

(No Model.)

2 Sheets—Sheet 1.

J. A. CRANE.

BOOK COVER.

No. 299,914.

Patented June 3, 1884.

Fig. 1.

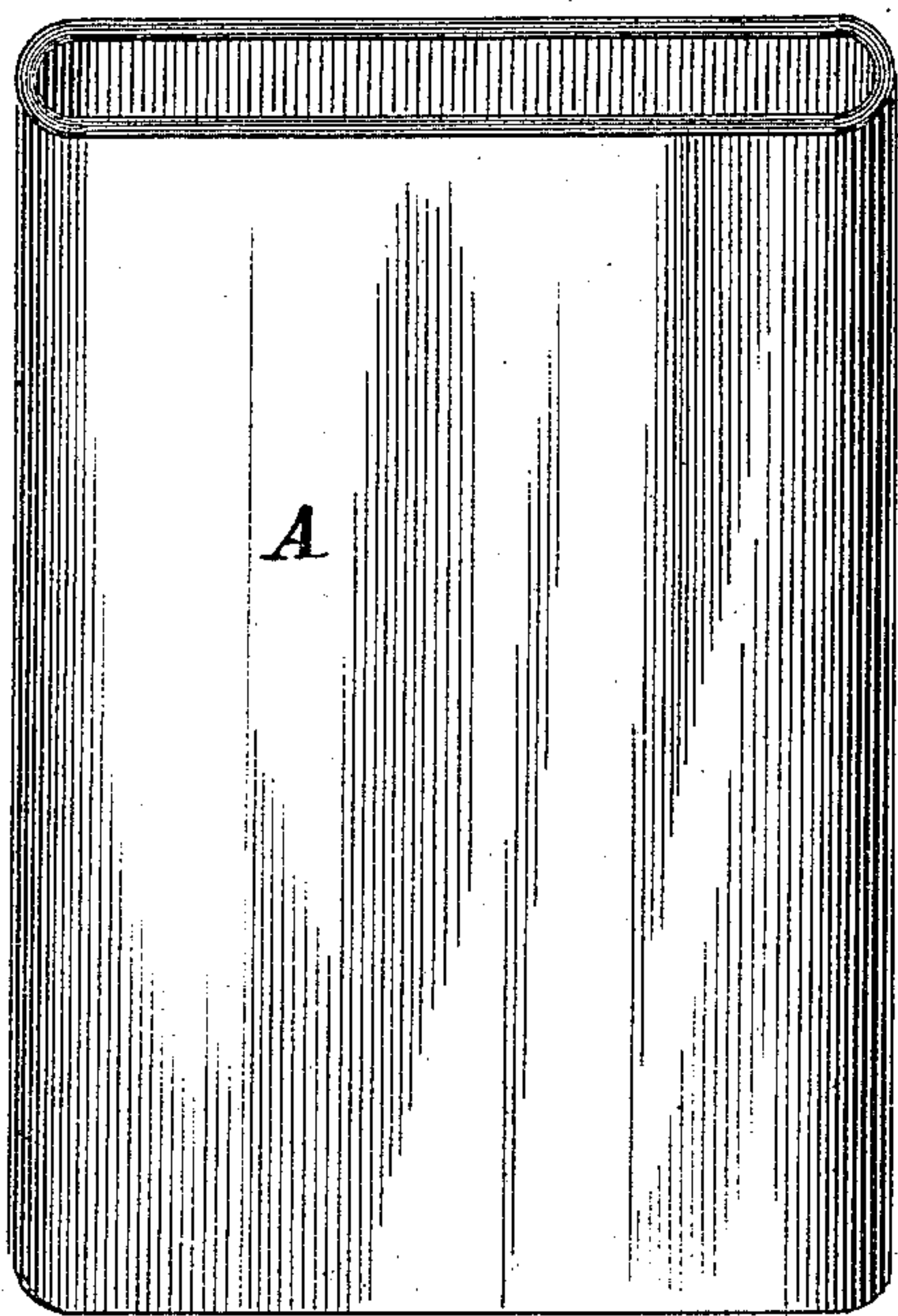


Fig. 2.

