No. 739,557. PATENTED SEPT. 22, 1903.

T. PENDERGAST.

BUNG BUSHING.

APPLICATION FILED NOV. 13, 1902.

NO MODEL.

Fig. 1.

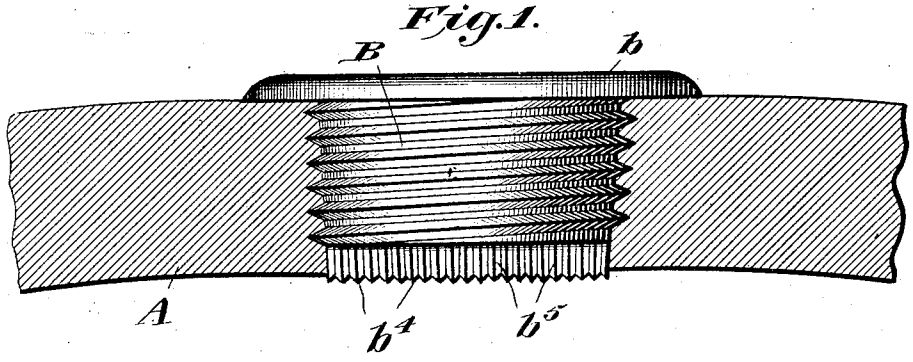


Fig. 2.

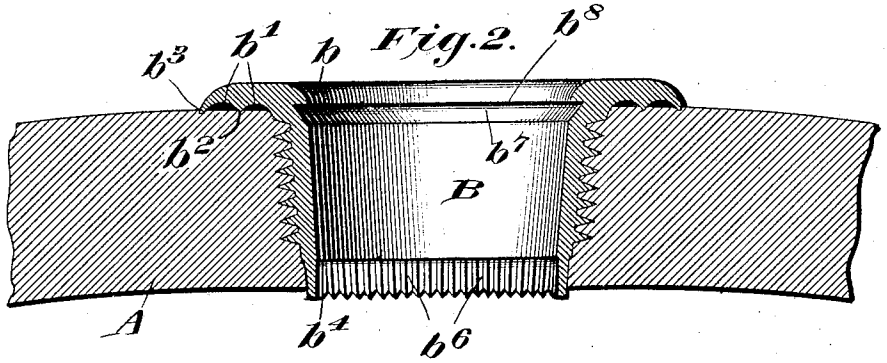
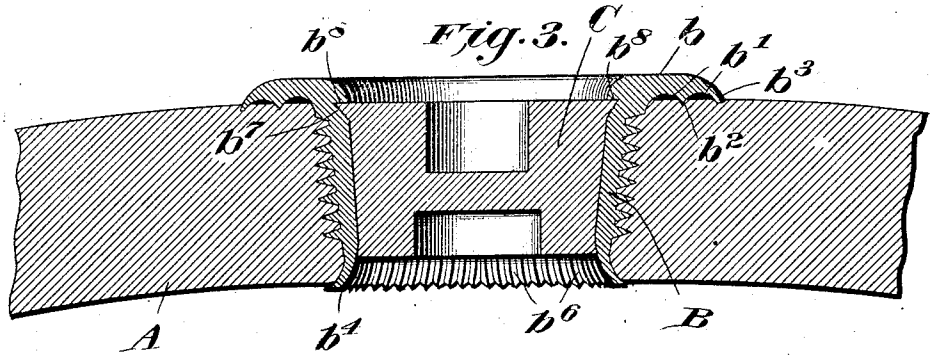


Fig. 3.



Witnesses
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No. 739,557. Patented September 22, 1903.

UNITED STATES PATENT OFFICE.

THOMAS PENDERGAST, OF LANCASTER, PENNSYLVANIA, ASSIGNOR OF FIFTY-ONE ONE-HUNDREDTHS TO JOHN HERTZLER, OF LANCASTER, PENNSYLVANIA.

BUNG-BUSHING.

SPECIFICATION forming part of Letters Patent No. 739,557, dated September 22, 1903.

Application filed November 13, 1902. Serial No. 131,235. (No model.)

To all whom it may concern:

Be it known that I, THOMAS PENDERGAST, a citizen of the United States, residing at Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Bung-Bushings; 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 bungs and bung-bushings; and it consists, substantially, in the features of improvement hereinafter fully described, and particularly pointed out in the annexed claims.

The principal object of the invention is to provide an improved bushing which can readily be inserted or screwed into the bung-hole, while its upper or outer flange and lower or inner end can be made to bite or embed in the stave and clench the margin of the bung-hole between them, thus bracing the stave, holding the bushing securely in place, and forming an effective fluid-tight seal.

A further object is to provide an interior construction of the bushing which will afford a grip for the bung or plug and allow the latter to swell or expand in such manner as to retain itself securely in place; also, to offer a grip for the expansion-wrench or other implement for screwing the bushing into the bung-hole.

