United States Patent

[11] **3,582,224**

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[54] **LOOSELEAF POST BINDER FASTENER ASSEMBLY**
1 Claim, 6 Drawing Figs.

[52] **U.S. Cl.** **402/17**
[51] **Int. Cl.** **B42f 3/00,** B42f 13/06
[50] **Field of Search** 402/9, 14, 15, 16, 17, 18; 24/81

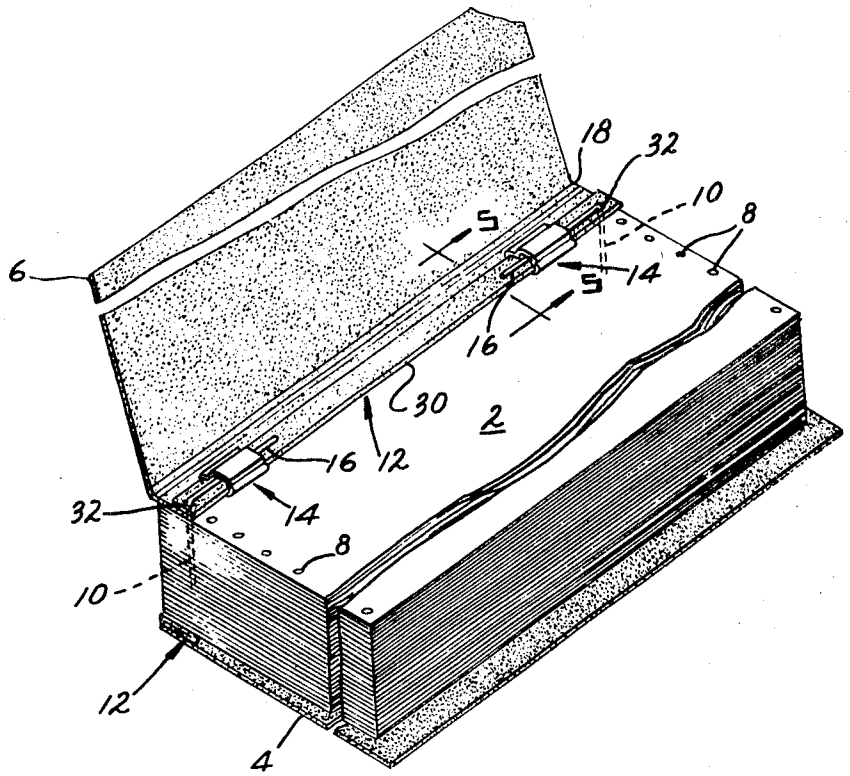
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Attorney—Chapin, Neal and Dempsey

ABSTRACT: A binding strip and post clamp construction for expandable looseleaf binders utilizing posts of a stiffly flexible rodlike character, comprising a folded two-ply strip of resilient coverboard material with registrable holes and a clamp of stiff springy material slidably engaged on the strip, a lower plate of the clamp underlying the strip, a bight portion engaging the fold thereof, and a parallel upper plate having a free edge reversely hooked to receive the edge of the upper ply for guided clamp movement and to frictionally grip said lower ply between the plates, the upper plate also having a post receiving channelled section for sliding over terminal end portions of posts flexed against the strip. The clamp is slidable into position endwise of the strip.



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Fig. 1.