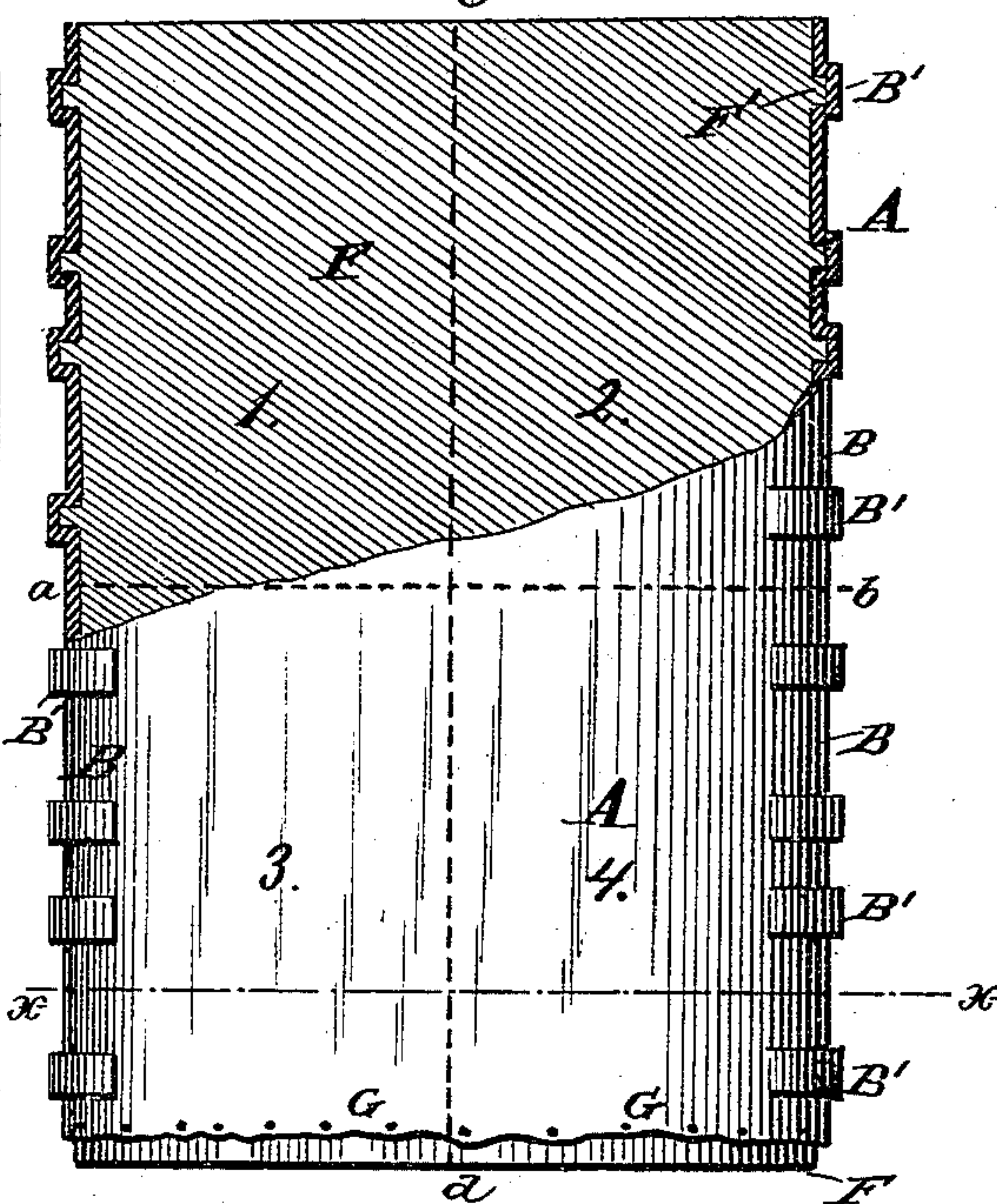


Fig. 3.

