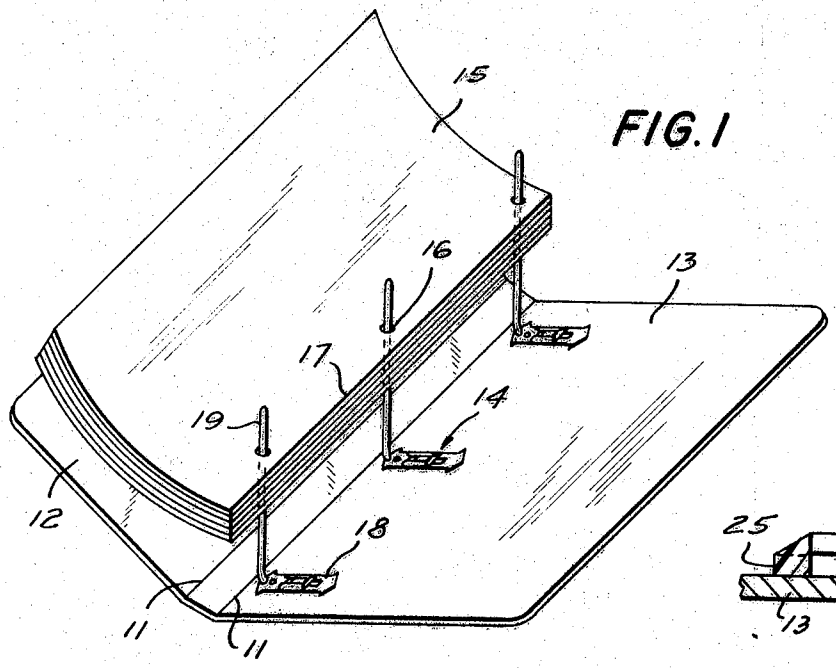
Jan. 9, 1968 C. G. MOLLER 3,362,412

LOOSE LEAF BINDER

Filed July 31, 1967

FIG. 1



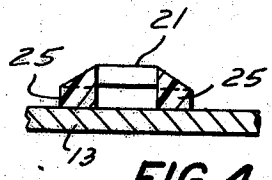


FIG. 4

FIG. 2

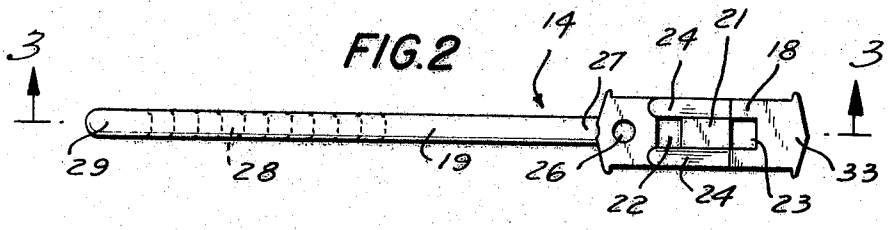
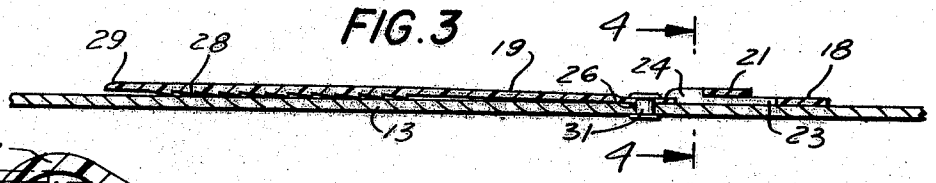


FIG. 3



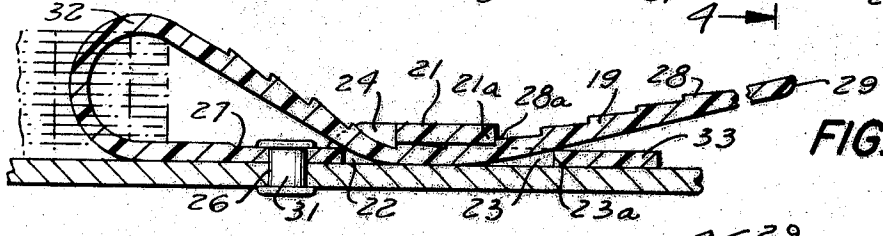


FIG. 5

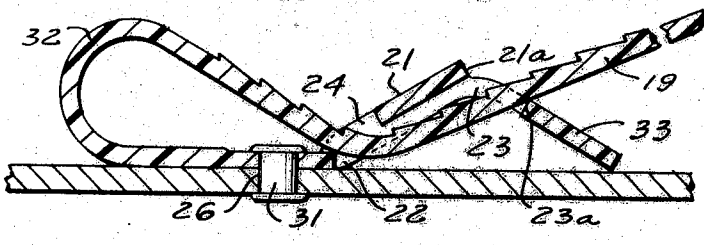


FIG. 6

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LOOSE LEAF BINDER

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1 Claim. (Cl. 129—1)

