

No. 709,599.

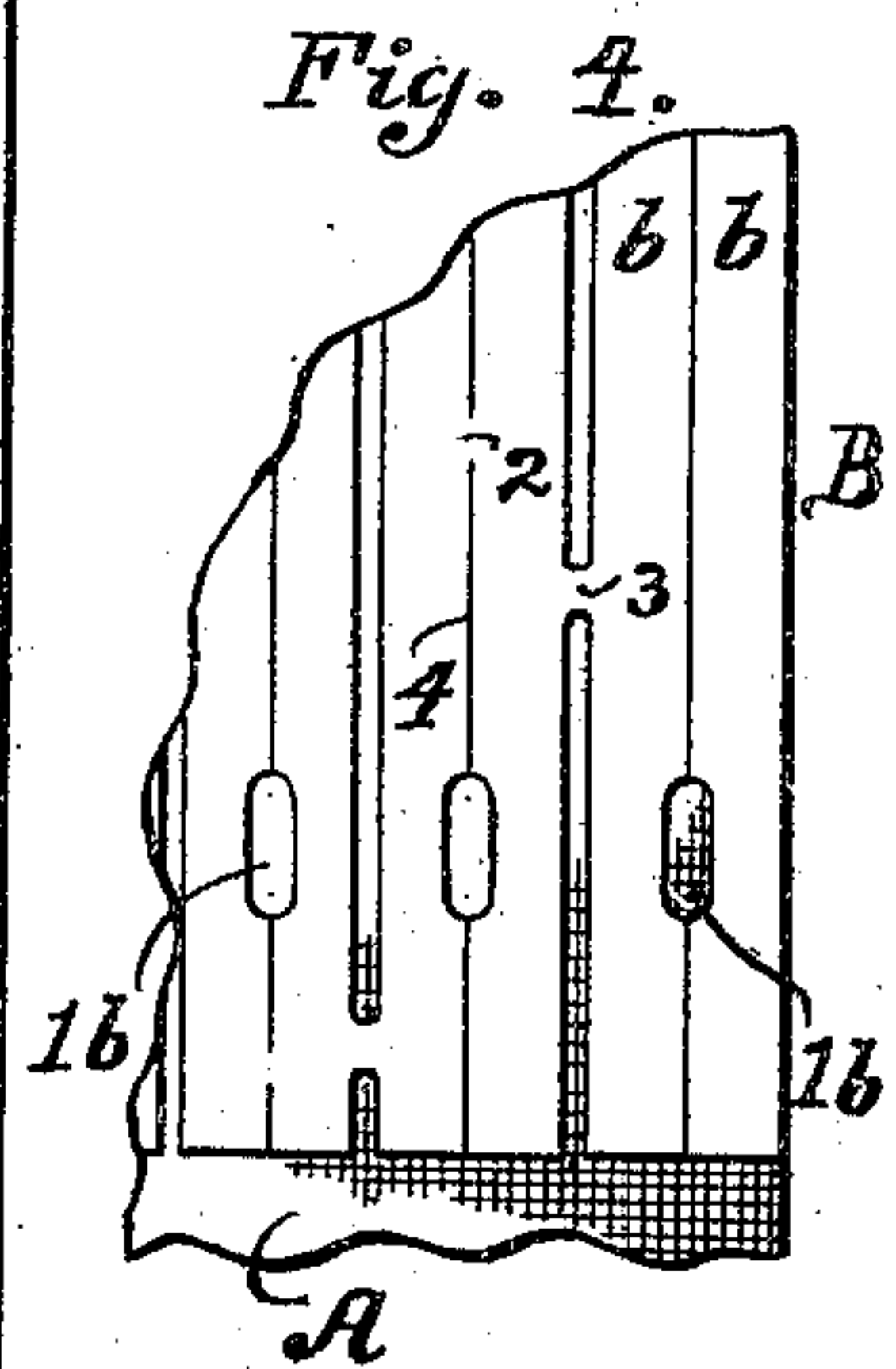
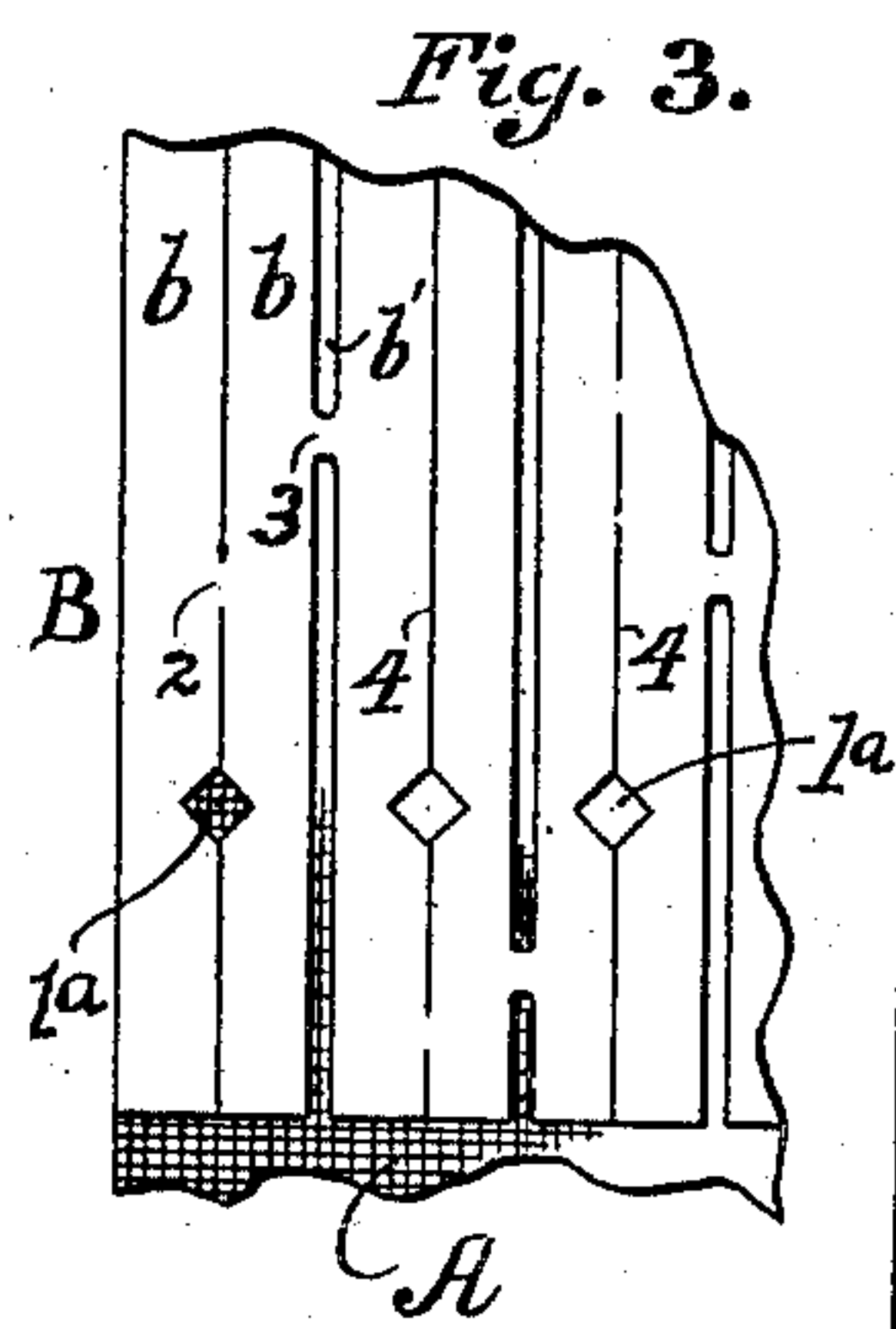