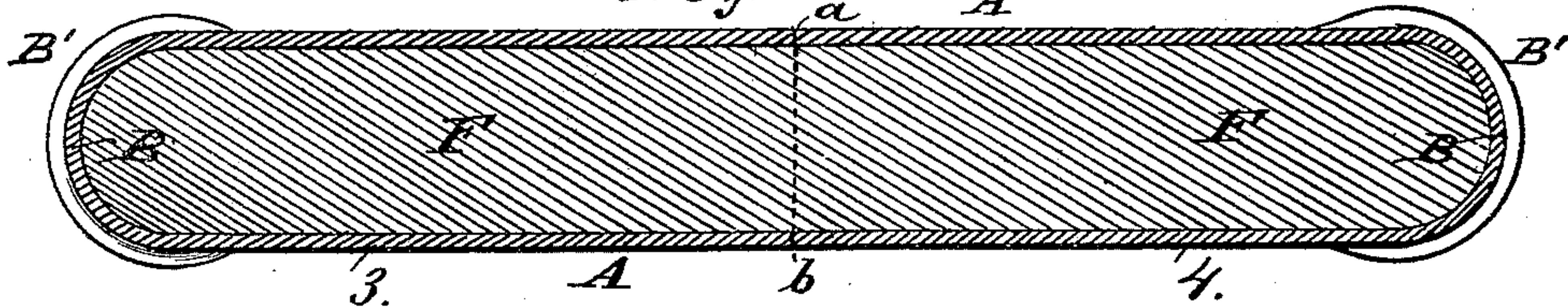
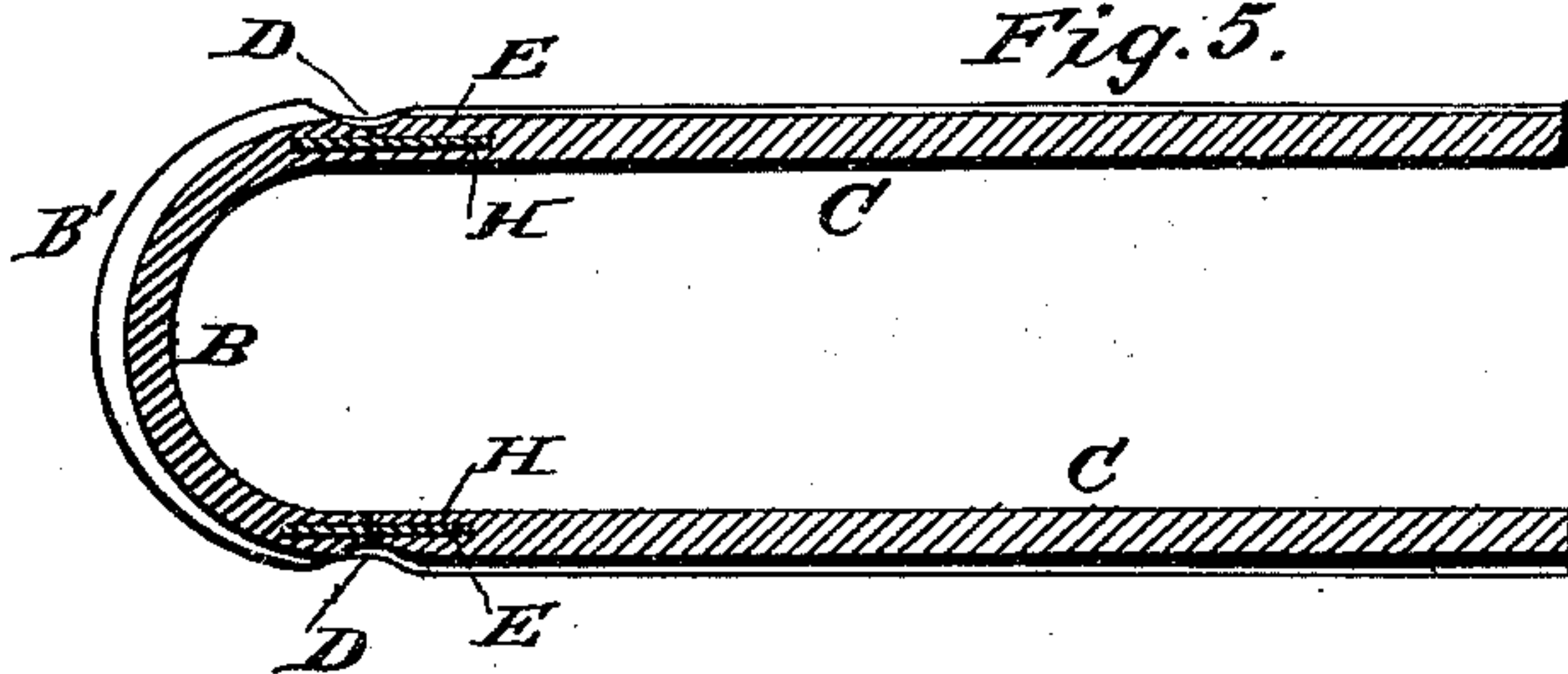


