May 21, 1974 F. JAMES 3,811,998

END PAPER ASSEMBLY

Filed Sept. 22, 1972

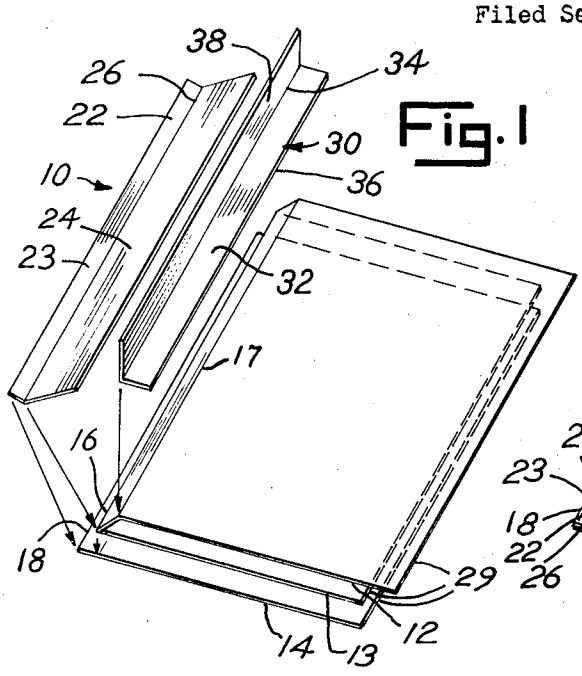


Fig. 1

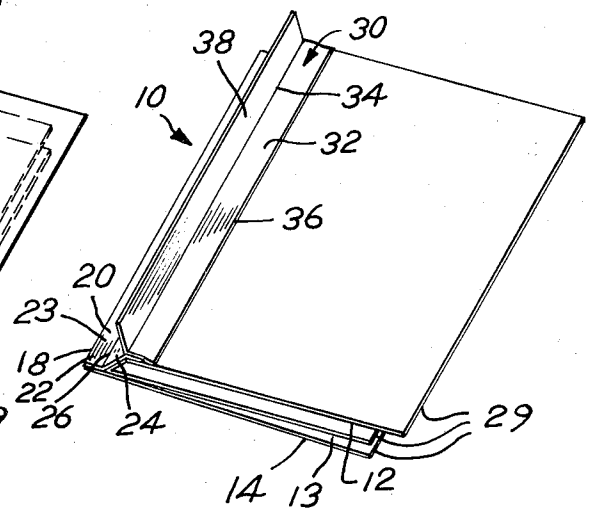


Fig. 2

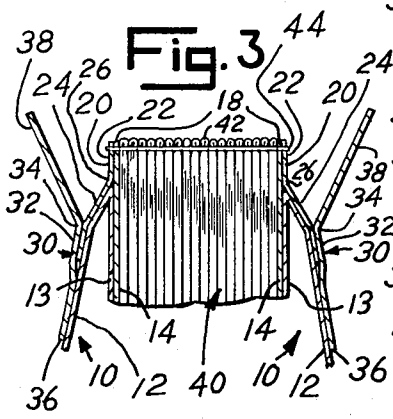


Fig. 3

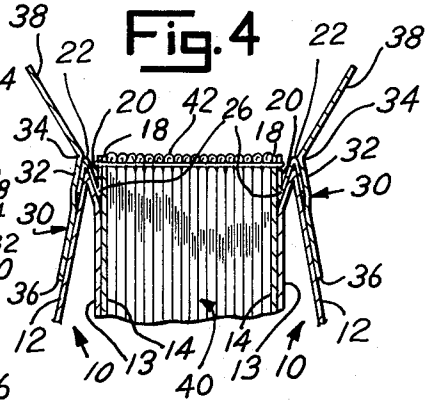


Fig. 4

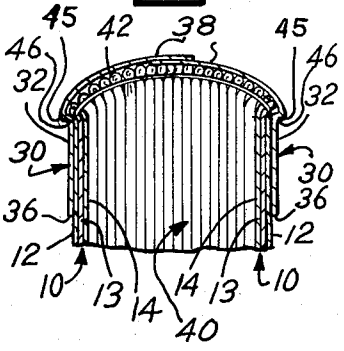


Fig. 7

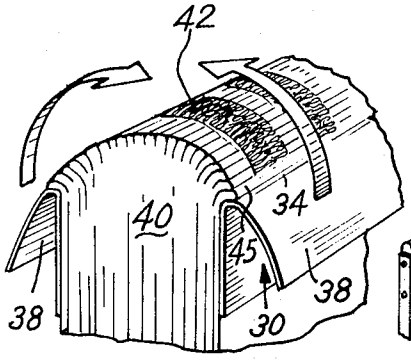


Fig. 5

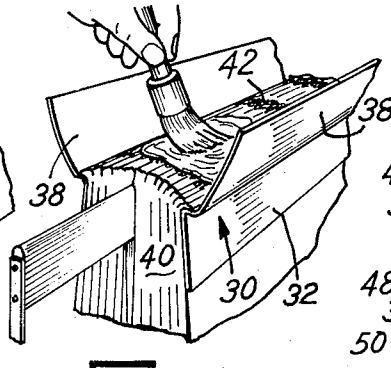


Fig. 6

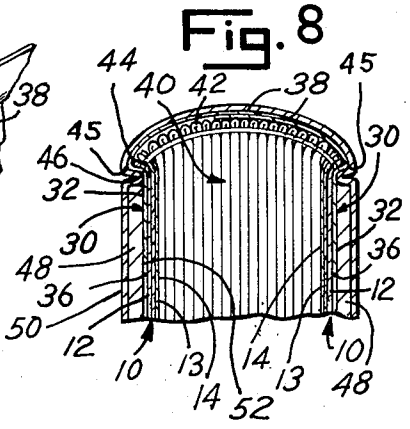


Fig. 8

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END PAPER ASSEMBLY

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U.S. Cl. 161—100 5 Claims

ABSTRACT OF THE DISCLOSURE

A method of binding and an end paper assembly for use in the binding of books includes a cover sheet and top and inside sheets and the cover and top sheets are attached to the inside sheet along a line adjacent to but spaced from the edge of the inside sheet to define a margin. A back liner material is then attached to the cover sheet and a portion of the liner material extends freely from the sheets. To bind the pages of the book, the end sheet assembly is first attached along its margin to the pages of the book, the cover sheet is folded back to cover the bound margin and the freely extending portion of the back liner material is folded over and adhesively bonded to the back of the book pages.

BACKGROUND AND SUMMARY OF THE INVENTION

This invention relates to a bookbinding method and an end paper assembly for use in the binding of books.

Generally, end paper assemblies have been formed of two or three leaves or sheets of paper secured along one edge thereof and folded back over each other. During binding, an end paper assembly is positioned at each side of the stack of pages which are to be bound together and the pages and end paper assemblies are sewn together. In the past, the back of the sewn materials was rounded and backed with a rounding hammer or the like and a strong flexible back liner material, e.g. a heavy muslin or flannel, was adhesively bonded to the back of the book with an adhesive to reinforce the book.

The back liner material which extends beyond the book back and over the cover sheets of the end paper assemblies positioned at each side of the stack of pages was then adhesively bonded to the upward facing side of the cover sheets. Once this operation was accomplished, the upward facing sides of the front and back cover sheets were bonded to the cover boards securing the pages in the case.

