

[54] **BOOK BINDING**

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[58] Field of Search**281/15 R, 29, 36, 37, 33; 402/74, 75, 77, 76, 80 R, 80 L, 61-63, 71; 211/50, 51**

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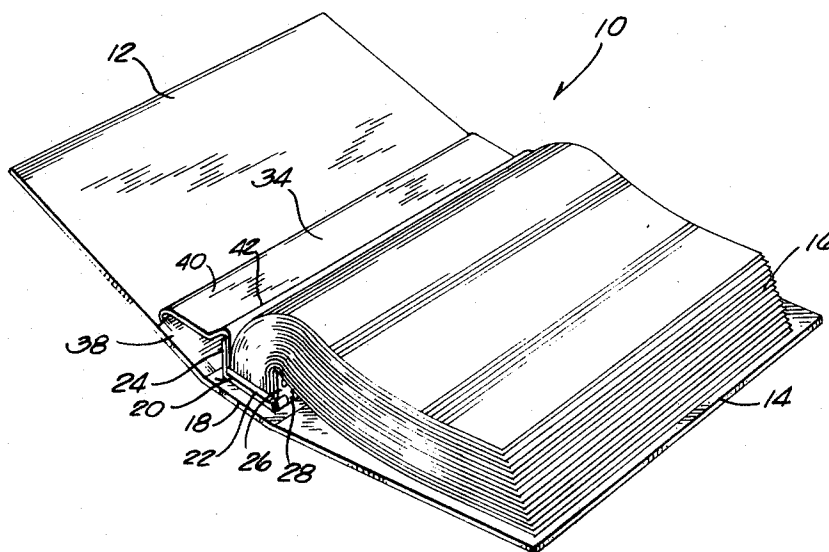
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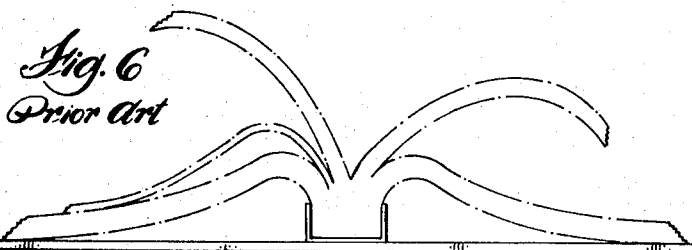
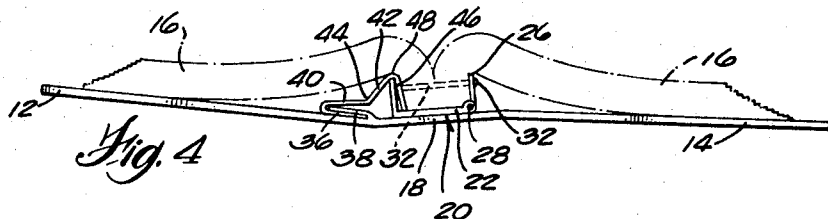
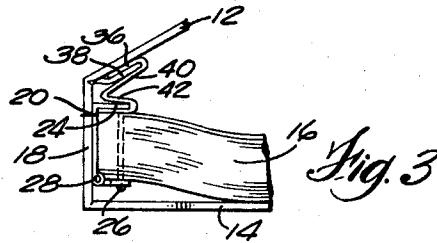
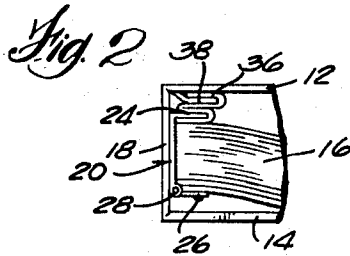
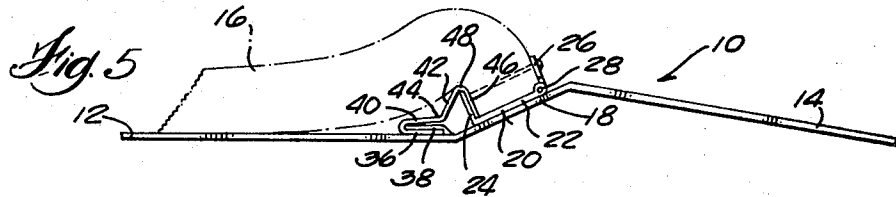
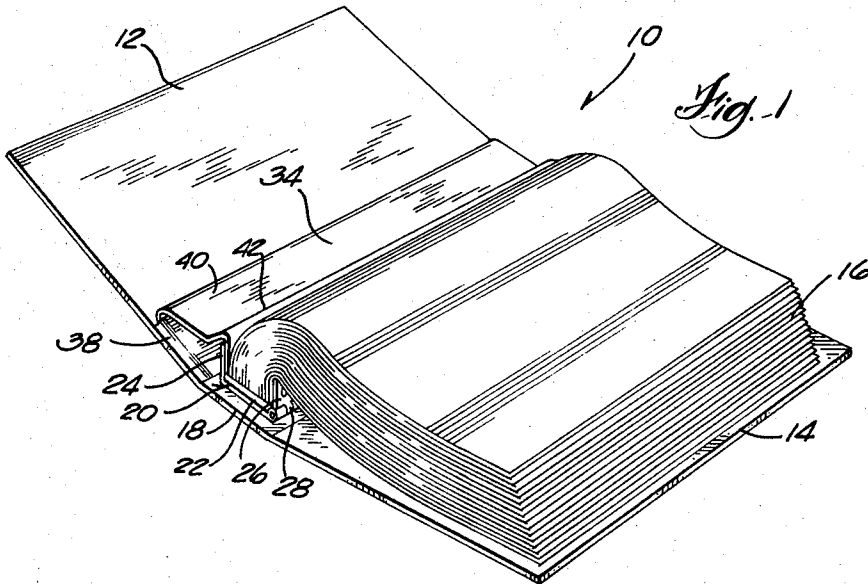
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[57] **ABSTRACT**