Fig. 5.



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(No Model.)

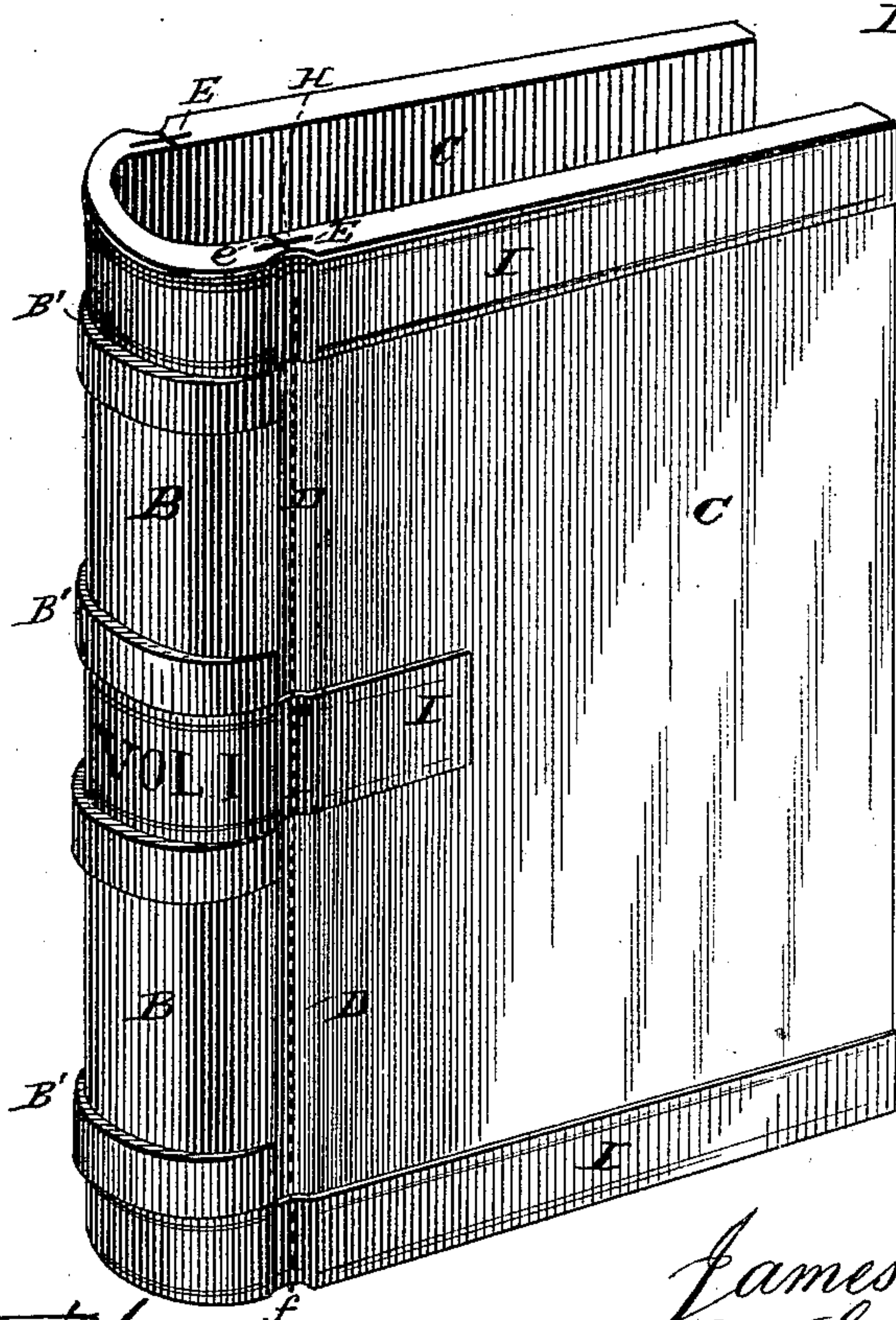
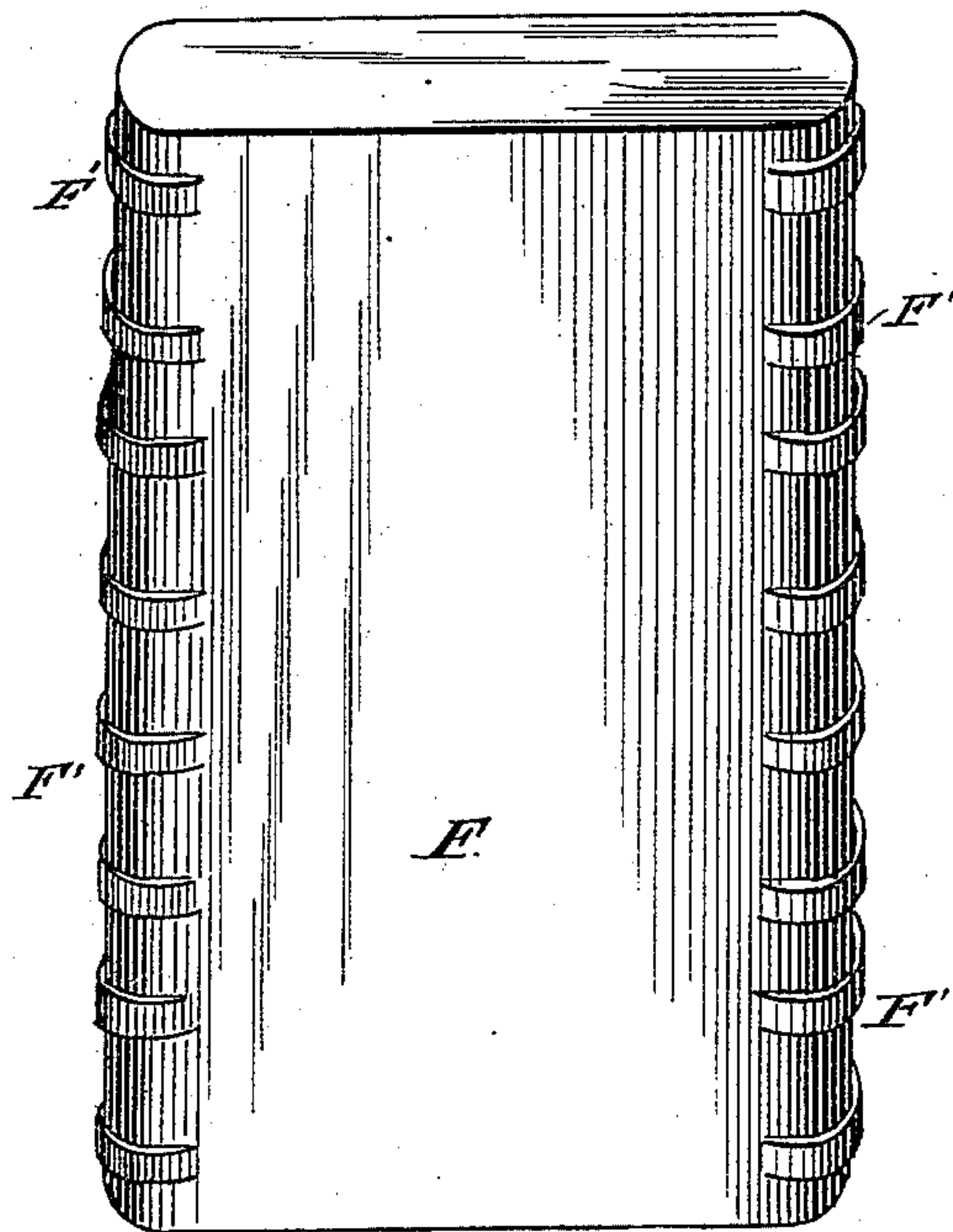
2 Sheets—Sheet 2.

