

(No Model.)

J. A. CRANE.
PAPER BACK FOR BOOK COVERS.

No. 299,913.

Patented June 3, 1884.

Fig. 1.

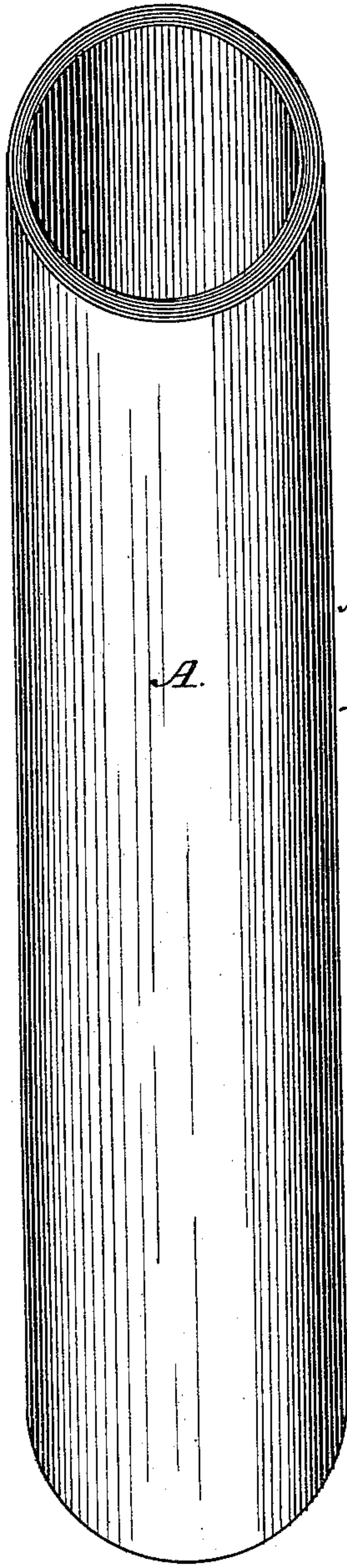


Fig. 2.

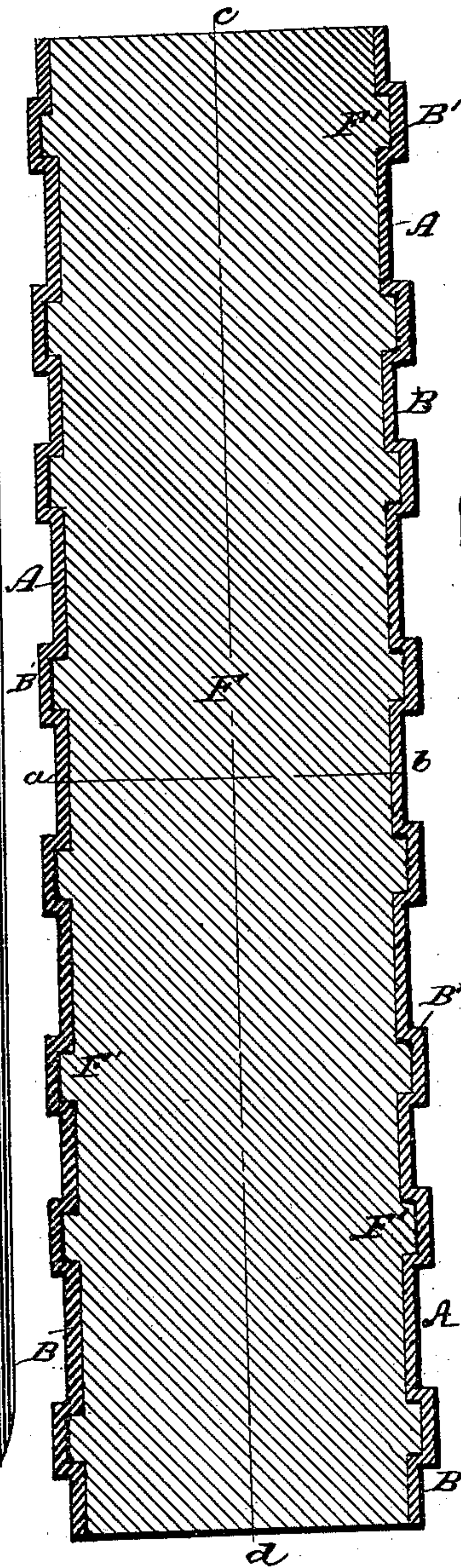


Fig. 3.

