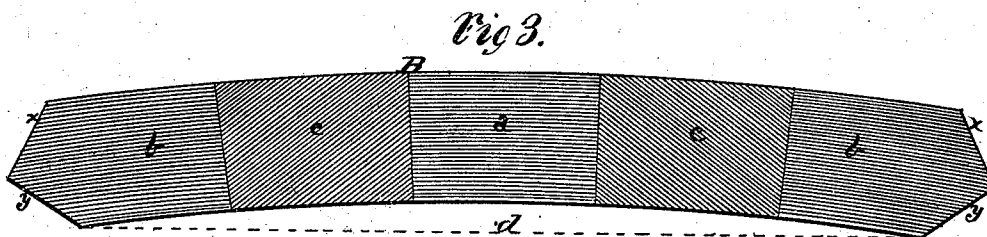
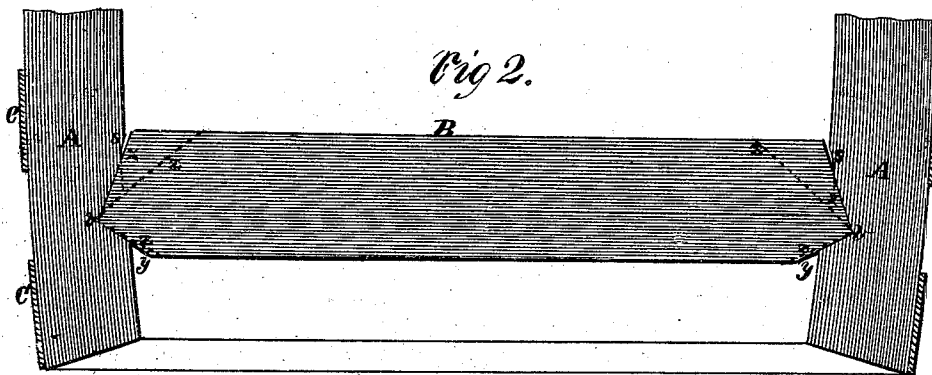
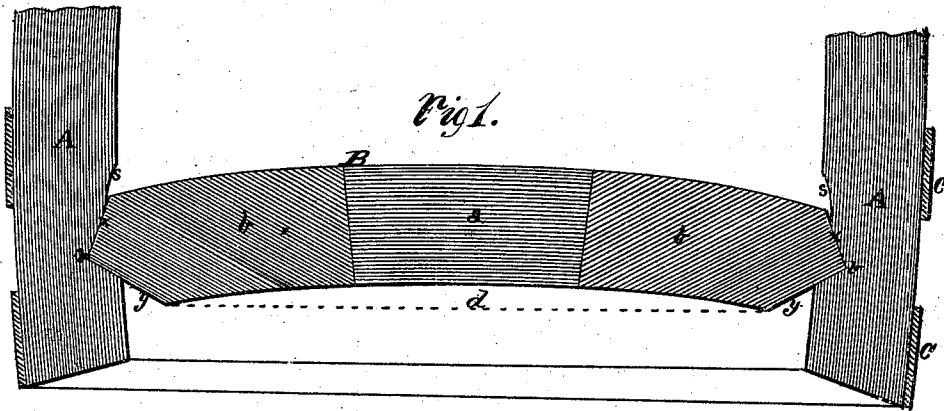


M. Howe,

Barrel Head.

No. 111,058.

Patented Jan. 17, 1871.



Witnesses. *Wm S. Buckner.*
Chas. S. White. *Matthew Howe.*
by his Attorneys
Chas. S. White
invol.

United States Patent Office.

MATTHEW HAWE, OF ALBANY, NEW YORK.

Letters Patent No. 111,058, dated January 17, 1871.

IMPROVEMENT IN THE CONSTRUCTION OF BARRELS FOR BEER, &C.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, MATTHEW HAWE, of the city and county of Albany, State of New York, have invented certain new and useful Improvements in Barrels for Beer and similar liquids; and I do hereby declare that the following is a description thereof, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 represents a longitudinal section (through a section) of a barrel with a head, taken in a direction at right angles with the direction of the grain of wood, illustrating one part of my invention.

Figure 2 represents a sectional view of a section of a barrel, with a head taken in a direction of the grain of the wood, illustrating another part of my invention.