Such state of the art end paper assemblies and binding methods suffer several disadvantages. The manner in which the bound materials must be manipulated to apply the back liner material is conducive to deforming the book back. Further, the back liner material tends to tent at the back ridges of the rounded and backed materials during adhesion of the back liner material to the cover sheets of the front and back end paper assemblies. In addition, extensive and accurate folding is required in the construction of the prior end paper assemblies.

The present invention overcomes these several disadvantages. In the end paper assembly and binding method incorporating the principles of the invention measuring, cutting and affixing the usual single piece back liner material may be eliminated. In the present invention, a back liner material is first bonded to the cover sheet of each of the end paper assemblies and if finally bonded to the book back, thereby eliminating the tendency of the book back to become deformed during completion of the back lining step and also eliminating the tendency of the back lining material to tent. Moreover, in the method

and assembly incorporating the principles of the present invention, the difficulty of folding the end paper assembly is substantially reduced and the hinge more accurately formed while an improvement in both the appearance and strength of the bound book is realized.

In one principal aspect of the invention, an end paper assembly for binding books comprises at least a pair of sheets, a first of the sheets being attached adjacent to an edge to a second of the sheets so as to define a margin for sewing the assembly to the book. Back lining material is attached to the end paper assembly and includes a first portion attached to the first of the sheets and a second portion which freely extends from the first portion and which is adapted to cover the back of the pages of the book after the end paper assembly is sewn to the pages.

In another principal aspect of the invention, a method of binding a book comprises affixing a portion of a back liner material to the cover sheet of an end paper assembly, positioning the end paper assembly upon a stack of pages which are to be bound and affixing the end paper assembly thereto, and folding and adhesively bonding the remaining portion of the back liner material which has not been bound to the cover sheet to the back edges of the pages.