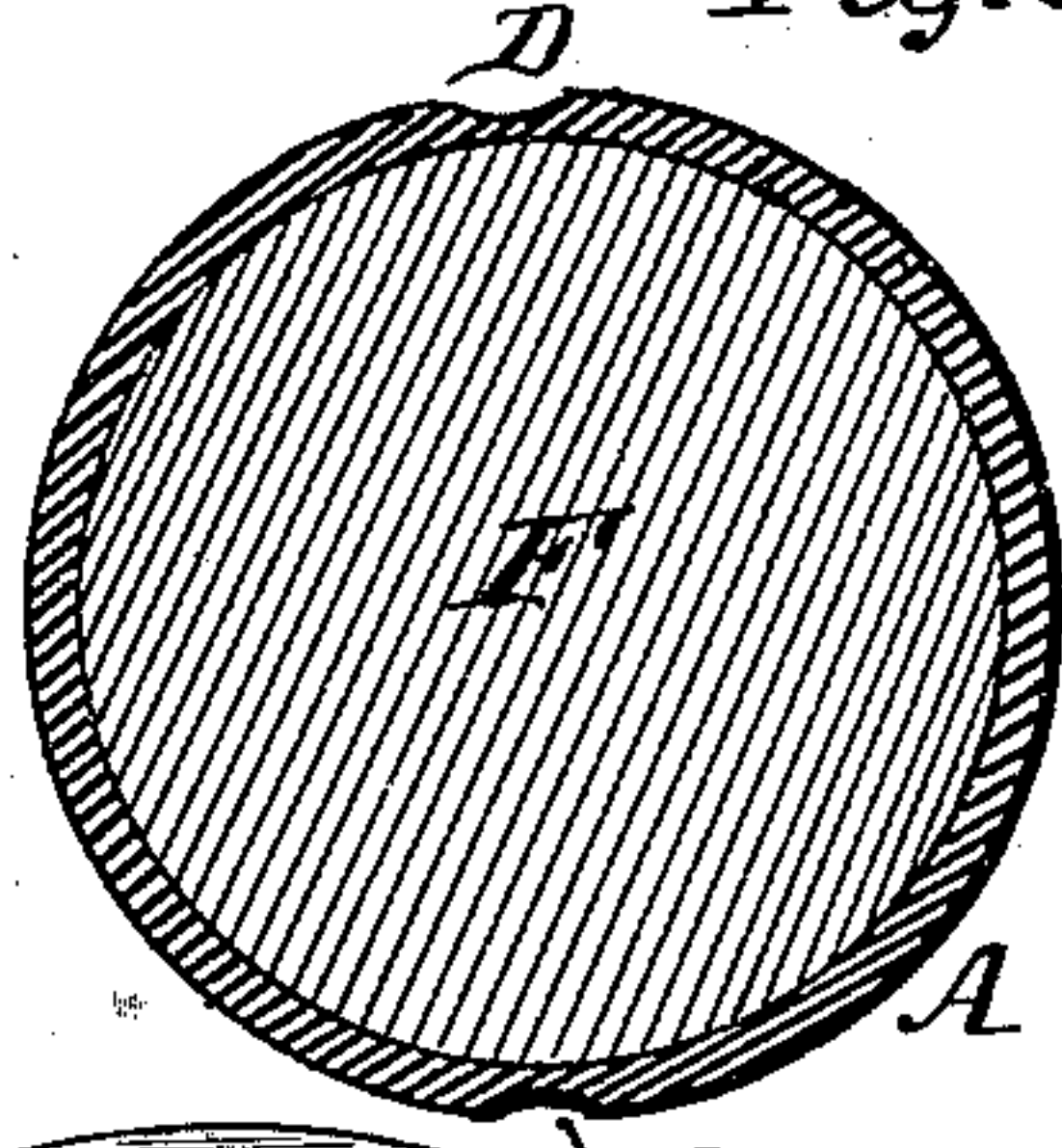


Fig. 4.