These objects are attained by means substantially as illustrated in the accompanying drawings, which form a part of the specification, and in which—

Figure 1 is a side elevation of a bung-bushing embodying my improvements screwed into the bung-hole of a cask or barrel, the stave being shown in longitudinal section. Fig. 2 is a central vertical section thereof, and Fig. 3 is a central vertical section of the bushing with its lower end expanded and with the bung in place.

The letter A designates the bung-stave of a cask or barrel, B denotes a metallic bushing screwed into the bung-hole thereof, and C indicates the bung or plug, of wood or other suitable material. The bung-bushing, as shown, tapers slightly toward its lower or inner end and is exteriorly threaded for screwing into the stave; but these features, though preferred, are inessential, and the bush may be straight and smooth.

The bushing has an upper or outer flange b, which on its lower side is preferably formed with two circular grooves b', leaving between them a sharp annular edge or ridge b^2. When the bushing is screwed into the stave and forced down to the full extent, this ridge becomes embedded in the outer face of the stave, compressing the wood within the grooves, thus forming an effective seal around the top or outer end of the bung-hole. A greater number of the grooves may be formed, with a correspondingly greater number of intermediate sharp-pointed projections, though one of such projections is sufficient. The circumference or rim b^3 of the flange may turn down and also be sharp-pointed, so as to bite the stave and increase the tightness of the joint. The bushing has its lower or inner end b^4 reduced in respect to the thickness of the walls and adapted to be expanded against the interior wall of the bung-hole or the lower end thereof, so as to clench and compress the wood, brace the stave, hold the bush securely in place, and form an effective seal around the lower or inner end of the bung-hole. As shown, said end b^4 is exteriorly reduced, the screw-threads being cut away, and is interiorly enlarged or beveled, which is a preferred formation, though the same purpose may be accomplished by other constructions. When the bushing is forced down into the bung-hole, a suitable expansion-tool (not shown) is inserted therein and the lower end b^4 is expanded, as shown in Fig. 3. The lower end b^4 is shown exteriorly roughened or formed with closely-arranged sharp-edged ribs or projections b^5, which when said end is expanded embed themselves in the stave, and thus hold the bush even more securely. Said lower end is also preferably interiorly roughened or formed with similar ribs b^6, which afford a grip for the expansion-wrench or other implement, by means whereof the bush is screwed

into place, and which also afford a grip for the lower or inner end of the bung or plug.

It will be observed that when the bushing is screwed home in the bung-hole and its lower end expanded, as explained, the margin of the bung-hole is clenched between the upper flange and lower expanded end, thus bracing the stave at both the outer and inner sides, while the fiber of the stave is compressed and gripped by the bush at both ends, thus holding the bush very securely and forming a perfectly fluid-tight seal.

An interior annular enlargement or groove b^7 is formed at or near the upper or outer end of the bushing, leaving, preferably, a sharp projection or abrupt shoulder b^8 above the same. When the bush is in place and the bung C is driven in, the upper or outer end of the latter swells or expands into said enlargement, its edge fitting under the shoulder b^8, so that the bung is absolutely prevented from blowing out. The lower end of the bung also expands within the expanded lower end of the bush, swelling itself against the roughened interior thereof, thus forming an exceedingly effective seal between the bung and its bushing.

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

1. A bung-bushing comprising a ring or sleeve, adapted to fit within a bung-hole, having an upper flange to engage the outer face of the stave, and having its lower end cut away circumferentially, providing an abrupt thin or reduced part which can be expanded against the interior or lower end of the bung-hole, substantially as described.

2. A bung-bushing comprising a threaded ring or sleeve, having an upper flange and its screw-threads cut away from its lower end which is also reduced exteriorly and interiorly beveled, substantially as described.

3. A bung-bushing, adapted to fit within a bung-hole, having an upper flange formed with a sharp annular ridge adapted to embed in the outer face of the stave, and having its lower end substantially reduced in thickness and adapted to be expanded outwardly against the interior or lower end of the bung-hole.

4. A bung-bushing comprising a ring or sleeve having an upper or outer flange and a lower end adapted to be expanded outward, said lower end being formed externally with vertically-disposed sharp ribs or corrugations.

5. A bung-bushing comprising a ring or sleeve, having an upper or outer flange formed on its under side with circular grooves, leaving an intermediate sharp annular ridge, and having a lower externally-reduced end adapted to be expanded outward and formed internally and externally with sharp ribs or corrugations, and having an interior annular groove or enlargement near its upper or outer end, substantially as and for the purposes described.

6. A bung-bushing, having a lower end adapted to be expanded outward, and having an interior annular enlargement near its upper end, with an abrupt shoulder above the same, in combination with an expansible bung the lower end of which swells in the lower enlargement of the bushing while the upper edge thereof swells into said annular enlargement and under said shoulder.

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

THOMAS PENDERGAST.

Witnesses:
PIERCE LESHER,
J. GUY ESHLEMAN.