(No Model.) 2 Sheets—Sheet 1.

J. PLEUKHARP.

STANDARD BARREL STAVE.

No. 459,646. Patented Sept. 15, 1891.

Fig. 1.

Fig. 2.

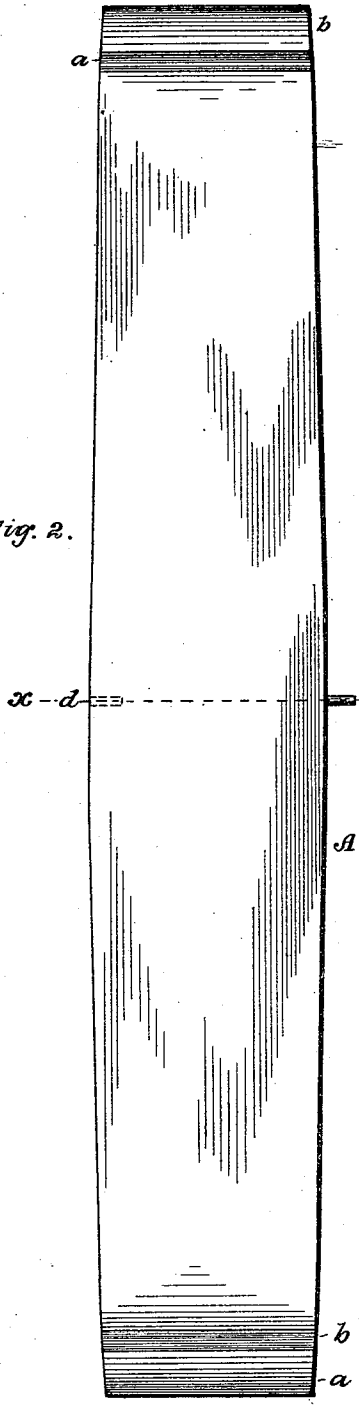
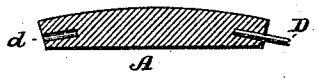


Fig. 3.

Fig. 4.



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(No Model.) 2 Sheets—Sheet 2.

J. PLEUKHARP.

STANDARD BARREL STAVE.

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Fig. 5.

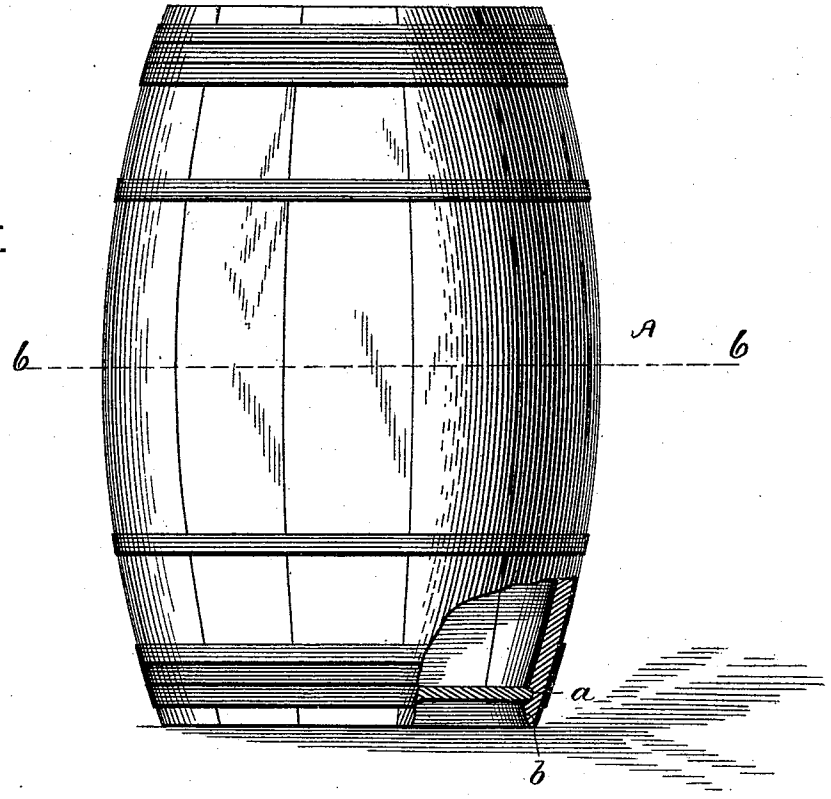
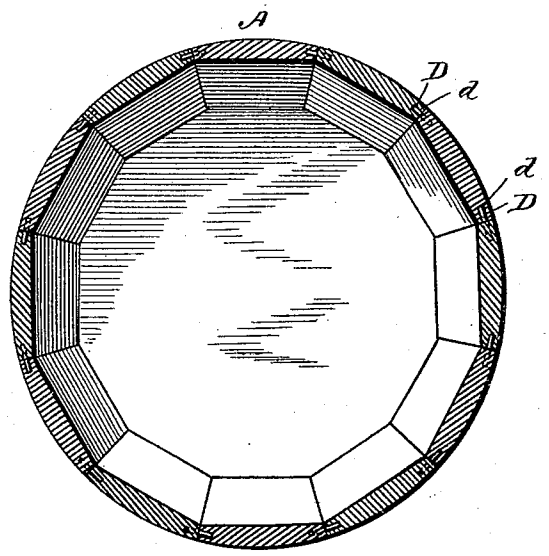


Fig. 6.



