

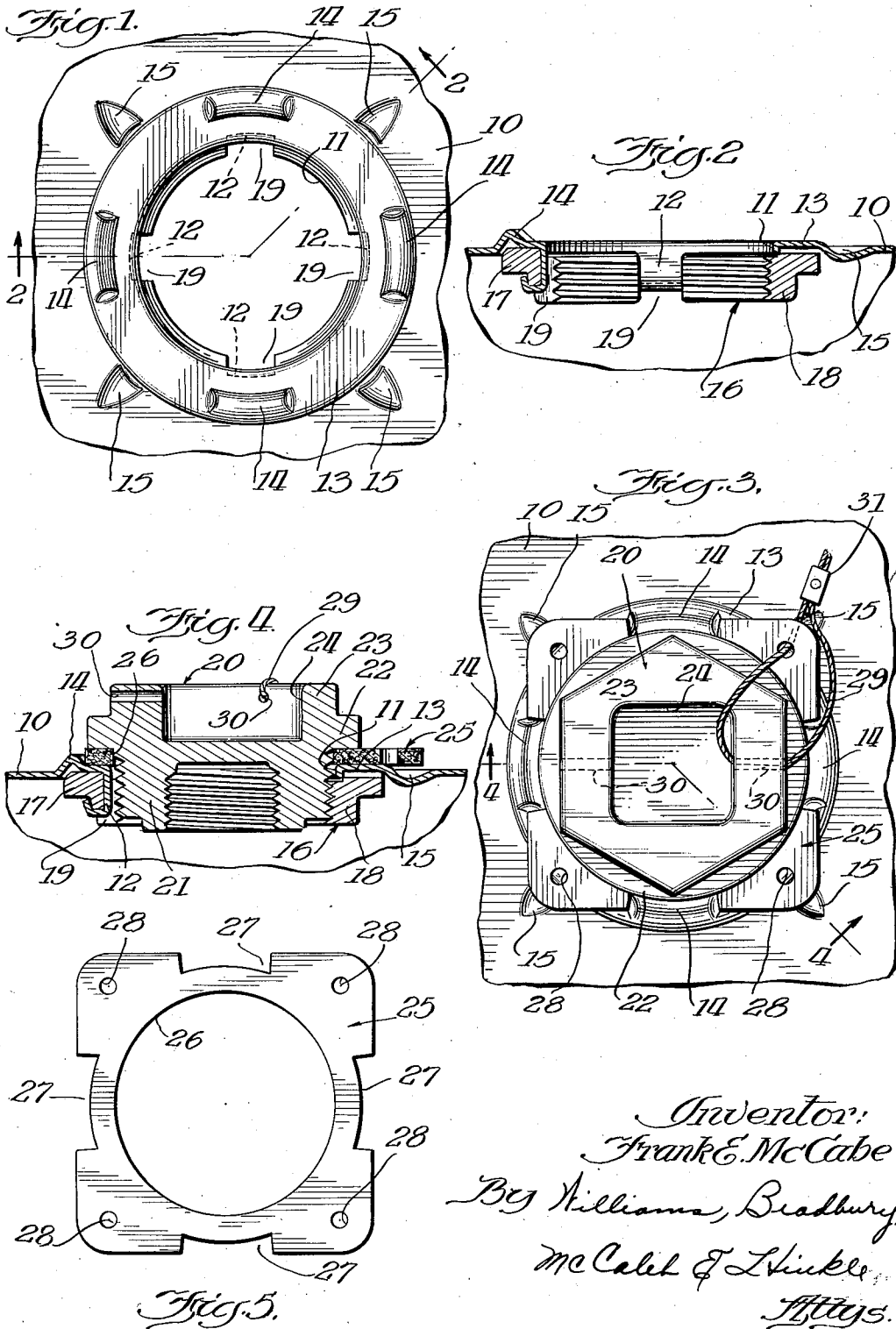
June 18, 1935.

F. E. McCABE

2,004,997

SEALING DEVICE

Filed July 13, 1932



UNITED STATES PATENT OFFICE

2,004,997

SEALING DEVICE

Frank E. McCabe, Shaker Heights, Ohio, assignor
to The Grabler Manufacturing Company,
Cleveland, Ohio, a corporation of Ohio

Application July 13, 1932, Serial No. 622,264

4 Claims. (Cl. 220—39)

This invention relates to sealing devices and particularly to sealing devices for steel barrels or drums.

In such barrels or drums the bung opening is provided in the wall of the metal and is reinforced by suitable means. A ring providing a threaded surface is normally associated with the bung opening and the bung is correspondingly threaded. With certain constructions it is difficult to maintain liquid-tight adjustment, and sealing the bung to the drum is also a matter of considerable difficulty.

One of the objects of the invention is to provide a barrel closure and sealing device whereby these difficulties may be obviated in a simple, inexpensive and effective manner.

A further object of the invention is to provide an improved closure and sealing device.

A further object of the invention is to provide a drum wall provided with a bung opening, a bung, and a gasket adapted to cooperate effectively to provide liquid-tight closure and effective sealing.

Other objects, advantages and capabilities of the invention will appear from the following description of preferred embodiments thereof, taken in conjunction with the accompanying drawing, in which

Figure 1 is a plan view of a portion of a barrel wall containing a bung opening;

Fig. 2 is a sectional view therethrough taken on the line 2—2 of Fig. 1;

Fig. 3 is a plan view of a bung applied to a bung opening in closing and sealed relation;

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 3; and

Fig. 5 is a plan view of the gasket shown in Figs. 3 and 4.

