E. S. BOYNTON.

Book-Binding.

No. 211,616. Patented Jan. 28, 1879.

Fig. 1

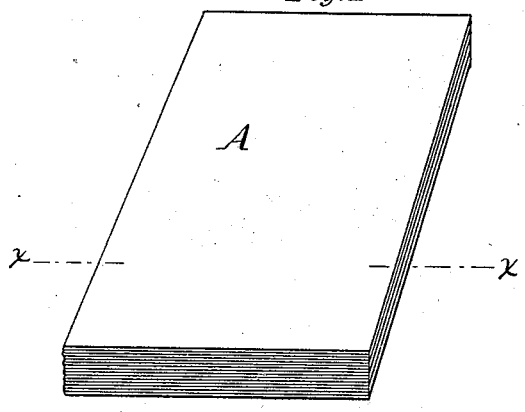


Fig. 2

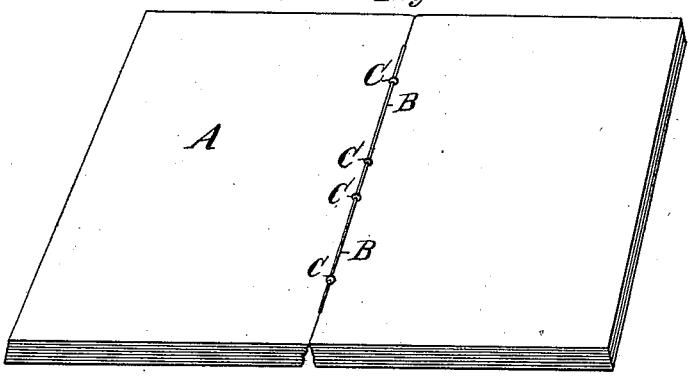


Fig. 3.

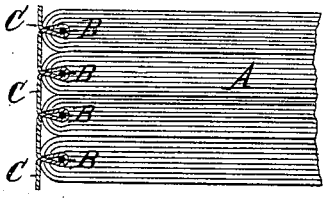
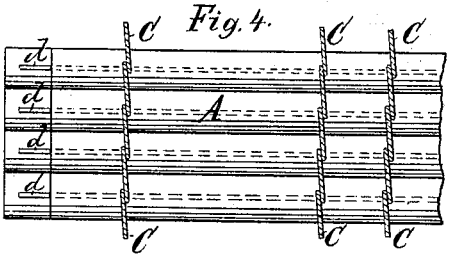


Fig. 4.



Witnesses:

S. J. Gordon

John W. Ripley.

Inventor

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UNITED STATES PATENT OFFICE.

EDWARD S. BOYNTON, OF BRIDGEPORT, CONNECTICUT.

IMPROVEMENT IN BOOK-BINDING.

Specification forming part of Letters Patent No. **211,616**, dated January 28, 1879; application filed November 15, 1878.

To all whom it may concern:

Be it known that I, EDWARD STANLEY BOYNTON, of Bridgeport, county of Fairfield, Connecticut, have invented certain Improvements in Book-Binding, of which the following is a specification:

This invention relates to the means of securing the leaves of each signature together, and the signatures themselves to each other and to the transverse binding-cords; and consists in the combination of parts hereinafter described, by which these objects are most perfectly accomplished, and a reliable and properly elastic binding is secured.

In the accompanying drawings, Figure 1 is a perspective view of a book constructed according to my invention, no stiff covers being shown. Fig. 2 is a plan thereof when opened in the fold of one of the signatures. Fig. 3 is a transverse section of the book at the line *x x* of Fig. 1. Fig. 4 is a view of the back of a portion of the book, showing the manner of uniting the signatures, and also showing the position in which the ends of the longitudinal cords, hereinafter described, may properly be secured.

A represents the body or leaves of the book. B B are cords or twines, one of which is located inside of and against the fold of each signature, extending the entire length of the page, and its ends *d d* being drawn through the fold of the signature, so as to lie upon the back thereof. C C are the binding-cords which secure the signatures to each other and the back of the book to the covers, the cords C C being sewed through the saw-cuts in the back of the book, and looped or turned around the cords B B, and tightly drawn up, so as to hold the latter firmly in place and the signatures together.

The work of sewing in these cords B and C may be performed either by hand or by machine, or partly by each, and the order and mode of operation may be, and probably will be, somewhat varied to accord with the means adopted for executing the work.

When the work is done entirely by hand, the cords B B may be first laid in place on the inside of and against the fold of each signature, as shown in Fig. 2, and the cords C C sewed through the saw-cuts, and entirely around the cords B B, with a needle suitable for that purpose; but when the work is done either wholly or in part by machine, the cords C C may be partially sewed into a signature, so as to form loops for the cord B, and the latter inserted in those loops, either by means of a long needle adapted to the purpose and worked by hand, or by a shuttle operated by machinery, the latter, of course, being the most expeditious mode of doing the work.

A machine similar to that described in the Letters Patent of the United States No. 203,530, granted to me May 14, 1878, with a proper shuttle for carrying the cords B B through the loops of the cords C C and laying them in place, and appropriate mechanism to operate such shuttle in place of the pin supplying the feeding mechanism described in said patent, would furnish an efficient mechanism for the rapid performance of the work.

In case the cords B B are sewed in one continuous cord extending through the entire book, such continuous cord must then be cut at the end of the pages, so as to make the cord B for each signature a separate and independent cord, having no connection at the end of the page with the corresponding cord in the next signature. The cords C C having been sewed through the saw-cuts and around the cords B B, as described, I then, by pulling upon the two cords C C which are nearest the ends of the book, draw the ends *d d* of the cords B B through the saw-cuts, so as to bring them out upon the back of the book, as indicated in Fig. 4, and, discarding those cords C C by which the ends *d d* have been drawn through, I secure these ends *d d* firmly to the back of the book with glue, or by some other reliable mode of fastening, and preferably in the position indicated in Fig. 4. The binding of the book is then completed in the usual manner, the ends of the remaining cords C C, being secured to the cover as ordinarily practiced.

This mode of binding secures great strength, permanence, and flexibility, effectually preventing the loosening of the leaves of the book by handling. It also has the advantages over the mode of binding described in the Letters Patent of the United States No. 193,109,

granted to me July 17, 1877, that the longitudinal cords B B, being flexible, give a more satisfactory binding for use, and not being metallic are not liable to rust or corrode from dampness or other cause, and soil the pages of the book.

I claim as my invention—

The combination, with the signature of a book, of the longitudinal cord B B and the binding-cords C C, the ends *d d* of the said cord B B being drawn through the fold and secured at the back of the book, substantially as hereinbefore set forth.

Witness my hand this 12th day of November, A. D. 1878.

EDWARD STANLEY BOYNTON.

Witnesses:
S. J. GORDON,
JOHN W. RIPLEY.