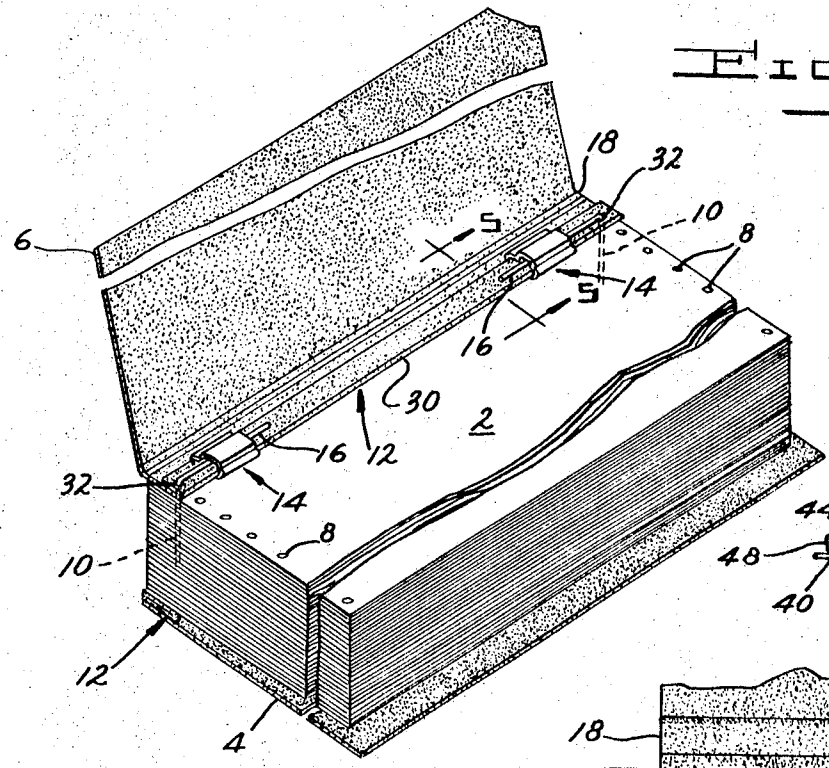
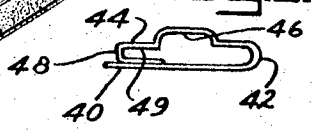


Fig. 2.



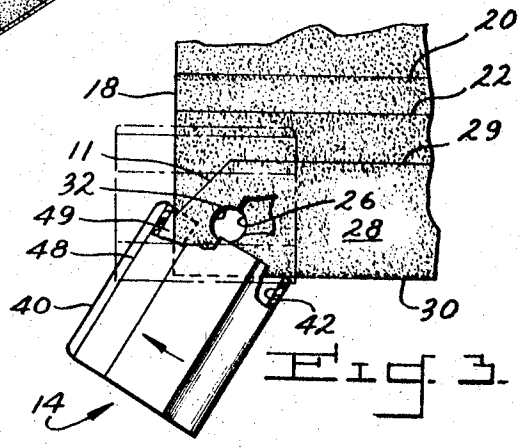


Fig. 3.

Fig. 4.

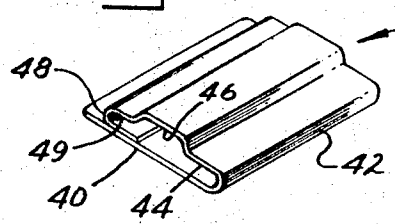


Fig. 6.

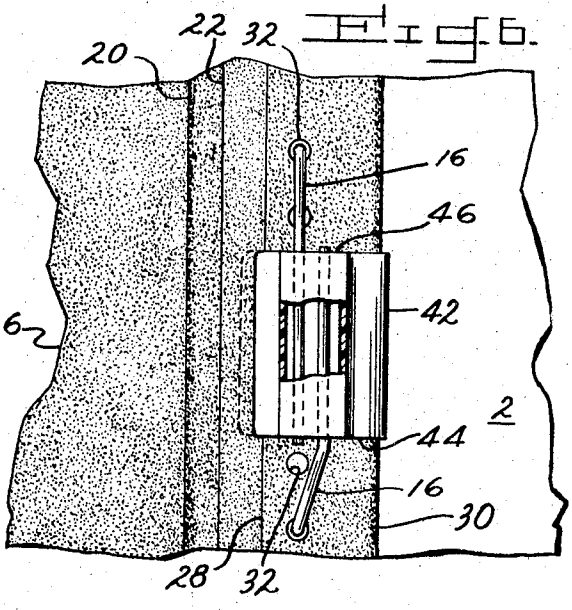
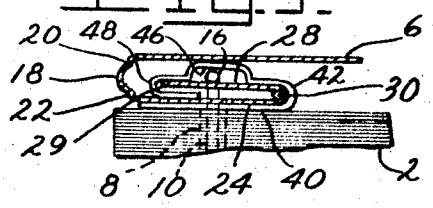


Fig. 5.