J. A. CRANE.

BOOK COVER.

No. 299,914.

Patented June 3, 1884.



WITNESSES:

Fred. L. Dieterich
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UNITED STATES PATENT OFFICE.

JAMES A. CRANE, OF WESTFIELD, MASSACHUSETTS, ASSIGNOR OF ONE-HALF
TO ROBERT B. CRANE, OF SAME PLACE.

BOOK-COVER.

SPECIFICATION forming part of Letters Patent No. 299,914, dated June 3, 1884.

Application filed October 25, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. CRANE, a citizen of the United States, and a resident of Westfield, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Book-Covers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to 5 which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention has relation to the manufacture of covers for blank-books, printed books, 15 albums, and analogous articles; and it consists in the art or process which will be hereinafter more fully described and claimed.

In the accompanying two sheets of drawings, Figure 1 is a perspective view of the seamless 20 paper tube from which my cover is made. Fig. 2 shows this tube placed in its moist or soft state upon the mold or form on which it is to be shaped. Fig. 3 is a section, on an enlarged scale through the form and flattened tube, on line *x x*, Fig. 2. Fig. 4 is a perspective 25 view of the mold or form, with the paper tube which is to form the covers removed. Fig. 5 is a sectional view of the cover, back, and sides, showing one form of making the flexible hinges; and Fig. 6 is a perspective 30 view of the finished cover complete and ready for use by the binder or blank-book manufacturer.

Like letters of reference indicate corresponding parts in all the figures.

In carrying out my invention I use an endless or seamless tube of moist paper made in any desired manner and of any desired thickness, according to the number and thickness 40 of the layers or laminae of paper composing the tube. This tube (shown at A in the drawings) is placed, in its moist or wet state, upon a form, F, of wood or any other suitable material, which may be either solid or made in sections to collapse. This form is of a width 45 corresponding to the width of two covers when placed edge to edge, and of a thickness equal to the thickness of the book for which the cover is intended, while its length may be for

the length of a single cover only; or it may be 50 long enough for two, three, four, or more pairs of covers, as shown in Fig. 2, in which a paper tube for two pairs of covers is shown upon the form, the dotted line marked *a b* indicating the dividing-line between the covers endwise, 55 and line *c d* marking the division or line of separation sidewise, so that it will be seen that four separate covers are made on this form, marked respectively 1, 2, 3, and 4. This stage of my process is illustrated in Figs. 2 60 and 3.

