July 21, 1942. G. B. WISER 2,290,663

BOOKBINDING

Filed Feb. 16, 1939

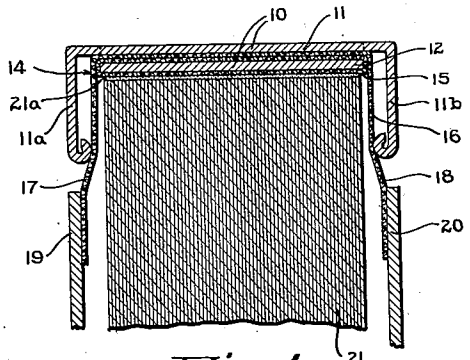


Fig. 1

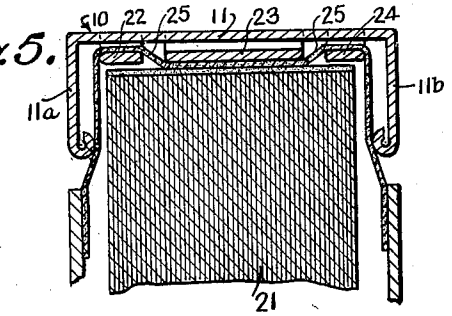


Fig. 5.

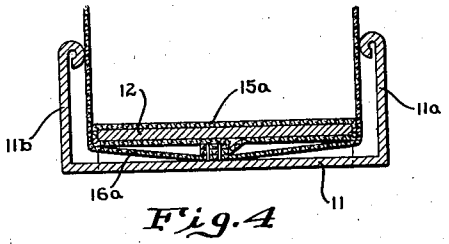


Fig. 4

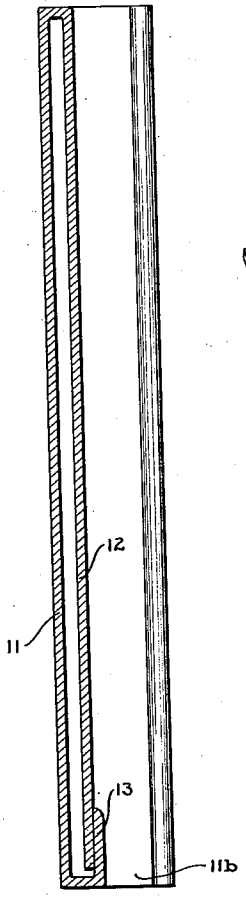


Fig. 2

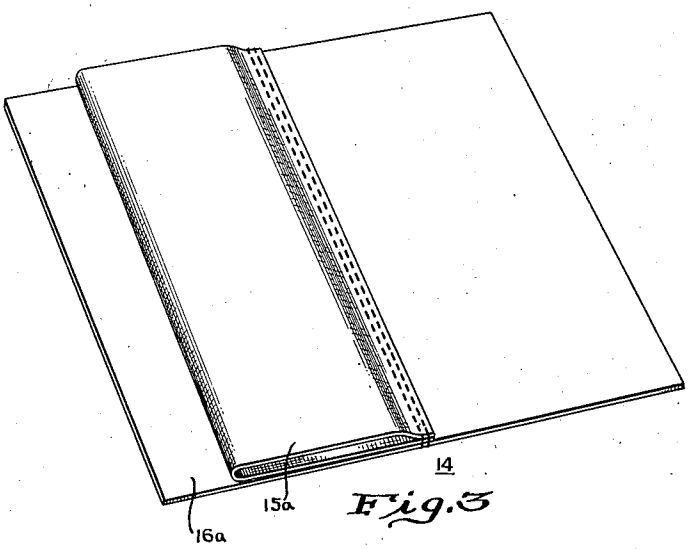


Fig. 3

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Patented July 21, 1942

2,290,663

UNITED STATES PATENT OFFICE

2,290,663

BOOKBINDING

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Application February 16, 1939, Serial No. 256,649

11 Claims. (Cl. 281—29)

This invention relates to books, and more particularly to means for binding books.

One of the objects of the present invention is to provide a novel durable binding for books.

Another object of the invention is to provide a novel bookbinding to which a plurality of pages can be permanently attached without danger of straining the binding.

A further object is to provide a novel bookbinding having no movable parts with exception of suitable side covers and hinges therefor.

An additional object is to provide a novel device of the above character having a high rigidity.

Another object is to provide a rigid and strong binding for a book, the binding having long wearing qualities which will obviate a necessity for frequent rebinding.

A still further object is to provide a novel bookbinding which, by obviating a necessity for frequent rebinding, is more economical than other bindings over a protracted period of time.

An additional object is to provide a novel bookbinding including a rigid backbone member having side covers, and novel means for hingedly securing the covers to the backbone member.

The above and further objects and novel features will more fully appear when the same is read in connection with the accompanying drawing. It is to be expressly understood, however, that the drawing is for the purposes of illustration only and is not intended as a definition of the limits of the invention, reference for this latter purpose being had to the appended claims.

