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WOODEN BUNG FOR BEER BARREL

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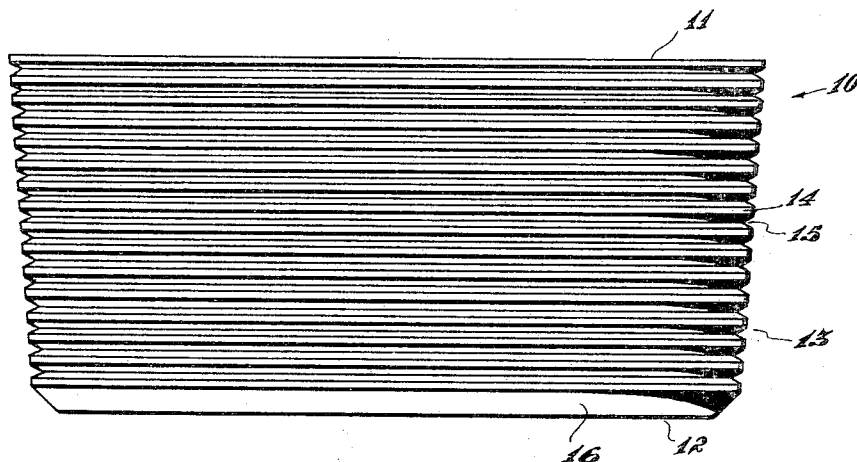


Fig. 1

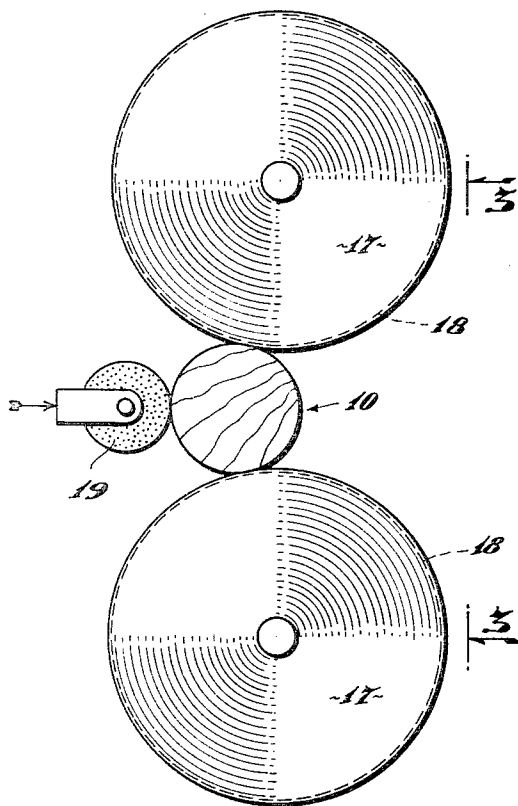


Fig. 2

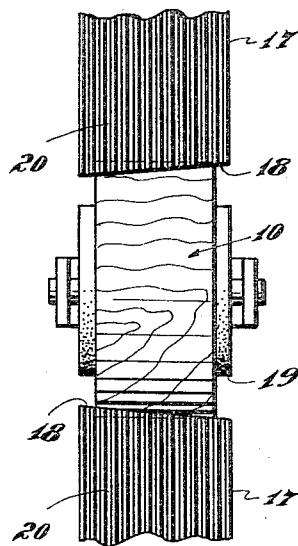


Fig. 3

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WOODEN BUNG FOR BEER BARREL
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This invention relates to wooden bungs for beer barrels and is particularly concerned with a novel type of construction which provides definitely improved securance of the bung in the barrel bushing and reduced leaking.

For many years the conventional type of bung has been one in which the sides are smooth from top to bottom but are tapered and compressed so that when the bung is inserted in the bushing and is subject to contact with liquid in the container, the sides of the bung will swell and partially, at least, lose their tapered contours to form a tight seal which to a very large extent prevents the leakage of the liquid in the container.

Bungs of the types just described are manufactured in two different ways. The first way, and the most conventional, is to first form a circular cut blank of the desired diameter and then to jam this blank forcibly into the mouth of an open ended die or cup having tapered sides. This is a cheap and simple operation but there are a number of objections to it including particularly a substantial percentage of loss of blanks through breaking and splitting and a relatively high rate of leakage through splits or cracks not obvious on visual inspection.

The second conventional method of forming tapered compressed bungs is to first form the cut blank and then to roll this blank between tapered edges of two or more rollers, spaced apart to the desired diameter of the bung. In this operation it has been found to be more practical to introduce the bung between the rollers in a direction parallel to the axis of the rollers or in other words in the same general way as the bung is jammed into the die mouth in the method first described.

