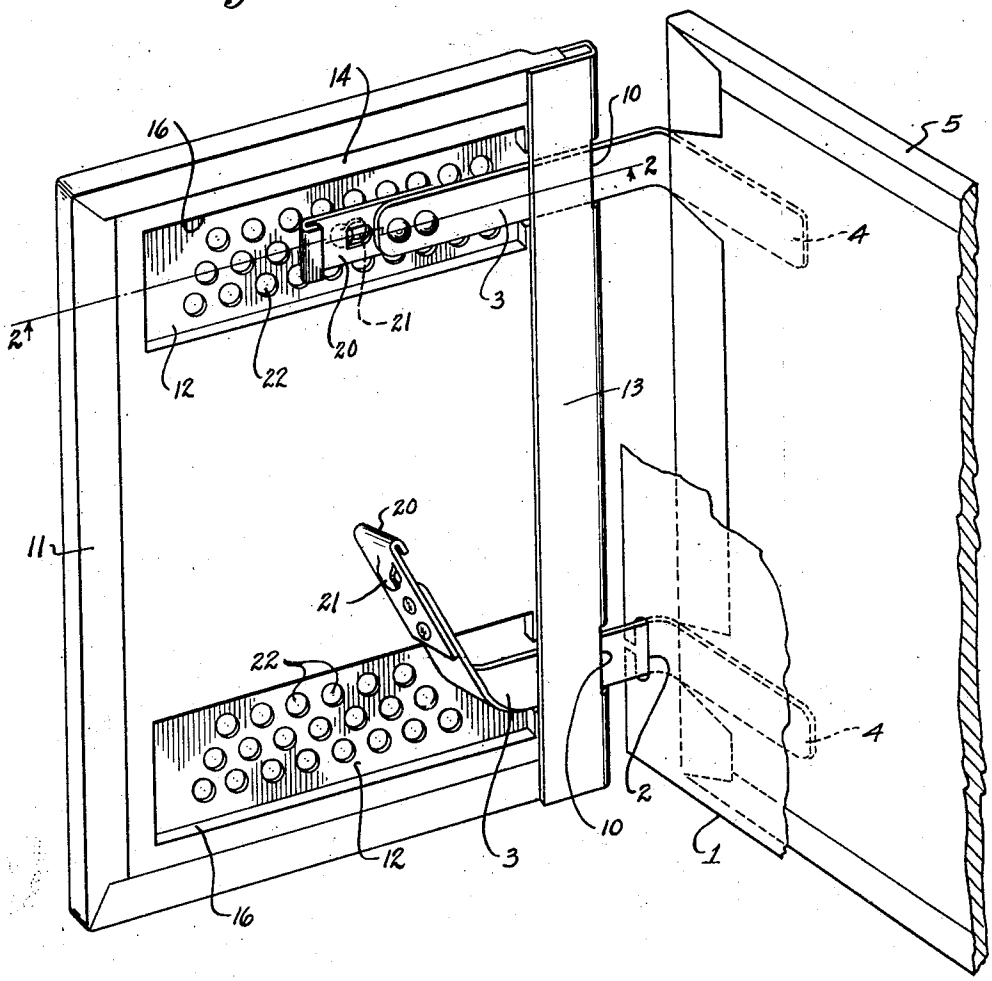
Sept. 23, 1930. W. F. SADTLER 1,776,376

LOOSE LEAF BINDER

Filed July 15, 1927 2 Sheets-Sheet 1

Fig. 1



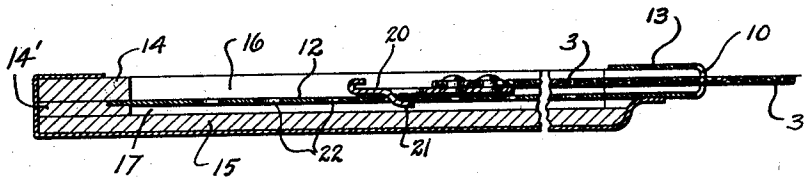


Fig. 2

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LOOSE LEAF BINDER

Filed July 15, 1927 2 Sheets-Sheet 2

Fig. 3

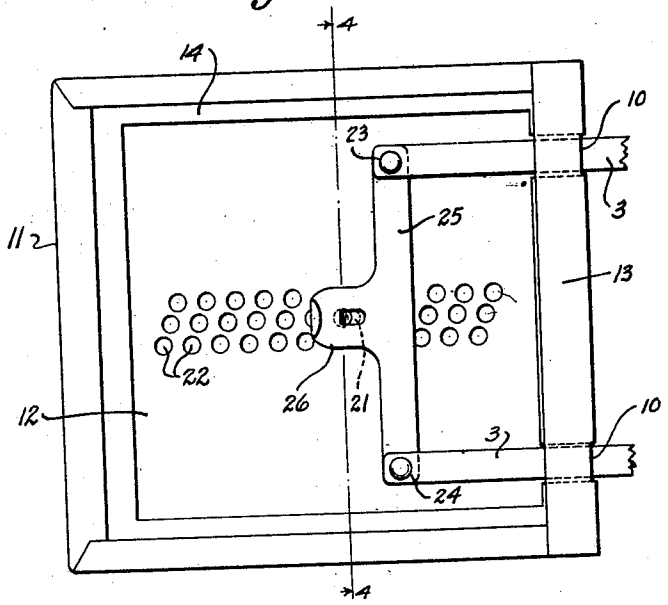


Fig. 4

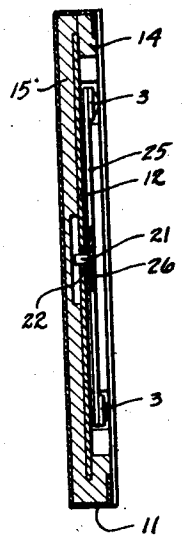
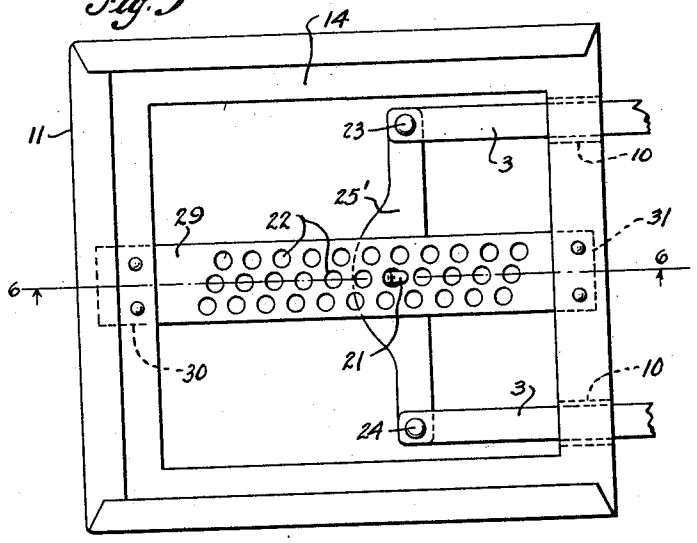


Fig. 5



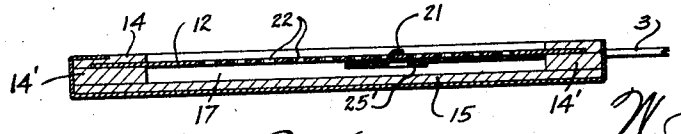


Fig. 6

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UNITED STATES PATENT OFFICE

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LOOSE-LEAF BINDER

Application filed July 15, 1927. Serial No. 206,014.

The invention relates to improvements in loose leaf binders, and more particularly to novel and useful interlocking devices for such binders wherein the leaves are held by engagement with a plurality of flexible members, such as straps or bands, which in turn are detachably fastened to the cover in different positions to accommodate different numbers and thicknesses of the bound leaves.

Objects and advantages of the invention are set forth in part hereinafter, and in part will be obvious herefrom, or may be learned by practicing the invention; the same being realized and attained by means of instrumentalities pointed out in the appended claims.

The invention consists in the novel parts, combinations, improvements, constructions, and arrangements herein shown and described.

The accompanying drawings, herein referred to and constituting a part hereof, illustrate one embodiment of the invention, and together with the accompanying description serve to explain the principles of the invention.