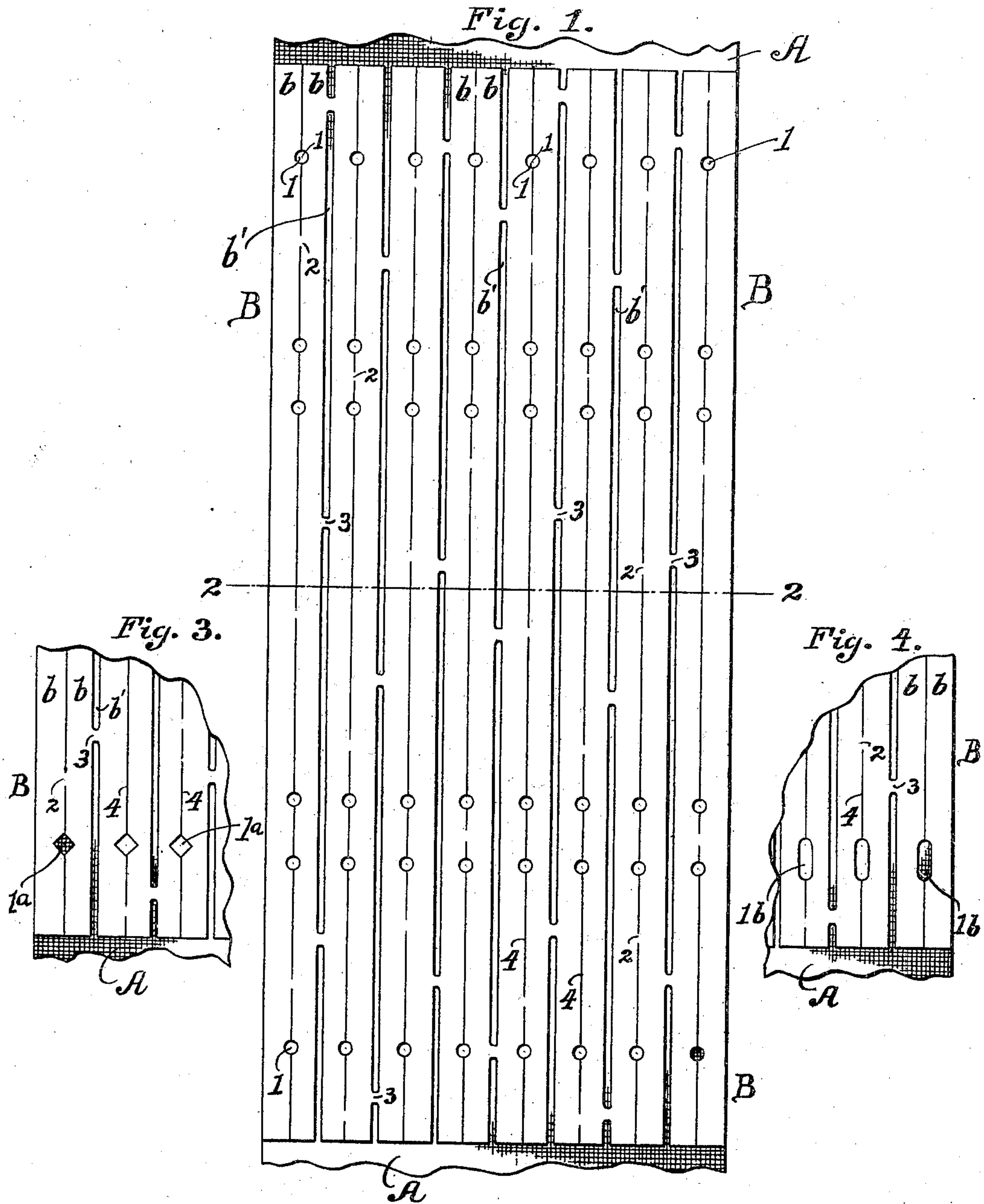
Patented Sept. 23, 1902.