In the drawing I have illustrated the invention in connection with the bung hole structure described and claimed in United States Patent No. 1,513,516, issued October 28, 1924. While the invention is capable of being employed with this structure, it is not intended to be limited thereto, since it is obvious that it may be applied to other forms of bung ring structure.

Referring to the drawing, the wall of the barrel is designated by the reference numeral 10. This wall is provided with a bung opening which is designated 11. The edge of the bung opening is spun inwardly slightly and carries a plurality of fingers 12, four being shown, located at equidistant points at the opening 11. Around the opening 11 the wall 10 is provided with an annular boss 13. Along the outer edge of the

boss 13 and at desired positions on its circumference, upward projections 14 are formed which are preferably located in radial alignment with the fingers 12. The inner portion of the boss 13 is left flat so as to insure effective engagement with the gasket in the manner hereinafter described. Intermediate adjacent projections 14, and beyond the boss 13, the barrel wall 10 is provided with depressions or recesses 15 for a purpose hereinafter described. It will readily be understood that the bung opening and the associated features hereinbefore described may readily be formed in the metal of the wall 10 by simple stamping and pressing operations. The boss 13 provides a seat for the bung ring 16 which is located on the inner side of the wall 10. The bung ring 16 comprises two offset flanges 17 and 18. The upper flange 17 is located within the boss 13. The lower flange 18 projects inwardly with respect to the flange 17 and is internally threaded. The flange 18 is provided with vertical slots 19 which are adapted to receive the fingers 12. The extremities of these fingers may be turned outwardly so as to secure the bung ring 16 to the drum wall 10. It will readily be understood that the bung ring 16 is held by the fingers 12 against rotation when the bung is being applied to, or removed from the drum.

The bung 20 comprises a cylindrical portion 21 which is exteriorly threaded so as to engage the threaded surface of the bung ring 16. It also comprises a circular flange 22 which is adapted to overlie the inner portion of the boss 13. Suitable means may be provided whereby the bung may be engaged by a suitable wrench for application or removal. Such means may, for example, be a head 23 having a hexagonal contour and a rectangular recess 24.

In the embodiment of the invention illustrated, the gasket 25 shown in plan in Fig. 5 may suitably be employed. This gasket is provided with an opening 26 through which the cylindrical portion 21 of the bung 20 is adapted to pass. The gasket 25 may suitably be cut from square material, slots 27 being provided in the center of the sides, which slots are adapted to coincide with the projections 14 provided in the barrel wall. Adjacent each corner the gasket 25 is provided with small openings 28 and it is to be noted that when the slots 27 register with the projections 14, the openings 28 are located above the recesses or depressions 15 in the drum wall.

In operation the bung 20 has its lower cylindrical portion 21 passed through the opening 26

of the gasket 25 and threaded into the bung ring 16. The engagement of the projections 14 with the ends of the slots 27 prevents the gasket from rotating. Bung 20 is tightened so as to press the gasket and effectively close the bung opening in a liquid-proof manner. In order to seal the closure, means are associated with the gasket 25 for preventing rotation of the bung 20 without immediate disclosure of unauthorized tampering, the gasket 25 being held immovable until the bung 20 is unscrewed to a considerable extent. Such means may suitably comprise a wire 29 which is passed through an opening 30 in the bung 20. The wire 29 is passed through one of the openings 28 and a seal 31 of any suitable type is applied to connect the ends of the wire together. The recess or depression 15 being located below the openings 28 facilitate the threading of the wire through said openings.

Although the invention has been described in connection with the specific details of preferred embodiments thereof, it must be understood that such details are not intended to be limitative of the invention except in so far as set forth in the accompanying claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In combination, a metal barrel wall provided with a bung opening, a bung adapted to be threaded into said opening, a gasket adapted to be applied between the bung and the barrel wall, said gasket being provided with projections, projections formed on said barrel wall adjacent said opening adapted to engage the projections of said gasket and hold same against rotation, and sealing means adapted to connect the bung and gasket to prevent surreptitious rotation of the bung.

2. In combination, a barrel wall provided with a bung opening, a bung ring on the inner side of said wall secured adjacent said opening, said wall being provided with projections around said opening, a bung having a threaded portion adapted to extend through said opening and adapted to be

threaded into said ring and provided with a flange, and a gasket adapted to be engaged between said flange and said barrel wall, said gasket having openings corresponding to said projections whereby the same is held against rotation, said bung and said gasket being adapted to be secured together to prevent surreptitious removal of the bung.

3. In combination, a barrel wall provided with an opening and having inwardly extending fingers around the circumference of said opening, a bung ring secured adjacent said opening by said fingers, a bung extending through said opening and threaded into said ring, said bung having a flange extending over said wall around said opening, said wall being provided with upward projections beyond said flange, and a gasket engaged between said flange and said wall and having portions projecting outwardly between adjacent projections whereby the gasket is held against rotation, said projecting portions and said bung being provided with openings whereby the same may be secured together so as to prevent surreptitious removal of the bung.

4. In combination, a barrel wall provided with an opening and having inwardly extending fingers around the circumference of said opening, a bung ring secured adjacent said opening by said fingers, a bung extending through said opening and threaded into said ring, said bung having a flange extending over said wall around said opening, said wall being provided with upward projections beyond said flange, and a gasket engaged between said flange and said wall and having portions projecting outwardly between adjacent projections whereby the gasket is held against rotation, said projecting portions and said bung being provided with openings whereby the same may be secured together so as to prevent surreptitious removal of the bung, the barrel wall being provided with depressions registering with the openings in said projecting portions of the gasket.

FRANK E. McCABE.