MOLDED PLASTIC LOOSE LEAF BINDERS

INVENTOR.

By

Milton E. Libby

ATTORNEYS.
MOLDED PLASTIC LOOSE LEAF BINDERS

Milton E. Libby, Glen Rock, N.J., assignor to
Milton M. Harris, Fair Lawn, N.J.
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This invention relates to loose-leaf binders and more particularly to an all-plastic binder.

A principal object of the present invention is to provide a molded loose-leaf binder with built-in hinges and flanges and wherein the rivet heads are concealed.

Another object of the invention is to provide a loose-leaf binder wherein the spine and cover members are weakened along parallel lines to provide hinges.

A further object according to a modification of the invention is to provide a loose-leaf plastic binder wherein the spine and cover members are molded and integral flanges are formed along the junctures between the spine and cover members and the flanges are perforated to receive fastening elements.

Still another object of the invention is to provide a molded loose-leaf binder wherein the side cover members are formed with inwardly extending abutting flanges for protecting the edges of the leaves.

Yet another object is to provide a molded loose-leaf binder that is simple in construction, attractive in appearance, and economical to manufacture.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings material a part of this disclosure:

FIG. 1 is a top perspective view of a loose-leaf binder embodying my invention in flatwise open condition, leaves being shown removably fastened thereto, parts of the leaves being shown broken away.

FIG. 2 is a top plan view of a fragment of the loose-leaf binder in flatwise open condition, parts being omitted.

FIG. 3 is an end view along the lines 3-3 of FIG. 1.

FIG. 4 is a cross-sectional view taken on the line 4—4 of FIG. 1.

FIG. 5 is a sectional view taken on the line 5—5 of FIG. 1, parts being shown broken away.

FIG. 6 is an enlarged cross-sectional view taken on the line 6—6 of FIG. 1, showing a base plate and ring in dot-dash lines and showing one cover member moved to closed condition in dot-dash lines.

FIG. 7 is a view similar to FIG. 4 showing a modified form of peripheral flange.

FIG. 8 is a top perspective view of a loose-leaf binder embodying a modified form of the invention, leaves being shown in fastened condition therewith.

FIG. 9 is a top plan view of the loose-leaf binder of FIG. 8 in flatwise open condition, looking at the interior thereof.

FIG. 10 is an enlarged cross-sectional view taken on the line 10—10 of FIG. 9, showing a fastening element and leaves in fastened condition in dot-dash lines, one cover member being shown in closed condition in dot-dash lines.

Referring more in detail to the drawings, in FIG. 1 there is shown a loose-leaf binder made in accordance with one form of my invention and designated generally by the reference numeral 10. The binder 10 comprises a rectangular-shaped body in closed condition having an elongated rectangular-shaped back or spine portion 12 and side cover members 14, 14. The back or spine portion and the side members are molded in one piece from suitable commercial plastic injection molding material.

In accordance with the invention, the spine or back portion 12 is slightly curved longitudinally with squared shoulders 16 formed alongside the long side edges thereof, and beads 18 are formed alongside and outwardly of the shoulders 16. The beaded portions 18 merge downwardly into grooves 20, 20 formed lengthwise of the back portion at its junctures with the side covers 14, 14, on the inside thereof, thereby weakening the material of the binder thereon allowing the side cover members to flex at such points until the grooves 20 engage the beads as shown in dot-dash lines in FIG. 6. The shoulders 16 and beads 18 are provided to stiffen the back portion 12 adjacent the weakening flex or hinge grooves 20.

An important feature of the invention is the contour of the long and end edges 22, 22 and 24, 24, respectively, of the side cover members 12, 12. These edges are disposed at an angle to the plane of the bodies of the cover members, extending inwardly as best seen in FIGS. 3, 4 and 5. The edges extend inwardly sufficiently to align each other when the binder is in closed condition. Instead of angular, however, the edges may be curved as indicated at 25 in FIG. 7.

