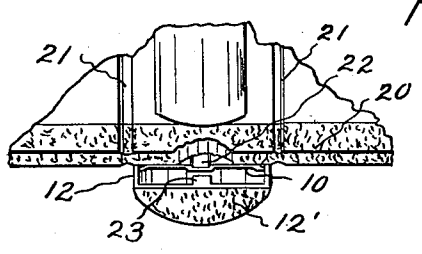


Fig 3



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COMBINED LOOSE LEAF BINDER AND PENCIL BOX

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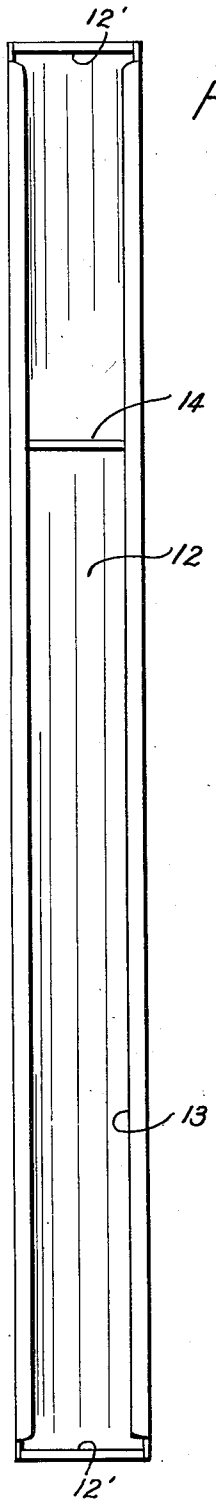


Fig 4

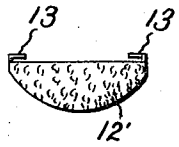


Fig 5

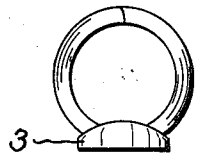


Fig 6

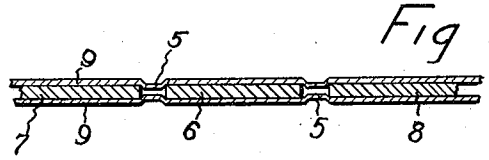


Fig 7

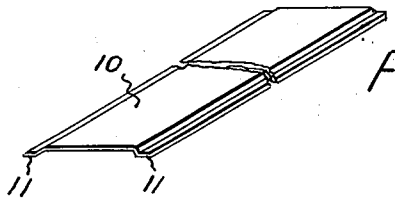


Fig 8

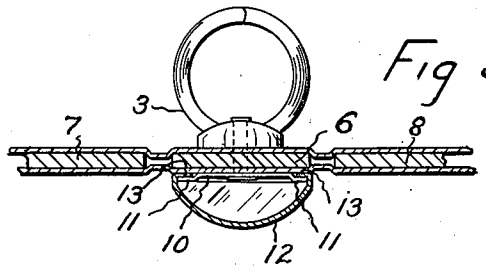


Fig 9

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UNITED STATES PATENT OFFICE

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COMBINED LOOSE LEAF BINDER AND PENCIL BOX

Frank Stanley Schade, Holyoke, Mass., assignor to National Blank Book Company, Holyoke, Mass., a corporation of Massachusetts

Application March 9, 1935, Serial No. 10,189

3 Claims. (Cl. 281—36)

This invention relates to an improved construction in ring binder books, particularly of the kind used by students in school. Its object is to make a good looking book of low cost construction and in the making of the book to hide away a pencil box element by combining it with an element used to improve the appearance at the back panel of the book and as a part of the book construction.

The preferred way to accomplish this object is disclosed in the accompanying drawings, in which—

Fig. 1 is a rear view of the open binder with portions of the covers cut away to save space;

Fig. 2 is an end view of the binder with outer cover parts shown broken away to save space;

Fig. 3 is a perspective view of a desirable detail;

Fig. 4 is a top view of one type of pencil box element and means to give regular curved back form to the back panel element of the binder;

Fig. 5 is an end view of the element in Fig. 4;

Fig. 6 is an end view of the loose leaf mechanism as ordinarily attached to the back panel of a binder;

Fig. 7 is a section through the back panel as associated with the cover portion and hinges before the loose leaf structure is assembled on the inside face of the back panel;

Fig. 8 is a perspective view of a back panel plate before it is assembled on the outside face of the back panel and riveted with the loose leaf structure; and

Fig. 9 is a view partly in section of the parts shown in Figs. 6, 7, and 8, but in assembled condition.

The finished binder, except for the outer portions of its covers, is shown in Fig. 2. This view, together with the view of Fig. 1 indicates a loose leaf binder of one conventional type in appearance. That is to say, it consists of covers 1 and 2, hinged at 5 to a back panel, having a curved back surface with the loose leaf metallic structure 3 riveted on the inside face of the back panel, and is in appearance and dimensions substantially the same as a high grade ring binder of the conventional curved back type. The simple appearance of the book is best seen in Fig. 1. Although the appearance in Fig. 2 does disclose elements of the new structure, they are unobtrusive and in the actual book will not be noticed except on close examination. This finished conventional binder form is one that by my invention can be built into the book embodying the new structure for the pencil box compartment, although of course the invention is not limited to appearance alone.