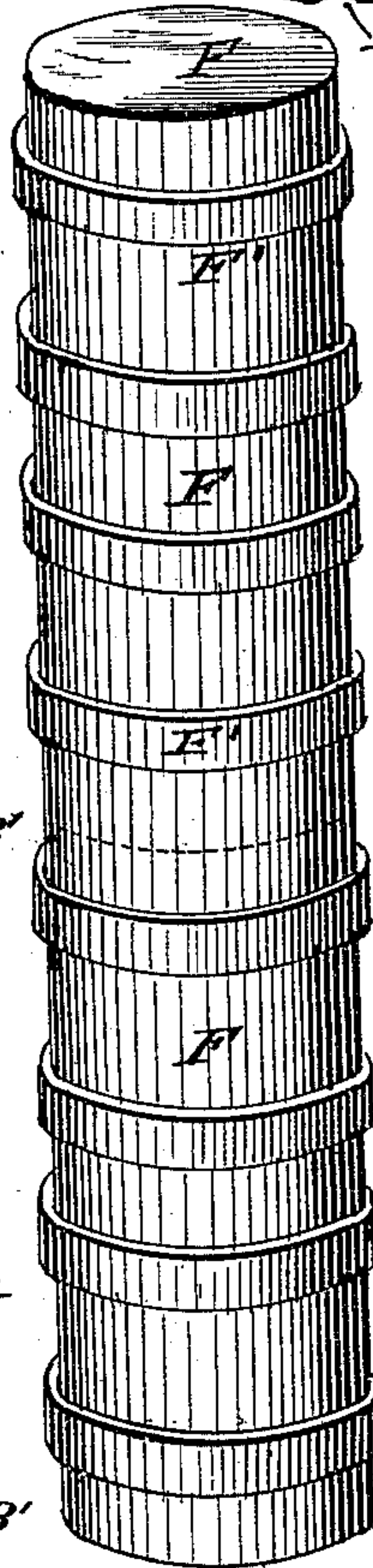
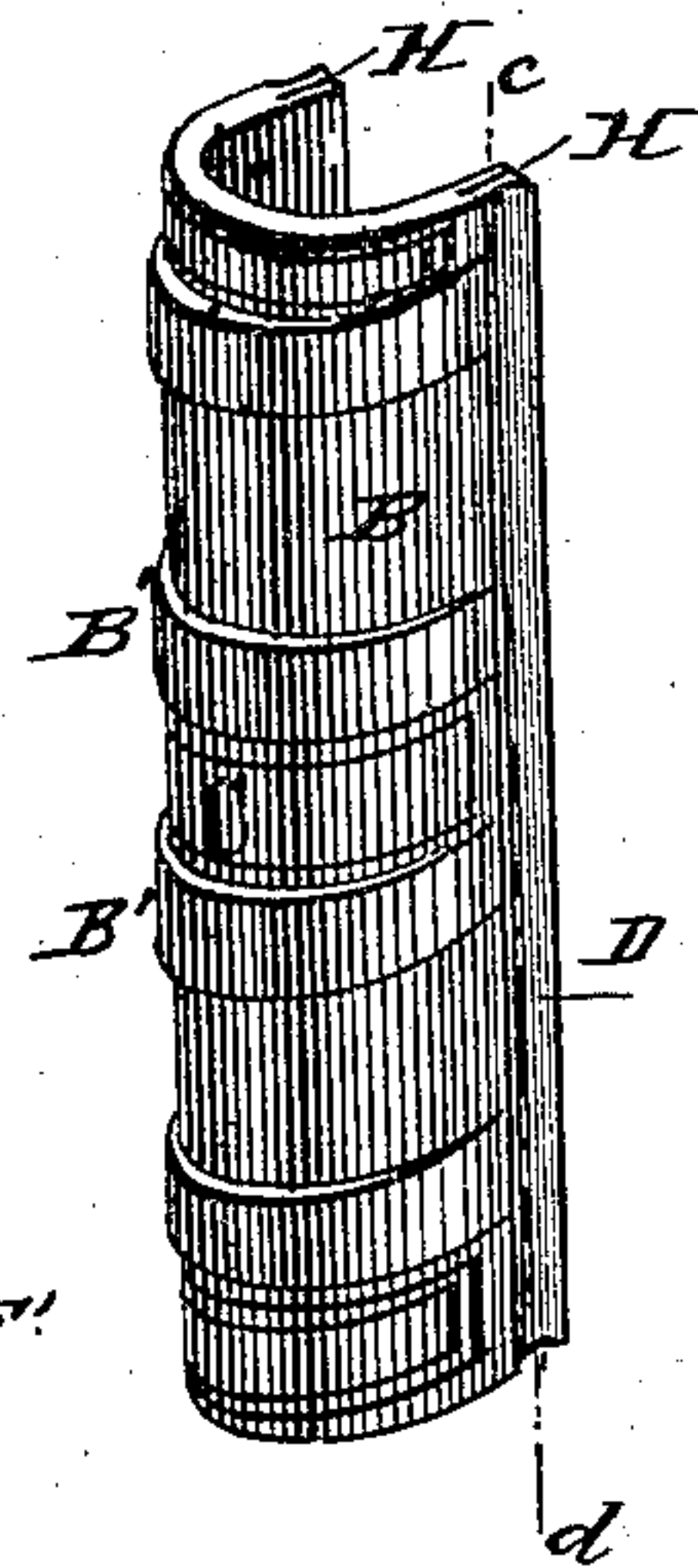