Fig. 1 is an isometric perspective view of a binder embodying my invention;

Fig. 2 is a transverse section taken on the line 2—2 of Fig. 1;

Fig. 3 is a fragmentary plan of a somewhat different form of device embodying the invention;

Fig. 4 is a section taken on the line 4—4 of Fig. 3;

Fig. 5 is a fragmentary view showing a somewhat different form from Fig. 3; and

Fig. 6 is a transverse section on the line 6—6 of Fig. 5.

The invention is directed to producing a simple, sturdy, economical and securely holding loose-leaf binding device, which is simple and easy to manipulate and provides a very wide and minute range of positional variation of the leaf-holding means to accommodate differences in the number and thickness of the bound leaves. With this in view, I have provided an exceedingly simple and secure fastening device which passes into locking engagement by a mere pressure and pull upon the binding straps or like flexible members, and may be in turn disengaged by a simple reverse pressure. I provide also for a lateral movement of the binding means, whereby a minuteness of positional variation is effected for the interlocking means without sacrificing either the sturdiness, simplicity, security or ease of operation of the device.

The invention lends itself, while retaining the advantages outlined, to separate application to a plurality of straps or like flexible leaf-binding members, or to a single fastening device connected to a plurality of the flexible leaf-binding straps or members, as is exemplified in the drawing.

