

[54] **LOOSE LEAF BINDERS**

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[58] Field of Search **402/14-17**

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[57]

ABSTRACT

Two separate cover panels are mounted on two separate pliable laces to form a book structure with loose leaf pages mounted on the parallel lace portions which are between the cover panels. Each end portion of each lace lies longitudinally between and along the jaws of its own normally open, self-locking when closed and manually openable V-clamp. Two such clamps are carried on each cover panel; their fixed jaws constituting the end portions of a single slat; each such end portion having a well into which the companion movable jaw fits flush when the clamp is closed. In a modified embodiment, only one of the cover panels is provided with clamps, provision being made so that the lace ends at the other cover panel are headed to maintain their association with such clampless cover panel.

7 Claims, 9 Drawing Figures

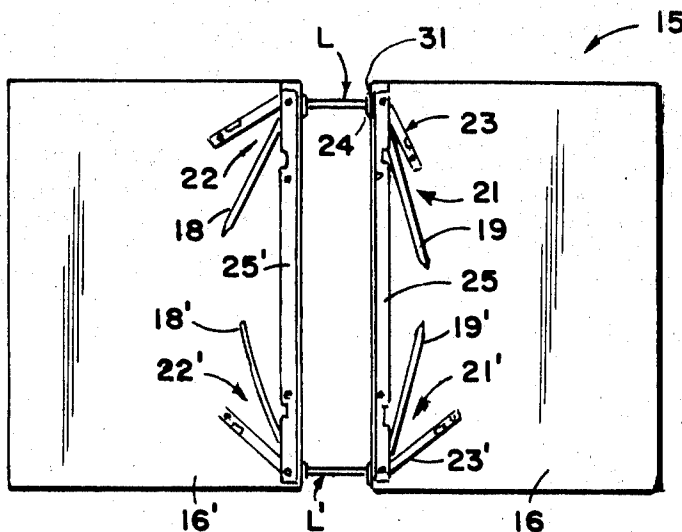


FIG. 1

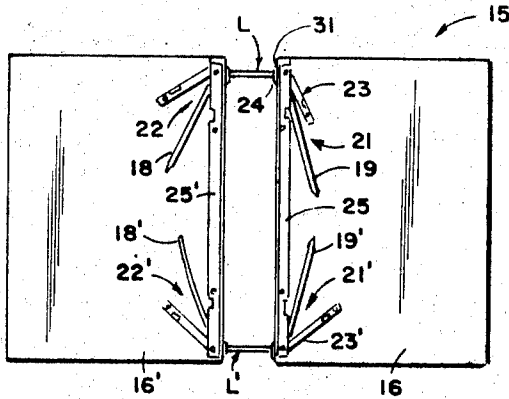


FIG. 2

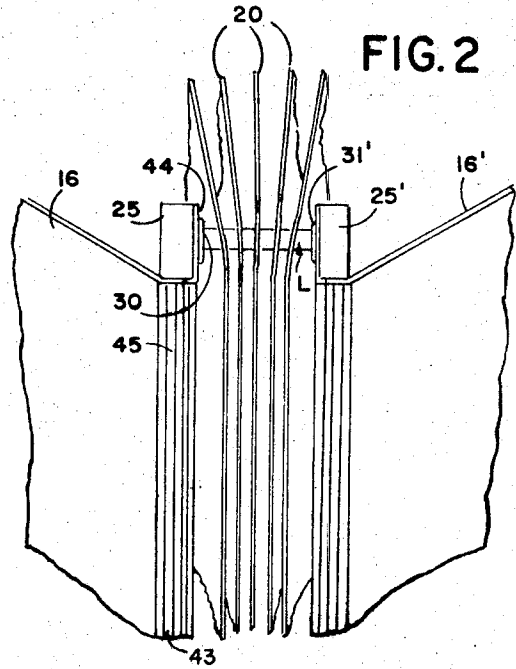


FIG. 3

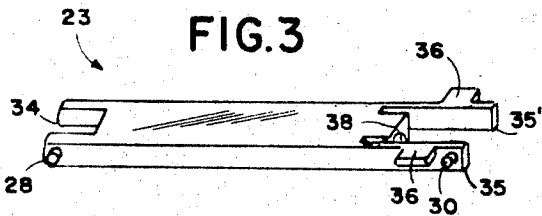


FIG. 4

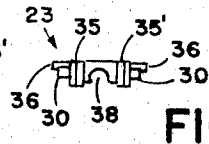


FIG. 5

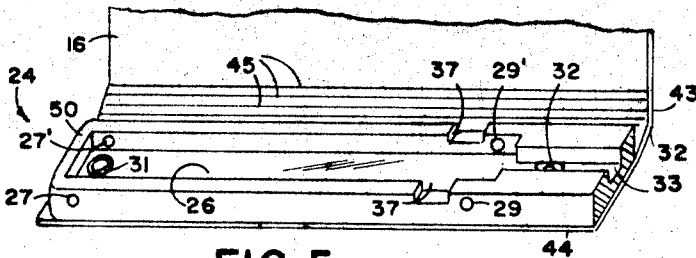


FIG. 8

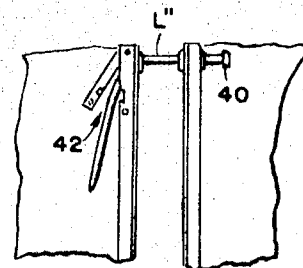


FIG. 6

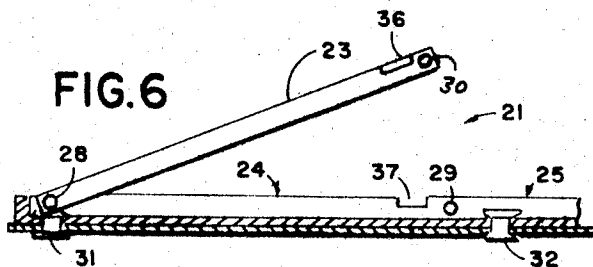


FIG. 7

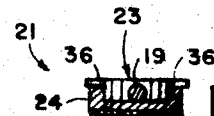
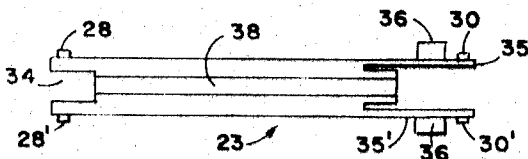


FIG. 9



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LOOSE LEAF BINDERS

The present invention relates to, and its principal object is to provide, novel and improved binders of the type comprising two separate cover panels connected by adjustable laces for holding sheets having holes along one edge, the assembly being tightened to make a book-form by the use of clamps on the panels, for releasable lace-engagement allowing the addition and removal of sheets.

Another object thereof is to provide novel and improved binders of the character mentioned, in which each clamp when set into lace-engagement condition by closing it, will automatically be locked, affording quick unlocking when necessary.