A front and back cover are hingedly connected to the backbone permitting the covers to be opened towards a planar position. A generally U-shaped binder is affixed to the interior of the backbone for receipt of the pages or leaves. A foldable strip is connected between the front cover and binder which limits opening movement of the front cover relative to the backbone and binder over a preselected arc. Further opening movement of the front cover results in joint rotational movement of the binder and backbone with the cover. The front cover is prevented from becoming coplanar with the backbone thereby reducing the amount of rotation of the pages as they are turned and providing a relaxed and stable paging of the book.

3 Claims, 6 Drawing Figures





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BOOK BINDING

BACKGROUND OF INVENTION

This invention relates to book binding.

Prior proposals dealing with books used in connection with the display of fabrics, or materials in general, have been inadequate for several reasons. To begin with, when the book is lying on its back cover and the front cover is opened, the binder and backbone do not rotate with the cover and therefore unless the backbone is physically rotated into a generally coplanar alignment with the front cover, any turned pages will have a tendency to flip back due to the interference of the binder. Thus, it is necessary for the viewer to properly set up and align the backbone with the front cover. However, even then, as the leaves or material are turned, the binding builds up a barrier to stable pagination creating an inherent bias in the pages which causes them to become unstable or flip backwards, as shown in FIG. 6 of the drawings. For convenience, reference is made at this time to FIG. 6 of the drawings which exemplifies a typical illustration of the prior art problem. Unless the viewer physically holds the pages down, they tend to flip back as shown. When this happens, the book becomes cumbersome for display purposes as it requires the user to hold the pages down in order to observe them.

SUMMARY OF INVENTION

A principal object of this invention is to provide a display binder capable of holding pages of display materials or the like while providing stable pagination through the book with the cover completely opened.

For achievement of these and other objects, this invention proposes a front and back cover both hingedly connected to a backbone, the latter including means for individually binding the pages together. Linking means operatively connects the front cover to the backbone to permit limited opening movement of the front cover relative to the binder after which further opening movement of the front cover results in joint rotational movement of the backbone with the front cover. The linking means maintains an angular relation between the front cover and backbone and prevents the front cover from becoming coplanar with the backbone thereby reducing and limiting the degree of rotation of the individual pages and providing a relaxed and stable pagination of the book.