Another important feature of the invention is the mounting of the pair of longitudinally spaced rivets 26 for frictionally securing the base plate 28 to the inner surface of the back portion 12 (only one rivet being shown). The base plate 28 is oval in cross section, forming an upper convexly curved wall 30 and a lower concavely curved wall 32 and extends the length of the spine or back portion, the lower curved wall being shaped to conform to the shape of the inner surfaces of the spine or back portion 12. According to the invention, the head 34 of each rivet is molded into the material of the spine or back portion 12 as seen in FIG. 6 and is thus concealed from view. The Shank 36 extends upwardly through and frictionally engages the wall defining a hole 38 in the bottom wall 32 of the base plate 28 into the interior of the plate and the shank of the rivet is formed with a transverse hole 40.

A pair of closely spaced holes 42 are formed in the top wall 30 of the plate 28 over each hole 38 in the bottom wall 32, on both sides of the shank 36 of the rivet 26. A breakable metal ring 44 is inserted through the aligned holes 40 and 42 in the plate 28 of the rivet. Subsequently, the ring extending outwardly and radially of the base plate 28 as seen in FIGS. 1 and 6.

In FIG. 1, a supply of leaves or sheets 48 is shown secured in position by means of a paper cover 50 having an extension 52 along one long edge thereof provided with spaced holes 54 slotted over the rings 44 when opened.

In use, when the leaves 48 are secured in position, the side cover members 12, 12 may be swung toward each other along the grooved weakened lines 20, 20 until the edges 22 and 24 of the respective cover members 12, 12 abut each other in closed condition whereby the edges of the leaves are protected and the rivets are hidden from view.

Referring now to the modified form of the invention shown in FIGS. 8 to 10, inclusive, this binder 10' differs from the binder 10 in that the back or spine portion 12' is formed with radially extending flanges 58, 58 along its long edges on the inside thereof for the length thereof, along the grooves 20'. The flanges 58, 58 are formed with a pair of opposed holes 60, 60 adjacent each end of the spine or back. In this form of binder 10', the shoulder 16 and bead portion 18 of binder 10 are omitted.

In all other respects, the binder 10' is similar to binder 10 and similar reference numerals are used to indicate similar parts.

In using the binder 10', the inner edges of the leaves are...
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48' are disposed over the inner surfaces of the spine or back portion 12' between the flanges 58, 58 and an elongated screw and bushing assembly 62 extends through the holes in the flanges and through aligned holes 64 in the leaves 48' with the heads 66 of the screw and bushing on the outside of the flanges. The screw and bushing assembly detachably hold the leaves 48' in place in the binder.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the appended claims.

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

1. A loose-leaf binder comprising a rectangular-shaped plastic body including an elongated rectangular-shaped back portion and rectangular side cover members, said back portion and cover members being molded together, a pair of rivets with heads embedded in the material of the back portion, said rivets having transverse holes in the shanks thereof, a flattened tubular plate having a concave lower wall and a convex upper wall, said concave lower wall having a pair of longitudinally spaced holes therein, and said convex upper wall having a pair of transversely spaced holes disposed therein adjacent each end thereof in vertical alignment with the said longitudinally spaced holes in the said concave lower wall, the concave lower wall of said plate being secured in contact with the inner wall of said back portion by the said shanks of said rivets extending upwardly through the said longitudinally spaced holes therein in frictional engagement with walls defining said holes, and split rings extending through said pair of transversely spaced holes in the said convex upper wall and the transverse hole in the rivet shanks extending up the longitudinally spaced holes in the said concave lower wall for releasably holding leaves in position between the cover members of the body.

2. A loose-leaf binder as defined by claim 1 in which said body has elongated grooves in the inner surface thereof at the junctures of the back portion and the side cover members which extend throughout the length of the back portion.

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JEROME SCHNALL, Primary Examiner.

LAWRENCE CHARLES, LEONARD W. VARNER,
Examiners.