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LOOSELEAF POST BINDER FASTENER ASSEMBLY

This invention relates to expandable looseleaf binders and particularly to an inexpensive clamp fastener and binding strip assembly for securing a filler pack of loose sheet contents between binder covers. More particularly the invention relates to binder assemblies especially designed for business machine or data processing machine record sheets having a plurality of small perforations along the marginal side edges thereof for tracking purposes and through which stiffly flexible rodlike "-posts" may be threaded for binding between covers of cardboardlike material and primarily for temporary or permanent storage purposes.

DESCRIPTION OF THE PRIOR ART

Prior binding strip and "post" clamping devices of the general type of which the present invention relates are many and varied. Broadly they are known as "Acco" fastener and related types. In such devices a post element, on which sheets are mounted, is turned down and held at right angles by a slidable clamp element against a marginal binding strip to which a binder cover panel is normally hinged.

An example of this binder type may be seen in U.S. Pat. No. 3,073,315 issued Jan. 15, 1963. As there disclosed a spring clamp is first slidably placed on the rodlike flexible post and then, with post inserted, the clamp is fitted in place over the edge of a coverboard binding strip, preferably integrally hinged to the cover. Another well-known commercially available construction and one directly comparable to the "Acco" fastener construction includes a stiff metal or plastic channel member which is secured as by riveting to a coverboard binding strip hinged to the cover panel. The channel member forms tracking means at each side for slidably pocketing flanges along each side of an inverted U-shaped post clamp. Channel stops are provided at each end to prevent endwise separation therefrom. The sliding clamps are manipulated in well-known fashion to overlie and hold terminal end portions of flexible posts extending up through perforations in the strip and channel and turned down against the latter.

The clamp and binding strip arrangement disclosed in the above patent has the advantage of extreme simplicity and low cost. However, the fact that the clamp is separated from the assembly when adding or subtracting contents of the binder is at times an undesirable feature from the standpoint of efficiency in handling. In the commercial structure described the sliding clamps remain with the channel member. Adding the channel, however, requires an extra assembly operation in the manufacture of the binder as well as adding expense in providing the additional element.

A principal object of the present invention is to provide an assembly which largely preserves an extreme simplicity of construction and inexpensive nature characteristic of that of the patented device and yet in part preserves operational features substantially comparable to that of the commercial structure above described. The inexpensive nature of the materials which may be used in an assembly is, in fact, such as to make it practical to dispose of the covers along with the contents when the latter are no longer needed and are being discarded.

SUMMARY OF THE INVENTION

In the present invention the tracking of one or more sliding clamps along a marginal binding strip is accomplished by forming the strip as a two-ply structure, preferably by reversely folding the material of the strip over on itself. A sliding clamp of cliplike form is mounted on the folded plies to grip the lower ply of the strip for frictional sliding action and to hook onto the upper ply by a pocketing action for guided movement of the slide along the strip. The upper plate portion of the clamp is provided with a downwardly facing channel for receiving the terminal end portion of a flexible binding post.

Further objects, features and advantages of the invention will be evident from the following description of a preferred embodiment thereof as shown by the accompanying drawings.

DRAWINGS

FIG. 1 is a perspective view with parts cut away of an assembled binder embodying the invention;

FIG. 2 is an end view of the clamp element thereof;

FIG. 3 is a detail view showing a preferred method of mounting the clamp on the binding strip of a cover panel member;

FIG. 4 is a perspective view of the clamp;

FIG. 5 is a sectional view on line 5–5 of FIG. 1; and

FIG. 6 is a plan view with parts cut away of a binding strip and clamp showing an alternative use of the clamp.

