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PLUG

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Fig. 1

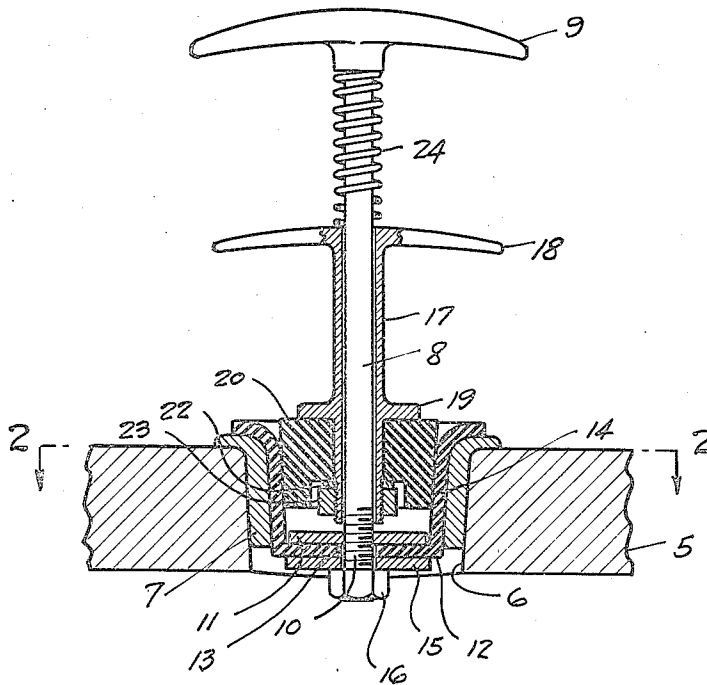
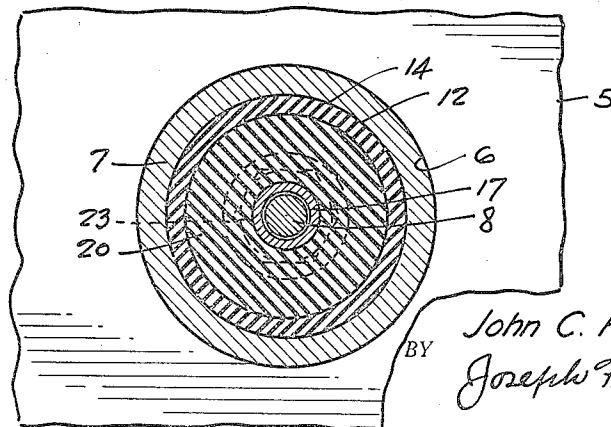


Fig. 2



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PLUG

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6 Claims. (Cl. 217—109)

This invention relates to stopples or bungs for bottles, jugs, kegs, barrels, and the like, and is particularly adapted for use as a plug for bung-holes of beer barrels. Pitching plugs of the prior art, made of wood, can only be sealed in the bung-hole by blows of a heavy hammer. The useful life of the plug is shortened by constant driving which causes an abrupt, ragged shoulder to form on the plug necessitating harder driving and reducing its frictional grip in the hole, due to the compression of the wood being upward in the shoulder rather than inwardly against the core of the plug.

The impact of the hammer often cracks the bung stave, opens the seams, or loosens the iron bushing with which the bung-hole is usually lined, resulting in expensive replacement jobs or beer leaks. Carbonic-acid gas in the beer likewise escapes, causing the beer to become flat and insipid.

Similar injurious effects of the use of the wooden plug are encountered in the manufacture and aging of wines. In addition to the aforesaid difficulties, the vibration resultant from the necessary periodical opening and sealing of wine kegs by heavy hammer blows prevents proper settlement and clarification of the wine.

It is a principal object of my invention to provide a plug to positively close an opening in a container such as is above described by the expansion of a resilient element in the hole which may be removed by permitting normal contraction of said element, its insertion and removal being accomplished with a minimum of exertion or strain by the user, thus avoiding disturbance of the contents of the container.

Another object of my invention is to provide a plug comprising a calathiform expansible gasket, having a conical resilient element moved into said gasket by a spring, thus equalizing upward and downward pressures relative to the wall of the hole and concentrating expansion of the gasket diametrically.

Another object is the provision of a plug which may be easily compressed for insertion into or removal from a bung-hole or the like by drawing the handles, controlling expansibility of the plug, together, between the fingers and thumb of one hand.