Fig. 5.



WITNESSES:

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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.

PAPER BACK FOR BOOK-COVERS.

SPECIFICATION forming part of Letters Patent No. 299,913, 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 Paper Backs for 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 which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of the seamless paper tube from which the back is made. Fig. 2 is a longitudinal sectional view of the same, showing it placed upon the central core or form. Fig. 3 is a cross-section of the tube and central core or form, showing the grooves or creases on both sides. Fig. 4 is a reduced perspective view of the core or form with the tube removed; and Fig. 5 is a perspective view of the finished back on a still further reduced scale.

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

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

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 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 cylindrical in shape, and of a diameter equal to the thickness of the book for which the back is intended to be used. It may be long enough for the length of one back only; or its length may be equal to the length of two, three, four, or more backs when placed together endwise, as shown in Fig. 2, in which a paper tube for two pairs of backs is shown upon the central core or form, the line marked *a b* indicating the dividing-line between the backs endwise, and line

c d marking the division or line of separation sidewise, so that it will be seen that four separate backs are made on this core.

In order to give the backs (shown at B) the raised or embossed sections or panels B' usual on blank-books, the core or form F may be made with projections F', as shown, so that as the moist-paper tube shrinks upon the core or form in the process of drying or baking, thereby hugging the form closely, the paper tube will conform to these shapes, by which the raised back-panels B' will be formed. The form or core F, 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 tube to shrink upon the core, as stated above, thus by the contraction of the several layers or laminae which compose the paper tube or envelope forming the whole into a solid homogeneous mass. After drying or baking, the paper tube is cut into sections crosswise, if more than one pair of backs is formed upon the core, and then slitted longitudinally on the line *c d* on both sides of the core, thus in the present illustration of my mode of procedure making four separate backs. In making thick backs for heavy books I make a longitudinal groove or channel, D, on each side of the tube prior to the cutting of this lengthwise, the cutting-line *c d* falling in the middle of the groove. This is for the purpose of permitting of the easy opening or unfolding of the cover after the sides have been hinged or jointed to the back.

The "waterproofing" of the backs may be done either while these are upon the core or form uncut or afterward. I have found by experiment that the better way is to dip the backs in the waterproofing-bath after they have been removed from the core, and then, after draining, replacing them on the core, whereby I effectually prevent warping of the paper during the process of drying after the waterproofing-bath. One of the methods employed by me is to dip or immerse the backs, 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 backs are placed in a kiln to be dried or baked a second time, which so hard-

ens 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 backs and panels, which may be done
5 either by placing them in a lathe and turning prior to the slitting of the tube, and while this is yet upon the core or form, or by planing and rubbing, the panels being squared and trimmed with suitable tools, so as to present a
10 neat and finished appearance; and, if desired, leather bands or panels may be glued or cemented upon the backs, to prevent scratching of the desk as well as for ornamentation.

If desired, a groove or kerf (shown at H)
15 may be made (by sawing or otherwise) in both side edges of the back, for the insertion and fastening of a flexible band of leather or other suitable material to form the hinge or joint which connects the sides of the cover to the
20 back. It is obvious that these sides may be made of any desired material, and that they may be hinged to the back by any desired means.

Having thus described my invention, I claim and desire to secure by Letters Patent of the 25 United States—

The hereinbefore-described art or process of manufacturing paper backs for book-covers, which consists in forming the backs in pairs from an endless or seamless tube composed of 30 successive layers of paper over a shaped form or core by drying and shrinking the paper tube upon the form, cutting the dried and shrunk paper tube longitudinally across the middle, and finishing the backs, substantially 35 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.