

(No Model.)

F. ANDREW.  
BARREL MAKING MACHINE.

No. 323,253.

Patented July 28, 1885.

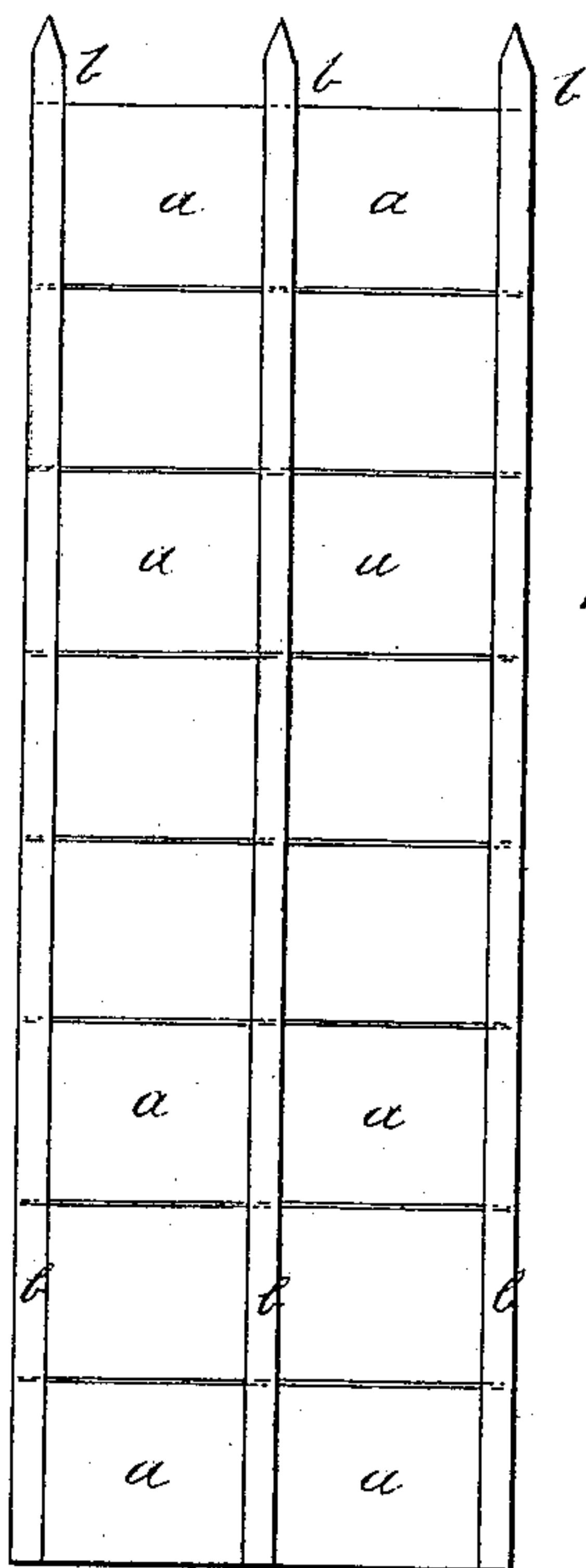


FIG. 1

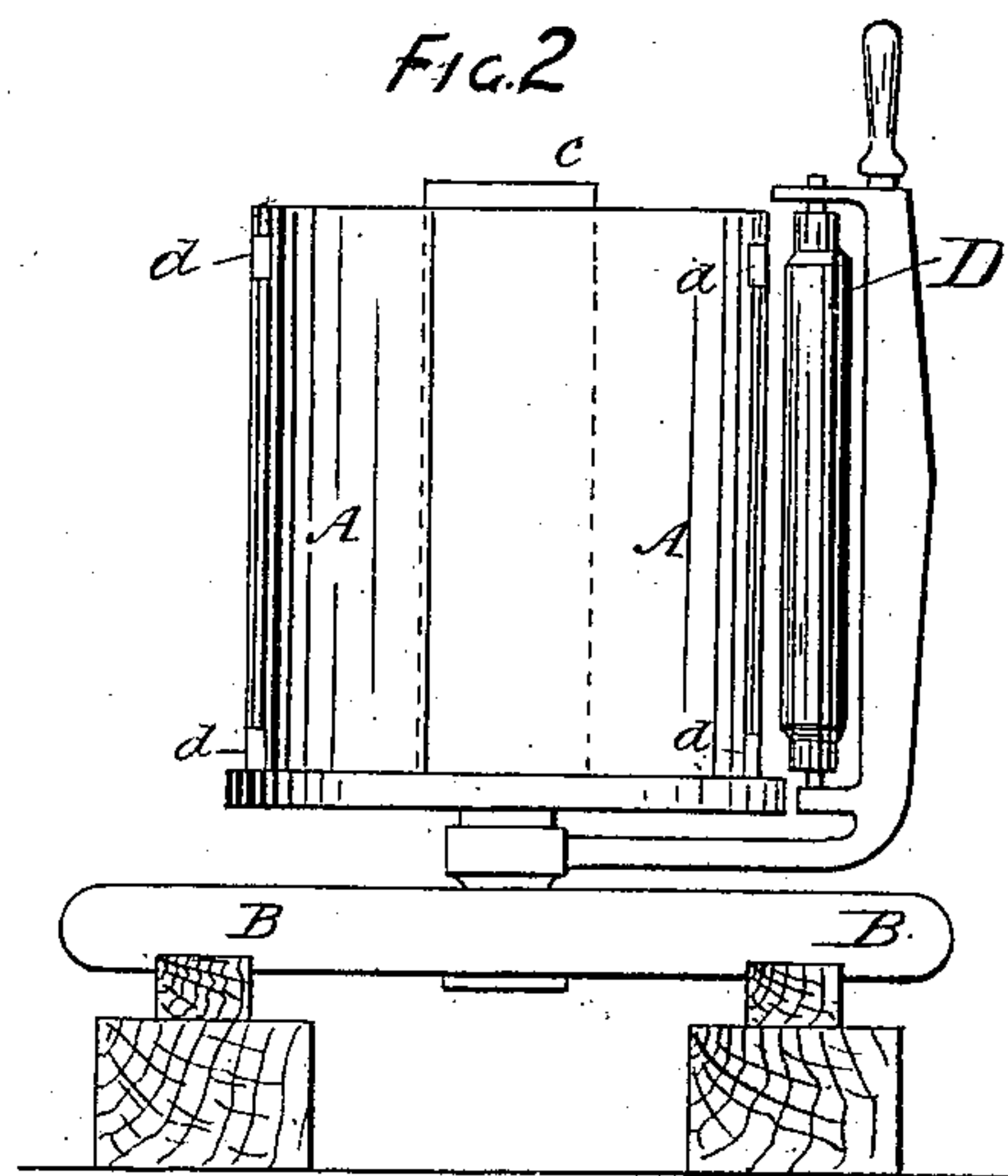


FIG. 2

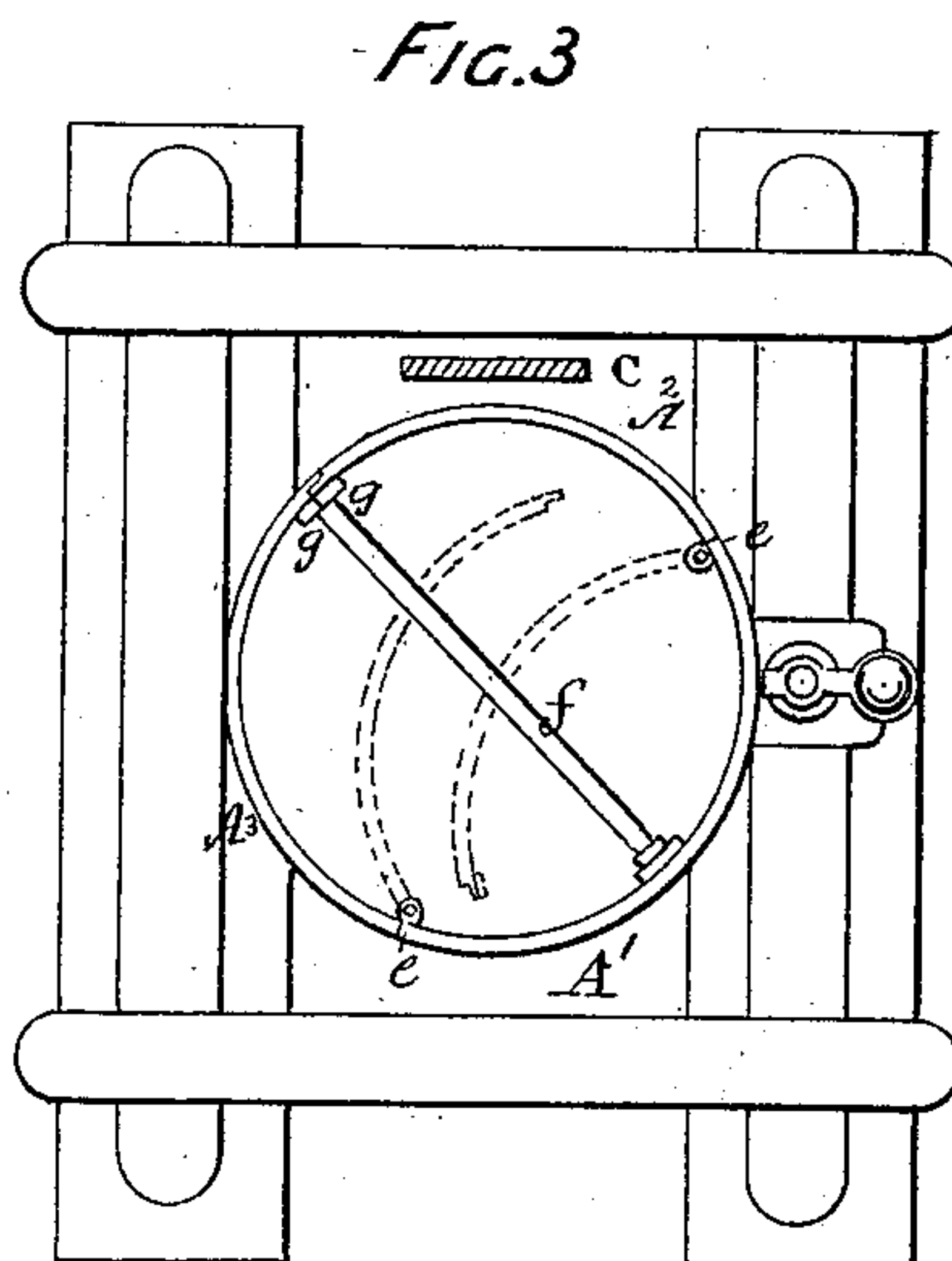


FIG. 3

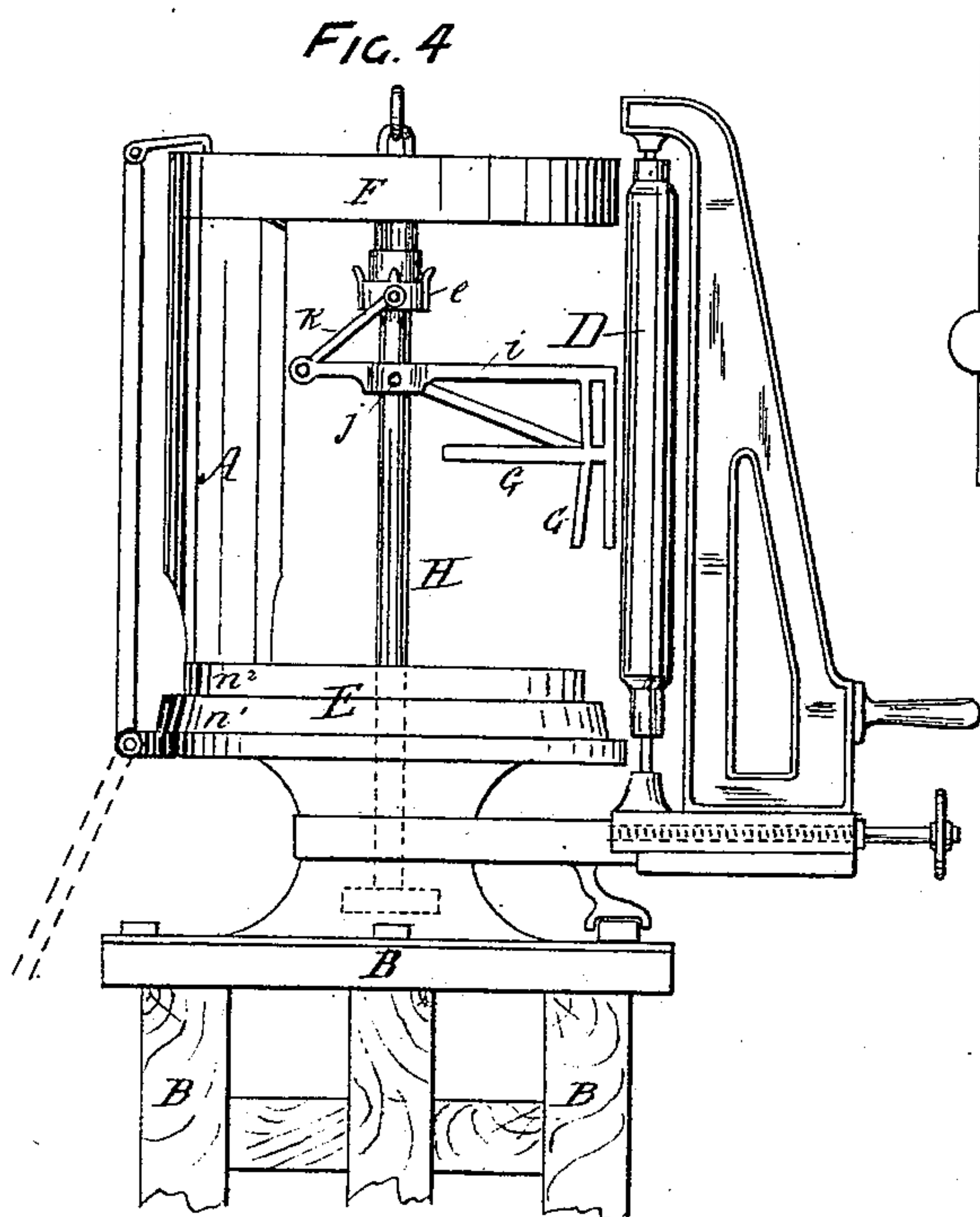


FIG. 4

ATTEST  
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# UNITED STATES PATENT OFFICE.

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## BARREL-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 323,253, dated July 28, 1885.

