Dec. 11, 1956 D. D. McGERVEY 2,773,504

LOOSE-LEAF BINDERS

Filed Dec. 30, 1952 2 Sheets-Sheet 1

FIG. 1

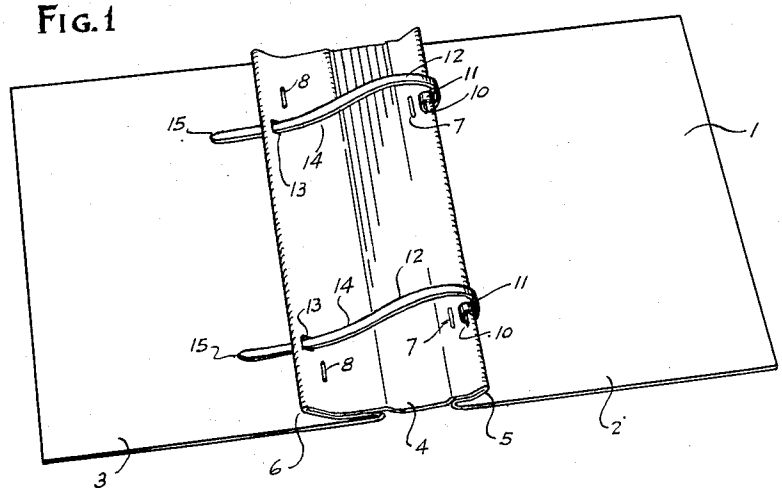
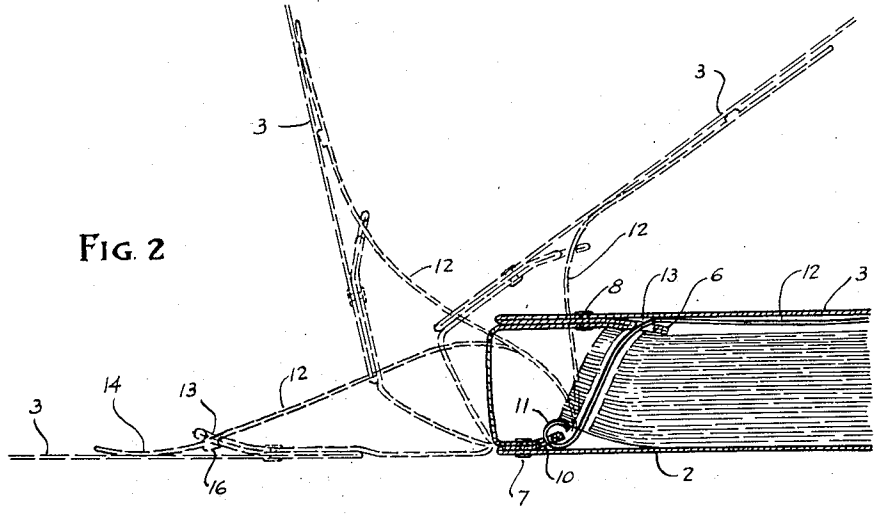


FIG. 2



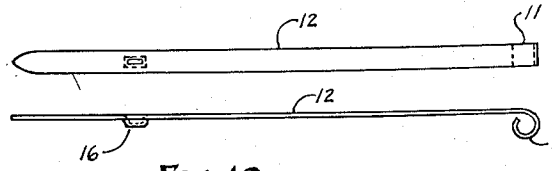
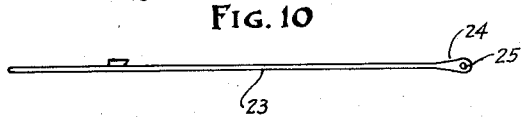