G. HAGER.  
BOOKBINDING SHEET.

(Application filed May 11, 1901.)

(No Model.)

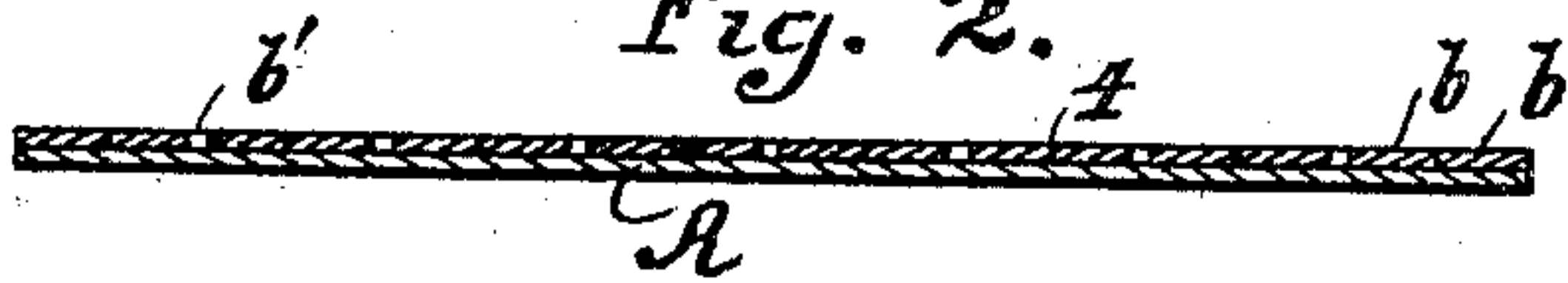
2 Sheets—Sheet 1.



WITNESSES:

Frank J. Stinner,  
Sophia Karnusch

Fig. 2.



INVENTOR

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(No Model.)

2 Sheets—Sheet 2.

Fig. 6.