In the drawing wherein like reference characters refer to like parts throughout the several views,

Fig. 1 is a top plan view, partly in section and with parts broken away, illustrating one embodiment of the present invention;

Fig. 2 is a sectional view of a backbone member employed in the present invention;

Fig. 3 is a perspective view of one form of sleeve member employed in the present invention;

Fig. 4 is a top plan view, partly in section and with parts broken away, showing a sleeve member positioned upon a backbone member of the present invention; and

Fig. 5 is a cross-sectional view of a second embodiment of the invention.

The forms of the invention illustrated in the accompanying drawing, by way of example, comprise a novel bookbinding having a backbone member formed of any durable rigid or semi-rigid material. The backbone member is constituted by an outer strut which comprises the back face of the binding, and by one or more inner struts. The inner strut or strut group provides a support for a flexible member to which are attached, upon separate areas thereof, suitable side covers of the binding and also a plurality of pages, i. e. the contents of the book. The side covers, however, may be hingedly attached to the backbone member proper instead of being secured to the web.

In the form shown in Fig. 1, in order to provide a strong binding which will give adequate protection to books, for example, school or library books which are ordinarily subjected to severe treatment, a novel rigid or semi-rigid backbone member 10 is provided. The latter is preferably stamped from sheet metal or formed from a suitable plastic composition having a desired rigidity, and strength. The backbone in this embodiment is constituted by a flat outer strut 11 and an inner strut 12 which is substantially parallel thereto and laterally spaced at a small distance therefrom. The inner strut is preferably integral with the outer strut but may be a separate member rigidly secured thereto. The strut 11 in the form illustrated, includes, for a purpose to appear later, longitudinally extending side faces 11a, 11b, having rounded or inwardly curled edges. The strut 11 also includes a flap 13 (Fig. 2) for retaining the free extremity of strut 12 in a desired position.

Novel flexible means, having a desired toughness and durability are provided for association with the backbone member to which, upon one area thereof, a front cover of the binding can be secured, upon a second area, a rear cover, and upon a third area, the contents of a book can be attached. The novel means in the embodiment shown comprises a sleeve member 14, preferably of fabric or rubber composition, having an inner sleeve 15, which surrounds the inner strut, and an outer fabric or sheet 16 sewn or cemented thereto which passes between the inner sleeve 15 and the outer strut 11. Sheet 16 is provided with flaps 17, 18 comprising areas adjacent opposite edges of said sheet. To the latter are attached, for example, by means of rivets or a suitable glue, a front cover 19 and a rear cover 20, respectively. The front and rear, or side covers of the bookbinding preferably may be constituted by composition materials such as cellulose nitrate, cellulose acetate, phenolic resins, casein or other synthetic materials generally grouped under the name "plastics," it being understood, however,

that cardboard, metals, or other suitable materials may be employed instead. A plurality of pages, i. e., a filler 21 comprising the contents of the book is attached, for example, by glue 21*a*, to the exposed area of the sleeve 15.

The above mentioned side faces 11*a* and 11*b*, of this and the next described embodiment, are mainly for the protection of the flexible sleeve 14 including the inner sleeve 15, and the flaps 17, 18 of sheet 16. The rounded edge of each side face provides a suitable surface against which each flap respectively may be bent, when the book is opened, without the danger of tearing, which danger would ordinarily exist if the flaps were bent when in contact with a sharp edge or corner. The side faces 11*a*, 11*b* may be bent inwardly, if desired, to grip the filler 21 and to prevent any lateral movement thereof relative to the backbone element. The faces, in a manner to appear later, may be adapted for hinged engagement with the side covers 19 and 20.

As above mentioned, the distance separating struts 11 and 12 is small. In order to aid the rigidity of the backbone member and to prevent a yielding movement of strut 12, this distance is substantially equal to the thickness of the sleeve 14, which in the form shown, is the combined thickness of inner sleeve 15 and sheet 16.

In the embodiment illustrated in Fig. 1, the inner sleeve 15 of sleeve 14 is one continuous piece of fabric having no edges which are sewn together. However, one preferred embodiment of a sleeve member 14 is shown in Figs. 3 and 4 which differs therefrom in that an inner sleeve 15*a*, analogous to sleeve 15, is formed from a single piece of flat material which is not originally formed as a sleeve. Opposite edges of the flat piece are sewn together in such a manner that a sufficiently tight fit will be obtained about the inner strut. The threads preferably pass through the center line of an outer fabric or sheet 16*a*, thus securing the sheet to the inner sleeve 15*a* to prevent wrinkling or any undesired movement thereof. As shown in Fig. 4 the stitching is preferably positioned adjacent the longitudinal center lines of the struts. For purposes of illustration, the distance separating the inner and outer struts in Fig. 4 is enlarged, it being understood that it is preferable that said distance be substantially equal to the thickness of sleeve 14.