FIG. 8

FIG. 9

FIG. 10



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FIG. 3

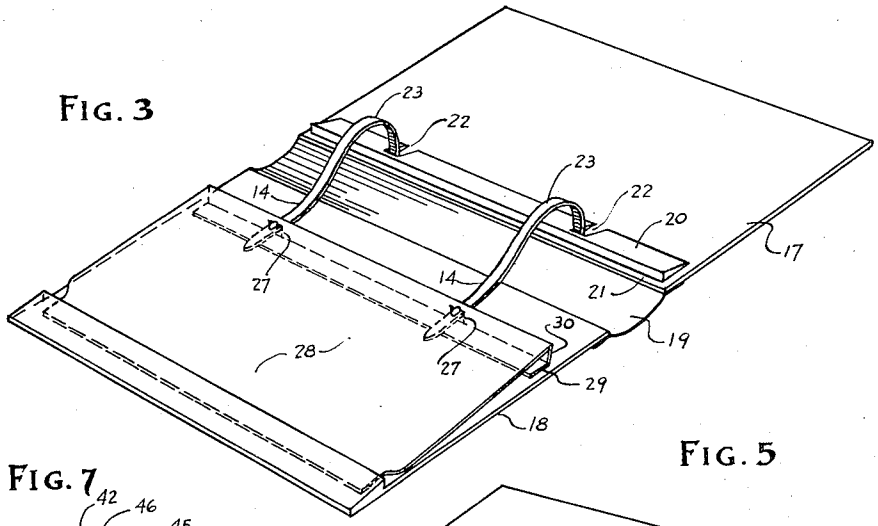


FIG. 5

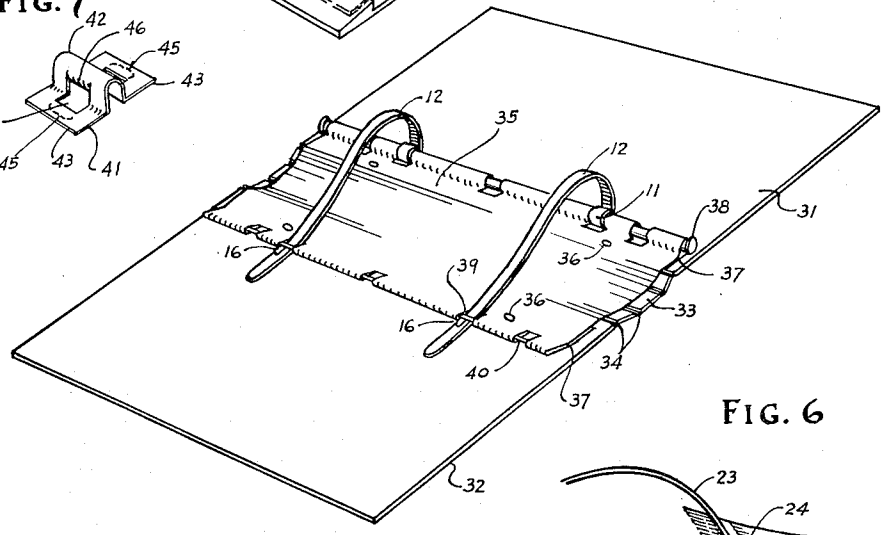


FIG. 7

FIG. 6

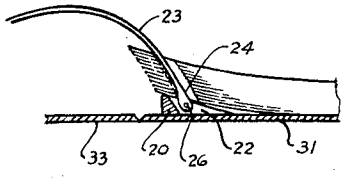
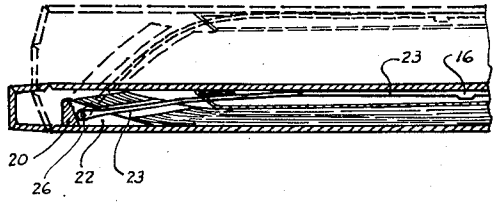


FIG. 4



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2,773,504

LOOSE-LEAF BINDERS

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Application December 30, 1952, Serial No. 328,648

2 Claims. (Cl. 129—41)

This invention relates generally to loose-leaf binders, and more particularly to a loose-leaf binder that is provided with a flexible binding strip that slides when the book is opened and closed to accommodate the sheets held thereby.

Loose-leaf binders, as known in the art today, are limited by the size and number of sheets that they can contain, and also by the difficulty in removing or replacing sheets, and permitting them to be opened flat for use. Again, loose-leaf binders, as found on the open market today, are materially more expensive than need be, and they do not permit stacking.

The principal object of this invention is the provision of a loose-leaf binder that provides a flexible strap for retaining loose-leaf sheets within a binder which permits the sheets to be opened for the full extent thereof, and which permits the flexible binding straps to slide relative to the binder when opening and closing the book in order to save the sheets from destruction.

Loose-leaf binding mechanisms of the present art crowd and spoil the leaves. However, the binder comprising this invention permits the loose-leaf sheets to open flat on both sides and to be completely exposed for use, without putting any strain on the binding, the strips or on the loose-leaf sheets.

This is accomplished by providing a flexible binding strap made of flexible material, such as plastic or metal. The plastic is preferable, as it has sufficient flexibility, as well as thickness, however, as metal increases in thickness, it loses its flexibility. It is preferable to provide a binding strap that has thickness as well as flexibility without being limp in the manner of a flat strap.

The flexible binding strip is provided with a loop or pivotal end which permits the same to be hingedly attached at one end to the inner face of the cover and adjacent the flexible binding edge. The opposite cover must be provided with some type of keeper through which the free end of the plastic binding strip may pass and move or slide freely up the cover when the book is opened and closed. The flexible binding strap should also be provided with a stop which prevents it from coming out of the keeper. This stop limits the length of withdrawal of the strap to the most desirable curvature within the limits of the flexibility of the material and to such an extent to prevent the strap from being folded on itself when the book is closed.

