J. DONALD.

Vessels formed of Staves and in Staves.

No. 222,987. Patented Dec. 30, 1879.

Fig. 1.

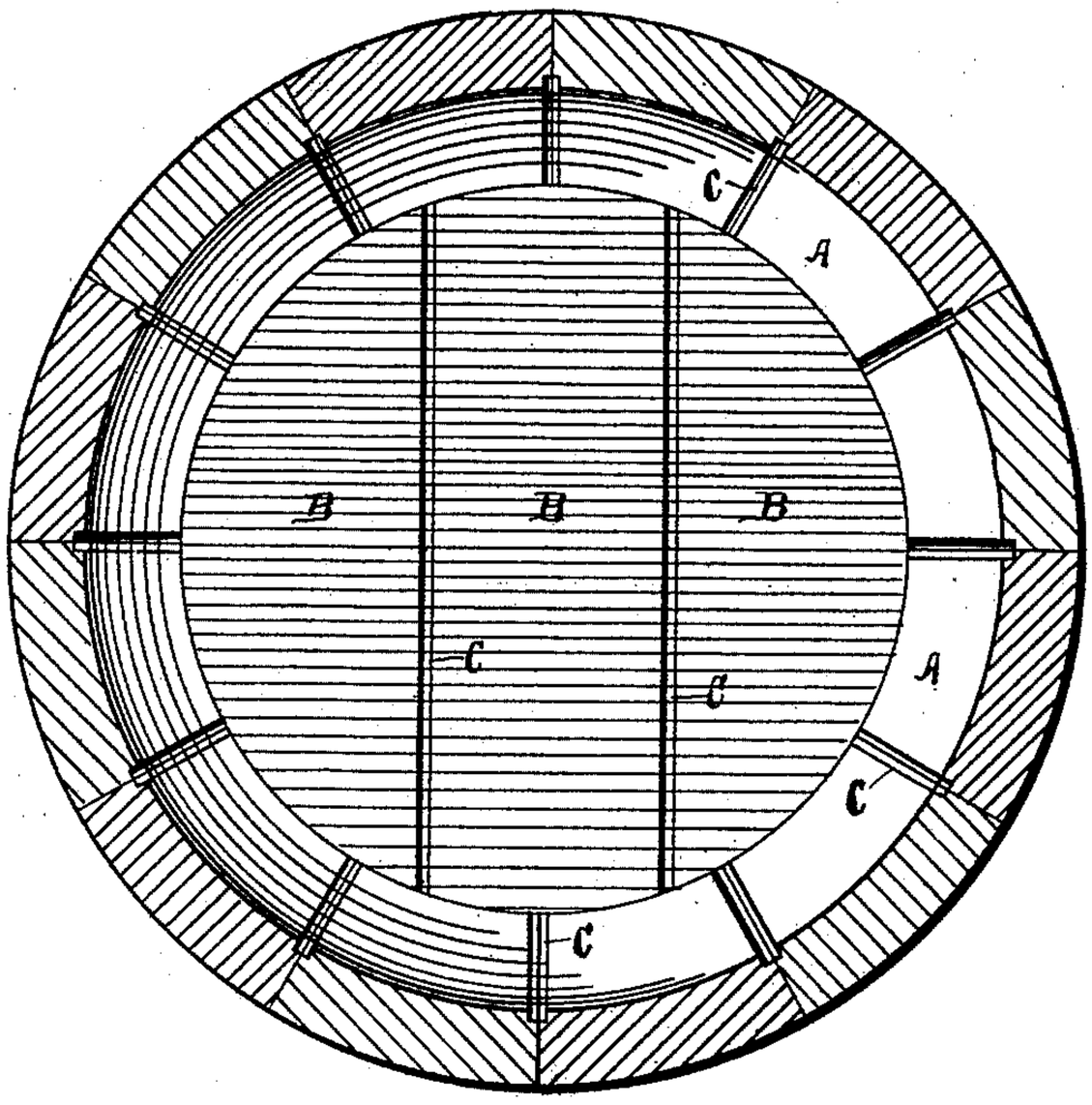
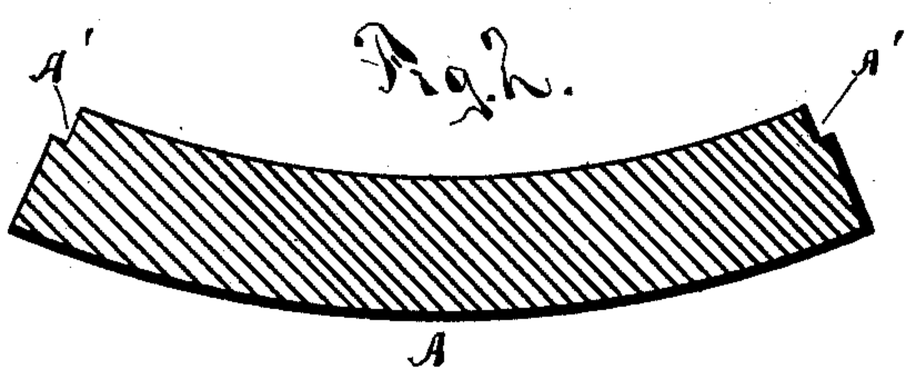