A further object is to provide a device in which worn or deteriorated parts may be easily replaced.

Other objects and corresponding advantages such as durability of construction, facility of placement and removal, and tenacity in opera-

tion, will be obvious to all those of skill in this art upon an examination of the accompanying description and drawing, in which—

Fig. 1 is a view in section and elevation of the plug in operative position in the bung-hole of a barrel stave;

Fig. 2 is a section on line 2—2 of Fig. 1.

Referring to the drawing in detail, the numerals of which indicate similar parts throughout the several views, 5 designates a portion of a beer barrel stave having the bung-hole 6 of the barrel bored therethrough. A flanged iron bushing 7 is provided in hole 6 to protect and preserve the wood adjacent the hole as well as to furnish a lining hard enough to resist erosion and maintain its circular form, thus facilitating closure by a plug.

The plug of my invention comprises a main stem 8 having a handle 9 at one end. Its opposite or lower end is threaded at 10, to receive an internally-threaded washer 11. A rubber calathiform gasket 12 having a centrally-disposed hole 13 through its bottom is located on stem 8 with its side wall 14 extending toward handle 9. The outer periphery of wall 14 of gasket 12 is shaped to conform to the inner contour of bushing 7 of the barrel, although exact conformation is not necessarily due to the flexibility of the gasket, as will be apparent. A second washer 15 supports gasket 12 against washer 11 by means of a nut 16 threaded on the end of stem 8.

Mounted slidably on stem 8 between washer 11 and handle 9 is a tubular member 17 provided with a handle 18 at its upper end which corresponds in shape to handle 9. Near the lower end of member 17 and integral therewith a flange 19 provides an abutment for a centrally-bored rubber expanding element 20 comprising a truncated cone, which is mounted on member 17 with its narrow end extending into gasket 12. The lower end of the bore through expanding element 20 is enlarged to receive a washer 22 and a nut 23, threaded on a member 17, to maintain expanding element 20 firmly against flange 19.

A spiral spring 24, located on stem 8 between handle 9 and tubular member 17 normally urges expanding element 20 into the annular gasket 12. The circumference of gasket 12 is preferably only slightly smaller than the hole which it is adapted to plug, and expanding element 20 slightly larger than corresponding inside dimensions of the gasket in order that by a comparatively short lift of handle 18 relative to handle 9 contraction of gasket 12 may be effected and the plug released from the hole.

While I have described and illustrated one embodiment of my invention it will be obvious that various changes may be made therein, such, for instance, as the composition of the expanding element and relative size, numbers and proportion of the parts, without departing from the spirit of my invention.

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

10 1. In a device of the character described, an expansible gasket supported on a rod, a resilient expanding element for said gasket slidable on said rod against said gasket, and means to move said expanding element against said gasket to
15 expand the same.

2. In a device of the character described, an annular gasket having a stem axially disposed relative thereto, a tubular member slidable on said stem carrying a resilient, conical expanding
20 element and means to urge said tubular member toward said gasket to move said expanding element into said gasket to expand the same.

3. In a device of the character described, a rod, a resilient conical member slidable on said rod,
25 a hollow resilient gasket carried by said rod, and resilient means to urge said conical member into the bore of said gasket to extend the same laterally.

4. In a device of the character described, a rod,
30 a resilient calathiform gasket mounted on one end of said rod, a handle at the end of said rod

opposite to said gasket, a tubular member slidable on said rod carrying a wedge, resilient means to normally move said wedge into said gasket to expand the same by lateral pressure, and means to manually permit contraction of said gasket.

5. In a device of the character described, a rod, a cylindrical gasket secured to one end of said rod, a handle at the opposite end of said rod, a tubular member slidably encircling said rod having a resilient, conical expanding element attached to one end thereof, a handle connected to the other end of said tubular member, and a spring encircling said rod between the handles to urge said expanding element into said gasket.

6. In a device of the character described, a rod having a handle at one end, a resilient calathiform gasket comprising a circular bottom portion having annular diverging sides extending from said bottom portion, said bottom portion having a hole concentrically disposed therein through which said rod extends, means to seal the gasket with said rod, a tubular member slidable on said rod having a handle at one end, a resilient member having the form of a truncated cone carried by the end of said tubular member opposite to the end thereof to which said handle is secured, and a helical spring encircling said rod between said handles to urge said resilient member into said gasket and expand the same.

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