Oct. 12, 1926. 1,602,816

J. A. FELLOWS

BOOKBINDING AND METHOD OF BINDING BOOKS

Filed August 11, 1925 2 Sheets-Sheet 1

Fig. 1.

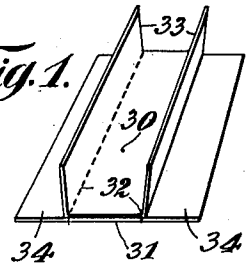


Fig. 2.

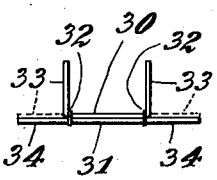


Fig. 4.

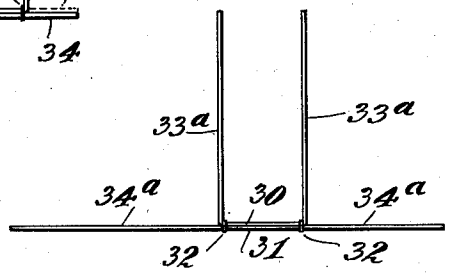


Fig. 3.

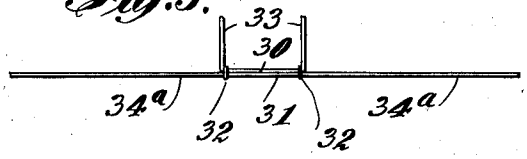


Fig. 6.

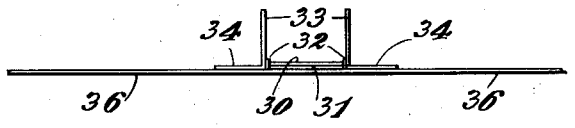


Fig. 5.

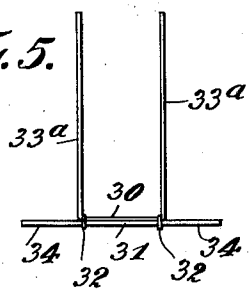


Fig. 7.

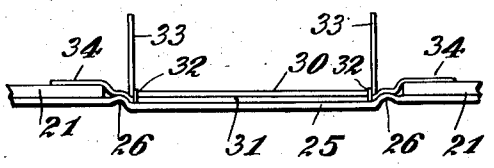


Fig. 8.

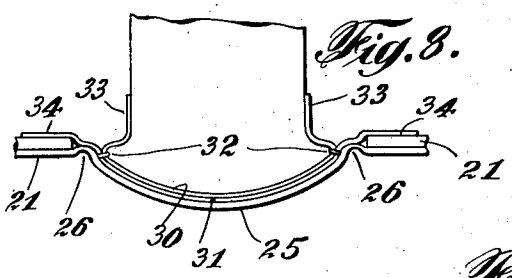
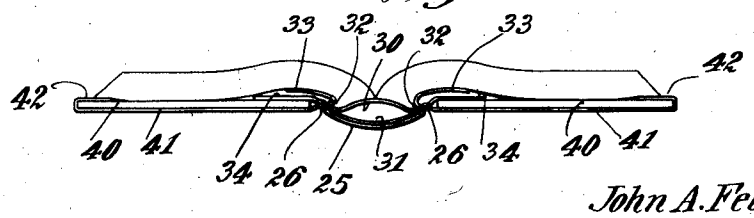


Fig. 9.



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BOOKBINDING AND METHOD OF BINDING BOOKS

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Fig. 10.

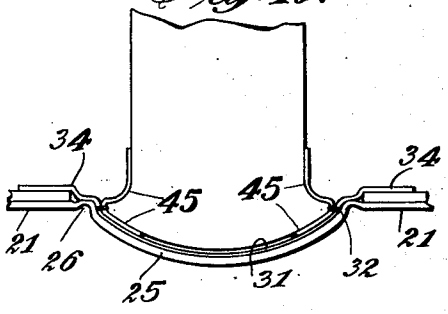


Fig. 11.

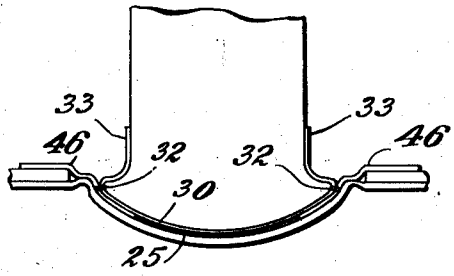


Fig. 12.

