Jan. 15, 1963 F. S. SCHADE 3,073,315

FASTENER FOR EXPANDABLE LOOSE LEAF BINDER

Filed Oct. 7, 1959

Fig. 1.

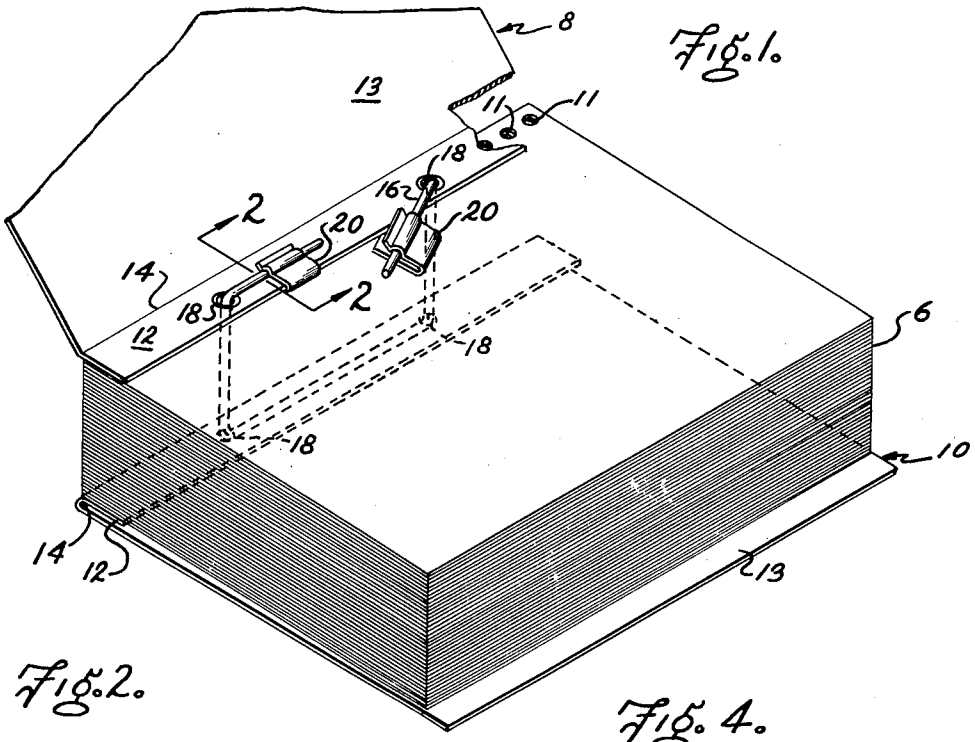


Fig. 2.

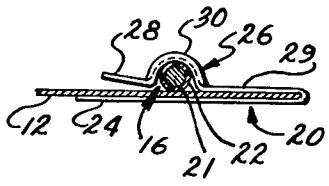


Fig. 3.

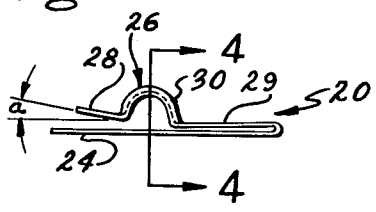


Fig. 4.

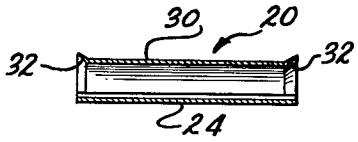
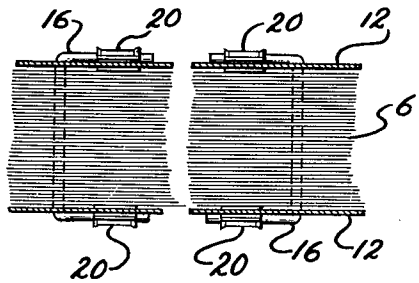


Fig. 5.



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FASTENER FOR EXPANDABLE LOOSE LEAF BINDER

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1 Claim. (Cl. 129—41)

This invention relates to expandable loose leaf binders and particularly to fasteners for securing loose sheets in book-page relation.

The principal object of this invention is to provide an improved fastener for loose leaf binders which is separate and distinct from the binder cover members and which may be manufactured and sold independently of the cover members.

Another object of this invention is to provide a fastener element for loose leaf binders which can be fitted over the binding strip portion of the binder cover at any point along its length for securely and neatly clamping the free ends of a flexible post member against the binding strip regardless of the length of the post member.

A further object of this invention is to provide a fastener element for loose leaf binders of simple and inexpensive construction.