Another object thereof is to provide a novel and improved binder construction of the kind set forth, which allows the addition or removal of sheets at both ends of the book, or just at one book end if desired.

Still a further object thereof is to provide a novel and improved binder of the kind described, having the mentioned attributes, and which is simple in construction, reasonable in cost to manufacture and efficient in carrying out the purposes for which it is designed.

Other objects and advantages will become apparent as this disclosure proceeds.

For one practice of this invention, the intermediate parallel positioned portions of two pliable laces having some resilient quality, are for holding loose leaf sheets between two cover panels through which said laces are also passed. The fixed jaws of two V-clamps are mounted on each cover panel along the line of the holes in such panel, for holding the laces. Each fixed jaw has a companion movable jaw which is swingably mounted thereto by means of trunnion pintles extending laterally at one end of the movable jaw into aligned holes in the fixed jaw. The other end of each movable jaw has two spring fingers in extension thereof, provided with trunnion pintles adapted to automatically enter aligned holes in the fixed jaw when the clamp is closed, and thus releasably lock the clamp to grip a lace portion between and along the clamp jaws. The two fixed jaws on each cover panel are preferably integral to form a slat along the hole line of the associated cover panel. Eyelets which secure the slat to the cover panel, serve as the lace holes for the slat. Accessible tabs extending laterally from the spring fingers, when pinched together, release the movable jaw and so the clamp can be opened. Each fixed jaw has a well into which its companion movable jaw fits flush, when the clamp is set into closed condition. The holes for the two sets of pintles carried by the movable jaw, are in the side walls of such well. The laces are of course pulled through the clamps and made taut before the clamps are closed so the book-form effected, is tightly assembled. In a modified embodiment, clamps are only on one cover panel; the lace ends at the other cover panel being headed whereby the assembly is maintained.