In order to give the back of the book (shown at B) the raised or embossed sections or panels B', usual on blank-books—such as ledgers, records, &c.—the form F may be made with 65 projections F', as shown, so that as the moist-paper tube shrinks upon the form in the process of drying, thereby hugging the form closely, the paper covering will conform to these shapes, by which the raised back-panels 70 B' will be formed. It is obvious that, if desired, the sides of the form may be similarly provided with raised panels, thereby forming raised or embossed panels for the ornamentation of the sides of the cover. In order to 75 prevent shrinking endwise of the moist-paper tube or envelope during the process of drying or baking, its top and bottom edges may be fastened to the form by nails, clamps, or in any other suitable manner, as shown at G in Fig. 2. 80 The form, with its paper envelope, is next placed in a kiln and dried slowly at a suitable temperature. This drying or baking process causes the paper to shrink upon the form, as stated above, thus, by the contraction of the 85 several layers or laminae which compose the paper envelope, forming the whole into a solid homogeneous mass. After drying, this paper envelope is cut across the line *a b* and lengthwise across line *c d* on both sides of the form, 90 thus, in the present illustration of my mode of procedure, making four separate covers. Where thick covers are used, however, as in the manufacture of ledgers, record-books, and blank-books of the larger denominations, I 95 make a groove or channel, D, parallel to the back, in each of the sides or covers C, along the line where the sides join the back, for the

purpose of permitting of the easy opening or unfolding of the cover after the hinges have been put in.

The "waterproofing" of the covers may be done either while the covers are upon the form uncut or afterward. I have found by experiment that the better way is to dip the covers in the waterproofing-bath after they have been removed from the form, and then after draining replacing them in their former position upon the form, whereby I effectually prevent warping of the paper during the process of drying or baking after the waterproofing-bath. One of the methods employed by me is to dip or immerse the covers, after the first drying, in a bath of raw linseed-oil, which is readily absorbed by the porous paper fabric; and after the pores have been filled with the oil (or other waterproofing substance) the covers are placed in a kiln to be dried or baked a second time, which so hardens the paper that it will become as hard and tough as the best sole-leather.

The next step is the finishing or smoothing of the sides and back of the cover by planing them and rubbing them down in any desired manner to present a smooth and polished ivory-like surface. The back-panels B' are trimmed with suitable tools to present a neat and finished appearance; and, if desired, leather bands or panels may be glued or cemented upon the outside of the covers, as shown at I in Fig. 6 of the drawings, for the purpose of preventing the cover from scratching the desk, as well as for ornamentation. The corners may be rounded and the edges trimmed and beveled, if desired. The sides are severed from the back by cutting lengthwise across the line *ef*; and this may be done either while the covers are on the form or afterward, as desired; and the sides are connected or jointed to the back by hinges of any suitable kind and construction.

On the accompanying drawings I have shown a flexible leather hinge or joint, E, connecting the sides and back, to which it is fastened by inserting it edgewise into grooves or kerfs H, made (by sawing or otherwise) in the edges of

the back and cover, as shown more clearly in Fig. 5 of the drawings.

It is obvious that any desired color may be given to the covers during the manufacture, and that they may be ornamented in any suitable manner by embossing, gilding, painting, &c. As there are no leather bands or trimmings over or around the edges, these will not wear, as do the leather bindings of ordinary covers, especially the bottom edge, where all the wear comes in placing a book upon its appropriate shelf or removing it therefrom. These covers are therefore particularly suitable for county records and other books which are in frequent demand and subjected to rough usage.

The leaves or body of the book may be fastened to the back and cover in any desired manner, as the book-binder or blank-book manufacturer may see fit; and it is obvious that my cover may be used either as a permanent binding or as a temporary binder.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

The hereinbefore-described art or process of manufacturing book-covers, which consists in forming the covers in pairs from an endless or seamless tube composed of successive layers of paper over a shaped form or mold by drying and shrinking the paper tube upon the form, cutting the dried and shrunk paper envelope lengthwise on both sides of the form, waterproofing the paper body thus formed, disconnecting or severing the rigid sides of the cover from the back and again uniting the same by a flexible hinge, and finally planing and finishing the sides and back, substantially in the manner and for the purpose shown and set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

JAMES A. CRANE.

Witnesses:

LOUIS BAGGER,
HOMER B. STEVENS.