It will be noted that both of these methods densify the sides of the bung due to compression but the increased denseness is progressive from the top to the bottom and on the upper portion of the sides is very slight.

The present invention embodies certain of the principles of the compression by rolling method just described. However, a materially improved bung is provided in that the tapered edges of the rollers have formed thereon a series of ridges and grooves which in turn impart a ridged and grooved construction to the bung blanks compressed by the rollers. It has been found that the provision of a series of closely adjacent ridges extending peripherally around the sides of the bung blank and compressed provide a materially improved bung insofar as concerns tight securance in the bushing and the prevention of leakage. This is partly due to the fact that each ridge, in effect, constitutes a separate gasket sealing the sides of the bung blank against the bushing or bung hole. Additionally, since all parts of the ridged surface are compressed the total area of compression is a great deal larger than on the ordinary smooth surface bung so that when liquid is applied to the grooves between the ridges, the expansion occurs much more rapidly and more completely than in the case of a smooth surface. There is also

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an increased and uniform denseness over the entire side surfaces because the depth of the grooves is uniform and more compression is required to form them than would be the case with smooth surfaces.

In order to manufacture a bung of the type to which the invention relates, it is necessary to use a rolling process and it is also necessary to insert the bung blank between the rollers in the same plane as the rollers and in a direction opposed to the rollers' axes.

Accordingly, one of the objects of the invention has been to provide a bung for a beer barrel, the sides of which contain a plurality of closely adjacent parallel compressed ridges and corresponding grooves.

Another object has been to provide a wooden bung for a beer barrel in which the sides of the bung are compressed over an area substantially greater than the distance between the upper surface and lower surface of the bung.

Another object has been to provide a bung in which the sides are denser and the degree of denseness is more uniform than in the case of a smooth sided bung.

Another object has been to provide a method of making a bung of the type to which the invention relates.

FIGURE 1 is a side elevation illustrating the preferred form of the invention.

FIGURE 2 is a diagrammatic top plan view illustrating a step in the formation of the preferred type of the invention.

FIGURE 3 is a sectional view taken along lines 3-3 of FIGURE 2.

Referring again to the drawings for a further and more detailed description of the invention, a completed bung of the preferred type of the invention is indicated generally at 10. This bung has a generally flat upper surface 11, a generally flat lower surface 12 and downwardly tapered sides 13 into which are formed a plurality of ridges 14 and a plurality of grooves 15. As illustrated, the ridges in parallelism, are closely adjacent one another and preferably, although not necessarily extend continuously from the upper surface of the bung to the lower surface. The entire surface area of each ridge and each groove is compressed inwardly towards the axis of the bung. As shown, a bevel 16 is formed circumferentially around the lower surface by a trimming operation but this feature forms no part of the invention.

The method of forming the bung of the invention is illustrated more or less diagrammatically in FIGURES 2 and 3. As shown, the bung 10 is forced into engagement with the tapered side walls 18 of the spaced rollers 17 by the idler roller 19. In effecting the engagement the bung is moved at all times in the same plane as the rollers so that the ridges 20 on the side walls 18 of the rollers form corresponding grooves and ridges on the side walls of the bung as the compression proceeds.

While as previously indicated the showing of the method has been largely diagrammatic, the details including the bung feeding and discharge, the exact relationship of the positioning of the rollers to the diameter of the bung and the time and degree of contact between bung and rollers will be obvious to those skilled in the art.

In addition to the advantages previously discussed it has been found that bungs constructed in accordance with the invention are easier to drive into a bushing or barrel and there is less shock and resultant damage to metal bar-

rels or wooden barrels because the ridges tend to cushion the shock of insertion. Additionally, and due partly to the increased denseness of the side walls, the bung has better seating qualities and is more resistant to internal pressures particularly where the bushing surfaces are imperfect.

Having fully described my invention, I claim:

A bung for a liquid-containing barrel comprising a cylindrical wooden plug having its side walls tapered inwardly from its upper surface and a plurality of ridges and grooves extending circumferentially around said side walls in closely spaced parallelism, the entire side walls including the ridges and grooves being formed from a generally planar peripheral surface and being densified by compression of the inward ridges and grooves towards the axis of the bung, said inward compression resulting in the peripheral portion of said bung being of greater density than the center portion thereof and the bottom of

said grooves being compressed to a greater extent than the tops of said ridges so that said groove portions of said side walls are of greater density than said ridge portions.

References Cited by the Examiner

UNITED STATES PATENTS

145,897	12/1873	Pentlarge	217—98
220,733	10/1879	Stewart	217—110
266,763	10/1882	Burk	144—321
273,788	3/1883	Werle	217—110
1,331,083	2/1920	Shelley	217—98
2,378,713	6/1945	Lawton	144—321

FOREIGN PATENTS

15	1,045,403	6/1953	France.
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