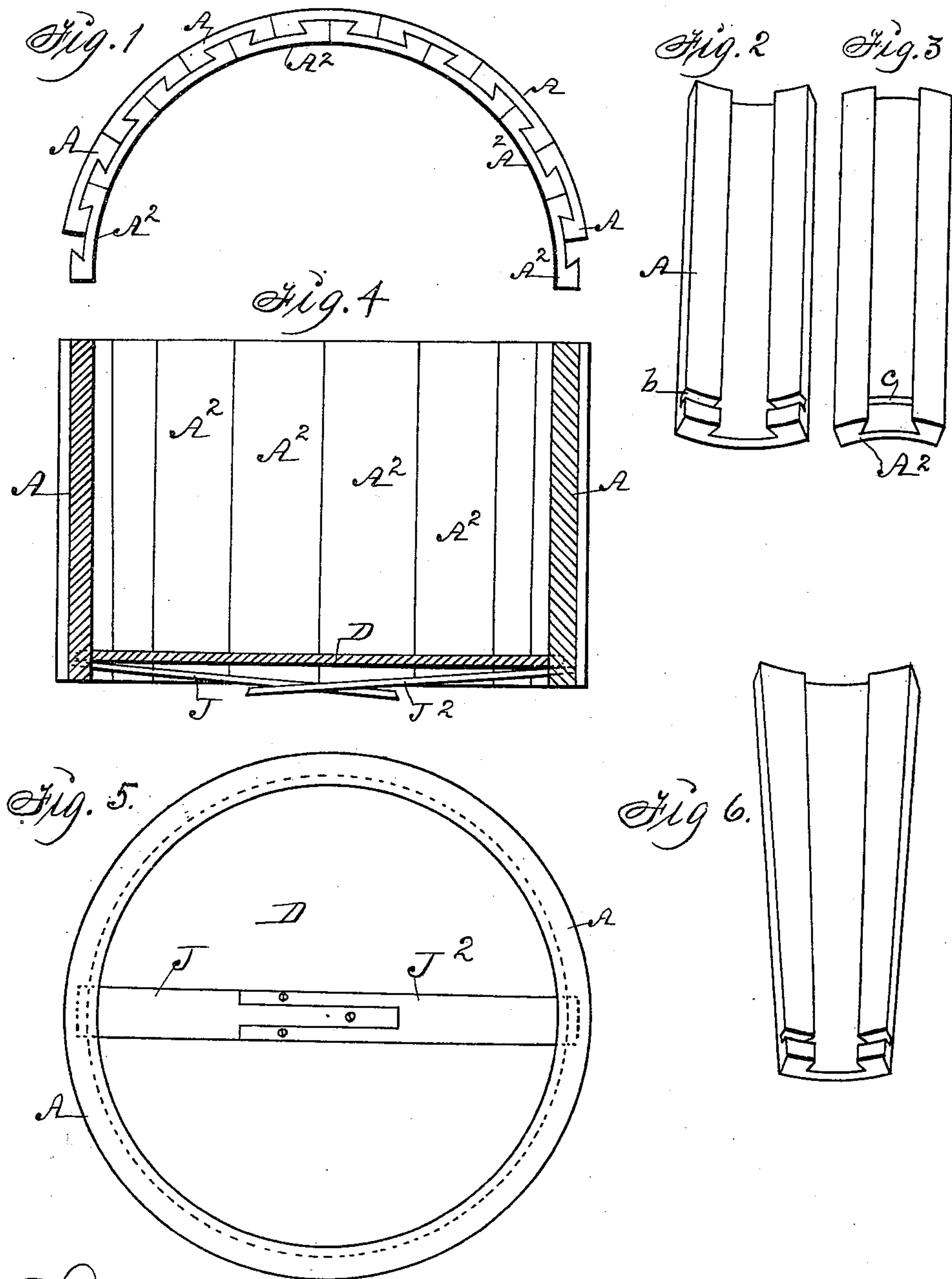


No. 663,591.

Patented Dec. 11, 1900.

J. C. TATE.
CYLINDRICAL WOODEN VESSEL.
(Application filed Aug. 6, 1900.)

(No Model.)



Witnesses:
L. B. Orrig
R. S. Orrig

Inventor: John C. Tate,
By Thomas G. Orrig, Atty.

UNITED STATES PATENT OFFICE.

JOHN C. TATE, OF DES MOINES, IOWA, ASSIGNOR OF ONE-HALF TO GRANT ROSS, OF SAME PLACE.

CYLINDRICAL WOODEN VESSEL.

SPECIFICATION forming part of Letters Patent No. 663,591, dated December 11, 1900.