Fig. 2.



WITNESSES

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JAMES DONALD, OF CLEVELAND, OHIO.

IMPROVEMENT IN VESSELS FORMED OF STAVES, AND IN STAVES.

Specification forming part of Letters Patent No. **222,987**, dated December 30, 1879; application filed November 14, 1879.

To all whom it may concern:

Be it known that I, JAMES DONALD, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Staves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to barrels, casks, firkins, tubs, pails, or any container made up of staves hooped together; and it consists in the following specified construction, whereby shrinkage may be taken up and the container kept tight, and that without the necessity of any renewal of the glue lining, if such a lining or its equivalent be used.

In the drawings, Figure 1 represents a barrel, in transverse section, constructed according to my invention. Fig. 2 is a view, in cross-section, of a single stave constructed according to my invention.

In the said drawings, A A are the staves; B B, the component slabs of the head. Each stave is constructed with a shoulder or flange, A′, (see Fig. 2,) upon each of its edges, so that when joined together a groove, C, Fig. 1, shall be formed at the line of union between every stave. A similar construction exists as respects the component slabs B of the head.

Now, when a container thus formed is lined with glue, this lining will fill the grooves C, and as the wood composing the staves and heads shrinks there will be a crack between them, and the barrel would leak if it were not for the glue lining which fills the grooves C. This glue lining, however, has sufficient elasticity to permit of the hoops being driven, and the shrinkage thus taken up and the barrel made tight, as before.

Were it not for the grooves C, as the staves would shrink and separate, the lining between them would be cracked, and the barrel thus caused to leak, as there would not be sufficient lining at this point to prevent the fracture of said lining, as the staves, through their shrinkage, would separate. By the provision of the grooves C, however, a considerable body of said lining is applied at the juncture of the staves, and this lining may be of such a composition as to have elasticity sufficient to allow of the separation of the staves due to shrinkage without fracture, and the container thereby be prevented from leaking, notwithstanding this shrinkage; and, as before stated, when the shrinkage does occur, the hoops can be driven and the staves brought together, as at first.

What I claim is—

1. A stave for a barrel, cask, tub, or any container, constructed with the inner flanges, A′, substantially as and for the purpose shown.

2. A barrel, cask, or other container where in the component staves are constructed with the flanges A′, substantially as and for the purpose shown.

3. A barrel, cask, or equivalent container constructed from staves having the internal grooves, C, at the juncture of each of the component staves, substantially as and for the purpose shown.

4. In combination with a barrel-lining, the internal grooves, C, substantially as and for the purpose shown.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES DONALD.

Witnesses:

JNO. CROWELL, Jr.,

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