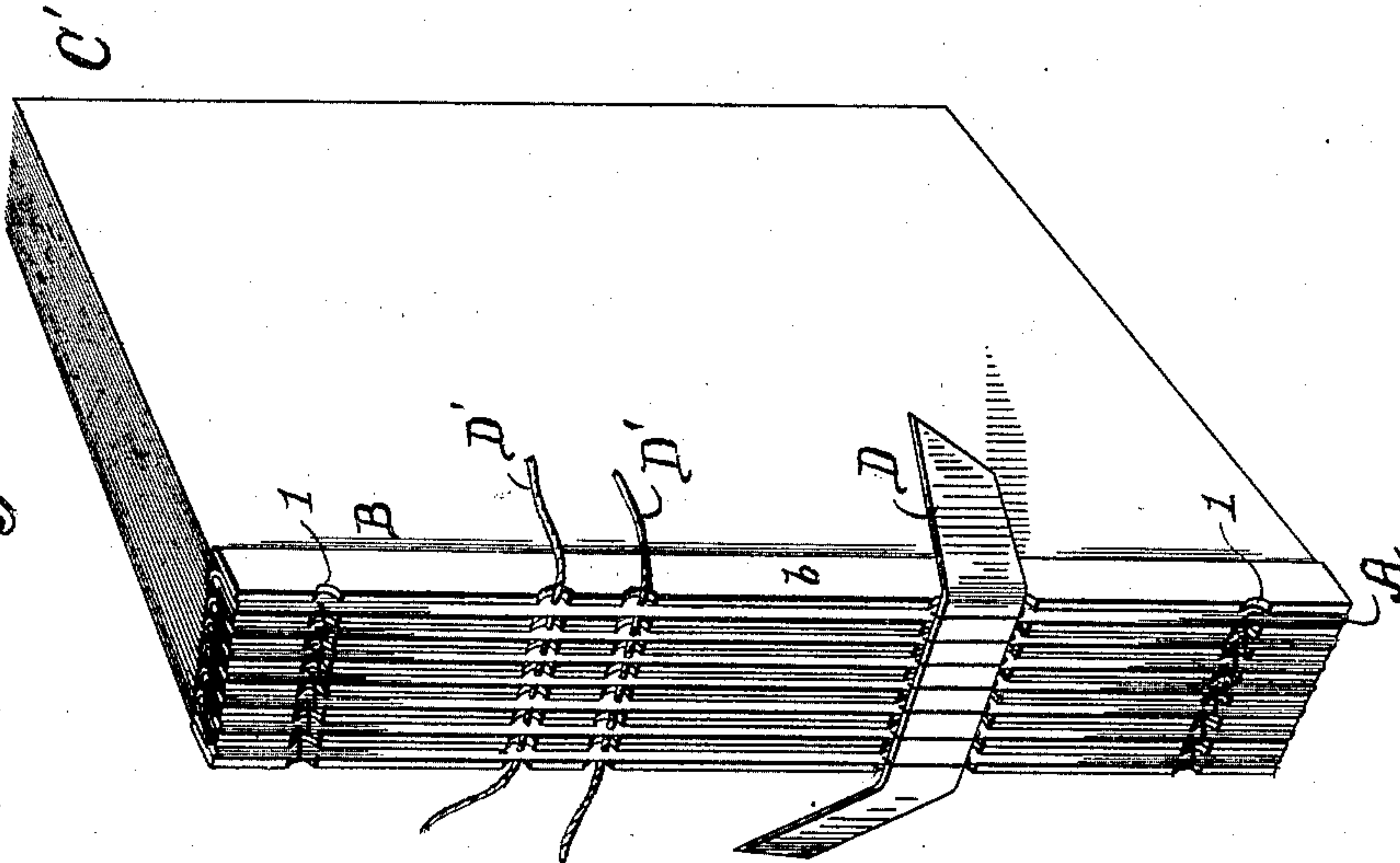