ABSTRACT OF THE DISCLOSURE

This invention relates to the art of loose leaf binders of the type having a pair of cover members with a plurality of retaining members associated with one of the cover members, each retaining member having a body portion and an elongated tongue extending longitudinally thereof, said tongue being adapted to extend through juxtaposed openings in a stack of loose leaf pages with the body portion of the retaining member having means releasably to lock the tongue in fixed position with respect thereto to define a loop to accommodate the stack of pages.

This application is a continuation-in-part of copending application Ser. No. 513,423, filed Dec. 13, 1965.

As conducive to an understanding of the invention, it is noted that where loose leaf binders utilize spring-urged metal ring loops that may be opened or closed for insertion or removal of perforated sheets of paper, the mechanism in addition to being relatively heavy and bulky, is also relatively expensive to fabricate. In addition, the size of the rigid rings cannot be adjusted so that if only a few sheets are to be accommodated in a binder having large rings, the binder is unnecessarily bulky.

Where a plastic retaining member of fixed size is provided to accommodate the sheets, then it is apparent that where only a few sheets are initially carried by the binder, the latter will be unnecessarily bulky. Furthermore, where the plastic retaining member requires any complex manipulation for opening or closing, insertion and removal of the sheets would be relatively difficult.

It is accordingly among the objects of the invention to provide a loose leaf binder which may readily be fabricated at low cost from relatively inexpensive materials and may readily be adjusted by the user to accommodate varying amounts of sheets of perforated paper of conventional type within a relatively large range of thickness.

Another object is to provide a low cost retaining member which may readily be mounted on the cover member of a loose leaf binder and which may readily be adjusted with a relatively simple manipulation so that at all times one or more sheets of perforated paper will be securely retained in position, yet free to be turned to facilitate reading thereof and without any unnecessary bulkiness of the retaining members in excess of that required to accommodate the number of sheets carried by the binder.

According to the invention, these objects are accomplished by the arrangement and combination of elements hereinafter described and more particularly recited in the claims.

In the accompanying drawing in which are shown one or more of various possible embodiments of the several features of the invention,

FIG. 1 is a perspective view of a loose leaf binder according to one embodiment of the invention, showing the retaining members in open position to receive the perforated loose leaf pages;

FIG. 2 is a top plan view of the retaining member;

FIG. 3 is a longitudinal sectional view taken along line 3—3 of FIG. 2 showing the retaining member secured to a cover panel;

FIG. 4 is a transverse sectional view taken along line 4—4 of FIG. 3, and

FIG. 5 and FIG. 6 are fragmentary detail sectional views illustrating the operation of the retaining member.

Referring now to the drawings, as shown in FIG. 1, the loose leaf binder illustratively comprises a rectangular sheet of relatively stiff cardboard or the like which has a plurality of fold lines **11** extending transversely across the length of the sheet along the center portion thereof to define front and back cover panels **12** and **13**.

Secured to the inner surface of one of the cover panels, illustratively the back cover panel **13** adjacent the fold lines **11**, are a plurality of retaining members **14**.

In the illustrative embodiment shown, three retaining members **14** are provided, where the loose leaf binder is to be used in association with loose leaf sheets or pages **15** of the type shown, having three apertures **16** adjacent one of the side edges **17** thereof.

As shown in FIGS. 1 to 5, each retaining member **14**, which preferably is molded from suitable plastic, has a body portion **18** substantially rectangular as shown with an elongated relatively narrow tongue **19** extending longitudinally therefrom.

The body portion **14** has an elongated rectangular opening therethrough bridged by an inverted substantially U-shaped strip **21** which is molded integrally with the retaining member **14**. The bridging strip **21** defines openings **22**, **23** on each side thereof respectively through which the tongue **19** may extend.

The opening **22** along each side thereof has ribs **24** which preferably are molded as continuations of the side walls **25** of the U-shaped bridging strip **21** and which serve to reinforce the body portion **18** at the region thereof between the bridging strip **21** and a retaining opening **26** adjacent the root end **27** of the tongue **19**.