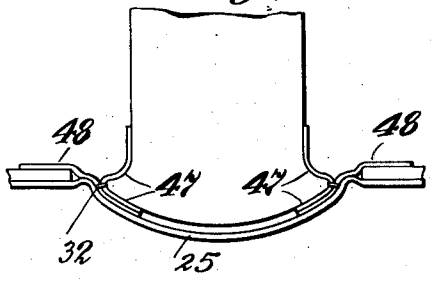


Fig. 13.

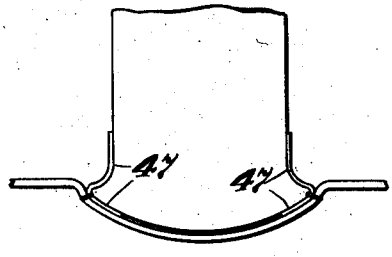


Fig. 14.

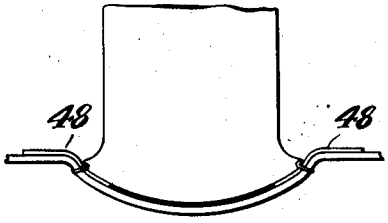


Fig. 15.

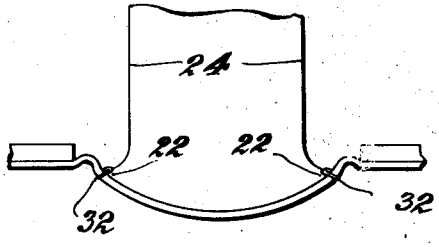


Fig. 16.

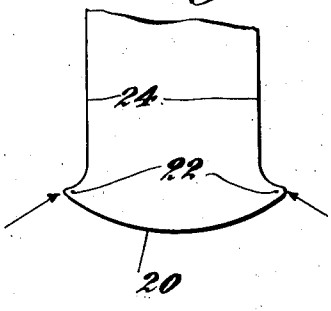
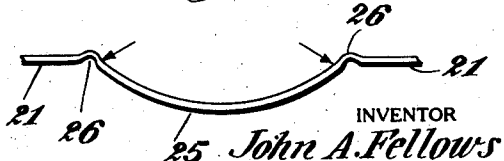


Fig. 17.



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UNITED STATES PATENT OFFICE.

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BOOKBINDING AND METHOD OF BINDING BOOKS.

Continuation of applications Serial No. 708,367, filed April 23, 1924, and Serial No. 25,224, filed April 23, 1925. This application filed August 11, 1925. Serial No. 49,594.

This invention relates to an improved book binding and to a method of binding books and has for its primary object to provide a very simple and inexpensive device and method whereby the book leaves may be easily, quickly and securely bound between the covers so as to permanently maintain their position in the cover, and thus give a long life to the book. The present invention may be employed either as the original binding for the book or for re-binding books when, owing to handling, the bound leaves become detached entirely or partially from the covers.

In carrying out my present invention, in one practical embodiment thereof, I provide a lining sheet of suitable material to the inner face of which and substantially centrally thereof, a binding sheet is permanently secured by two spaced parallel lines of stitching. A suitable adhesive is applied to the exposed surface of the binding sheet, and the back of the bound edges of the book leaves are then inserted between the free longitudinal flaps of the binding sheet and on the exposed side of the binding sheet between the flaps, whereby the back of the book leaves or rear thereof and the end leaves of the book leaves are joined to the binding sheet. The portion of the binding sheet between the parallel lines of stitching remain free or unattached to the lining sheet so that after the book leaves have been secured to the binding sheet, said intermediate portion thereof will freely flex in respect to the lining sheet between the stitches. The face of the lining sheet opposite to that on which the binding sheet is secured may be suitably applied by an adhesive to a book cover.

The book leaves when open will lie flat, and the book requires no breaking open, which it is believed is due to a great extent to the hinge action provided by the lines of stitches being located in proper positions.

Various other modifications of the invention described but embodying the same underlying principle will be described and shown hereinafter.

The invention also comprises a new method or step in the art which consists in providing a common hinge joint for both of the edges of the book leaves at the back thereof and the cover. This consolidation of hinge actions anchored to the cover prevents a bound book from tearing, and gives a long life to the book.

With the above and other objects in view, the invention consists in the improved book binding, in the construction and arrangement of the several parts thereof, and in the novel method of bookbinding, as will be hereinafter more fully described and illustrated in the accompanying drawings. The invention will be subsequently incorporated in the subjoined claims.