By rotating the backbone and attached binding means with the front cover after the front cover is opened initially through a preselected arc, an easy examination of the pages to the end page is provided without requiring assistance by the observer to eliminate one page interfering with the other.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the book binding arrangement proposed by this invention;

FIG. 2 is an end view with the front cover closed;

FIG. 3 is an end view similar to FIG. 2 with the front cover in a partially open position;

FIG. 4 is an end view with the book in an open position with approximately half of the pages turned;

FIG. 5 is an end view similar to FIG. 3 with all of the paging complete; and

FIG. 6 is an end view of the prior art.

DESCRIPTION OF PREFERRED EMBODIMENT

Referring now to the drawings in detail, the book binding proposed by this invention is adapted for application to a book of the type used for displaying fabric samples although it is not intended to be limited as such since almost any type of page or leaf can be used. Such a book 10, as shown in FIG. 1, includes a front cover 12 and a back cover 14 connected by a backbone 18 in a conventional manner to permit individual rotational movement of the covers relative to the backbone. Preferably, the covers are larger and wider than the samples of fabric 16 bound therebetween. A generally rigid U-shaped binder 20 having a web portion 22 and two leg portions 24 and 26 is affixed to the backbone. The binder extends essentially the entire length of the backbone and is preferably attached to it by riveting the web portion of the binder to the backbone.

In order to permit easy installation and removal of the samples, leg 26 is hinged to web 22 along edge 28 with a series of threaded screws 30 and caps 32 positioned through the legs of the binder to secure the samples together. Thus when it is desired to install or remove any of the pages, the screws are removed allowing leg 26 to swing down thereby permitting easy access to the pages. When leg 26 is in place and the screws are tightened, the binder then assumes a rigid U-shape.

In order to overcome the problems existing in the prior art as discussed above under "Background of Invention," a linking means 34 is connected between front cover 12 and binder 20 which provides two essential functions. The first function pertains to opening the book from a closed position shown in FIG. 2 to an open position as shown in FIG. 1. The linking means 34 (described in detail hereinafter) permits the front cover to be partially opened through a preselected arc relative to the backbone and binder but prevents it from becoming coplanar with the backbone. After the front cover is opened to a position similar to that shown in FIG. 3, further opening movement of cover 12 causes joint rotational movement of the binder and backbone with the front cover so that the backbone lies flat on the supporting surface and in general alignment with back cover 14 as shown in FIG. 1. In this position, the ease of paging is greatly enhanced since the backbone is positioned so that the open portion of the binder now faces upwards.

The second function lies in means 34 preventing the front cover from assuming coplanar alignment with the backbone. Thus when the book is fully opened as shown in FIG. 1, the front cover is significantly raised off the support surface forming an obtuse angle with the backbone. As the leaves are paged so that the cover is pushed onto the surface as shown in FIG. 4, means 34 continues to rotate the backbone and binder with the front cover lifting it off the surface generally maintaining the obtuse angle therebetween. The result of this second function is to reduce the effect caused by binder 20 which creates an inherent bias in the pages causing them to become unstable as shown in FIG. 6 of the prior art.

Linking means 34 is preferably comprised of an elongated strip material which folds into a stacked face-to-face relationship when the cover is closed (FIG. 2) and expands as the cover and book is opened. A first portion 36 affixes the strip to the front cover while the opposite portion 46 affixes the strip to the binder 20. The

two interior portions 40 and 42 are hingedly related to each other and the outer portions so that when the book is closed, the strip folds into the aforesaid stacked relationship. Preferably, strip 34 is comprised of a material such as synthetic leather which extends the entire length of the backbone or binder. A simple means for joining the strip to the front cover is provided by a pocket 38 on the inside of cover 12 and running the length thereof for receipt of portion 36. Any conventional means may be used, however, such as riveting, adhesives, etc. The opposite portion 46 may be folded over leg 24 of binder 20 and secured to the binder in the same fashion as described with respect to the pages of the book.