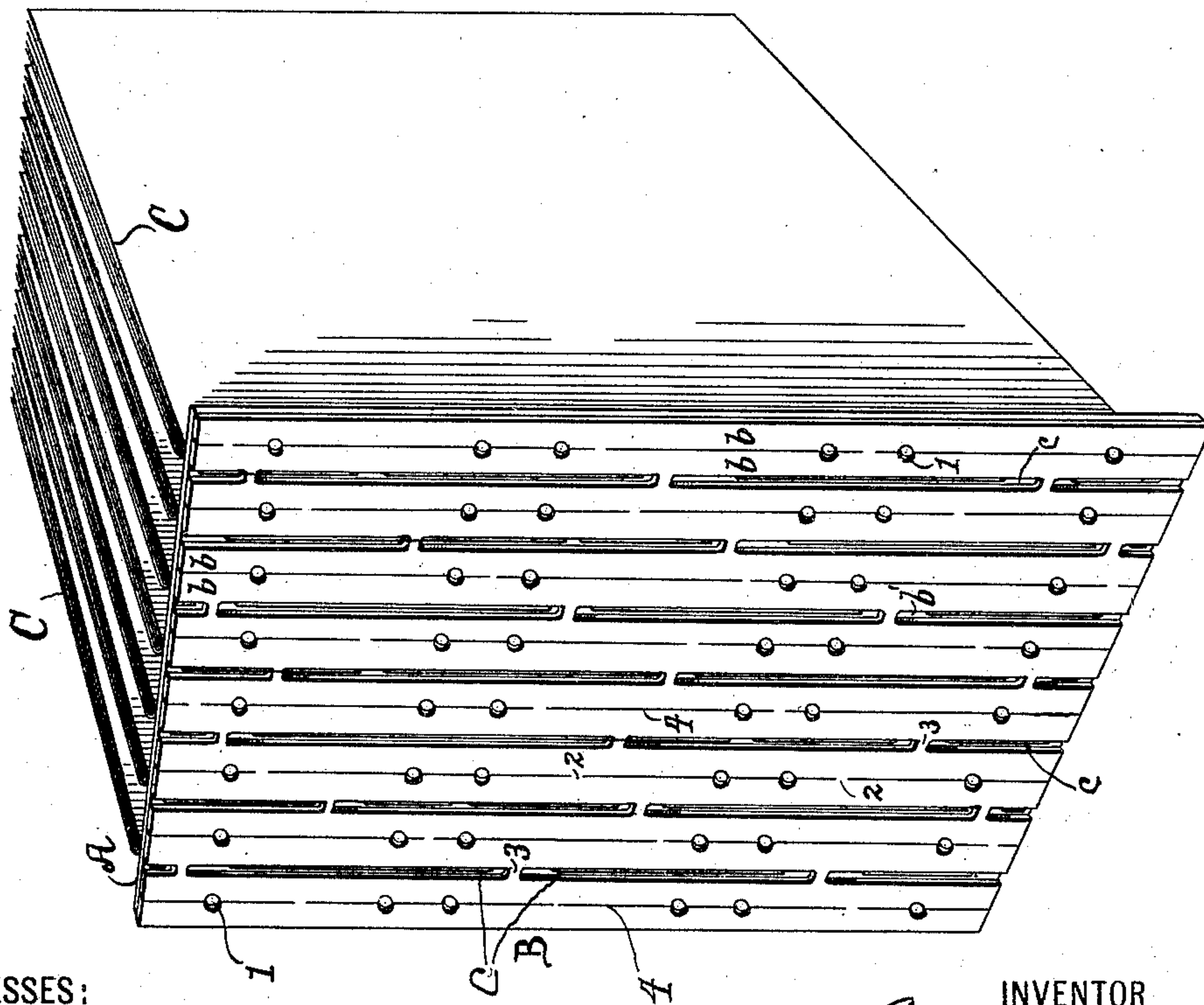


