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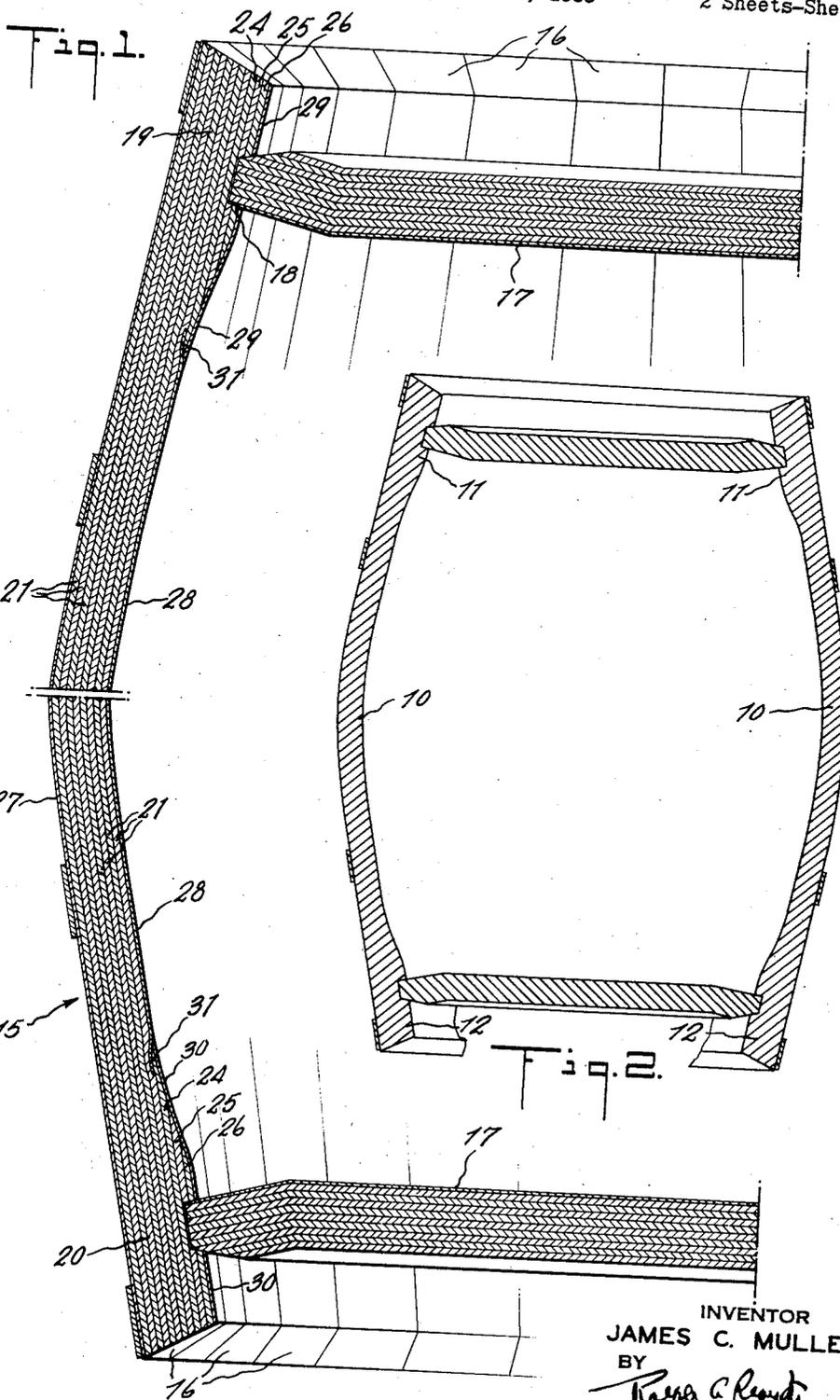
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2,291,980

