(No Model.)

F. BOWMAN.

BLANK BOOK.

No. 469,054. Patented Feb. 16, 1892.

Fig. 1.

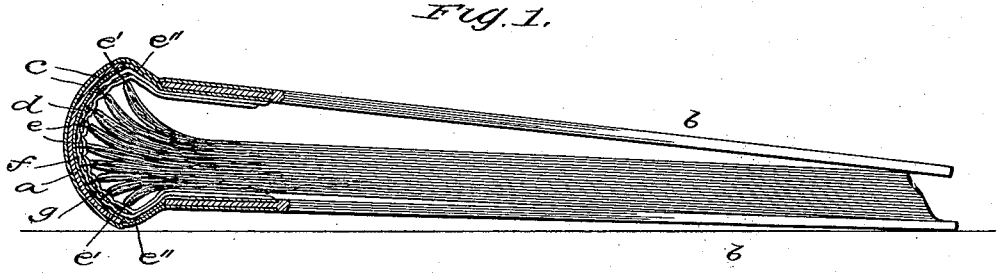


Fig. 2.

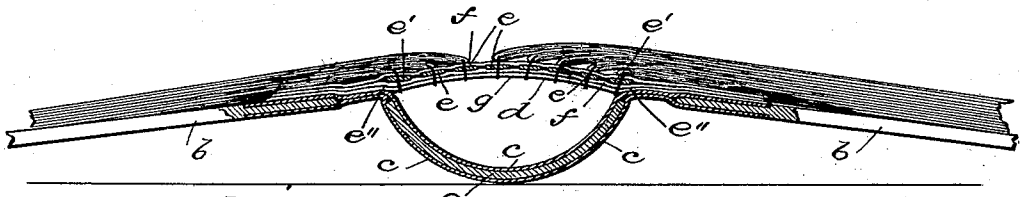


Fig. 3.

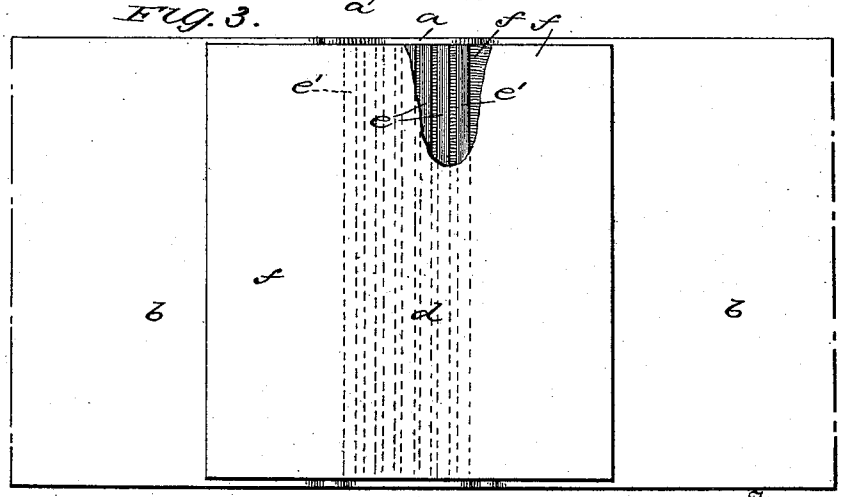
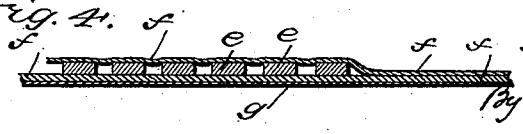


Fig. 4.



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FRANK BOWMAN, OF BROOKLYN, NEW YORK.

BLANK-BOOK.

SPECIFICATION forming part of Letters Patent No. 469,054, dated February 16, 1892.

Application filed November 28, 1891. Serial No. 413,404. (No model.)

To all whom it may concern:

Be it known that I, FRANK BOWMAN, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Blank-Books, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to a new and useful improvement in blank-books; and it has for its objects to provide a book with a very strong inner back to which the sections or signatures are secured, and to so construct said inner back that it will be flexible and conform to the curvature of a concaved outer back when the book is closed, and which when the book is opened out flat will spring upwardly at its center to form a convexed inner back, thereby causing the leaves of the book to lie approximately flat, as will presently appear.