The actual front and back cover portions of the flexible cover may vary together with the flexible binding between the cover portions. It may be a solid flexible cloth, or one might employ straps for this use.

The position of the hinge of the flexible strap on one binder should be so constructed so as to permit that end of the flexible binding strip to stand up from the face of the cover. The advantage gained is in the raising of the hinged end from its surface, in order to give the leaves or pages of the book a better position when they are turned from one face to the other, with the flexible binding strips arcing upwardly from the binding of the

book, whereas, when the book is closed, the binding strip is flexed in the opposite direction.

Other objects and advantages appear hereinafter in the following description and claims.

The accompanying drawing shows for the purpose of exemplification without limiting the invention or claims thereto, certain practical embodiments illustrating the invention wherein:

Fig. 1 is a perspective view of an open loose-leaf binder comprising this invention, and made from a single piece of paper binding.

Fig. 2 is a sectional view illustrating a binder similar to that shown in Fig. 1 with a number of sheets therein.

Fig. 3 is a perspective view of another form of a binder strip.

Fig. 4 is a sectional view of a structure similar to Fig. 3 showing the disposition of the loose-leaf sheets in the binder such as disclosed in Fig. 3.

Fig. 5 is a perspective view of another type of binder having a similar flexible binding strap as shown in the other figures but with a different binding back.

Fig. 6 is a sectional view illustrating the relative position of the sheets of the structure such as illustrated in Figs. 4 and 5.

Fig. 7 is a detailed perspective view of a keeper or hinge member to be employed in attaching or retaining the flexible binding strip of a loose-leaf binder.

Fig. 8 is a plan view of a flexible binding strip such as illustrated in Figs. 1 and 2.

Fig. 9 is a side elevation of the structure as shown in Fig. 8.

Fig. 10 is a side elevation of the flexible binding strip such as illustrated in Figs. 3, 4, and 6.

Referring to the drawings, the loose-leaf binder **1** of Fig. 1 is made of a single piece of material such as a heavy paper, and the cover sheets **2** and **3** are made stiff by pressing a design therein, however, the paper forms the flexible binding portion or back **4** which is produced by folding the paper back on itself to form a fold having a bend along one edge and the other edge adjacent each of the cover sheets **2** and **3**, as indicated at **5** and **6**. The folded back portion **5** may be secured or otherwise held together and in shape by the use of the fastener means **7**, which penetrates not only the folded portion **5**, but also the cover. The fasteners **8** are employed on the folded over portion **6** to secure the same together and to back or cover **3**. Owing to the formation of the paper cover, the folded edges **5** and **6** will turn upwardly.

A slot is cut through the folded over portions **5** and **6**, as illustrated at **10** to form a pivot means, for reception of the hinged loop portion or pivot receiving means **11** of the flexible strap **12**. The opposite end of the flexible strap **12** passes through the opening **13** in the folded over portion **6**, which is aligned with the opening **11** in the folded over portion **5**.

The flexible strap passes through the hole **13**, and arcs upwardly when the binder is filled with paper. The strap **12** is made of a flexible plastic material, and not being too limp, it retains a certain amount of rigidity but is still flexible. When the book is filled the strap may produce the reversed curve as indicated at **14**. This permits the free end **15** of the flexible binding straps **12** to slide back and forth through the openings **13** and along the cover **3** when the book is opened and closed.

As shown in Fig. 2, when the book is in its closed position, the flexible straps **12** are slid along the inside of the cover **3** to a great extent. However, as shown by dotted lines, different positions of the cover **3** illustrate the different relative positions of the flexible binding strap **12**. When the book is fully opened with the covers **2** and **3** lying flat and open, it will be noted that the flexible

member **12** has its stop member **16** engaging in the bottom of the hole **13**. Yet, the flexible strap **12** will still have its reversed curve as illustrated at **14**. In any of these positions, the leaves are readily opened and do not become strained, which is an important object or improvement of this invention.

As shown in Figs. 8 and 9, the flexible binding strap member **12** with its loop **11** and the stop member **16**, is merely a strip of plastic material that is capable of being flexed without undue strain on the material and the hinge loop **11** can be readily formed therein by merely heating the same, and extruding a portion to the underside thereof.

The cover **17** of Fig. 3 is made of a heavy material, such as cardboard, and the cover **18** is constructed of a similar material and they are flexibly joined at their binding edges by the flexible back section **19** which is secured to the outer surface of the members **17** and **18**.