Figure 3 represents a cross-sectional view through the head of a hogshead, illustrating the invention.

My invention relates to the heads of half-barrels, barrels, hogsheads, and like vessels, used for holding ale, beer, and similar fermenting liquids, which are apt to strain the vessels holding them, and sometimes to such an extent as to burst out the heads of thin vessels and be lost; and partly consists in constructing the heads of an odd number of pieces, (as three or five, according to the size of the vessels to be constructed,) each piece having its edge beveled in such a manner that when all are joined and placed in their respective ends of their vessels, they will arch inward; the object of this part of my invention being to render each piece forming the head capable of acting under a pressure, the same as the several sections of an arch, which will more effectually resist the tendency of bursting out the head of a barrel or hogshead when the liquid contained therein ferments.

Another part of my invention consists in making the inner bevel of the barrel with such a bevel as will cause the edge of the head at the ends of the pieces forming the same, and also the sides, to rest on the howel cut in the stave; the object of this part of my invention being to strengthen the heads, so that when the said heads have exerted on them a pressure from the outside, they will be capable of more effectually resisting the said pressure, and prevent all splitting up of the wood at the ends of the said pieces or elsewhere on the edge.

To enable others skilled in the art to make and use my invention, I will proceed to describe it with reference to the drawing and the letters of reference marked thereon, the same letters indicating like parts.

In the drawing—

A represents the staves of a barrel.

B is the head.

C C are the usual hoops.

The head B of the vessel I make of an odd number of pieces of wood, consisting, in half-barrels and bar-

rels, of three pieces, the center-piece *a* and the cants *b b*; and in hogsheads I use five pieces, viz., the center-piece *a*, and the cants *b b*, and the intermediate pieces *c c*, fig. 5. In the usual construction of the heads B, the number of pieces to form the same is not considered of any material importance, so long as a sufficiency of width of material is secured.

Pieces *a*, *b*, and *c* I slightly bevel, as shown in figs. 1 and 3, so that when the said pieces are joined together the head will be arched inward as shown, and each piece of the head will form a section of an arch with its more extensive surface-line within the barrel, which will throw the chord of the arch thus formed outside the vessel, as shown by dotted lines *d* in figs. 1 and 3.

The inner angle line *x* of the beveled edge of the head B I form obtuse, with the outer angle line *y* of the same as shown. When thus formed, the edges of the head B will bear on a portion of the howel S as well as the usual croze V cut in staves, and in such a manner that when the ends of the pieces *a*, *b*, and *c*, will have a more extensive bearing surface inside, as shown in fig. 2, and contrasted with the beveled edge cut on the heads of barrels and the like as they are now usually constructed for beer, ale, and similar liquids, as shown by dotted lines *z z z* in fig. 2.

By forming the said angle line *x* of the beveled edge of the head B in the manner above described, the howel S cut on the inside, past the croze, receives and bears against the said beveled surface line *x*, which, at the ends of the pieces *a*, *b*, and *c*, is more extensive, and insures the head from being broken in, or the ends of the said pieces from being split up, as is often the case with the heads as now constructed.

By my invention, the heads of barrels or hogsheads, which are now the weakest part of the same, can be made as strong as the other parts, and will as effectually resist the excessive pressure of any fermented liquids placed within, and will also effectually prevent the heads from being split up at the ends of their pieces. For it is readily seen that the arching or crowning of the heads in one direction by means of the beveled pieces *a*, *b*, and *c*, will cause the said arch to act against all inside pressure and resist the same as long as the hoops C C bind the staves together.

It is also readily seen that the more obtuse angle line *x*, bearing against the howel S as well as the croze V, will give a greater amount of bearing surface to that part of the edge of the head, and effectually prevent the head being splintered or split up at the ends of the piece forming the same, or elsewhere on the head.

Having described my invention,

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

1. In barrels and similar vessels for holding beer, ale, and other fermentations liquids, constructing the heads B arching or crowning inward by means of the bevel-pieces *a* and *b*, or *a*, *b*, and *c*, substantially as and for the purpose set forth.

2. Making the beveled line *x* of the upper edge of the head B in such a manner that the said beveled

line *x* will bear against a portion of the howel S, as also the croze V, substantially as and for the purpose set forth.

MATTHEW HAVE.

Witnesses:

ALEX. SELKIRK,
CHAS. SELKIRK.