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By his Attorneys
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THE MORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES PLEUKHARP, OF COLUMBUS, OHIO.

STANDARD-BARREL STAVE.

SPECIFICATION forming part of Letters Patent No. 459,646, dated September 15, 1891.

Application filed February 10, 1890. Serial No. 339,868. (No model.)

To all whom it may concern:

Be it known that I, JAMES PLEUKHARP, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Standard-Barrel 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 appertains to make and use the same.

This invention relates to a standard barrel.

The object of my invention is the manufacture of tight or liquid barrels which shall be standard—that is, which shall be alike in every particular, holding always a given number of gallons of liquid and of a given height, diameter, bilge, &c. Thus any one element from one barrel may be replaced by a like element from another barrel. This barrel is to be entirely a machine-made barrel. The staves of which it is composed are formed from sawed stock rounded on the outside, so as to make a round external surface to barrel, left square on the inside, making a polygonal internal surface, chamfered and crozed at the end, so as to receive barrel-head, and beveled or jointed on the edges, so as to form up into a perfect barrel without listing or lagging. The stave is further provided with a dowel and dowel-hole for the purpose of forming and truing. It also materially strengthens the barrel. Heretofore all tight or liquid barrels have been made of staves of various widths, which, after being set up to an approximate given diameter and trussed, are then set over fires and warped. They are then crozed, chamfered, and squared, thus set up in cylindrical form, and the heads put in and hoops put on by hand. To obviate any leakage caused by differences in diameters, (due to staves being of various widths,) thin strips are placed between the staves, called "lagging," when the trusses are removed and hoops put on. By this way of making barrels the staves must necessarily be put under severer strains at some places than at others; also, as the staves are warped hollowing on the inside, the strain of the barrel is left entirely upon the hoops. With my standard machine-stave no setting over fires or warping is necessary. The staves being of uniform width at end or bilge or any other point, a given number of staves will always form a barrel of a given diameter. The exterior surfaces of the staves being parts of a complete and perfect cylinder before they are set up in barrel or cylinder form, no trussing is needed to form the barrel. The staves may be and are crozed and chamfered before setting up into barrel form. The staves may be and are jointed, so as to give a perfect barrel form, and the hoops may be driven on without causing unequal strain or necessitate the use of lagging; and, finally, the staves being left square or straight on the inside, they form a polygonal internal surface, the staves keying into each other, thus making a much stronger barrel, and because of increased thickness at their longitudinal centers and squareness of pressure a stronger stave is the result than that obtained by warping. The object in the use of the dowel is to prevent slipping in and out of the staves past each other. It also increases the resistance of the stave against any sudden shock, which often causes leakage.

In the drawings, Figure 1 is an edge view of a stave of my invention. Fig. 2 is a front view of the said stave. Fig. 3 is an end view, and Fig. 4 is a cross-section, of the stave on the line x x of Fig. 2. Fig. 5 is a side view of a barrel embodying my invention, parts being broken away. Fig. 6 is a horizontal section on the line 6 6 of Fig. 5.

The staves of which my barrel is composed are in longitudinal section of uniform thickness from end to end and taper slightly in width for a short distance from each end, according to the required bilge of the barrel. In cross-section they increase in thickness from the edges to the middle, being straight on the inside and curved on the outside, the degree of curvature corresponding with the diameter of some element in the bilge of the completed barrel, preferably the medial of the end and inmost hoops. An advantage is gained by the slightly-polygonal character of the barrel under the end hoops, they being made to bind tighter at the edges than in the middle of the staves. Each end of the stave is chamfered at a and crozed at b. The stave midway of its ends is provided in one edge with the dowel-pin D and its other edge with the opening d, so that when the barrel is set

up the dowel of one stave will enter a corresponding opening in the adjacent stave. The edges *e* of the stave are beveled alike.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

As an improved article of manufacture, a standard barrel composed of a given number of staves, each stave being the counterpart of the other and in longitudinal section of uniform thickness from end to end and tapering slightly in width from the middle toward each end and having the ends crozed and chamfered and having the edges similarly beveled and having the inner surface between the edges straight and the outer surface curved to correspond approximately with the circumference of the barrel and having a dowel projected from one edge and a corresponding opening in the opposite edge, substantially as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES PLEUKHARP.

Witnesses:
MERCH E. SWANSON,
BARTON GRIFFITH.