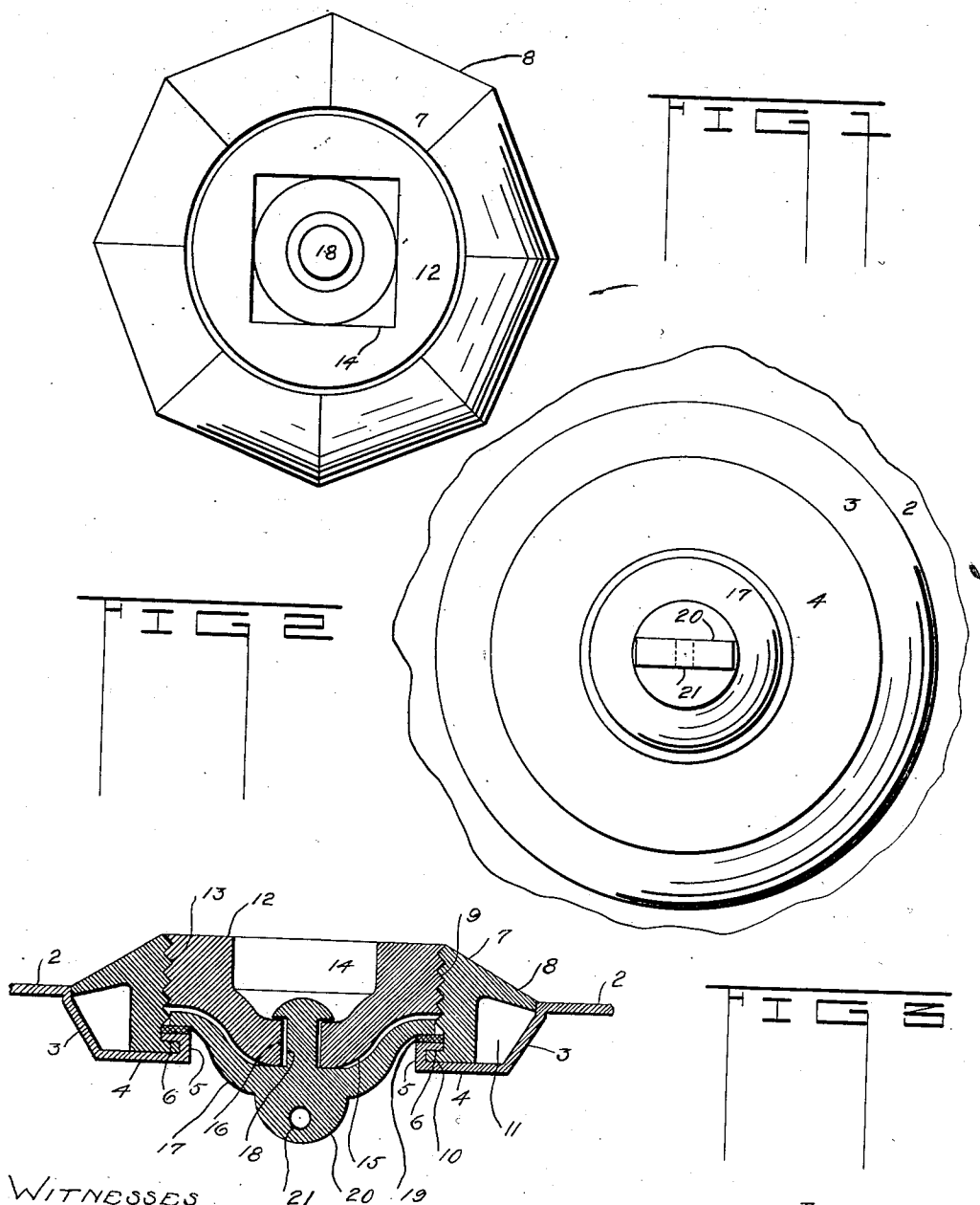


I. H. WILLIS.
 BUNG FOR CONTAINERS.
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Patented May 12, 1914.



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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ISAAC H. WILLIS, citizen of the United States, residing at Galesburg, in the county of Knox and State of Illinois, have invented certain new and useful Improvements in Bungs for Containers, of which the following is a specification.

My invention relates to containers, as barrels, casks, and the like.