Referring to FIG. 1, an expandable looseleaf binder assembly is shown with a looseleaf filler pack comprising a plurality of loose sheets 2 bound between cover panels 4 and 6. Sheets 2 are of a conventional type having a plurality of small, closely spaced perforations 8 along opposite side edges for tracking purposes in business record machines or data processing equipment.

The post elements 10 of the assembly (FIG. 1) are stiffly flexible rodlike members of a well-known type. Extending through the registered perforations of sheets 2 and perforations of the two-ply binding strip 12 as will be described, the terminal end portions 16 of the posts are flattened at right angles against strip 12 and held by clamps 14 to securely bind the sheets between the covers 4 and 6. As will be apparent sheets 2 can be added or subtracted by disengaging portions 16, removing the strip 12 from the posts and then replacing the strip, posts and clamps in the condition shown by FIG. 1.

The material of strip 12 is preferably a resiliently flexible coverboard material and formed integrally with the cover 6. As best shown by FIG. 5 cover 6 may be suitably joined to the strip by a hinge section indicated at 18 and formed by impressing parallel crease lines as at 20, 22. The strip 12 is of two-ply construction, a base portion 24 being provided with perforations 26 registrable with perforations 8 at the upper corners of the sheets 2 of FIG. 1. It will be obvious to those skilled in the art that the strip 12 may also overlie a series of perforations along one side of the sheets 2 and perforations in strip 12 provided for registration with any given set of holes 8. As many perforations as desired may be provided in strip 12 so that the assembly may accept posts 10 in a variety of positions along a perforated edge to best suit a user's preference.

Along the edge of the base portion at 24 is a reversely folded extension or upper portion 28 of the composite strip 12. The hinge line of the coverboard material providing the reverse fold is preferably creased as at 30 by pressing the material in the direction of the fold. The inherent resiliency of the material, when creased, thus normally holds the upper ply or portion 28 generally parallel to the base 24. It will be noted (FIG. 5) that the upper ply does not completely overlie base 24, the free edge thereof at 29 lying inwardly of the opposite edge of the base along the crease line 22. The upper ply is provided with perforations as at 32 registerable with the sheet and base perforations 8 and 26 for receiving the posts 10 and turning the terminal portions 16 thereof against the upper surface of the folded binding strip.

The clamps 14 engage the folded strip 12 with a frictional grip and are guided for sliding movement by pocketing the upper ply 28. The clamp may be of any suitable stiffly resilient springlike material as spring metal. In its preferred form it is cut to size from a strip of extruded plastic having the desired characteristics as, for example, a high impact styrene of suitable formulation.

As shown the clamp is provided with a flat lower jaw plate 40 adapted to underlie the base portion 24, a reverse fold or bight portion 42 adapted to embrace the reverse fold line portion 30, and an upper jaw plate portion 44 generally in spaced parallel relation to the lower plate 40. The upper plate 44 is formed with a centrally disposed downwardly facing longitudinally channeled section 46 for receiving the post ends 16. At its free edge is a reversely hooked portion 48 having a positional tracking slot at 49 in which the free edge of the upper ply 28 is caught. The hooked portion 48 lies inwardly of the

free edge of the lower jaw plate and is in closely adjacent relation thereto.

Clamps **14** engage strip **12** by sliding the same over an end thereof so as to tuck the free edge **29** of the upper ply into the slot **49** of the hooked jaw portion **48**. Preferably, a corner of the upper ply is diagonally cut as indicated at **11** (FIG. **3**). Most conveniently the clamp may thus first be applied angularly at the corner to engage the bight **42** against the fold **30** of the strip as in the full-line position of FIG. **3**. The clamp may then be pivoted at the point of bight engagement and swung into position with lower ply **24** passing between the slightly flexed hook portion **48** and lower plate **40**. The slot **49** thus easily receives the diagonal edge **11** first and then is turned to slide over and catch the edge **29** of the upper ply when the clamp slides into place on the strip.