In the accompanying drawings—

Figure 1 shows a perspective view of one embodiment of my invention, in which a binder sheet and a lining sheet of substantially the same size are shown.

Figure 2 is a transverse section thereof.

Figure 3 is another embodiment in which the lining sheet is longer than the binder sheet.

Figure 4 is still another embodiment in which both sheets are of the same size, but now of the length of the leaves and cover leaf.

Figure 5 is a further embodiment in which the binder sheet is of the length of the book leaves, and the lining sheet is shorter.

Figure 6 shows a binder and a lining sheet applied to a cover, in this case a flexible cover.

Figure 7 shows a binder and a lining sheet applied to a stiff cover.

Figure 8 shows the same arrangement with the book leaves inserted therein.

Figure 9 shows the same arrangement with the book open.

Figure 10 shows another embodiment in which a lining sheet is provided and two binder sheets, one at each corner of the book leaves, are provided.

Figure 11 shows still another embodiment in which a binding sheet is provided and two lining sheets one at each corner of the cover are provided.

Figure 12 shows a further embodiment in which companion pairs of binder and lining sheets are provided.

Figure 13 shows corner binder sheets, attached directly to a book cover.

Figure 14 shows corner lining sheets attached to the cover and then the corners of the book leaves stitched thereto.

Figure 15 shows an embodiment in which the corners of the book leaves are stitched directly to a cover, which stitching serves as

a common hinge joint for the edges of the book leaves and for the cover leaves.

Figure 16 shows an end view of a well known outline of a bound set of book leaves, the corner edges thereof being known as joints and

Figure 17 shows an end view of a well known form of cover having stiff cover leaves, these latter two figures being shown as representative of the known art, to clearly define the invention in respect thereto.

Similar characters of reference indicate corresponding parts, and for the sake of clarity in representation the drawings are diagrammatic and not cross hatched.

Referring to the drawings, the wellknown end view or end outline of bound leaves of a book are shown in Figure 16 and an end view of a wellknown cover is shown in Figure 17.

Heretofore, these book leaves were applied to cover by various methods and the most utilized method was to provide a paper and crash connection, binding the back 20 of the book leaves to the cover leaves 21. This connection provided a hinge action at the edge 22 of the back of the bookleaves, and a second hinge action at the jointure of the connection with the cover leaf. As a result of this construction, two hinge actions were provided, and wherever the movement of the parts were in opposite directions a tearing and destruction of this connection resulted, and the book required rebinding. In many cases, the back of the leaves was cemented or glued to the back of the cover between the cover leaves and in due time this would dry out and the book would become destroyed on the opening of the same. Many other reasons might be enumerated for the comparatively short life of books. In respect to the use of books, those largely found on the market have the further disadvantage that when they require a very careful first opening, consisting in gently pressing down the first and last pages alternately and then working inwardly pressing down the remaining pages, page by page, so as not to destroy the binding and to permit the pages to lie flat and not close up as is their tendency. This procedure takes time and causes a certain amount of vexation to the user, but is a necessary one in order to save the book from damage through use.

After numerous tests, I have found that by uniting the crease or flexible portion of the cover directly to the joint or corner of the book (the bound book leaves), an anchoring of the parts is obtained and many of the objections of the present methods of bookbinding are overcome. This is made evident by the embodiment shown in Figure 15, in which the book leaves shown in Figure 16 are joined to the cover shown in Figure 17 by two rows of stitching indicated at 32. The book leaves are indicated at 24, it being supposed that the lines shown indicate the end leaves and that there are a plurality of leaves in between, depending on the number of pages desired in the book. The cover may be made in any suitable way and of any suitable construction. The made cover may be of one piece, or may be built up from separate pieces. The wellknown cover as shown in Figure 17 consists of five parts, to wit: a cover back 25, two stiff cover leaves 21 and two flexible members 26. To bind a book in accordance with the novel method, an embodiment of which is shown in Figure 15, a cover is selected which has a cover back 25, slightly wider or larger than the width of the back of the book leaves 24, from corner to corner. The stitching 32 is then passed through the corners or edges 22 and the back 25 of the cover at the edges of the cover back close to the flexible members 26. This stitching 32, while shown as passing through the corners 22 of the book leaves and as passing through the cover back, need not pass through each, since surface stitching may be employed. It is essential, however, to anchor the edges of the book leaves to the back of the cover and to provide a common pivotal point for the corners and for the cover leaves. This union of hinge actions provides a removal of opposed forces tending to tear and destroy.