In the accompanying drawing forming part of this specification, similar characters of reference indicate corresponding parts in all the views.

FIG. 1 shows a binder embodying teachings of this invention. This view shows the binder in open condition, exposing the inner surfaces of the cover panels, and the laces connecting them; each end of said laces, being between the jaws of its own clamp; the clamps

being shown in open condition. No pages are included in this view.

FIG. 2 is an enlarged fragmentary view showing the binder containing some pages, but the book is not "tightened", so the pages are shown loose. The book is here shown upright, partially open, and in perspective.

FIG. 3 is an enlarged perspective view of the movable jaw of one of the clamps.

FIG. 4 is an end view of FIG. 3.

FIG. 5 is a fragmentary perspective view, drawn to the scale of FIG. 3, showing one end of a slat mounted on one of the panels, there being one such slat on each panel, and each such slat end constitutes structure serving as the fixed jaw of a clamp.

FIG. 6 is an elevational view partly in section, showing an assembled clamp in open condition, drawn to the scale of FIGS. 3 and 5.

FIG. 7 is an end view of FIG. 6, but showing the clamp in closed condition, engaging a lace.

FIG. 8 is a fragmentary view, akin to FIG. 1, but of slightly modified form.

FIG. 9 is a bottom view of FIG. 3.

In the drawing, a loose leaf binder of preferred construction, designated generally by the numeral 15, consists of two cover panels 16 and 16' of relatively stiff material, laced through near one edge of the panel 16, and at the corresponding edge of the panel 16', by the spaced pliable separate laces L and L', which are for holding any desired number of loose leaf pages 20, between said cover panels; such pages having appropriate holes near one edge to receive said laces therethrough, as is well known in this art. Each cover panel carries two normally open V-clamps whose cooperating jaws are adapted to releasably grip that region of a lace which lies along and between them. The lace parts which extend through the clamps, are denoted by the numerals 18, 19' which are of the lace L, and 18', 19' which are of the lace L'. The clamps on the cover panel 16, are indicated generally by the numerals 21 and 21' respectively, and those on the cover panel 16', are designated generally by the numerals 22 and 22' respectively. All clamps being of identical construction, the description of one, that numbered 21, will suffice for all.

The V-clamp 21, shown in open condition in the FIGS. 1 and 6, comprises an elongated movable jaw indicated generally by the numeral 23, along an elongated fixed jaw denoted generally by the numeral 24, which is mounted on the cover panel 16; said jaws being hingedly associated at one end to form a closable V-form whose mouth faces that of the clamp 21'. It is preferred that the fixed jaws of the clamps 21, 21', shall be integral and be the end regions of a slat 25. Likewise, the fixed jaws of the clamps 22, 22' shall be integral and be the end regions of the slat 25'.

The fixed jaw 24 of the clamp 21, is provided with an indentation, which may be the well 26, or a channel by omitting the end wall 50, into which indentation, the movable jaw 23 fits flush, when the clamp 21 is closed, at which time the lace part 19 is gripped tight thereby. The opposite lengthwise walls of the well 26, or of the channel if such is used, not shown, have the aligned pair of holes 27, 27' for the respective pintles 28, 28' which serve as the axis of swing of the hinged movable jaw 23. Said opposite walls also have the aligned pair of holes 29, 29' for the locking protruberances which may be the pintle-forms 30, 30'. The slat 25, at each

end region, is secured to the cover panel 16 by the spaced eyelets 31 and 32, as shown. The indentations in the fixed jaws of the lace-clamping means 21, 21' are communicative with a longitudinal channel 33 of reduced width in the slat 25, which connecting channel is for the admission of the lace parts 19 and 19'.

