

(No Model.)

A. H. TYRRELL & G. A. ZIBELL.
BOOKBINDING.

No. 508,154.

Patented Nov. 7, 1893.

Fig. 1.

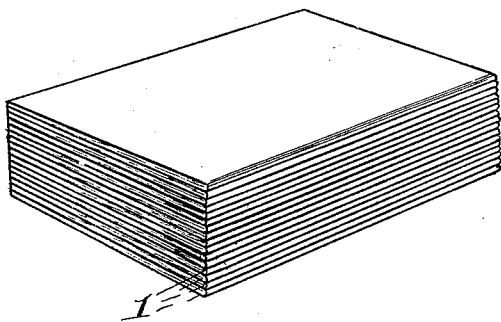


Fig. 2.

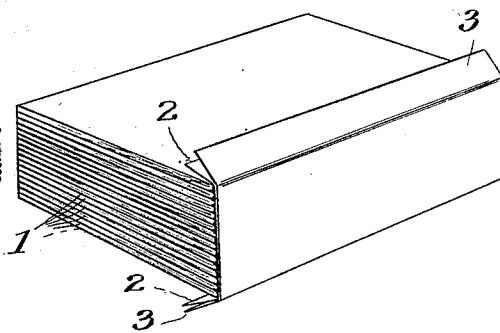


Fig. 3.

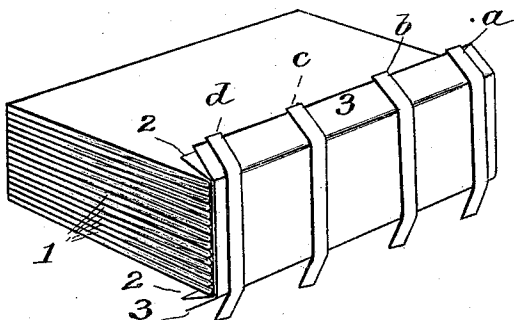


Fig. 4.

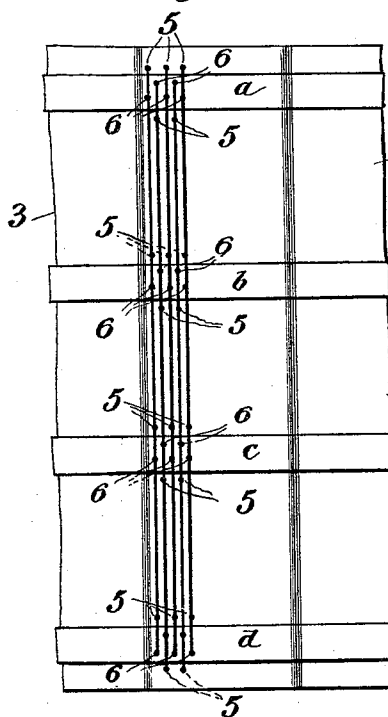
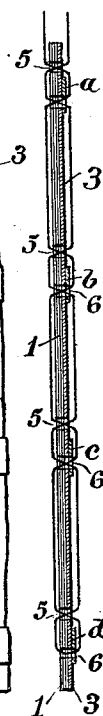


Fig. 5.



WITNESSES:

J. French.
A. S. Meloy

INVENTORS

Arthur H. Tyrrell
Gustave A. Zibell

BY

H. W. Smith Jr.

ATTORNEY

UNITED STATES PATENT OFFICE.

ARTHUR H. TYRRELL AND GUSTAVE A. ZIBELL, OF WATERBURY,
CONNECTICUT.

BOOKBINDING.

SPECIFICATION forming part of Letters Patent No. 508,154, dated November 7, 1893.

Application filed March 8, 1893. Serial No. 465,195. (No specimens.)