The invention consists in the novel combination and arrangement of parts, that will more fully hereinafter appear.

In the drawings, Figure 1 is an end elevation of my improved book. Fig. 2 is a vertical sectional view showing the book opened. Fig. 3 is a plan of the covers and the flexible back, the flexible back being partly in section; Fig. 4, a detail transverse section of the main back.

In the drawings, *a* designates the rigid concaved outer back, and *b b* the covers which are secured to it by the fabrics *c c*. These fabrics envelop the outer back and are glued or otherwise secured together for a short distance beyond the longitudinal edges of the outer back, and are then separated and secured to opposite sides of the covers at the inner ends thereof, thereby forming flexible connections between the outer back and the covers. The flexible inner back *d* is constructed of strips of stiff material *e*, such as pasteboard, which extend the full length of the back and are spaced suitable distances apart and glued between fabrics *f f*, which envelop them and extend a suitable distance beyond the outer ones to insure a secure fastening to the covers. This inner back is secured to the covers across the concavity of the outer back in such manner that the outer strips *e' e'* or that portion of the fabrics which envelop them abut against the flexible connections between the covers and the outer back at a point *e''* just beyond the longitudinal edges of the outer back. The fabrics *f f* have their longitudinal edges glued together beyond the outer strips *e' e'* and are glued or otherwise rigidly secured to the inner edges of the covers from the point *e''* outwardly to their edges. The length of the inner back between the outer edge of the outer strip *e'* is greater than the distance across the concavity of the outer back, in order that the flexible inner back may conform to the curvature of the outer back when the book is closed and when the book is opened spring upwardly and assume a convex form, as shown in Fig. 2. The strips *e e* give the back sufficient stiffness and elasticity to cause it to spring up and assume a convex form when the outer strips *e'* are turned upwardly or raised by the opening of the book, and the flexible spaces between the strips permit a sufficient compression or contraction of the flexible back by the opening or closing of the book to allow the flexible back to pass the straight line drawn between the outer strips *e' e'* across the concavity of the outer back. The elasticity of the outer back contributes to permitting the inner back to spring outwardly and inwardly in opening and closing the book, as is evident. A reinforcing-strip *g* of fabric is secured to the outer side of the inner back to still further strengthen it, said reinforcing-strip extending the full length and breadth of the inner back. The sections or signatures of the book are stitched, stapled, or otherwise secured to the inner back, said fastenings passing directly through the strips *e* and their enveloping fabrics, thereby making an exceedingly strong and durable connection for said sections. One signature is secured to each strip, so that the spaces between the strips *e* coincide with the spaces between the signatures of the book.

In constructing the inner back I preferably form the lower fabric of some heavy strong material and the upper fabric of a thinner and more flexible and pliable material, as shown in Fig. 4.

Having thus fully described my invention,

what I claim, and desire to secure by Letters Patent, is—

1. In a blank-book, the combination of a concaved outer back, covers flexibly secured to said back, a flexible inner back consisting of the separated strips of stiff material and the fabrics enveloping said strips and securing them in position, said flexible back being secured to the outer back in such manner that it will conform to the curvature of the outer back when the book is closed and will assume a convex form when the book is opened, and signatures secured to said flexible back, substantially as described.

2. In a blank-book, the combination of a concaved rigid outer back and covers flexibly secured to the said back with a flexible inner back consisting of the separated strips of rigid material extending the full length of the back, fabrics enveloping said strips and securing them in position and extending beyond the outer ones, said inner back being secured to the flexible connections between the outer back and the covers and to the covers, and signatures secured to the inner back directly through the strips, substantially as described.

3. In a back for blank-books, the combination of the series of separated stiff strips, fabrics glued upon opposite sides of the strips, and signatures secured to the back thus constructed, the fastenings of the said signatures passing through the body of the strips and the enveloping fabrics, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK BOWMAN.

Witnesses:
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