To build up my book in the most economical way, I make the binder case as indicated in Fig. 7. It consists of body material such as 6 for the back panel, 7 and 8 for the covers, covering strips or sheets 9 which may provide the hinges at 5. These parts are ordinarily made into a complete case in flat form by automatic machinery and forms one of the most economical case constructions known in the book binding art. The procedure is more fully described in my prior Patent No. 1,983,883, dated December 11, 1934, entitled "Loose leaf book and method of manufacture". In this case I may use body material 6 and 7 of cardboard and I do not need to laminate back panel 6 in the case with a metal stiffener means for getting a very strong book back, as in my prior patent. Instead, I place the metallic loose leaf structure 3 of Fig. 6 on the inside face of back panel 6, the flat stiff plate 10 on the outside face of panel 6, and then rivet these parts together with the back panel between, as indicated in Fig. 9. I provide flanges 11, one on each side of plate 10, which in the position of Fig. 9 are spaced from the back panel a distance about equal to the thickness of the metal in the plate.

To make the curved back of the case, I provide stiff trough 12. It is curved in cross-section, as in Fig. 9; its ends are preferably permanently closed as in Fig. 2; while its top is open as in Fig. 4; its length is equal to the back panel of the book. This trough 12 when its top side is covered by plate 10 makes a closed pencil box. The plate 10, in addition to its function in fastening the loose leaf structure and back panel together, acts as a sliding cover for the pencil box. Its flanges 11 slide under inturned flanges 13 along the top inside edge of trough 12. The arrangement for this flange engagement for the sliding cover is seen in Figs. 4 and 9. Of course the cover plate 11 for the pencil box, being a permanent part of the book binding back panel, will ordinarily remain stationary and the trough or box itself will have sliding movement.

Fig. 4 shows the open box, with closed ends 12' and a convenient division wall 14 to provide a small compartment for erasers and what not usually carried by students. This pencil box, as indicated in Fig. 1, may have its surface finish made the same as the book covers. That, in addition to the shape and structure of the box, will cause the latter to blend into the book binding as a part of it.

It is customary in making ring binder books

to curve the back panel transversely. In my present construction I save that labor and provide a curved back panel structure by combining the pencil box shaped for two purposes, one to give a bulging form to the back panel in the binder as normally used, and the other to hide away a pencil box as part of the binder structure. The box is made of sheet metal and its surface may be decorated to give various effects on the back of the book. The one I prefer is that indicated in Fig. 1 where the box blends in exactly with the finish surface of the covers. This may be carried out at both ends, one of the ends being so indicated in Fig. 5.

The arrangement of flanges 11 and 13 of Figs. 4, 8, and 9 may be conveniently reversed as in Fig. 2 at 13'. This has the advantage of avoiding the overhang of flanges 13 above the storage space of the box. The latter has one advantage in that inturned flanges 13 help to hold the contents of the box from rolling out easily while outturned flanges 13' have the advantage of a smoother and better access to the box interior.

It may be desirable in some instances to make the covers and body material of the binder of a single piece of leather, for example. This arrangement is shown in Fig. 3 at 20, with hinge lines 21 scored to define the back panel. Plate 10 and metallic loose leaf structure indicated at 3 may be riveted to this back panel and the pencil box 12 applied on the outside as already described. Then by covering the metal of the box with a thin layer of leather the whole blends together as a leather bound book of simple curved back book appearance. In this modification of Fig. 3 I have shown a spring lip 23 on the top edge of the end 12' adapted to engage the aligned depression 22 in plate 10 so as to lie between the plate and the leather body material. This makes a convenient friction catch at the back of the book to largely avoid the box 12 accidentally moving out of closed position.

I am aware that various kinds of pencil box compartments have been combined with books, including loose leaf binders. My present invention consists in the improvements as herein disclosed and claimed.

I claim:

1. A ring binder construction having covers, hinges, and a composite back portion, the latter comprising an outside form-giving element of transversely bulging shape like the back of a book, a flanged stiffening plate spanning the ends of said bulging form-giving element and having sliding engagement therewith, an ordinary back panel element to which the covers are hinged, said last named element being riveted to the stiffening plate and a loose leaf ring mechanism on the inside of said back panel element also riveted thereto, the parts being permanently fastened together except for the sliding engagement of the outside form-giving element, the space between the latter and the stiffening plate forming a compartment accessible when said form-giving element is slid longitudinally from its normal position.

2. A ring binder construction having covers, hinges, and a composite back portion, the latter comprising an outside form-giving element of transversely curved shape like the back of a book, a stiffening plate spanning the ends of said curved form-giving element and having sidewise extending flanges along its longitudinal edges, the longitudinal edges of the form-giving element being bent around said flanges to provide a sliding engagement between said element and the stiffening plate, an ordinary back panel element to which the covers are hinged, said last named element being riveted to the stiffening plate and a loose leaf ring mechanism on the inside of said back panel element also riveted thereto, the parts being permanently fastened together except for the sliding engagement of the outside form-giving element, the space between the latter and the stiffening plate forming a compartment accessible when said form-giving element is slid longitudinally from its normal position.

3. A ring binder construction having covers, hinges, and a composite back portion, the latter comprising an outside form-giving element of transversely curved shape like the back of a book, a stiffening plate spanning the ends of said curved form-giving element and having its longitudinal edges bent outwardly and inwardly to form recessed flanges, the longitudinal edges of the form-giving element slidably engaging in the recesses of said flanges to provide a sliding engagement between said element and the stiffening plate, an ordinary back panel element to which the covers are hinged, said last named element being riveted to the stiffening plate and a loose leaf ring mechanism on the inside of said back panel element also riveted thereto, the parts being permanently fastened together except for the sliding engagement of the outside form-giving element, the space between the latter and the stiffening plate forming a compartment accessible when said form-giving element is slid longitudinally from its normal position.

FRANK STANLEY SCHADE.