The triangular strip or block **20** is attached to the inner face of the cover **17**, as by cementing, and it is spaced from the binding edge as indicated at **21**. This triangular section is provided with the slots **22** for receiving the ends of the flexible binding strips **23** which are illustrated in Figs. 4, 6, and 10. In this instance, the binding strip has an enlarged end **24** with pivot receiving opening **25** therethrough, for the purpose of receiving a pivot pin, such as illustrated at **26** in Figs. 4 and 6. This manner of hinging the flexible member **23** to the binding permits the flexible strap to swing freely relative to the cover **31** but is limited in its reverse movement relative to the cover owing to the slope of the triangular section, as illustrated in Figs. 4 and 6. Thus, the strap is caused to extend upwardly, and if free, would in fact, extend upwardly, but it is held by the keeper through which the free end passes. The keeper, in this instance, is formed by the openings **27** in the book closure sheet **28**. One end of the book closure sheet is cemented as indicated at **29** to the cover **18**, and the other end is inserted in a pocket formed in the outer edge of the cover **18**.

The false sheet **28** not only maintains a spacing for the flexible members **23** to slide freely back and forth when the book is opened and closed, but also provides a smooth and uniform surface on which to write on the pages of the loose-leaf binder. The openings **27** are formed in the riser portion **30** of the false sheet **28**. Here again, the openings **27** form the keepers for the flexible straps **23** and produce the reverse curves illustrated at **14** in the straps. It will also be noted that the riser portion **30** of the false sheet **28** is spaced a materially greater distance from the binding edge of the sheet **18** than that of the triangular wedge piece **20**. Both the wedge piece and the triangular shape of the sheet **28** combine to cause the pages to lie as indicated in Figs. 4 and 6, which materially aids in the preservation of the pages and also permits them to open up for use without straining the binding edge of the sheet. It will be noticed that when there are substantially very few sheets in the binder, as illustrated in Fig. 4, the flexible binding strap **23** is substantially straight when the book is closed.

As shown in Fig. 5, the flexible loose-leaf binder is provided with the cover sheets **31** and **32** which are hinged together by the back as indicated at the back section **33** by merely creasing the material and causing a fold therein, as indicated at **34**. An extra flexible binding sheet **35** is attached to the covers **31** and **32** by means of the rivets **36**.

The binding sheet **35** is provided with backwardly folded portions as indicated at **37**. These folds produce a channel or bend to receive the pivot pin **38** which may be provided with a head at each end, and which functions as a pivot pin for the loop **11** on the flexible strap members **12**.

However, the flexible strap members, as shown in Fig. 5, have their stop members **16** on the upper side, instead of on the lower side, and they pass through openings which are illustrated at **39**, and which form the keepers or guides for the flexible straps. The fold or folder back portion **37** is provided with a pin **40** forming the stop or abutment against which the stops **16** on the flexible straps **12** engage. The pin **40** is similar to the pin **38**, only smaller in diameter, and may be held in place by the fold **37**, together with the cementing of the same therein. As shown in Fig. 5, additional slots are provided for additional flexible members **12**, if the user may care to insert the same.

As shown in Fig. 7, a hinge or keeper is constructed preferably of relatively stiff material, such as plastic, which, owing to its form, has become fairly rigid, and comprises a bracket member **41** having the central U-shaped portion **42** and the oppositely extending legs **43**. The leg and part of the U-shaped portion are blanked out as indicated at **44** to produce the tongues **45** and **46**. The tongues **45** are bent backwardly on the underside of the legs **43**.

The tongues **46** are bent under the U-shaped portion so as to provide a substantially cylindrical bearing surface which would be employed to receive the loop **11** of the flexible binding strap **12**, such as indicated at Figs. 8 and 9. This same bracket member may also be employed on the opposite binder as the guide member or keeper for the free end of the flexible strap member by merely passing the same therethrough in the manner very similar to that of Figs. 3 and 5. If the back or cover of the loose-leaf binder is made of plastic, the plastic back that is illustrated at Fig. 7 may be readily cemented thereto. However, it may also be cemented to a paper or fiber loose-leaf binder in the same manner as the other members ordinarily attached thereto.

I claim:

1. A loose-leaf binder comprising two folds each formed by turning material back on itself to produce a bend along one edge of each fold, one fold being at least twice the width of the other fold, a cover sheet for each fold, fastener means passing through each fold and its cover sheet to secure it with its opposite edge along one edge of its cover sheet, a back section hinged to said cover sheets along said one edge thereof and extending therebetween, a plurality of leaf holding flexible binding straps each materially longer than the cross dimension of said back section, said straps secured in spaced relation along the bend of the narrow fold, and a keeper in the form of an opening at the bend of the wide fold and in alignment to receive the free end of each flexible binding strap attached to the narrow fold to permit the free end of said straps to slide through said keepers when the binder is opened and closed.

2. The structure of claim 1 characterized in that said two folds, said cover sheets and said back section are all one piece of material.

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