In the present preferred embodiment, I have shown my invention applied to that type of binder wherein the bound leaves 1 are provided at their rear edges with spaced-apart key-hole slots 2, which receive a flat flexible strap or like member 3, which lies in the elongated inner part of the slots to hold the leaves in position in a well-known manner. The flexible members 3 are connected at their fixed ends in any suitable manner, at 4 to the back edge of one of the covers 5 of the binder. While only one end of the flexible members 3 are usually variably positionable, it will be clear that both ends may be so constructed and arranged if desired.

Referring primarily to the embodiment of my invention as applied separately to a plurality of flexible straps or members 3 (Figs. 1 and 2), these flexible members 3 pass through the slots or like fastening devices in the back edges of the leaves, and thence inwardly through guiding and holding apertures 10 formed in the rear edge of the other cover member 11 in any suitable manner. The cover member 11 is of laminated structure, and between the outer and inner layers 14 and 15 is a metal plate 12, the rear edge of which is doubled over and spaced apart, as shown at 13, to form the rear edge of the cover member, the openings 10 being formed in the rear edge of this bent-over part. Above and beneath the plate 12 are cover plates 14 and 15, formed of cardboard or other light, stiff material. The layer 14 has portions cut out to form well spaced-apart,

recessed channels 16, in the cover member 14, thereby exposing the metal plate 12. Plate 12 is spaced from the cover plate 15 by means of layer 14′, which may be formed of thin strips of material or a sheet provided with openings similar to the openings in sheet 14; the layer 14′ thus forms a recess 17 beneath the plate 12 which allows the easy insertion and removal of hook member 21. These channels as shown in Fig. 1 are in prolongation with the apertures 10 and in them lie the straps 3.

The interlocking holding means attached to the straps 3 embody the features and advantages of passing into firm holding engagement by mere pressure and remaining firmly interlocked, and again disengaging as readily by a reverse pressure. As embodied, I have affixed metal or other rigid plates 20 to the outer ends of the flexible members 3, and have formed in these plates struck-up, and rearwardly-beveled fingers or hooks 21. Cooperating therewith are a plurality of holes 22 formed in the plate 12. For each of the fastening devices a series of these holes is formed in three rows in staggered relation, thereby providing a minuteness of positional change while retaining the full strength and simplicity of the structure, the flexible straps being movable laterally sufficiently to engage in the holes of any of the rows.

In accordance with one feature of the invention (Figs. 3 and 4), a single, fastening means is provided for a plurality of the flexible members 3, and in the embodied form thereof, a transversely disposed bar 25 is connected at its ends 23 and 24, respectively, with the flexible members 3, extending inwardly through the apertures 10. In this form, a single holding mechanism is provided, located medianly on the cross bar 25, and being similar in construction to that previously described. As embodied, a forward projection 26, in the central part of the bar 25 has a hook 21. A single series of holes 22, similar to those previously described is formed in the plate 12, and consisting, as embodied, of 3 rows, constitute a similar minutely variable positioning means, cooperating with the hook 21. The beveled form of the hook 21 with the rearwardly extending flat portion causes the hook to engage with the proper hole by merely pressing the fastening outwardly or downwardly; and the hook may be disengaged from the hole by a pull in reverse direction, hook 21 cooperating with any one of the holes 22 forms a pivotal holding device that equalizes the tension exerted on the flexible members 3 by allowing bar 25 some movement about hook 21.

In accordance with one feature of the invention (Figs. 5 and 6) the single variably positionable fastening means is utilized as retaining means for a plurality of flexible members. In this form a bar 29 is fixed at its ends 30 and 31 to the central part of the front and rear ends of the recessed portion of the cover, the holes 22 being formed in this bar. This bar is spaced away from the outer layer 15 of the cover, and the cross bar 25′ is located in this space, the hook 21 being on the upper side of the cross bar.

It will be understood, of course, that changes may be made in the details of embodiment of my invention without departing from the principles thereof and without sacrificing its main advantages.

What I claim is:—

1. An adjustable binder including in combination a plurality of cover members and means for attaching them together, said means comprising a flexible member attached at one end to one of said cover members, and a rigid device attached to the other end of the flexible member, and a plurality of holding devices adapted to engage with said rigid device and arranged in staggered close order on said other cover member.

2. In an adjustable binder, flexible member fastening means comprising a metal sheet having a plurality of rows of holes therein, and interlocking means comprising a flat, rigid metal device containing a tongue member extending at an angle from said device, said tongue member being adapted to engage in any one of said holes.

3. An adjustable binder including in combination cover members, flexible members attached to one of said covers, holding means at the free end of said flexible members and a rigid device spaced from and carried by the other cover and adapted to overlie and engage the holding means.

4. An adjustable binder including in combination a pair of cover members having two flexible members attached to the back edge of one cover member and well spaced apart, a rigid device having a locking portion and attached to the free ends of both flexible members and extending across therebetween, a member extending across the second cover member and over said rigid device and serving to hold the latter in position on the cover and provided with a plurality of interlocking devices adapted to cooperate with the locking portion on said rigid device.

In testimony whereof, I have signed my name to this specification.

WILLIAM F. SADTLER.