Fig. 5.



WITNESSES:

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INVENTOR

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# UNITED STATES PATENT OFFICE.

GODFREY HAGER, OF BROOKLYN, NEW YORK.

## BOOKBINDING-SHEET.

SPECIFICATION forming part of Letters Patent No. 709,599, dated September 23, 1902.

Application filed May 11, 1901. Serial No. 59,760. (No model.)

*To all whom it may concern:*

Be it known that I, GODFREY HAGER, a citizen of the United States, and a resident of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Bookbinding - Sheets, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters and figures of reference indicate corresponding parts.

This invention relates to improvements in bookbinding-sheets of the class employed in the art of bookbinding for backing and assembling the several signatures comprising a book-body.

The invention embodies an integral strip-sheet and a flexible base; and the object thereof is to provide an efficient article of this character in which the plurality of strips embodying the strip-sheet are all connected to each other in parallel alinement and which are so formed as to facilitate the operation of sewing the parts of the backing together and to fastening straps or cords.

The invention will be hereinafter fully described, and specifically set forth in the annexed claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a face or plan view of a strip-sheet embodying my improvements. Fig. 2 is a transverse sectional view taken on the line 2 2 of Fig. 1. Figs. 3 and 4 are face views illustrating modifications, and Figs. 5 and 6 are perspective views illustrating the relative arrangement of the back with a book-body.

In the bookbinders' art these strip-sheets have been formed by pasting separate strips of cardboard upon a flexible base or fabric, said strips having smooth vertical edges and being arranged in pairs with their adjoining edges abutting and the respective pairs being parallel and separated by a narrow intervening space; but this method of pasting the separate strips upon the flexible base or fabric is exceedingly tedious and slow, and a perfect parallel alinement of the pairs of strips is virtually impossible. The variation in the width of the separating-spaces between the respective pairs of strips makes the sheet irregular and precludes its perfect operation

when applied in position in the binding of the book. It is the purpose of my present invention to entirely obviate the above disadvantages and to produce a bookbinding-sheet in which the strips will be in perfect and accurate alinement and which are so formed as to facilitate the operation of shaping and sewing the backing, so that the maximum degree of efficiency and operation is secured.

Referring to the drawings, A designates the flexible base or sheet, which may be of fabric or any other suitable or desired material.

B designates the strip-sheet of cardboard or analogous material which is pasted upon the flexible base. This strip-sheet is produced by approved machinery, and it embodies a series of pairs  $b\ b$ , having their meeting edges abutting and provided with notches 1, which register with each other and are arranged in horizontal rows or series across the sheet, the pairs being connected to each other by integral bridges embodying the unsevered portions of material 2, whereby a plurality of pairs are connected to each other to provide an integral sheet of desired width, said pairs being in perfectly parallel relative position and separated by the narrow intervening spaces  $b'$ ; but the strips of the respective pairs are connected by narrow integral necks 3, extending across the intervening spaces  $b'$ .

