

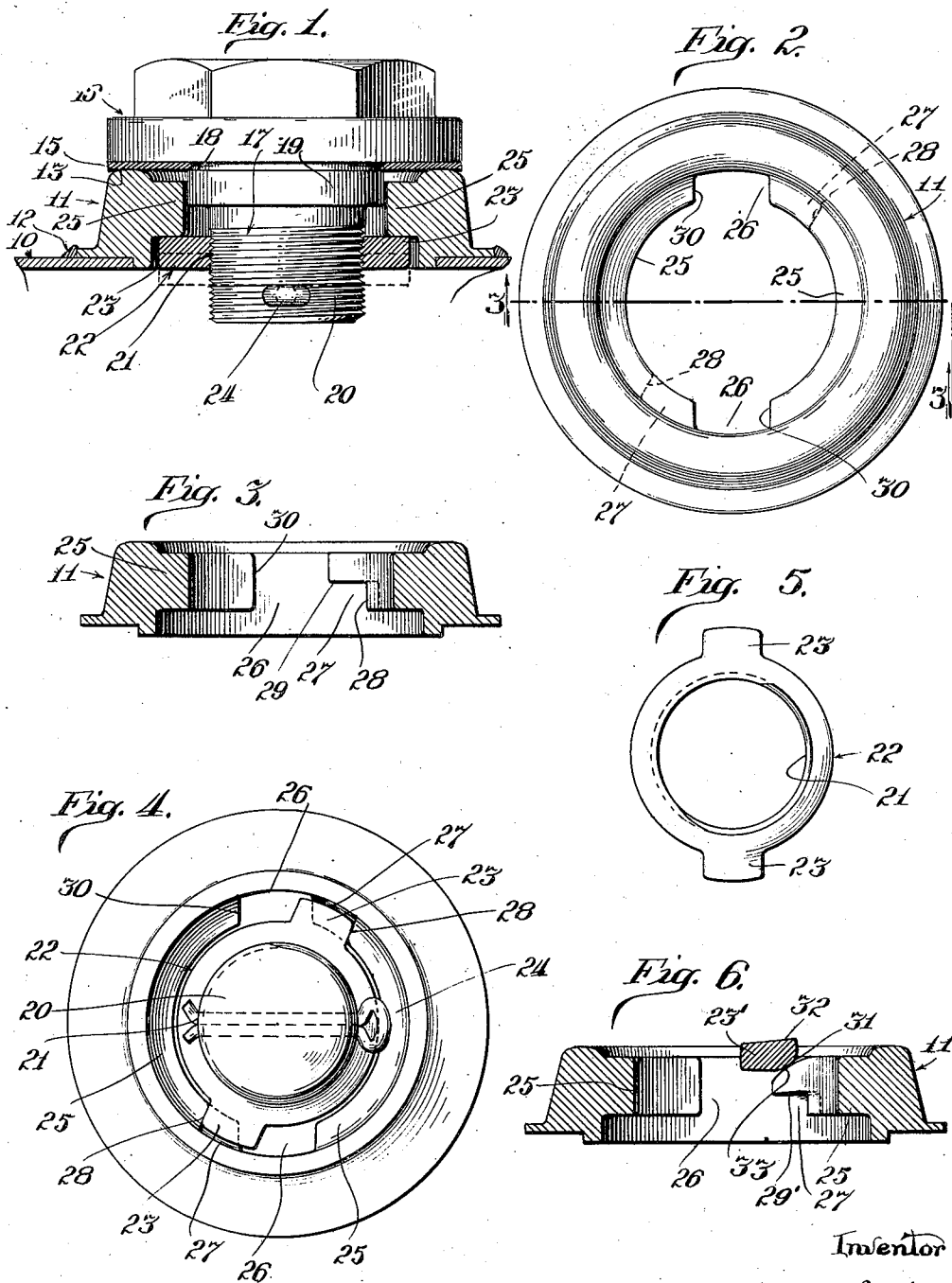
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CLOSURE FOR RECEPTACLES

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UNITED STATES PATENT OFFICE.

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CLOSURE FOR RECEPTACLES.

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To all whom it may concern:

Be it known that I, FREDERICK G. WACKER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Closures for Receptacles, of which the following is a specification.

My invention relates to closures for receptacles, and more particularly to a bung for metal barrels. Metal barrels intended for repeated shipment, and sturdily and expensively constructed, usually have a head orifice for filling and emptying, rimmed with an internally threaded ring or flange welded to the apertured metal-sheet of the barrel, and closable by a screw threaded cap or bung that enters the threaded orifice of the rim. Mutilation of the rim-threads may occur from many causes and is a source of great loss, since it is usually impractical to repair such injury, and very many otherwise-useful barrels have to be scrapped on this account.

An object of my invention is to provide a rimmed-orifice and a closure so constructed that the rimmed part connected to the barrel head is not threaded and offers minimum possibility of damage; so that barrel-losses from this cause may be greatly diminished or avoided. Another object of my invention is to provide a simple and efficient means for quickly and securely closing the barrel orifice, such means being of a character not liable to injury but easily replaced if damaged or lost.