The above and other objects and advantages of this invention will be apparent from the following description with reference to the accompanying drawing in which:

FIG. 1 is a perspective view of an expandable loose leaf binder embodying this invention;

FIG. 2 is a section on an enlarged scale taken along line 2—2 of FIG. 1;

FIG. 3 is an end view of the fastening element shown in FIG. 2;

FIG. 4 is a section taken along line 4—4 of FIG. 3; and

FIG. 5 is elevation partly in section of the back of a binder showing an alternative method of practicing this invention.

Referring in detail to the drawing, an expandable loose leaf binder is shown in FIG. 1 in which a plurality of sheets 6 are bound together in book-page relation between a pair of cover members 8 and 10. The sheets 6 include a plurality of holes of perforations 11 along their marginal edge portions by which the sheets may be tracked through business machines. The cover members include binding strip portions 12 between which the perforated marginal edge portions of the sheets 6 are captured. Front and back cover panels 13 are hinged to the marginal binding strips by crease lines 14. A post member or wire 16 extends through spaced perforations 11 in the marginal edge portions of the sheets 6 and through holes 18 in the binding strips registered with the spaced perforations. The post member 16 is stiffly flexible enabling its free end portions to be easily threaded through the perforations in a stack of sheets and bent downwardly toward the outer surface of the binding strip 12. A fastening element or clip 20 clamps the free end portion of the post member against the binding strip.

The post member 16 is of circular cross section and is preferably in the form of a flexible metal wire 21 having a smooth plastic cover or coating 22. The plastic coating reduces wear and tear on the sheets by the insertion and removal of the post from the sheet perforations. In addition, the plastic coating prevents the metallic wire from rusting and eliminates the possibility of cutting or nicking the hands on an unraveled thread of the metal wire. As shown in FIG. 1, a single post member may be employed in binding the sheets 6, in which case the free ends of the wire extend outwardly of the same binding strip and may be secured thereto by a pair of clips

20. Alternatively, two lengths of wire 16 may be used as shown in FIG. 5, in which case the free ends of each wire extend outwardly of opposite sides of the binder. Each wire requires two clips 20 to secure its free ends to the front and back binding strips 12.

The fastener 20 is a generally U-shaped metal clip comprising a lower plate 24 and an upper plate 26 disposed in spaced superposed relation to the lower plate. At the outer or open edge of the clip the upper plate includes a portion 28 which extends outwardly in diverging relation to the lower plate 24. The diverging relation of the outer portions of the clip provides an entry angle *a* facilitating placement of the clip around the edge portion of the binding strip. The upper plate includes an inner portion 29 which is disposed in converging relation to the lower plate when the clip is in an unflexed condition, as shown in FIG. 3. Intermediate the converging and diverging portions, the upper plate includes a curved portion 30 which provides the recess for receiving the binding wire or post member 16. As shown in the drawings, this curved portion of the clip is cylindrical conforming with the cross section of the wire. In its unflexed condition, the distance between the upper surface portion of the recess and the opposite surface portion of the lower plate 24 is less than the sum of the diameter of the post member 16 and the thickness of the binding strip 12. Thus, as the clip is fitted over the edge of the binding strip with the post member 16 disposed in the recess, the outer plate of the clip 20 is flexed outwardly and firmly clamps the post member 16 against the upper surface of the binding strip.

As shown in FIG. 4, opposite edges of the clip's curved portion 30 are flared outwardly as indicated at 32, facilitating insertion of the post member 16 into the recess of the clip.

It will be readily appreciated that the fastener clips 20 may be fitted around the binding strips 12 at any point along the length of the strip at which it is desirable to clamp the free ends of the post members to the strip. Thus, where the free ends of the post members are relatively long, they can be clamped at or adjacent to their outer ends. As the sheet pack increases in size and the free end portions of the post member 16 decreases in length, the clips 20 can be moved outwardly toward the holes 18 to clamp the ends of the post member against the binding strip.

Having thus described this invention, what is claimed is:

An expandable post binder for loose sheets having perforated marginal edge portions comprising at least one binding strip having openings registrable with perforations of said sheets, a stiffly flexible rod member of generally circular cross section threaded through said perforations and registered openings and having at least one of its terminal end portions extending outwardly of said binding strip, and means clamping said terminal end against the surface of said binding strip, said clamping means comprising a spring metal clamp slidable on said rod member and fitted over an edge portion of said binding strip, said clamp being structurally discrete from said binding strip and rod enabling said rod to be clamped against said binding strip at any point coextensive with the length of the terminal end portion of said rod, said clamp having spaced opposed upper and lower plate portions, the upper plate portion including a downwardly opening, rod-receiving channel extending from end-to-end thereof, the maximum distance between the inner surface of said channel and the opposed portion of the lower plate being not greater than the diameter of said rod and the thickness of said binding strip.

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