The method described provides, therefore, a novel step in the art, which consists in joining the respective normal hinge actions into a common point and anchoring the bound book leaves at their edges to the cover.

Various embodiments in which these fundamental principles are embodied are shown in the drawings.

The preferred forms are shown in Figures 1 to 9, in which two sheets of thin leather, or buckram or other suitable material are utilized. These two sheets are about the length of the book leaves, that is, about the height of the book. The width of the sheets is determined by the thickness of the book and the desired length of the flaps, which in turn depends on the kind of book. The flaps can be one-quarter of an inch and upwards, depending on the kind of book. In some cases, the flaps can be less than one-quarter inch. These two sheets are sewed or stitched together by two parallel rows of stitches, the space between these rows being determined by the thickness of the book to be bound.

Referring particularly to Figures 1 and 2, the binding sheet 30 is the upper sheet because it is to be bound to the book leaves, and the lining sheet 31 is the lower sheet because it is to line the cover. The rows of stitching are indicated at 32. This provides two pairs of flaps, one pair indicated

at 33 forming part of the binding sheet, and the other pair indicated at 34 forming part of the lining sheet. In Figure 2, the binder flaps 33 are shown in dotted lines to indicate their position when the sheets are being stitched together, and are shown in full lines to indicate their position as ready to receive the book leaves.

In some cases, it is desired to have the lining sheet flaps line the inside surfaces of the book covers, in which cases, these flaps are of the size of the inside of the book covers, such flaps being indicated as 34ª in Figure 3.

In other cases, the binder sheet flaps are desired to cover the end leaves of the book leaves, and are then lengthened to the same size as the book leaves as shown by 33ª in Figure 4, in which both binder and lining sheets are shown to be the same size as the inside cover leaves and end leaves.

In still other cases, the lining flaps are short and the binder flaps long as is shown in Figure 5.

Either of the foregoing forms may be utilized depending upon the character of the finished book desired.

In either case, the bound book leaves, the width of which equals the width of space between the stitches 32, are inserted into the binder sheet between the flaps thereof. A desirable adhesive or cementitious substance is applied either to the back of the book leaves or to the exposed surface of the binder sheet or to both, and the binder 30 with its flaps 33 is joined to the back and sides of the book leaves. The surface of the lining sheet opposite to that to which the binder has been applied by stitching is then coated with an adhesive, and is then applied to the inside of the cover-back and adjacent cover leaves. This is shown in Figure 6, in which view a flexible cover 36 is shown in which, as is well known, the back and leaves form an integral member. Again, the binder and lining sheets stitched together may be applied to a stiff cover. In such a case, shown in Figures 7, 8 and 9, the binder 30 with its flaps 33 is applied to the back of the book leaves, and the opposite surfaces of the lining sheet 31 and flaps 34 is applied to the inside of the back 25 of the cover and the cover leaves 21. It will be noted that the stitches 32 are in a position in respect to the back 25 of the cover, along the edge of the same, as near to the edges as practical, at a point where approximately the flexible members 26 begin. By placing the stitches 32 at this point, the common hinge action is secured. It will also be noted that the corners of the book leaves are anchored by the aid of suitable intermediaries to the cover back. When the cover leaves 21 are opened they pivot around the flexible members 26, which pivot at or pivot substantially identical with the edge of the back of the cover, and when the leaves are opened they pivot around the stitches 32, which are coincident with the edges of the cover backs. This is clearly seen in Figure 9.

It will also be noted from Figure 9 that the binder 30 and flaps 33 are made part of the book leaves by an adhesive, and the lining sheet 31 with its flaps 34 are made part of the cover by an adhesive, and that the binder between the stitches is free from the lining sheet between the stitches.

In the form of cover shown in Figures 7 to 9, the leaves 21 consist of a stiff inner member 40 as cardboard, and an outer covering 41 of leather or cloth or the like, which extends from the back 25 and flexible members 26 to the edges of the stiff cardboard or the like, and is then bent over at 42 as shown. All this is well known and forms no part of the invention.

In some cases, it may be found desirable to provide instead of a binder sheet with flaps, two separate book leaf edge binders 45 as shown in Figure 10, retaining however lining sheets 31 and flaps 34. In other cases, the binder 30 and flaps 33 are retained, and corner lining members 46 are provided as in Figure 11.

In still other cases, companion binder and lining cover members 47 and 48, respectively, are provided as shown in Figure 12.

In Figure 16 is shown an end view of a book (bound leaves) in which the leaves are indicated by 24, the back by 20, the corner edges by 22, each corner edge being known in the art as "a joint", and indicated by the arrows in Fig. 16.