The operation of strip 34 is as follows: The book is initially closed (FIG. 2) and lying on back cover 14 with the strip in its fully collapsed or folded position. As cover 12 is opened, strip 34 expands or, more specifically, portions 40 and 42 fold open along crease 44 towards a planar relationship. Initially, no force is exerted on the binder or backbone thereby permitting the cover to rotate or open through a preselected arc relative to the backbone until the cover assumes a position generally shown in FIG. 3. The preselected arc is arbitrary so long as means 34 prevents cover 12 from achieving a coplanar relationship with the backbone 18. A medium size obtuse angle will prove very satisfactory. Further opening movement of cover 12, however, will precipitate the exertion of a pull on the binder as portions 40 and 42 of the strip open up. From this point on, the binder and backbone rotate jointly with the cover 12.

With this feature in mind, the front cover 12 is thus opened until the binder and backbone are rotated into a position illustrated in FIG. 1 with the backbone lying flat on the supporting surface thereby positioning the binder for easy paging of the book. The strip means 34 however prevents the front cover from likewise lying on the surface, i.e., from becoming coplanar with the backbone. This means that as the pages are turned, the front cover reduces the angle of rotation of each page thus reducing the inherent bias effect resulting from leg 24 of the binder. The net effect is a smooth, stable pagination of the book. As the leaves or samples 16 are then paged through, each successive page will lie relatively flat permitting full examination of the next page. With the legs 24 and 26 of binder 20 essentially in a vertical position, there is no uneven biasing effect on a turned or unturned page. As the weight of the paged samples builds up on cover 12, the cover will begin to rotate toward the surface or table top and in so doing will rotate the backbone and binder with it such that at all times the backbone and front cover do not become coplanar. This rotation of the backbone elevates the backbone and back cover 14 in the area of the connection of the back cover to the backbone as shown in FIG. 4. This latter effect reduces the tendency of the unturned pages to now want to become unstable as the weight of the preceding "turned" pages are lifted off them. Further paging of the book causes front cover 12 to fully rotate over onto the table top, and in so doing, backbone 18 will likewise move with it until all the pages are turned as shown in FIG. 5. Thus, no matter how many pages are turned, the joint rotation of the backbone and binder with the front cover, and the

resultant movement of the back cover 14, reduces the biasing effect induced by the binder legs on the pages to provide easy and stable pagination of the book without necessitating the viewer's aid in keeping the pages turned.

Although but one embodiment of the present invention has been illustrated and described, it will be apparent to those skilled in the art that various changes and modifications may be made therein without departing from the spirit of the invention or from the scope of the appended claims.

I claim:

1. A book binding arrangement comprising, in combination an elongated backbone including a back portion adapted to rest on a support surface and a generally U-shaped binder extending substantially along the length of said backbone which has a web portion affixed to said back portion and a pair of spaced legs adapted to hold pages therebetween;

front and back covers hingedly connected to the opposite edges of said back portion adjacent to respective of said legs so that said front and back covers can be completely opened independently of each other in opposite directions relative to said backbone towards a flat position with respect to the support surface on which said backbone is resting; and

linking means including a first portion connected to the inside of said front cover, a second portion connected to the one of said legs corresponding to said front cover, and an intermediate portion which is foldable with respect to said first and second portions, said intermediate portion being expandable to permit limited opening movement of said front cover through a preselected arc relative to said back portion to a position short of becoming coplanar with said back portion without affecting the opening movement of said back cover and said linking means, upon continued opening movement of said front cover thereafter, solidly connecting said front cover to said corresponding leg so that said binder and back portion are rotated jointly with said front cover, thereby elevating the portion of said backbone to which said back cover is connected from the support surface and prohibiting said front cover and said back portion from becoming coplanar, said linking means comprising a flexible strip of material extending substantially along the length of said binder and said intermediate portion includes two portions which are foldable in face-to-face stacked relationship and disposed flat between said front cover and said one leg when said book is closed and become fully unfolded when said front cover is opened through said preselected arc.

2. The combination according to claim 1 wherein said first portion includes an intumed flange and said front cover includes a pocket for receiving said flange.

3. The combination according to claim 2 wherein at least one of said binder legs is hingedly connected to said web portion and is secured to the other of said legs by removable fastening means which is adapted to hold the pages and can be removed to permit the insertion and removal of pages from said binder.

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