Oct. 15, 1935. F. S. SCHADE 2,017,220

BOOK BINDER CONSTRUCTION

Filed Aug. 24, 1934

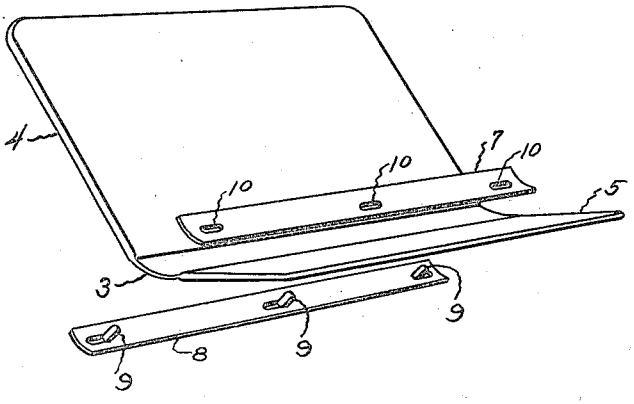


Fig. 1.

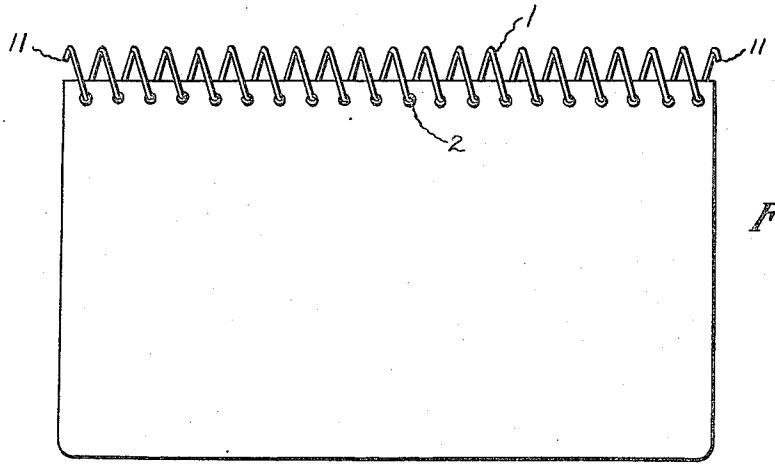


Fig. 2.

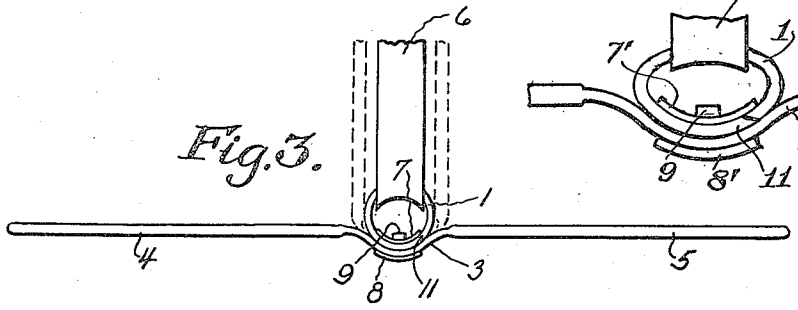


Fig. 3.

Fig. 5.

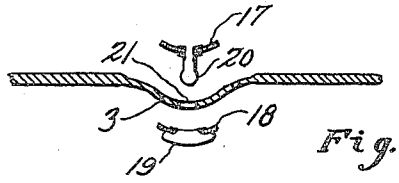


Fig. 4.

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BOOK BINDER CONSTRUCTION

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Application August 24, 1934, Serial No. 741,241

3 Claims. (Cl. 281—25)

This invention relates to improvements in book construction and particularly to bound notebooks.

The particulars of the invention will be best understood from the drawing and detailed description which make a complete disclosure.

Fig. 1 is a perspective view of the cover and back elements of the book with the binding strips used to fasten the parts of Fig. 2 separated from the back;

Fig. 2 is a view of the filler or pages of the book shown bound together, before the covers and back elements or binding strips are assembled with the filler;

Fig. 3 is an end view of the finished book with the elements positioned in a particular manner to show the arrangement of parts;

Fig. 4 is a detail sectional view indicating a modified form of book; and

Fig. 5 is an end view of a finished book with parts positioned in a different manner.

To put the improvements into use I assemble the book pages and bind their edges by threading a spiral wire 1 through marginal holes 2 of the paper. The wire is formed like a coiled spring and engages the binding holes that are separated a distance equal to the pitch of the coil, as in Fig. 2.