In Figure 17 an end view of a cover is shown. Covers like this are well known and are made in quantities by machinery, and are known in the practical art of bookbinding as "made covers". They have the back proper 25, the cover leaves 21, and the flexible connection 26. The point indicated by the arrows in Figure 17 is the point where the "made cover" joins the joints 22 of the book (bound leaves). Contiguous to these points the stitches of applicant's device are placed.

A flexible cover is also called a "made cover". By "made cover" is meant a cover separately made, that is, not a cover built upon the book itself as is done in hand made books.

One cover side 21 is called the front side of a cover and the other cover side 21 is called the back side of a cover depending upon the position of the cover on the bound leaves of the book.

The book, that is the uncovered book which is composed of signatures which are sewed together and have joints at the first and last signatures, are brought together by my invention with a "made cover", by

stitches disposed between the edges of the said joints and these parts of the cover contiguous to said edges, to provide a hinge action between said edges and the contiguous parts of the cover, while permitting freedom of movement, during the opening or closing of the covered bound book, between the back of the signatures and the parts of the cover disposed intermediate said stitches, and also a freedom of movement of the joined signatures in respect to each other.

In other cases, the lining sheet is dispensed with as in Figure 13 and in other cases the binder sheet is dispensed with as is shown in Figure 14. In Figure 15 all the forms of binder and lining sheets are dispensed with.

The preferred forms shown in Figures 1 to 9 have certain advantages over the forms of Figures 10 to 12, in that it is very easily applied, in substantially two operations, the adhering to the book leaves and the adhering to the cover, whereas in the forms shown in Figures 10 to 12, three or four operations are necessary. The preferred forms have certain advantages over the forms of Figures 13 to 15 in that a very secure book is provided. Not alone is the back of the book leaves securely bound by the binder sheet and flaps, but the inside of the cover is also securely bound by the lining sheet. A practically indestructible book is provided in Figs. 1 to 9.

I have described a novel method of bookbinding and various embodiments, but it is clear that changes may be made without departing from the spirit of the invention as defined in the appended claims.

The foregoing application is a continuation of my co-pending application for improvements in book binding, Serial Number 708,367 and of my co-pending application for improvements in book binding, Serial Number 25,224 filed April 23, 1924, and April 23, 1925, respectively.

I claim:

1. In the art of bookmaking, that step which consists in permanently uniting an uncovered bound book having joints at the opposite edges of the back thereof, with a completely made separate cover having spaced joints between the front and back sides thereof, by stitching together and thereby permanently uniting said book with the cover solely at the peaks of the joints of the bound book and the registering joints of the cover.

2. In combination with a made cover having front and back sides and a portion intermediate thereof, and an uncovered bound book composed of signatures sewed together and having joints at the first and last signatures, a binding sheet adhesively joined to the back of the uncovered bound book independently of the stitches holding the signatures together and extending beyond said joints and over the same and adhesively secured to the end leaves of the uncovered bound book, a lining sheet adhesively secured to the portion of the made cover intermediate the front and back sides thereof and extending beyond the part of the made cover contiguous to said joints and adhesively secured to the interior of the front and back sides of the made cover, and stitches joining the binding and lining sheets, said stitches being spaced apart the width of the back of the uncovered bound book and arranged at the joints thereof, the binding and lining sheets being free from each other through out their surfaces between said stitches, whereby a freedom of movement during the opening and closing of the covered book is provided between the entire back of the signatures disposed between the stitches and the cover intermediate the stitches, and also the signatures are free to hingedly move with respect to each other.

3. The combination of claim 2 in which the binding sheet adhesively joins the entire back of the uncovered bound book, and a lining sheet adhesively joins the entire portion of the back of the made cover disposed between the joints of the cover.

4. The combination of claim 2 in which the binding sheet covers the entire surfaces of the end leaves of the uncovered bound book, and the lining sheet covers the entire interior surfaces of the front and back sides of the made cover.

5. As an article of manufacture a cover for bound books comprising a binder sheet adapted to be adhesively applied to the back and sides of a bound book, a lining sheet overlying the binder sheet, parallel lines of stitches securing said binder and lining sheets together and spaced apart a distance equal to the width of the back of the book, and a facing sheet adhesively secured over the surface of the lining sheet and providing exterior front and back cover portions.

In testimony that I claim the foregoing as my invention, I have signed my name hereto.

JOHN A. FELLOWS.