These and other objects, features, and advantages of the present invention will be understood in connection with the following detailed description.

BRIEF DESCRIPTION OF THE DRAWING

The attached drawing illustrates a presently preferred embodiment of the present invention in which:

FIG. 1 is a perspective exploded view of an end paper assembly construction in accordance with the principles of the invention;

FIG. 2 is a perspective view of the end paper assembly shown in FIG. 1 in which the components of the end paper assembly have been assembled;

FIG. 3 is a cross sectioned elevation view of the end paper assembly shown in FIG. 2 and which is sewn to the pages which are to be bound;

FIG. 4 is a cross sectioned elevation view of the end paper assembly and pages shown in FIG. 3 and in which the cover sheet of the end paper assembly has been folded back over the stitching;

FIG. 5 is a perspective view of the end paper assembly and pages shown in FIG. 4 and in which the book has been rounded and backed and the back liner material is ready to be folded over and adhesively bonded to the back of the pages;

FIG. 6 is a perspective view of the end paper assembly and pages shown in FIG. 5 and in which the back liner material is being folded over and adhesively bonded to the back of the pages;

FIG. 7 is an enlarged cross sectioned elevation view of the end paper assembly and pages shown in FIG. 6 and in which the application of the back liner material has been completed; and

FIG. 8 is a cross sectioned elevation view of a completed bound and cased book constructed in accordance with the principles of the invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring particularly to FIGS. 1 and 2, an end paper assembly **10** incorporating the principles of the present invention is shown which comprises, generally a cover sheet **12**, a top sheet **13** and an inside sheet **14**. The cover sheet **12** is preferably formed integrally with the top sheet **13** by folding an enlarged sheet over itself along a fold line **16** such that the fold line **16** defines the edge of the cover and top sheets **12** and **13**. As shown in FIGS. 1

and 2, the folded cover and top shets **12** and **13** are then positioned over the inside sheet **14** such that the fold **16** is spaced from the edge **18** of the inside sheet so as to define a margin **20** therebetween. Attachment of the folded cover and inside sheets to the inside sheet **14** is accomplished by way of a reinforcing strip or tape **22** which is bonded over a part of its width **23** to the upper face of the inside sheet **14** between its edge **18** and the fold **16** and over the remainder of its width **24** to the upper face of the cover sheet **12**. The upward facing exterior surface of the reinforcing tape is preferably gummed so that it ay be folded back over itself along fold line **26** which is positioned along fold **16** and adhesively bonded as will be explained in further detail later.

Each of the three sheets **12**, **13** and **14** are substantially uniform in length. The top sheet **13** is equal in width to the inside sheet **14** less the width of margin **20**. The cover sheet **12** is somewhat wider than the top and inside sheets as shown in FIGS. 1 and 2 having a width which is equal approximately to the sum of the width of the top sheet plus twice the width of the margin **20** which is defined between the edge **18** of the inside sheet **14** and the fold **16** when these sheets have been attached together by the tape **22**. Thus, when the tape **22** is folded back over itself as shown in FIG. 4, the opposite right hand edges **29** of each of the sheets will be aligned with each other.

An important feature of the present invention resides in the provision of an elongate strip **30** of back liner material which is also adhesively bonded to the upper face of the cover sheet **12**. This strip of material **30** is preferably formed of a suitable strong back liner cloth of the type generally employed in binding, such as heavy muslin or book flannel. A first portion **32** of this back liner material is firmly adhesively bonded to the upper surface of the cover sheet **12** of the end paper assembly and over the edge of the tape **22** such that a fold line **34** of the strip **30** is spaced from fold **16** of sheet **12** by a distance substantially equal to the width of margin **20**, fold **34** extending parallel to edge **18** of the inside sheet **14** along a fold **17** in the cover sheet. The other edge **36** of portion **32** of the back liner material is positioned toward the opposite edge **29** of the cover sheet as shown in FIG. 2 and the edge of tape **22** is firmly sandwiched between portion **32** of the strip material **30** and the upper face of cover sheet **12**. The remaining portion **38** of the back liner material **30** freely extends from the end paper assembly along fold **17** for a substantial width and over its length as shown in FIG. 2. This extending portion **38** is adapted to be folded over and adhesively bonded to the back of the book pages as will be set forth hereinafter in the detailed description of the method of binding contemplated by the present invention.