BEER BARREL

Filed June 19, 1939

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

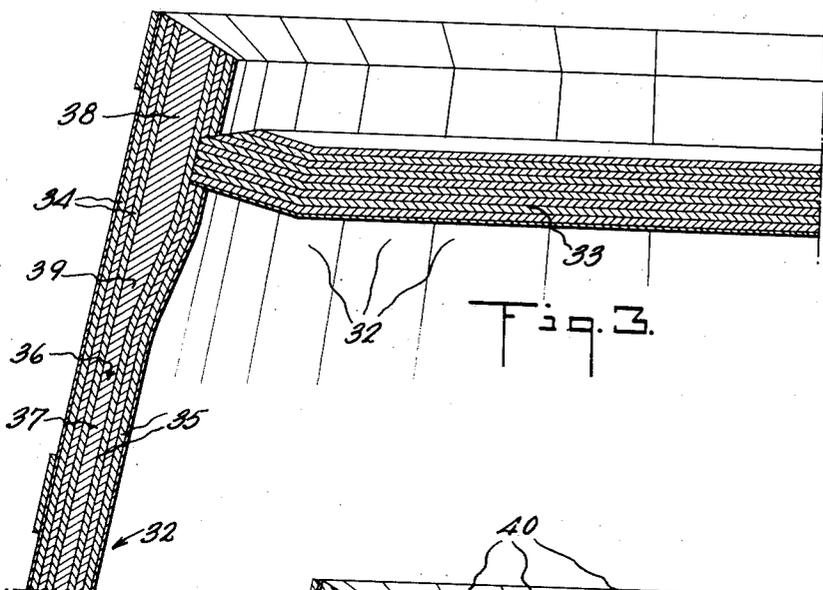


Fig. 3.

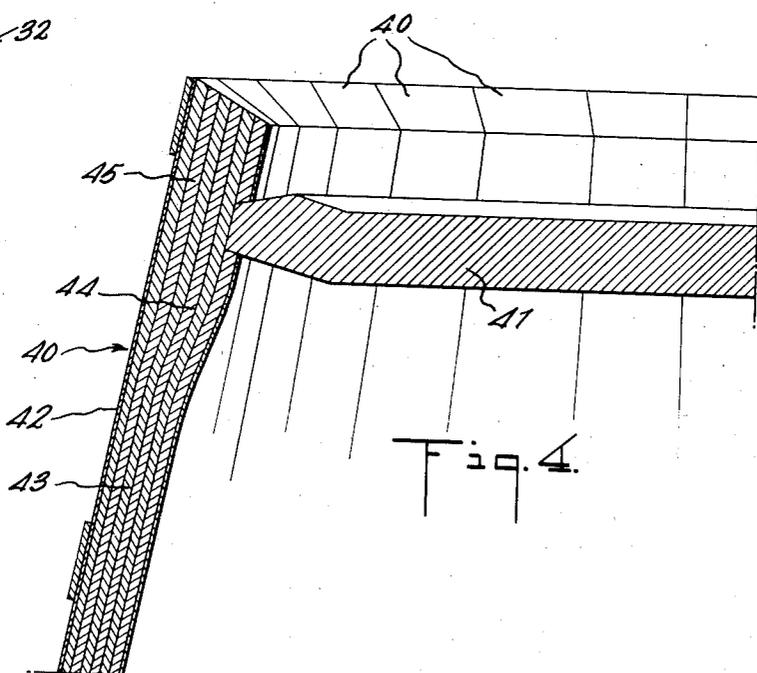


Fig. 4.

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# UNITED STATES PATENT OFFICE

2,291,980

## BEER BARREL

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Application June 19, 1939, Serial No. 279,783

2 Claims. (Cl. 217—88)

This invention relates to barrels, vats and the like and more particularly to the type of barrels employed in the shipment and dispensation of malt-liquors and similar products.

This invention specifically relates to barrels made up of ply wood laminations.

It is a common practice that barrels, used for the purposes referred to, are preferably built up of barrel staves of which their end portions are made much heavier than their middle portions, whereby to resist the severe handling in shipment.

When employing ply wood laminations in the manufacture of barrel staves, a thickening and thereby strengthening of their end portions introduces however certain mechanical difficulties.

One of the objects of this invention is to provide a practical barrel stave comprising wood ply laminations and of which the physical contour of said stave, approximates or duplicates those of the conventional one-piece, oaken staves.

A further object is to provide a stave adapted for the manufacture of barrels, and of which the wood ply lamination utilized therein are formed and arranged in a manner to give to the barrel all of the desirable characteristics of the conventional oaken barrel, while being cheaper to manufacture, stronger in construction and therefore more enduring.

Other objects will become apparent as the description of the particular embodiments chosen to illustrate the invention progresses.

Referring to the drawings:

Fig. 1 is a longitudinal cross sectional view of one side of a barrel illustrating one embodiment of the invention.

Fig. 2 is a schematic view of a conventional type barrel, shown in longitudinal section.

Fig. 3 is a cross sectional view of part of a barrel and illustrating a modification of the invention, and

Fig. 4 is also a cross sectional view of part of a barrel illustrating a further modification.

In the manufacture of barrels of the type outlined in Fig. 2 the manufacturing process for producing staves with thickened end portions has been comparatively simple, in that the staves are made from one solid piece of wood, such as oak.

To produce staves of laminated material which are to possess the identical physical contour and at the same time qualify as to the same characteristics as those of solid staves, interposes, however, new problems. These are claimed to have been solved in a novel and effective man-

ner to be described hereafter and clearly illustrated in the drawing.

Referring to Fig. 1, the longitudinal section of part of a barrel illustrates a series of staves 15, circumposing two heads 17 which protrude into grooves or slots 18 in the thickened end portions 19, 20 of each stave.