The movable jaw 23 of the clamp 21, has a clevis 34 at its hinged end, affording the pintles 28, 28' which fit into the holes 27, 27' respectively, and thus provide the axis of swing of said movable jaw. The other end of the movable jaw, which is at the mouth end of the clamp, presents two spring fingers 35, 35', having lateral protuberances which may be the pintle-forms 30 and 30', which are adapted to become automatically engaged in the holes 29 and 29' respectively so the clamp 21 is self-locking when in closed condition. Each of said fingers, which are at the sides of the movable jaw, has an outward lateral tab 36, which set into the notches 37 respectively when the clamp is in closed condition. These tabs are accessible, and when manually pinched together, will release the engaged elements 30, 30', so the movable jaw 23 can be manually swung to open said clamp 21, and thus release the lace part 19 which lies along the lengthwise channel 38 in the underside of said movable jaw 23. It is to be noted that the eyelet 31 is between the tines of the clevis 34 and has the lace L therethrough, thus mounting the panel 16 on said lace; said eyelet being in alignment with the holes in the pages 20, through which said lace is positioned straight.

One manner of presenting the binder 15 in trade, is to have it assembled as shown in FIG. 1, except that all the clamps are closed after pulling the laces tight so that the cover panels are in superimposed relation. To mount pages 20, the binder is opened, then the cover panel 16 is removed after opening the clamps 21 and 21'. Then the lace end 19 of lace L is set through one of the holes in said pages, and the lace end 19' of lace L' is set through the other hole in said pages. Now, the lace end 19 is set through the eyelet 31, and between and along the jaws of the clamp 21, and pulled tight, whereupon the movable jaw 23 is shifted to close the clamp 21, and cause said clamp 21 to be locked because the pintles 30, 30' will be sprung into the holes 29, 29' respectively. The same manipulation is done with the clamp 21'. It is evident that pages may be removed from or added onto the lace portions between the cover panels, from either side of the assembly, by opening the clamps 21, 21' or 22, 22' to remove the required panel 16 or 16', respectively, so proper access can be had to deal with pages, and then remounting such panel and effecting the book assembly. Obviously, removing pages from the book assembly would increase the length of either the lace ends 19, 19' if removed from the panel 16 side or the lace ends 18, 18' if removed from the panel 16' side. Accordingly, adding pages to the book assembly would reduce the length of either the lace ends 19, 19' if added to the panel 16 side or the lace ends 18, 18' if added to the panel 16' side. It is noted that the amount of pages that could be added would depend upon the lengths of the associated lace ends, 19 19' and 18, 18' which would permit proper gripping thereof by their respective clamps.

If it is desired to have the binder capable of having pages removed or added only from one side of the book, then, the cover member at that end of the book, shall be with clamps, but no clamps are furnished the other panel cover. Instead thereof, the lace ends at the

clampless panel, shall be headed as shown at 40, which expedient will maintain the assembly; the single clamp for the lace L' being indicated at 42.

It is preferred that the clamps and the lace ends shall be out of sight and non-accessible when the binder 15 is closed, so as to avoid accidental opening of a clamp, and to add to the neatness and appearance of the binder. One manner to accomplish this is to have each cover panel provided along its entire height at back edge, with an extension hinged thereto at that edge forming part of a book back as indicated at 43. The associated slat 25, is along this extension on the back surface of the latter, and so positioned, that when the binder is closed, the back face of the cover panel 16, is across the mouths of the wells, and hence covers the movable clamp jaws 23, 23' residing in said wells.

Although to secure the book back portion 43 of the said extension, to the side edge of the slat thereat, it is more practical to have the extension comprise said part 43 and a flap 44, bent to be inside the binder, and to attach the said flap to the back of the slat by means of the eyelets 31 and 32, at each end portion of said slat. It is evident, that the full extension shown forms a channel with its associated cover panel, in which the slat resides when the binder is closed. The numeral 45 indicates score lines to ease swing motion of the cover panel, which may be provided for such purpose. When the cover panels are made of sheeting material, their extensions to envelop the slats are made integral therewith respectively.

Recommended materials for the cover panels, are pressboard, plastic, cardboard which may be coated or cloth-bound, leather and the like. The laces are preferably of a pliable material having some resilient quality, as nylon, woven wire cable and the like. The slats 25, 25' are preferably molded of plastic, but may be of metal, pressed wood composition, or the like. The movable clamp jaws as 23, 23' are preferably mounted of plastic which would offer resilient quality to the resilient fingers 35, 35', as polypropylene, or of suitable metal.