In practice the strip-sheet embodying the series of strips, as just above described, is provided upon its back with mucilage or other suitable adhesive substance, by which it may be pasted upon the flexible base A, and it will be understood that the narrow integral connecting-necks 3 and bridges 2 will retain the strips in permanent connection and parallel alinement until they are secured to the flexible base, thus avoiding all guesswork, loss of time, or the use of the eye in securing a parallel alinement of the strips.

The notches 1 are arranged in horizontal rows across the strip-sheet, preferably as shown in the drawings, having one row near the top edge of the sheet, a similar row near the bottom edge, and double rows across the center; but the rows may be arranged in any desired number. These notches are preferably of semicircular contour, as shown by Fig. 1 of the drawings; but it is obvious that



they may be angular, as 1<sup>a</sup>, Fig. 3 of the drawings, or elongated, as 1<sup>b</sup>, Fig. 4 of the drawings. The special object of these notches is to uncover parts of the fabric-base A after the plaits are made, so that the folds of said fabric can be sewed together at their back parts, and binding-straps, as D, can be attached without the necessity of opening up the accordion-plaits and passing the needle back and forth between said plaits and between the book-signatures, which is an exceedingly awkward and tedious operation absolutely essential in the employment of strip-sheets formed without my registering and horizontally-alined notches. In cheap books single cords, as D', may be passed through the folds by means of a needle, which cords may act as equivalents for the straps D.

Another important feature of my improvement is that the adhesive substance is applied to and carried upon the back of the connecting-strips, so that only that part of the flexible base which is covered by the strips receives any of the adhesive substance, while in the practice heretofore pursued in the art in the operation of pasting single strips one by one upon the flexible base the adhesive substance was first applied to the whole surface of the flexible base and the strips were set upon said adhesive surface, which operation was not only uncleanly, but the adhesive substance also caused the flexible base to shrink and become stiff and hard.

The operation and advantages of my invention will be readily understood by those skilled in the art to which it appertains. The several signatures, as C, comprising the book-body are respectively sewed to the flexible base A by means of threads c, which pass through the said base into the space b'. The strips are then glued or gummed on the outside and then folded upon each other in accordion-plaits, as illustrated by Fig. 6 of the drawings, to bring the several signatures together and form the book-body.

The integral narrow connecting-necks 3 will not interfere to any degree whatever with the flexibility secured by the intervening spaces b' when my improved backing is applied in position, and after the strips are secured upon the flexible base and the backing is in position the dividing-cut line 4, between the respective strips of each pair, which forms the abutting edges of each strip, will open up freely and the bridges 2 will be readily fractured, whereby the folds of the fabric base will extend between the notches 1, so that said

60 folds may be readily sewed together, while the exact uniform size of the spaces b' will insure a true and perfect operation.

I do not confine myself to the specific details of mechanical construction as herein shown and described, as it is obvious that under the scope of my invention I am entitled to structural variations.

65 Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. As a new article of manufacture, an integral strip-sheet for backing and assembling book-signatures, embodying a plurality of pairs of strips, adjacent members of two pairs being connected by bridges and having notches which register with each other, and the members of each pair being in parallel position with a uniform intervening space bridged by integral narrow connecting-necks extending between them, substantially as shown and described.

2. As an improved article of manufacture, an integral strip-sheet for backing and assembling book-signatures, embodying pairs of strips in parallel position, adjacent members of two pairs having notches which register with each other, said members being connected by bridges, and the members of each pair being separated by a uniform intervening space bridged by integral narrow connecting-necks, said strip-sheet being provided with and carrying upon its back an adhesive substance, whereby it may be applied to a flexible base, substantially as shown and described.

3. As an improvement in book-binding sheets for assembling book-signatures, the combination, with a flexible base or fabric, of an integral strip-sheet embodying pairs of strips, adjacent members of two pairs having notches in their meeting edges which register with each other, said members bridged by integral portions, said pairs being in parallel position, and the members of each pair being separated by uniform intervening space bridged by integral narrow connecting-necks, and means for attaching said strip-sheet to the flexible base, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 6th day of May, 1901.

GODFREY HAGER.

Witnesses:

S. HARNISCH,  
B. PATERSON.