As will be clear from FIG. **2** and FIG. **5** the hooked flange portion **48** and lower jaw plate are flexed to grip the base portion **24** of the strip therebetween for a frictional sliding movement. This means the clamp will remain in any relative position on the strip to which it may have been manually moved whether engaging a post or not. Since the channeled upper plate portion **44** has the upper ply **28** caught between the bight **42** and the slot **49** the clamp is securely guided for longitudinal sliding movement only. Because of the insertion of the upper ply free edge **29** in slot **49** and the above-mentioned frictional grip the clamp will be separated from strip **12** normally by intentional end-wise movement only.

It will be noted from FIGS. **1** and **5** that the strip and clamp construction disclosed is adaptable for use with a variety of flexible post constructions insofar as the diameter of the latter is concerned. The flexible coverboard material will "give" to the degree needed for the usual range of post diameters used in this type of assembly. The frictional grip of the clamp on the base ply plus the friction of a post when inserted in the channel portion **46** will securely hold the clamp in any position to which it is set. As will be apparent from FIG. **5** the clamp and strip assembly structure is adapted to serve a range of post diameters merely by providing a suitable perforation size and without altering the dimensions of the clamp.

As will also be noted from the width of the channel portion **46** a single clamp is adapted to receive more than a single post. In some cases the posts may be set in closely spaced relation in an assembly where the binder contents are of a particularly bulky nature and more than two or more sets of posts may be desirable where the binding strip lies along a perforated margin of the filler sheets. In such instances adjacent posts may be held by a single clamp. This condition is illustrated by the showing in FIG. **6** illustrating a section along such a binder strip assembly.

Referring to the assembly of FIG. **1** it will be obvious that lower terminal end portions of the posts **10** may be similarly clamped along a binding strip **12** at the bottom of the pack of sheets **2**. Alternatively, as will be recognized by those familiar with this art, a single post element may be used, if desired. In such case the midportion of the element may lie along the lower strip and the ends thereof be directed upwardly for clamping in the assembly as desired.

What I claim is:

1. A binding strip and post clamp assembly for expandable binders containing loose sheets with perforated marginal edge portions and stiffly flexible rodlike post members extending through and outwardly of the perforations thereof, said assembly having

a two-ply binding strip member of resiliently flexible coverboard material including

a flat planar marginal base portion with perforations registrable with the marginal perforations of said loose sheets, and along one edge thereof,

a flat planar folded upper portion urged normally towards an upwardly angled overlying relation to said base portion,

said upper portion having perforations therein registrable with the perforations of the base portion when brought into parallel relation thereto, the free edge of said upper portion lying inwardly of the opposite edge of the base portion, and

a stiffly resilient clamp member having

a lower jaw plate,

an upper jaw plate in opposed overlying relation thereto and an integral bight portion connecting said plates,

the upper plate having a downwardly facing longitudinally channeled portion from end to end and a hooked flange portion at the free edge of the plate spaced inwardly from the free edge of the lower plate, said hooked portion lying in closely adjacent relation to said lower plate and providing a longitudinal tracking slot facing said bight portion, said clamp being releasably mounted on the binding strip with the lower jaw plate of the clamp underlying said base portion, the upper jaw plate of the clamp slidably engaging said upper portion of the strip between said bight and tracking slot and holding said upper portion approximately parallel to said base portion, and said hooked flange and lower plate portions gripping the base portion of the strip therebetween for frictional sliding movement,

said clamp being movable to engage and hold the terminal end portion of a looseleaf post member flexed against the outer surface of said upper portion of the strip in said channeled portion of the upper plate, said two-ply binding strip being an inner integral part of, an expandable binder cover member for loose sheets,

the edge of said marginal base portion opposite said one edge thereof having a creased hinge line portion parallel to said one edge and defining the inner edge of a cover panel.