Application filed August 6, 1900. Serial No. 26,000. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. TATE, a citizen of the United States, residing at Des Moines, in the county of Polk and State of Iowa, have invented a new and useful Cylindrical Wooden Vessel, of which the following is a specification.

Heretofore wooden vessels have been formed of staves joined together at their edges by means of tongues and grooves and a bottom fixed thereto and all the parts locked together in such a manner that when the wood would get dry and shrink they would not separate, so as to allow the vessel to collapse.

My object is to avoid forming tongues and grooves in the edges of staves and to produce better joints and improved means for locking all the parts together and reinforcing the bottom of a vessel; and my invention consists in the construction and combination of parts, as hereinafter set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which—

Figure 1 shows the top end faces of a plurality of staves joined together as required in constructing a vessel. Fig. 2 is a perspective view of a stave of uniform width from top to bottom and grooved in its inside concave face. Fig. 3 is a perspective view of a stave provided with a groove in its convex face. Fig. 4 is a sectional view of a vessel of equal diameter from top to bottom, showing an adjustable locking device under the bottom. Fig. 5 is a bottom view of a vessel, showing all the parts locked together, the bottom reinforced, and the vessel strengthened by means of the locking device. Fig. 6 is a perspective view of a tapering stave adapted for making vessels larger in diameter at the top than the bottom.

The letter A designates a straight wooden stave that has a smooth outside convex surface and a groove on a central line in its inside concave face extending from top to bottom and adapted to admit, jointly, the tongues on mating edges of staves, as shown in Fig. 1 and as required to connect three staves by means of a dovetail joint. A transverse groove *b*, formed in the inside face and bottom portion of the stave, is adapted to admit the edge of a circular bottom.

A² is a stave corresponding in length with the stave A, but less in width. It has a groove in the center of its convex face extending from top to bottom and a transverse groove *c* in the bottom portion of its concave face. The parallel portions of the stave at the sides of the longitudinal groove in the center are practically tongues adapted to allow the contiguous edges of two staves A² to be jointly connected with a stave A by simply placing and sliding them together, as shown in Figs. 1 and 4. The staves A will thus produce the outside smooth surface of the vessel and the staves A² will form a corresponding smooth inside face, and the abutting edges and joints of the outside staves will be covered on the inside of the vessel by the inside staves and the abutting faces of the edges of the inside staves will be covered by the outside staves, and all the staves will be reciprocally dovetailed together in such a manner that they cannot be separated except by longitudinal movements relative to each other.

A bottom D is fitted in the continuous groove produced in the inside face of the vessel by means of the transverse grooves *b* in the staves A and the grooves *c* in the staves A² when brought into alinement with each other.

A locking device is provided, preferably composed of two parts J and J², fitted together at their inner ends, as shown in Figs. 4 and 5, or in any suitable way, in such a manner that they can be placed in position, as shown in Fig. 4, to allow their outer ends to enter grooves in the inside faces of the staves and then be pressed flat against the under face of the bottom and fastened thereto by means of screws, as shown in Fig. 5. All the parts are thus securely locked together and the bottom and vessel reinforced and strengthened.

It is obvious vessels of various sizes and for various purposes can be thus advantageously constructed.

Having thus described the construction, arrangement, and combination of parts, the practical utility of my invention will be understood by persons familiar with the art to which it pertains.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a wooden vessel, the combination of a stave having a convex smooth surface on its outside from top to bottom and a dovetail groove in its inside concave face extending
5 from top to bottom on a central line and two mating staves having smooth concave inside faces and dovetail grooves in the centers of their outside convex faces extending from end to end to produce mating tongues on their
10 parallel edges and concentric inside and outside faces in a cylindrical vessel, as shown and described, for the purposes stated.

2. In a cylindrical wooden vessel, a plurality of staves having grooves extending longitudinally in their outside convex faces and
15 a plurality of staves having longitudinal grooves in their inside concave faces joined together and provided with transverse grooves in their inside faces a bottom fitted
20 in said grooves and the ends of a locking-bar composed of two parts adjustably connected extended into openings in staves under said

grooves and fixed to the bottom, for the purposes stated.

3. An improved cylindrical wooden vessel 25 comprising a plurality of staves having grooves in the centers of their inside concave faces extending from top to bottom and a plurality of staves having grooves in the centers of their outer and convex faces extending from top to bottom and coinciding transverse grooves in the inside concave faces of
30 all the staves, a bottom fitted in said transverse coinciding grooves, and a bar having its ends extended into openings in staves below the bottom and its body portion fixed to
35 the under side of the bottom, all arranged and combined in the manner set forth for the purposes stated.

JOHN C. TATE.

Witnesses:

THOMAS G. ORWIG,
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