Application filed July 7, 1884. (No model.) Patented in England February 21, 1884, No. 3,701; in France May 2, 1884, No. 161,864; in Germany June 8, 1884, No. 30,612, and in Spain September 10, 1884, No. 6,175.

*To all whom it may concern:*

Be it known that I, FREDERICK ANDREW, a subject of Her Majesty the Queen of Great Britain, residing at Burnt Ash, in the county of Kent, England, have invented certain new and useful Improvements in and connected with the Manufacture of Barrels and in Apparatus for such Manufacture, (for which I have received the following foreign patents, viz: British Patent No. 3,701, dated February 21, 1884; French Patent No. 161,864, dated May 2, 1884; Spanish Patent No. 6,175, dated September 10, 1884; German Patent No. 30,612, dated June 8, 1884,) of which the following is a specification.

The invention relates to apparatus for forming a series of staves and strips, previously prepared, into a barrel or cask.

To clearly explain my invention reference is made to the accompanying drawings, which form part of this specification, and in which the same letters of reference refer to corresponding parts.

Figure 1 represents the staves when secured to the hoops and before being formed into the barrel-cylinder. Fig. 2 represents in elevation the apparatus by which such strips or staves are formed into the barrel-cylinder. Fig. 3 represents a plan of Fig. 2, and Fig. 4 represents a modification of the apparatus as shown in Figs. 2 and 3.