In the previously described embodiment, a single inner strut was employed with which a sleeve 14 was associated, however, it is possible to use a plurality of inner strut members, for example, three as shown in Fig. 5, which preferably are stamped from the same piece of material and integral with the outer strut 11. The three inner struts comprise members 22, 23 and 24. Associated with the inner struts, for a purpose analogous to that of sleeve 14, is a web 25, which in the form shown, is woven between said struts in such a manner that a portion of the web passes behind member 22, in front of member 23, and behind member 24. Attached to the exposed areas of the web, which is adjacent strut 23, for example, by means of cement or by a sewn connection, are the pages or contents 21 of the book. Web 25, if desired, may be riveted to the struts 22, 23, and 24.

In the description of the above embodiments the term "sleeve" refers specifically to a flexible member, part of which surrounds an inner strut, and the term "web" refers to a flexible member which is interwoven between a plurality of inner struts. However, with reference to the appended claims, it is to be understood that the term "flexible member" refers to a sleeve or a web.

There is thus provided novel means for binding books, which means are extremely rugged and are adapted for lengthening the useful life of a book, and further, for enabling a book to withstand severe treatment. Although the novel binding may be initially slightly more expensive than a conventional binding, it is of great practical value because it eliminates the necessity for rebinding, and thus, over a period of time results in great savings, particularly to libraries and schools where heavy expense is periodically incurred by the frequent necessity for rebinding used books in order to prolong their lives.

Although several embodiments of the present invention have been illustrated and described in detail it is to be expressly understood that the same is not limited thereto, for example, instead of employing a flat outer and inner strut, either or both may be curved or circular in cross-section. If it is desired that the web follow the curvature, for example, of a concave strut with which it is associated, it may be glued or riveted thereto. Various changes may be made in the design and arrangements of the parts without departing from the spirit and scope of the invention as the same will now be understood by those skilled in the art. For a definition of the limits of the invention, reference will be had primarily to the appended claims.

What is claimed is:

1. In apparatus of the class described, an outer strut, a plurality of inner struts, a web member in a woven association with said inner struts, a rear cover secured to one portion of the web, and a front cover secured to another portion of the web, the latter being adapted for holding a filler upon a third portion thereof.

2. In apparatus of the class described, an outer strut, an inner strut, a sleeve surrounding said inner strut, the latter having side flaps thereon, a front cover secured to one of said flaps, and a rear cover secured to another of said flaps, said sleeve being adapted for the attachment thereto of a filler.

3. In apparatus of the class described, an outer strut, an inner strut, a sleeve surrounding the inner strut, said outer and inner struts being laterally spaced by an amount substantially equal to the thickness of said sleeve, a front cover, the latter being secured to said sleeve, a rear cover, the latter also being secured to said sleeve, and a filler secured to the sleeve, each of said covers and the filler being secured to a separate area of the sleeve.

4. In apparatus of the class described, a backbone element including an outer strut and a plurality of inner struts, a flexible member in interwoven association with the inner struts, a front cover supported by one area of said member, a rear cover supported by another area of said member, and a filler supported upon an area of the member which is different from the two above mentioned.

5. In apparatus of the class described, an outer strut, an inner strut, said struts being operatively interconnected and forming a backbone element, a flexible member, means for holding the flexible member in operative engagement with the inner strut, a front cover, a back cover, and a filler, each of the covers and the filler being secured upon a separate area of the flexible member.

6. The combination with an outer and an inner strut, of a flexible member in operative engagement with said inner strut, a front cover attached to the member, a rear cover attached to the member, and a filler secured to said member.

7. A book binding comprising a backbone member having an inner strut, a flexible member secured to said strut, said flexible member having portions thereof extending on two sides in front of said backbone member, separate front and rear cover elements secured to said extending portions of said flexible member for pivotal movement about axes in front of said backbone member, and a filler attached to a portion of said flexible member.

8. A book binding comprising a backbone member, a flexible member secured to said backbone member and having portions thereof extending clear of said backbone member, a filler attached to said flexible member, and separate front and rear covers secured to said portions of said flexible member.

9. A book binding comprising a backbone member having back and side walls and at least one inner strut, a flexible member permanently attached to said strut and having side portions which extend beyond the side walls of said backbone member, a binder secured to the central portion of said flexible member, and separate front and rear covers attached to said side portions of said flexible member for pivotal movement about axes in front of said backbone member.

10. In apparatus of the class described, a backbone member having an inner strut and side walls, a flexible sleeve surrounding said strut and having side flaps extending beyond said side walls, a filler attached to said sleeve, and separate front and rear covers secured to said flaps, said covers being located entirely in front of said backbone member for pivotal movement relative thereto.

11. The combination with a backbone element having an inner strut, of a flexible member mounted upon said strut, said flexible member having portions thereof extending in front of said backbone element a filler attached to said flexible member, a front cover secured to one of said extending portions of the flexible member, and a rear cover member secured to another of said extending portions of the flexible member, whereby said cover members are operable without engaging said backbone element.

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