The bottom surface of the tongue **19** has a plurality of substantially saw tooth protuberances **28** formed therein extending from near the free end **29** of the tongue toward the root end **27** thereof, the function of which will be hereinafter described.

The body portion **18** of the retaining member **14** is secured to the cover member **13** by a suitable fastening member **31** such as a rivet, extending through the body portion **18** between the opening **22** and the root end **27** of the tongue **19**. The retaining members **14** are positioned so that when initially fastened in place on the panel **13**, the protuberance **28** will be directed downwardly as shown in FIG. 3.

In use of the loose leaf binder, above described, the plurality of perforated loose leaf pages **15** are positioned so that the tongue **19** of each of the retaining members **14** extends through the aligned openings **16** of a stack of loose leaf pages as shown in FIG. 1. Thereupon, the tongue **19** is reversely bent to form a loop **32**, as shown in FIG. 4 and the free end **29** of the tongue **19** is moved through opening **22**, then beneath the bridge **21** and out of opening **23** so that such free end **29** will then extend over the rear end **33** of the body portion **18**. When the tongue **19** is pulled to the right as shown in FIG. 4 to reduce the size of the loop **32** so that it is of just sufficient size to accommodate the stack of pages, one of the saw tooth protuberances **28***a* will engage the edge **21***a* of the bridge **21** releasably to lock the pages in position.

By reason of the fact that the body portion **18** is mounted to the cover panel as at **31** adjacent the root end **27** of the tongue **19**, the free end **33** of the body portion **18** is free to move toward and away from the panel on which it is mounted.

As a result, in order to release the tongues for insertion or removal of sheets **15**, it is merely necessary to move the end **33** of the body portion forwardly from the position shown in FIG. 4 to the position shown in FIG. 5, so that the body portion tends to form a curve as shown

in FIG. 5. By reason of the reinforcement provided by the parallel ribs 24, the region of the body portion between the mounting member 31 and the locking edge 21*a* of the bridge will remain in a relatively straight line. Thus, the outer edge 23*a* of opening 23 will move downwardly below the plane of locking edge 21*a*. As the smooth surface of tongue 19 rests on said edge 23*a*, since the thickness of the tongue 19 is considerably less than the clearance now provided between edges 21*a* and 23*a*, it is apparent that the tongue 19 can readily be moved through openings 23, 22 without engagement of the protuberance 28 by locking edge 21*a*.

As the retaining member above described can readily be fabricated by molding, it can be made in large quantities at relatively low cost. To assemble the retaining members to the cover panel of the binder merely requires a simple riveting or stapling operation, for example, which may be performed automatically. As a result, the expandable binder of the type above described can readily be fabricated at low cost and with a simple manipulation may readily be adjusted to accommodate a few pages or a large number of pages.

As many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope of the claim, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A loose leaf binder comprising a pair of cover panels, a plurality of retaining members associated with one of said cover panels, each of said retaining members having a body portion and an elongated tongue having its root end integral with said body portion and extending longitudinally thereof, said tongue being adapted to extend through the juxtaposed openings in a stack of loose leaf pages, said body portion having means releasably to lock

the tongue in fixed position with respect thereto to define a loop to accommodate such stack of pages, said locking means comprising a pair of spaced aligned openings in said body portion longitudinally aligned with said tongue, one of said openings being adjacent the end of the body portion remote from the tongue, said tongue being adapted to extend through said openings beneath the region of the body portion between said openings, the region of the body portion between said openings being defined by an inverted U-shaped bridge integral with the body portion, a pair of parallel ribs formed respectively on opposed sides of the opening in the body portion adjacent the root end of the tongue to reinforce the associated region of the body portion, said tongue having a plurality of saw toothed protuberances on the surface thereof opposed to the surface of the body portion from which the bridge rises, at least one of said protuberance being adapted to engage the edge of said bridge associated with the opening adjacent the end of said body portion, releasably to lock said tongue in position and means securing said body portion to one of said cover panels between the root end of the tongue and the other of said openings and with said body portion normally lying flat on said one cover panel with said inverted U-shaped bridge extending upwardly from said one panel, the end of said body portion remote from the tongue being freely movable away from said panel, whereby when the free end of the body portion is moved forwardly it will tend to form a curve thus lifting the end of the bridge away from the engaging protuberance to release the latter so that the tongue may then readily be slid through the aligned openings for release thereof.

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