It is evident that a binder for "tall" pages, may have more than two laces and their appurtenant clamps, and that the binder may be made of such small size to accommodate tags which will be its "pages", in which instance, one lace may suffice. In some constructions, it may be desirable, that instead of the lace end being headed as at 40, it may be fixedly secured in proper place on the panel. It is believed that those versed in the art will readily understand all this, without the need of further illustration.

This invention is capable of numerous forms and various applications without departing from the essential features herein disclosed. It is therefore intended and desired that the specific embodiments shown herein shall be deemed merely illustrative and not restrictive, and that the patent shall cover all patentable novelty herein set forth; reference being had to the following claims rather than to the specific description and showings herein, to indicate the scope of this invention.

I claim:

1. A binder for loose leaves defining a book-form therewith, said binder comprising first and second separate cover panels for receiving the loose leaves therebetween, at least one pliable lace for extending through associated openings provided in the loose leaves and said first and second cover panels, at least one lace-

clamping means disposed on said first cover panel for engaging one end portion of said lace in a closed first position and for disengaging said one end portion of said lace in an opened second position, said lace-clamping means including first and second elements defining a V-shaped clamp, said first element including a bottom wall and at least one side wall, said first element bottom wall being secured to said first cover panel, hinge means securing said second element in a fixed longitudinal position to said first element for pivotal movement of said second element relative to said first element bottom wall between said closed first position and said opened second position, said one end portion of said lace being engaged between said second element and said first element bottom wall in said closed first position, said second element including at least one outwardly extending spring finger allowing lateral movement relative to said first element side wall, said spring finger being provided with a lateral protuberance for association with said first element side wall, said first element side wall including means for engaging said spring finger protuberance in said

closed first position and for disengaging said protuberance when said spring finger is moved laterally away from said first element side wall to allow said second element to be moved to said opened second position, means holding an opposite end portion of said lace in a secured position in association with said second cover panel, whereby upon pulling said one end portion of said lace in said opened second position will move said second cover panel towards said first cover panel, said first element including a second side wall spaced from said one side wall, said second element being disposed between said one and second side walls, said second element including a second spring finger spaced from said one spring finger, said second spring finger being provided with a lateral protuberance for association with said second side wall, said second side wall including means for engaging said second spring finger protuberance in said closed first position and for disengaging said second spring finger protuberance when said second spring finger is moved laterally away from said second side wall, and tab means provided on each of said one and second spring fingers for laterally moving said spring fingers away from said one and second side walls when said tab means are pinched toward each other.

2. A binder according to claim 1, wherein said opposite end portion of said lace is provided with a head defining said means holding said opposite end portion in

a secured position in association with said second cover panel, the opening provided in said second cover panel is smaller than said opposite end portion head.

3. A binder according to claim 1, wherein said second cover panel is provided with lace-clamping means defining said means holding said opposite end portion of said lace in a secured position in association with said second cover panel, said second cover panel lace-clamping means being similar to said first cover panel lace-clamping means and engaging said opposite end portion of said lace in a similar manner as said first cover panel lace-clamping means engages said one end portion of said lace.

4. A binder according to claim 1, wherein a similarly mounted second pliable lace is spaced from said first-mentioned lace for association with the loose leaves and said first and second cover panels, second lace-clamping means disposed on said first cover panel for engaging and disengaging one end of said second lace between first and second elements thereof, said second lace-clamping means being similar to said first-mentioned lace-clamping means, and second means holding an opposite end portion of said second lace in a secured position in accordance with said second cover panel.

5. A binder according to claim 1, wherein said second element includes a pair of spaced tines defining a clevis adjacent to said hinge means, an eyelet secures said first element bottom wall to said first cover panel, said eyelet being disposed between said tines with said lace extending through said eyelet, and said second element being provided with a lengthwise channel to receive said one end portion of said lace.

6. A binder according to claim 1, wherein said second element is provided with opposing lateral projections defining said hinge means, said lateral projections extending outwardly in opposite directions into associated holes provided in said one and second side walls of said first element.

7. A binder according to claim 1, wherein each of said first and second cover panels includes a hinged extension defining a part of a book back, each extension including a flap therealong bent inwardly to face an associated inner surface of said first and second cover panels respectively, said first element of said lace-clamping means being secured to said first cover panel extension flap with said second element of said lace-clamping means being disposable against said first cover panel inner surface.

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