To all whom it may concern:

Be it known that we, ARTHUR H. TYRRELL and GUSTAVE A. ZIBELL, citizens of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have
5 invented certain new and useful Improvements in Bookbinding; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will
10 enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to certain new and useful improvements in the art of book binding, and has for its object to make the book
15 sections flexible so that the book will open flat, and to render the book durable and not liable to become injured by the breaking of the stitches at the back.

In the accompanying drawings, Figure 1 is
20 a perspective showing the book-sections properly assembled preparatory to binding; Fig. 2, a similar view, but with the preliminary backing of muslin in position preparatory to stitching; Fig. 3, a view similar to Fig. 2, but
25 with the cross-bands in position on the muslin back; Fig. 4, a back view showing the manner of stitching; and Fig. 5, a sectional view through the back of a section of the book illustrating particularly the complementary
30 stitches.

Similar numbers and letters denote like parts in the several figures of the drawings.

1 are the book-sections made and assembled in the usual manner. The muslin back is
35 composed of two plies 2, 3, pasted together at their middle portions, the edges of said plies being separated, as shown at Fig. 2.

a, b, c, d, are narrow strips of tape or other suitable material secured at intervals across
40 the muslin back by gluing or otherwise, as seen at Fig. 3.

The stitching is taken from points 5 outside the bands to points 6 within the farther edges of the bands throughout the length of the sections. The stitches from the points outside
45 the bands within the farther edges of the bands will all appear at the back of the sections, while the stitches which connect each series of such stitches will appear at the inside of the sections. In order to afford strength

we double on a previous line of stitching and form complementary stitches opposite the previously made stitches, as shown at Fig. 5, these complementary stitches being designated by dotted reference numbers corresponding to the
55 numbers which designate opposite stitches. When this duplex stitching has been taken through one section the next stitching in the contiguous section is effected in like manner except that the points outside and inside the
60 bands are respectively opposite to the corresponding points in the stitching in the previous section. In other words, the stitching in the various sections is taken alternately from opposite sides of the bands through opposite edges
65 of the latter, as will be readily seen at Fig. 4. This peculiar stitching not only firmly secures the bands along both edges thereof but it does not weaken the bands, and the latter constitute hinges upon which the book-sections may
70 swing and open perfectly flat. After the stitches have been taken through the book sections, the muslin back is covered with glue, thereby embedding the stitches at the back, which stitches, it will be remembered, are
75 complementary to the stitches which appear on the inside of the book section, and such glued back is then preferably faced with muslin, paper or other suitable material. It will
80 thus be seen that not only are the book sections stitched to the backing, and are not secured thereto by the application of glue between such sections and backing, but that also the stitches which secure these sections are
85 firmly anchored in a bed of glue on the outside of the muslin back, so that should the stitches become broken at two or three places on the inside of a book section, the latter would not become detached from the muslin back, since each stitch is independently anchored
90 in the glue. Moreover, since each book section is stitched independently and is connected to the backing solely by the stitches, all the sections will open perfectly flat.

In following out our invention, we prefer to
95 assemble and properly secure together the muslin backing and cross-bands, before applying them to the backs of the sections, then sew the sections, as before set forth, to the inside of this backing, and then, after covering
100

the outside of the backing with glue, to cover the whole with a strapping of thin material.

We claim—

1. The combination of the book-sections, the muslin back having fastened thereto at regular intervals cross-bands, and the rows of stitching through said sections back and bands, each row comprising a series of complementary stitches which extend on the inside and outside of the sections, while the stitches in successive sections are taken alternately from opposite sides of the bands through opposite edges of the latter, substantially as shown and described.
2. The herein described improvement in the art of book-binding, the same consisting in

stitching the book-sections to the backing without the intervention of glue between such sections and backing, and then embedding such stitching on the outside of the backing in glue, whereby each stitch is independently fastened and the book-sections hinged to the backing solely by the stitching, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

ARTHUR H. TYRRELL.
GUSTAVE A. ZIBELL.

Witnesses:

B. G. BRYAN,
W. P. BRYAN.