

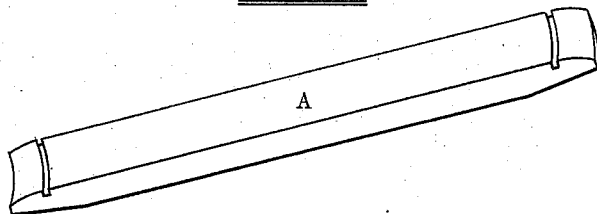
H. M. FITZHUGH.

Barrel.

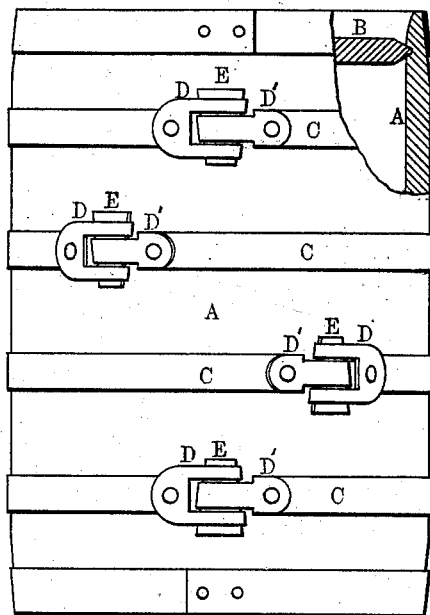
No. 201,603.

Patented March 26, 1878.

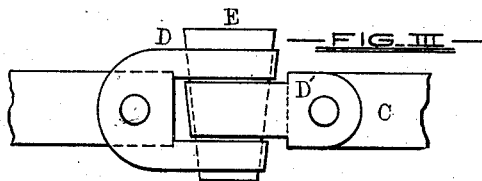
—FIG. I—



—FIG. II—



—FIG. III—



—FIG. IV—



—WITNESSES—

Wm. St. Lovison
Frank M. Burnham

—INVENTOR—

Henry M. Fitzhugh,
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UNITED STATES PATENT OFFICE.

HENRY M. FITZHUGH, OF BAY CITY, MICHIGAN.

IMPROVEMENT IN BARRELS.

Specification forming part of Letters Patent No. **201,603**, dated March 26, 1878; application filed September 4, 1877.

To all whom it may concern:

Be it known that I, HENRY M. FITZHUGH, of Bay City, in the county of Bay, and State of Michigan, have invented certain Improvements in Barrels, of which the following is a specification; and I do hereby declare that in the same is contained a full, clear, and exact description of my said invention, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

The invention refers, first, to a stave as a new article of manufacture. The stave is constructed so as to have a common width throughout and a uniform thickness, except that it is tapered exteriorly at each end from a point just below the croze to the extremity of the stave, as hereinafter set forth.

The invention refers, secondly, to a barrel as a new article of manufacture, of practically cylindrical form, constructed from a series of staves of the description alluded to above, bound together by hoops.

The invention refers, thirdly, to the combination, with staves of the description above alluded to, of hoops with tightening and locking devices, as hereinafter specified.

To carry out this invention, the staves are made of a common width and of a uniform thickness throughout their entire length, and are afterward chamfered or tapered exteriorly toward their ends, as shown in the drawing, which is hereinafter more specifically referred to. By this means the barrel, which is practically a straight one, and embodies the advantages of barrels of this class, is provided with sufficient taper at its ends to admit of the tightening of the chine hoops or bands, which secure the heads therein, by driving in the ordinary manner. This barrel is compressed circumferentially, and the joints between the staves rendered water-tight, by means of the bands, the ends of which are secured together after the desired tension has been obtained, and in this respect it differs little from the barrel described in Patent No. 160,664, granted to me for improvements in barrels, March 9, 1875. But it has been found, in carrying out the invention described in said Letters Patent, that in cases where the staves have not been properly seasoned, the chine hoops or bands, being located on the over-

hanging parts of the same which are not acted upon by the liquid contained in the barrel, become loosened from shrinkage of the wood, the other bands or hoops remaining perfectly tight. This defect is avoided in the present invention by chamfering the staves at the ends, as described, whereby the end hoops can be driven when loosened. The taper of the stave at the ends (seen particularly in Fig. 1) extends, as shown, from each extremity of the stave to a point just below the croze, the taper being only sufficient for the end band, and terminating before the first of the intermediate bands is reached.

In the drawing forming a part hereof, Figure 1 is a perspective view of a stave tapered toward its ends in accordance with the present invention. Fig. 2 is a view of the improved barrel, partly in section. Figs. 3 and 4 are enlarged views of a band or hoop.

Similar letters of reference indicate similar parts of the invention in all the views.

A A are the staves, and B B the heads, of the barrel. The bands C on the cylindrical portion of the barrels are drawn tightly around the staves by means of a machine, which, as it forms no part of the present invention, is not described herein. The locking devices for securing together the ends of each of the center bands C consist of two pieces of sheet metal, D D', which are duplicated and fastened to the ends of the bands. The member D of the locking device is slotted, to allow of the insertion therein of the member D', and the two parts or members are united by means of a key, E. It will be seen that by driving the key E the band is practically shortened, and the staves are thus held at the tension to which they are subjected in the compressing operation by means of the machine before alluded to.

The bands C are, to a certain extent, applicable to the ends or chines of the barrel; but the locking devices shown are liable to be brought into contact with other objects in the transportation of the barrel, and thereby effect the displacement of the hoops. I therefore use, to secure the chines of the barrels, either hoops formed in the ordinary manner, or bands having their ends fastened together while in place with rivets, screws, or other

similar devices, not projecting into the staves sufficiently to interfere with their being driven from the ends of the barrel when slack from the shrinkage of the staves.

In alluding to the staves as being of a common thickness, except where exteriorly tapered, the inner taper, whereby the chimes are fitted to receive the heads, is not taken into consideration, as in this respect all descriptions of barrels are substantially the same.

Having thus described my invention, what I claim as new, and wish to secure by Letters Patent of the United States, is—

1. As a new article of manufacture, a barrel-stave having a common width and a uniform thickness, except at the ends thereof, which are tapered exteriorly to a point just below the croze, substantially as shown in Fig. 1 and herein described.

2. As a new article of manufacture, a barrel composed of staves of a common width, the

said barrel being cylindrical in form except from just below the croze and beyond the first of the intermediate hoops, it being tapered exteriorly from said point to the extremities to receive the end hoops, substantially as specified.

3. A practically cylindrical barrel formed of staves having a common width, and tapered at each end from just below the croze and beyond the first intermediate hoops to the extremities, as described, combined with hoops having tightening and locking devices, substantially as specified.

In testimony whereof I have hereunto subscribed my name this 19th day of June, in the year of our Lord 1877.

H. M. FITZHUGH.

Witnesses:

F. FITZHUGH,

D. H. FITZHUGH, Jr.