This kind of assembly such as shown in Fig. 2 has been extensively used per se for notebooks. It has been customary in such use to bend over or enlarge the ends of the wire 1 to prevent the sheets from working off the ends. And in the prior use it has been customary to bind covers on the outside of the pack of sheets so the covers are bound in the same manner as the sheets. Such arrangement leaves the back of the notebook open and formed merely by the wire cage of the spiral wire 1 that binds the leaves.

In the preferred form of the present invention, I employ a book binding case consisting of back panel 3 and hinged covers 4 and 5 made up as a unit having the panel 3 slightly curved in cross-section. I place the coiled wire 1 holding the sheets 6 along the trough formed by curved panel 3. I place the metal strip 7 formed as in Fig. 1 within the spiral binding wire in position to press the bottom portions of all the turns against the panel 3. The metal strip 8 is placed on the outside of panel 3. Strip 8 has a set of spaced integral prongs 9 pushed through panel 3 and these prongs are bent over the edges of aligned openings 10 in strip 7 to hold the assembly together. In such an assembly the ends 11 of the spiral coils of wire 1 are trapped (by being cut and positioned for the purpose) under strip 7 or so near the edge thereof as to be entirely out of the way and not apparent to the eye. This arrangement completes the book in its preferred form, shown in Fig. 3.

In some cases it is desirable to make the curvature of the back panel 3' and the strips 7' and 8' on a substantially larger radius than that of the spiral curve, see Fig. 5. This arrangement would flatten out the turns of binding wire so that instead of being round in the finished book they would be oval with the long axis of the oval arranged transversely of the filler or pack of sheets. Thus, the bound margins of the sheets would be brought closer to the back of the book.

Some of the advantages of the book in my disclosure are as follows: The sheets are bound separately by a single piece of coiled wire and in position for easy turning to flattened position at all times; this wire has each turn tightly clamped over a substantial arc so as to most effectively stiffen the whole wire construction and give the coils a stiff economical "backbone" to prevent bending of the coil axis, and independently of the sheets and covers. The sheets and covers may be extremely flexible and yet their bound edges are effectively maintained in the desired alignment.

A book of this character may have the outside appearance as in a more expensive book with covers, back panel, and filler, but the filler has been effectively bound with the back and covers in such an inexpensive manner that the total cost is less than its appearance and function would suggest as compared to other books. This is of large importance in notebooks for general use.

The improved book has all the advantages of a high grade permanently bound book at a lower binding cost and other advantages. If one tears out a sheet from the ordinary permanently bound book evidence of the tear will appear in the book. So far as mere removal of a page is concerned my permanently bound book has the advantage of a loose leaf book. The page can be torn out without leaving evidence of the tear, and the stiff "backbone" in the binding elements is a help in tearing out sheets as described.

The book described is intended for a permanently bound book which when the sheets are used up is not refilled. The modification with parts made as indicated in Fig. 4 is to make the book available for readily supplying new fillers in the hands of the ultimate user. Instead of using paced prongs to fasten strips 7 and 8 in substantially permanent fashion a type of read-

ily removable snap fasteners such as glove fasteners 19 and 20 may be used. In this arrangement the user can easily unfasten strips 17 and 18 without tools, slip strip 17 inside the wire coil binder with a fresh set of filler sheets held together by a wire 1, and clamp strips 17 and 18 together again by inserting studs 20 through apertures 21 in the back panel to which the covers are hinged.

Having disclosed my invention, I claim:

1. A book construction made of a single piece of spirally wound spring wire, filler sheets with perforations engaged by the successive turns of said wire, a stiff metal strip placed on the inside of said coil and extending from end to end, a back panel and hinged covers, a second metal strip on the back panel, and means on said strips to clamp them tightly together with the wire turns and back panel between them, the ends of said spring wire being under the first mentioned strip.

2. A book construction comprising covers and a curved back panel, a single piece of spring binding wire coiled into spiral formation with about the same curvature as that of the back panel, filler sheets threaded on said wire for sliding engagement therewith, two binding strips of stiff material, one located within the spiral formation and one in the outer side of the back panel, and means to clamp said strips together with the back panel between them and trap a substantial portion of each convolution of the binding wire to the back panel of the book, the ends of said binding wire being cut so as not to extend beyond the metal binding strip on the inside of the book.

3. A book construction comprising covers and a curved back panel, a single piece of spring binding wire coiled into spiral formation and with a normal tendency to a different curvature than the curvature of the back panel, filler sheets threaded on said wire for sliding engagement therewith, two binding strips of stiff material, one strip located within the spiral formation and having a transverse curvature about the same as the curvature of the back panel and one strip located on the outer side of the back panel, and means to clamp said strips together with the back panel between them and trap a substantial portion of each convolution of the binding wire to the back panel of the book, said clamping strips holding the spiral binding wire to the back panel in a curvature corresponding to that of the back panel and against its normal spring tendency toward a different curvature.

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