Referring to FIG. 3, the stack of book pages **40** which are to be bound are aligned such that their edges are even with each other and an end paper assembly **10** of the present invention is then positioned both on the front and back of the stack as shown in FIG. 3 such that the edge **18** of the inside sheet **14** is substantially aligned with the back **42** of the pages. The pages **40** and end paper assemblies **10** are then sewed together with a suitable heavy binding thread **44** along the margin **20** defined between the edge **18** and fold **16** of the sheets and the fold line **26** of the reinforcing tape **22**, the reinforcing tape acting to substantially strengthen the sewn papers. Thus, the thread **44** passes through the pages **40** which are being bound, the inside sheet **14** and part **23** of the tape **22** at the margin **20** of the front and back end paper assemblies **10**.

Once sewing is completed, the reinforcing tape **22** and the cover sheet **12** between fold **16** and the fold **17** is folded back over itself as shown in FIG. 4 and the gummed surfaces of the tape **22** which now face each other adhesively bond the overlying tape portion **24** over the stitching and margin **20**. Once this foldback operation is completed, the fold line **17** of the cover sheet and the fold line **34** of the back liner material will also be positioned in substantially overlying relationship to the edge **18** of the inside sheet **14** and the opposite edges **29** of the cover, top and inside sheets will be aligned with each other.

Before the back liner material can be bonded in place, the book back must be rounded and backed with a suitable rounding tool to the shape shown in FIG. 5 to form beaded ridges **45** at the fold line **34**. The freely extending portion **38** of the back liner material **30** which is of substantial width is now folded over the page backs **42** as shown in FIG. 6, and is adhesively bonded thereto with a flexible adhesive, the portions **38** substantially meeting or overlapping as shown in FIG. 7. Thus it will be seen that the back liner material may be applied without repeated positioning and repositioning of the bound materials. This is important since the beaded edges **45** and rounded page backs **42**, as shown in FIG. 7 were subject to being distorted and flattened. Moreover, the back liner material tends to tent at the intersections **46** where the ridges **45** intersect the cover sheet **12** of the end paper assemblies as viewed in FIG. 7 causing the board to be separated slightly from the ridges. The end paper assembly and binding method of the present invention obviates both of these disadvantages.

To complete the bound book, the cover sheets **12** of each of the respective end paper assemblies are adhesively bonded to the inside surface **52** of the front and back cover boards **48** as shown in FIG. 8. Thus, in the finally bound book, the cover sheet **12** lines the inside of the book cover **50** and the top and inside sheets **13** and **14** define flysheets.

It will be understood that although sheets **12** and **13** are shown as a single folded sheet, the cover sheet **12** and top sheet **13** may be formed of individual sheets which are attached together along fold line **16**. In addition, although the invention has been described in terms of a three sheet assembly, the invention may be practiced in end paper assemblies having only two sheets or more than three sheets, depending upon the number of protective flysheets desired. Moreover, the term "paper" as employed herein is not intended to be exclusive of other suitable materials, such as foils and plastics.

Finally, it should be understood that the embodiment of the present invention which has been described is merely illustrative of one of the applications of the principles of the invention. Numerous modifications may be made by those skilled in the art without departing from the true spirit and scope of the invention.

What is claimed is:

1. An end paper assembly for use in the binding of books comprising:

at least a pair of sheets of substantially uniform length, a first of said sheets being attached adjacent an edge thereof to a second of said sheets and defining a margin adjacent one edge of said sheets for sewing said assembly to a book, reinforcing tape attached to said sheets over said margin, and

a back liner material having a first portion thereof attached to said first of said sheets, said first portion being positioned between said margin and the edge of said first sheet opposite said margin and a second back liner portion of substantial width extending freely from said first portion of said back liner material and adapted to cover the back of the pages of the book when said end paper assembly is affixed to the pages of the book, said sheets being attached to each other in spaced relationship to said one edge of said second sheet to define said margin of a given width between said edges of said sheets, and said first portion of said back liner material being attached to said first sheet in spaced relationship to said one edge of said first sheet by a distance substantially equal to said given width of said margin, whereby said first

sheet may be back folded into overlying relationship to said margin to position said back liner material in overlying relationship with said one edge of said second sheet and said second portion of said back liner material folded over said margin and secured to the back of the pages so as to physically restrict the folded over margin.

2. The construction of claim 1 wherein an end paper assembly is provided on each side of a book end, said second portions of said back liner material being folded over said margins and being secured to the back of the pages in overlapping relationship one to the other so as to strengthen the back of the book.

3. The assembly of claim 1 wherein the exposed surface of said reinforcing tape is gummed.

4. The assembly of claim 1 including a third sheet, each of said sheets being attached together adjacent said margin.

5. The assembly of claim 1 including a third sheet, said first and third sheets being folded over each other to define a fold line and said fold line being spaced from said one edge of said second sheet to define said margin therebetween.

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U.S. Cl. X.R.

156—216; 281—21 R