According to this invention the staves *a a* are first cut to the desired size, and a sufficient number are placed side by side (but in the case of unbeveled staves not quite touching each other) until the combined width of such staves equals the circumference of the barrel or cask desired to be made. In the case where a "crate-barrel" for the carriage of fruit, vegetables, and other articles requiring the admission of air during transit is required to be made, suitable spaces may conveniently be left between said staves. The staves are preferably placed upon a nailing or riveting table, provided with suitable grooves for the reception of the hoop-strips, which are laid therein. Over the staves are placed the external hoop-strips *b b*, the same being securely nailed or riveted to the staves, a sufficient length of the

strips extending over the last stave to enable it to be overlapped and secured when the barrel or cask is subsequently formed. This forming I prefer to do upon a vertical collapsible drum, *A*, (the circumference of which equals the combined width of the connected staves,) mounted upon suitable frame-work, *B*, and provided upon one side with an upright stationary bar or catch, *C*, against which the connected staves are placed. One or more centrally-pivoted and horizontally-adjustable vertical rollers, *D*, are provided, capable of traveling around the drum *A* in close proximity thereto for the purpose of bending the connected staves around the vertical drum, and thus forming the barrel or cask. Said rollers *D*, and also the drum *A* itself, may be provided with grooved recesses *d d*, within which the hoop-strips find a bearing. The connected staves being bent around the drum, the overlapping hoop-strips *b b* are nailed or riveted to the stave or strip *a* beyond the point of junction, and this may be readily accomplished by having that portion of the drum *A* beneath the point of contact made of metal, which will cause a nail, if driven through the staves and hoops upon it, to be bent back or riveted upon the staves or hoops, as the case may be.

The drum itself is preferably made of three or more sections, *A' A<sup>2</sup> A<sup>3</sup>*, as represented in Fig. 3, hinged together at *e e*, and collapsible inwardly, as shown by the dotted lines, so that after the barrel or cask cylinder is formed the drum may be collapsed and the barrel-cylinder readily removed therefrom, the "bottoms" and heads being subsequently fixed in the ordinary way; or, if it is desired, the top of the drum may be fitted with inwardly-projecting flanges, so that one end of the barrel may be put in place before removing it from the drum. In this case the catches or levers *f*, which hold the drum open while the barrel is being formed thereon, would be released from below.

The form of catches or lever which may be employed are, of course, numerous; but a convenient arrangement is that by which the lever *f* is pivoted with a loose or ball socket-joint near the bottom of the fixed part *A'*, and



is capable of passing at a rising angle across the drum when open, and being forced under internally-projecting lugs *g g* on the collapsible parts  $A^2 A^3$ .

5 When a machine of decreased weight is desired, the collapsible or hinged parts  $A^2 A^3$  may be omitted, and a step-frame, *G*, and removable top *F* substituted therefor, as represented in Fig. 4. In this case the strip of  
10 staves would rest on the base *h* and be bent about the part *n'* and head *F*, the inner hoops finding their seat on *n*<sup>2</sup>.

As a further or intermediate support a series of strips, *G*, may be carried by an arm or  
15 lever, *i*, pivoted at *j* to the central shaft, *H*, and carrying a pivoted connecting-piece, *K*, attached to sleeve *e*. The weight of the boss upon head *F* when upon shaft *H* is sufficient to keep the lever and frames in the position  
20 shown in the drawings; but when said head is removed after the barrel-cylinder is formed the weight of lever *i* and frames *G G* will cause them to fall inwardly and thus remove any friction there might be between them and  
25 the barrel-cylinder, which can then be lifted off part *n'* and over fixed or nailing part *A'* of the drum.

The form of apparatus described will be remarkably cheap to manufacture as compared  
30 with the barrel-making machinery now in use, and the method of preparing the staves and hoop-bands in the form of a combined strip

renders them readily and cheaply transportable, while capable of being rapidly formed into barrels or casks, which may be lined or  
35 coated with any desired material or substance.

Having now described my invention and set forth how the same may be practically employed, what I claim, and desire to secure by  
40 Letters Patent, is—

1. In a machine for making barrels from a prepared flexible strip of staves and hoops, a collapsible former, in combination with a roller traveling around its periphery, substantially  
45 as described.

2. In a machine for making barrels of the described kind, the combination of the collapsible former *A*, the holding-standard *C*, pivoted to the base and provided with catch mechanism at its free end, the pivoted crank  
50 and handle, and the roller journaled in such crank, substantially as described.

3. In a machine for making barrels, the collapsible former, composed of sections hinged to one another, in combination with the removable locking device *f*, having its bearings  
55 in the stationary part *A'*, and secured by lugs *g g* on the parts  $A^2 A^3$ , substantially as described.

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Witnesses:

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