Each stave 16 is formed by a series of strips of wood 21 of substantially the same length. On the inner surface of its end portions 19, 20, each stave has three or more short strips of wood 24, 25, 26, which progressively shorten in length in the direction towards the heads 17.

The various strips of wood or laminations shown, have each a uniform thickness. Their parallel surfaces or areas are joined and pressed against each other in a manner known to the art, forming thereby a firm and rigid stave which affords the same strength and resistive power as the solid staves 10 of Fig. 2.

The exterior or convex area of each stave 16 has a layer, lamination or veneer, 27 of any wood of any character, so long as it possesses the qualities suitable to withstand the exigencies of service incidental to barrels of this nature.

The inner or concave surface of each stave 16 is however preferably provided with a veneer lining of a wood most suitable for the kind of liquid it is to contact with and which is best calculated to impart desirable characteristics to same, of which wood, oak is a notable example for barrels for malt and other liquors.

The lining provided on the inner surface of each stave may comprise three sections of which the lining 28 forms a part of the middle portion of the stave, while the other two shorter linings 29, 30 cover the short strips 24, 25, 26 of the respective end portions 19 and 20.

In order to insure a continuity of this veneer lining at the location where the lining 28 meets the ends of the shorter linings 29 and 30, and to make certain that this continuity may not be broken by the exigencies of usage, the extremities 31 of the long lining 28 are made to overlap those of linings 29 and 30. The overlapping end parts 31 are intumed and made to extend behind the shorter linings, and being confined by the short lamination 24.

The heads 17, as illustrated are also of a laminated wood construction, but since the invention herein disclosed has no reference to heads of barrels, their construction is of no particular importance and solid, one-piece heads may also be employed in combination with the staves shown and described.

Referring to Fig. 3 of the drawings, the staves 32, shown assembled on the laminated head 33, comprise each an outer layer 34 and an inner layer 35 of a series of laminations of wood. Each lamination of said layers is of substantially the same gauge or ply and possesses a uniform thickness throughout.

Between both the outer and inner layer is located an intermediary lamination or core 36, having substantially the same length as said layers, but differing in thickness at its middle portion 37. This thickened portion extends in both directions into end portions 38 of further increased thickness.

Their swelling, which develops gradually from the middle portion 37 through an interjacent section 39 to the end portion 38, increases on the inner surface of the core only, so that the outer layer 34 joined to the core will maintain a substantially straight line contact surface.

Since the thickened end portion 38 shows its swelling on the inner surface of the core lamination, the inner layer 35 will accordingly assume the same contour as this swelling and which is plainly shown in the drawings.

It will be noted that a certain length of the end portion 38 is of uniform thickness, so that the laminations of the inner layer 35 will have a substantial straight line formation both above and below the head 33.

The core lamination 36 is preferably made of soft wood whereby to cheapen the manufacture of staves, without however materially affecting their strength and durability.

In Fig. 4, which illustrates another modified construction, the staves 40, surrounding the solid, one-piece head 41, are constructed of a series of laminations 42 which are similar in shape to that of the core shown in Fig. 3. Of the six laminations shown, each comprises a middle portion 43 of uniform thickness extending in length in both directions and increasing in thickness on their inner surface, whereby to form an interjacent section 44, which in turn develops into an end portion 45 of definite length and of a substantial-

ly uniform thickness. Each end portion 45 has therefore a thickness considerable in excess over that of the middle portion 43, and which when assembled in the manner illustrated, will provide a substantial uniform thickness on the entire length of the stove's end portions.

It is evident that the invention described and illustrated provides an effective and novel means of producing laminated staves with thickened end portions and this without in any way or manner distorting or deforming the parallel alignment of laminations of the end portions.

While it is known that laminated barrel staves with thickened end portions have been developed previous to the present invention, as shown for instance in the United States Patent No. 1,981,659, the improvements shown and described herewith are nevertheless believed to be of a nature to constitute novelty and usefulness.

20 What I claim is:

1. A laminated barrel stove having recessed thickened ends for receiving the barrel end comprising a plurality of laminations including a core of material different from that of the laminations between which it is set and preshaped to form thickened shouldered portions inwardly at its ends presenting an inwardly directed concave face, the core extending the full length of the stove and a thin hard wood lamination of uniform thickness secured to the concave face of the core and conforming to the shape thereof, the last mentioned lamination extending substantially the full length of the core.

2. A barrel stove having thickened ends, comprising hard wood inner and outer laminations and an intermediate lamination having thickened ends presenting a preformed inwardly directed concave face and of softer material than the laminations between which it is set, each of the laminations forming the stove extending substantially the entire length of the stove and the lamination forming the concave surface of the stove being of uniform thickness throughout.

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