

UNITED STATES PATENT OFFICE.

HENRY DE BUS, OF CINCINNATI, OHIO.

IMPROVEMENT IN THE MANUFACTURE OF CASKS.

Specification forming part of Letters Patent No. **221,398**, dated November 11, 1879; application filed August 2, 1879.

To all whom it may concern:

Be it known that I, HENRY DE BUS, of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Manufacture of Casks; 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 appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The main object of my invention is the improvement of that mode of manufacturing wood-stave casks according to which the staves are steamed preparatory to bending, or in the act of trussing them, my aim being the production of casks the stave-joints of which shall not be liable to open by reason of the shrinkage of the staves, and the staves of which shall be permanently set in the process of manufacture, so as to relieve the permanent hoops of much strain.

To this end my invention consists in steaming the staves while set up in a truss-hoop at one end, and, after applying a truss-hoop at the other end, drying the shell of staves by artificial heat to maximum shrinkage.

It further consists in the step, in the process of manufacturing casks, of drying the staves by artificial heat to maximum shrinkage while such staves are assembled in cask form.

In practicing my invention wood staves, jointed in the ordinary way, are to be set up in one head truss-hoop. Thus set up, they are to be transferred to and placed in a steaming-box, where they must be steamed to the required extent to render them pliable. On removal from the steaming-box the staves are to be windlassed, or in other manner drawn together at the unconfined end, to which the head truss-hoop is then to be applied. Standing thus in the two head truss-hoops the shell of staves is to be put in a kiln or drying-room and subjected to artificial dry heat to produce maximum shrinkage of the staves. After that has been accomplished the shell of staves may be trussed in any known or preferred manner, after which the ordinary methods may be followed to transform the shell into a cask.

Some of the advantages incident to the manufacture of casks according to the method just described may be briefly stated as follows:

The drying of the staves by artificial heat while in barrel form, and still in a pliable condition from the steaming, fixes and sets the staves in their bent form, so as to relieve them of strain and to prevent cracking or breaking, while the strain on the permanent hoops is also greatly lessened, and the subsequent removal and reapplication of the hoops becomes much less difficult. The steaming of the staves extracts and removes from them soluble ingredients, and the subsequent rapid artificial drying to maximum shrinkage renders the wood so close and compact that it is less liable to change by the action of the atmosphere as regards shrinking or swelling or form. Hence the joints will remain tight, and the periodical driving of the hoops may be almost wholly dispensed with.

The steaming of the staves has the incidental advantage also of extracting coloring and fermenting substances from the wood, so that barrels or casks made after my invention are peculiarly adapted for white alcoholic liquors, molasses, sirups, and many other articles that are deleteriously affected by such coloring or fermenting substances in the staves of casks. The longer the staves are submitted to the steaming process the cleaner they will become as respects such coloring or fermenting substances.

Where it is desirable to still more thoroughly clean the staves, the cask may afterward be rinsed with an acidulated wash; but this is not necessary in any case where the barrel or cask is used for spirits by a distiller, who sells his product to a rectifier, who empties the barrel or cask within a few days after it was first filled, for in such case the cask will be cleansed by the spirits, and in the proper clean condition for the rectified goods.

When the heads of casks to be used for white alcoholic spirits, molasses, &c., are made of woods that contain as much of coloring or fermenting substances as the staves, such heads should also be steamed.

The best results are obtained by combining the steaming of the staves with subsequent drying by artificial heat, as heretofore de-

scribed; but the drying of the staves, while assembled in cask form, by artificial heat will produce beneficial results in the ordinary process of manufacture where the staves are fired.

It is also evident that the drying feature of my invention may be practiced in a steaming process where the staves are steamed before they are set up.

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

1. In the manufacture of casks, the process, substantially as before set forth, of shaping and seasoning the same, which consists of the following steps, viz: first, steaming the staves while set up in a truss-hoop at one end; sec-

ond, windlassing the staves and applying a truss-hoop at the other end; third, drying the shell of staves by artificial heat to maximum shrinkage.

2. In the process of manufacturing casks, the drying of the staves by artificial heat to maximum shrinkage while assembled in cask form, substantially as before set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 30th day of July, 1879.

HENRY DE BUS.

Witnesses:

JOHN W. HILL,
E. C. MARTIN.