In the drawings herein I have illustrated structure embodying my invention, for purposes of disclosure thereof. Fig. 1 is a side elevation, with parts in sections, showing a rimmed-orifice and closure or bung; Fig. 2 is a top plan view of the orifice rim member; Fig. 3 is a section on line 3—3 of Fig. 2; Fig. 4 is a bottom plan view of Fig. 1; Fig. 5 is a detail of the bridge piece, and Fig. 6 is a diagrammatic section showing a modification.

To the barrel head 10 a ring 11 may be suitably secured, permanently, in any fashion, as by welding at 12, the top surface or crown 13 of the ring projecting above the barrel-head and affording a convenient seat for the packing washer 15 underlying the tool-receptive seating head 16 of the unitary screw-bung 17. Preferably, the

packing washer 15 is retained in the groove 18 in the collar portion 19 of the closure, immediately below the head, and the externally threaded stem 20, of somewhat smaller diameter, is long enough to extend somewhat below the bottom plane of the ring 11. This stem engages the threaded orifice 21 of the bridge member 22, this being preferably an annulus having opposed projecting wings or lugs 23. A cotter pin 24, extending through a suitable transverse hole in the stem 20, or any other form of stop suitable near the lower end of the stem, prevents accidental removal of the bridge piece and limits its downward displacement along the screw stem 20. The ring 11 has an internal flange 25, preferably extending nearly the full depth of the ring, having bayonet-lock passages to co-act with lugs 23. Thus the flange is interrupted by vertical channels or passages 26 through which the lugs 23 of the bridge piece may pass, and near the bottom of the flange recesses 27, 27, are made circumferentially of the flanges in a forward direction with respect to the closing rotation of the bung.

With the bridge piece screwed to its lowest position on the screw stem, in contact with the stop 24, the bung may readily be inserted in the flanged ring, the bridge piece slipping nearly clear through the flange, with its lugs 23 in the channels 26. This locates the lugs 23 (as shown in dotted lines in Fig. 1) with their top surfaces between the upper and lower planes of recesses 27, so that when one forwardly rotates the bung in the direction shown by the arrow in Fig. 1, these bridge piece lugs enter the recesses, striking the front walls 28 thereof, and then a further turning of the bung causes the bridge piece to ride up the threaded stem until the lugs 23 contact with the top wall 29 of the recesses, giving such bearing that the packing washer 13 may be tightly compressed to seal the joint between the bung head and the ring.

In opening the barrel the reverse operation occurs, the bridge piece being loosened and subsequently riding rotatively into contact with the uninterrupted wall 30 of the channel 26 as the bung is backwardly rotated, so that the bung and attached bridge piece may be simply lifted out.

In the slightly modified form shown in Fig. 6 the construction may be identical

with that heretofore described save that each lug 23' of the bridge piece may have its forward, lower corner (i. e. forward in the direction of tightening rotation) rounded as at 31 and its upper surface upsloping circumferentially in the same direction as indicated at 32, while the recessed side of each flange portion 25 may be circumferentially downsloped to the channel 26, as shown at 33, and the top surface of the recess may be circumferentially upsloped, as at 29', corresponding with the lug-slope 32. The complementary formations 31, 33 give the construction the useful capacity of plainly indicating to the workman endeavoring to seal a barrel that the seal is not made, should he have inadvertently started his work with the bridge piece too high on the screw stem to enter the recesses 27. Under such conditions no lock is possible and the bridge would simply travel up the stem until stopped by the collar 19. With the construction shown in Fig. 1 an inexperienced workman might consider the barrel sealed, under these conditions, because of his inability to further turn the bung, but with the construction shown in Fig. 6 the rounded edge 31 of the lug will encounter the cam surface 33 of the flange before the bridge piece seats against the collar 19, and so the continued effort of the workman would cam the bung out of its opening. Further, the complementary inclination of surfaces 32 and 29' gives a sufficient interlock to insure that vibration will not cause these surfaces to slip to bung-freeing position even though they be oil filmed. Neither of these refinements is essential but either or both may advantageously be used.

While I have herein described in some detail a particular embodiment of my invention it will be understood by those skilled in the art that many changes in the construction may be made without depar-

ture from the spirit of my invention, within the scope of the appended claims.

I claim:

1. The combination with a barrel-head having an orifice, of a ring secured to said head and rimming said orifice projecting above the plane of the head, said ring having bayonet-lock passages therein comprising vertical passages open at top and bottom through the upper and lower surfaces of the ring and lateral passages communicating with the vertical passages near the lower ends of the latter, a unitary bung structure comprising a tool-receptive head adapted to span across the top of the ring member and co-act with the upper surface thereof, and a threaded stem of greater length than the depth of the ring, an internally screw-threaded bridge piece on said stem having provision for co-action with the bayonet-lock passages, and means on said stem for preventing movement of said bridge piece away from the under surface of the head to a distance equal to the depth of the ring.

2. The combination of an orifice-rim having internal bayonet-lock passages and a cam surface 33 at the top of one of said passages, a bung member having provision for closing said orifice and a threaded stem, and a bridge piece threaded on said stem having lugs to engage the bayonet-lock passages and arranged to co-act with said cam surface as described.

3. The combination of an orifice-rim having internal bayonet-lock passages, the lateral recesses thereof upsloped circumferentially as at 29', a bung member having provision for closing said rim orifice and having a threaded stem, and a bridge piece threaded on said stem having lugs to co-act with said bayonet-lock passages, said lugs being upsloped circumferentially as at 32.

FREDERICK G. WACKER.