10 More particularly, my invention relates to bungs for such containers.

The object of my invention is to provide a reinforcement seat for the plug associated with the body of the container in a relation 15 to substantially support the former upon the latter, to effect a perfect air and liquid tight joint therebetween, and to accomplish a counterbalancing of the force of an applied plug between the reinforcement and the 20 metal body to prevent any strains upon the container body and also provide a construction wherein the plug seals the joint between the material of the container and the reinforcing member.

25 A further object of my invention is to provide a free seating member to cooperate in conjunction with the permanent seat in connection with the container that will adjust automatically by contact to meet any variations from normal parallelism of the permanent seat and the plug seat.

Also, my invention relates generally to the novel combinations hereinafter particularly set out.

35 That my invention may be more fully understood, reference is had to the accompanying drawings, in which—

Figure 1 is an outside view of a metal reinforcement ring and applied plug; Fig. 2 is an inside view of the same, and Fig. 3 is a vertical section through a portion of a container body, a metal reinforcement ring and a plug.

45 The drawings and description relate to a disclosure of a particular application, to containers formed of sheet metal. However, I do not wish to be confined to such application, but desire that it shall be understood that my invention may be applied as well to 50 containers formed of wood or other material.

Particularly, with reference to a reinforcement seat connected with a container, I am aware that plug supporting rings have heretofore been applied to containers, in connection with which closure plugs have 55 been used. However, I am not aware of an association of such reinforcement ring with a container in the relation disclosed whereby the interlock between the parts is in a manner to counteract relatively the pressure of 60 the applied plug, and at the same time, with the application of the pressure of the plug, to more effectually close the joint therebetween.

Referring to the drawings, 2 is the metal 65 body of the container, which is offset angularly and interiorly as at 3 with reference to body portion 2, and is extended as at 4 parallel with the axis of the barrel and upwardly as at 5 to form the bung opening, 70 and thence at right angles with said bung opening to form the flange 6, spaced apart the desired distance from extended portion 4 of the container body.

7 is a metal reinforcement, which I will 75 hereafter refer to as a ring.

8 is a laterally extending flange or extension from ring 7 which may be of octagon shape, as disclosed, to prevent turning and is adapted to meet a similarly formed wall 80 portion of the container at approximately the inturn thereof, substantially in the manner shown in Fig. 3. However, the periphery of the ring may be differently formed to accomplish the purpose, or the ring may be 85 otherwise secured to the metal container body without departing from the principle of my invention.

9 are threads in the interior wall of the ring, and 10 is an inturned flange at the base 90 of said ring.

Ring 7 is secured to the container body by being seated within a depression 11 formed by the inturn heretofore described, and the flange 6 is bent downwardly to engage 95 flange 10 on the ring, substantially as shown in Fig. 3. In this manner the ring is securely supported upon the body of the receptacle in a relation to prevent turning or dislodgment.

12 is a metal plug threaded as at 13 on its outer circumference, which may be provided with a square depression 14 to accommodate insertion of a wrench. The lower portion
5 of the plug, as 15, may be spherically formed to present an exterior convex surface, and provided with a central vertical opening as 16.

17 is a compression plate adapted to be
10 rockably supported by means of a pin 18 (or other similar connection) with plug 12, a fair example of such connection being disclosed in Fig. 3. However, any suitable connection of said parts may be made without
15 departing from the spirit of my invention, so long as said compression plate is rockably supported in said plug.

Plate 17 is so shaped that when pressure is applied thereto from plug 12, contact of
20 the plug therewith shall be upon a comparatively small portion of the curved surface, and that preferably close about the pin or other connection therebetween, with sufficient clearance between said plate and plug
25 from the contact point to the periphery of the plate, to facilitate a considerable rocking movement of the latter. Compression plate 17 is adapted to overlies at least a portion of flanges 6 and 10 respectively of the
30 container body and ring 10.

19 is a gasket adapted to be interposed between the compression plate and flange 6 of the container body.

20 is a lug extension from the lower portion of compression plate 17 and is provided with a perforation 21 to facilitate the
35 suspension of articles within the container.

I do not wish to confine myself to the form of plug disclosed herein, as it may be differently formed and accomplish the purpose, and its manner of connection with the reinforcement ring may be varied to still serve the functional purposes herein aimed to be accomplished, as the same principle of
45 central pivoting of the seating parts could be carried out in different ways, as for instance, the plug may be applied to a bung closed with a cap threaded internally and a reinforcement attached to the container and
50 threaded externally, and in such case the rockable compression plate may be attached inside the cap to seat on the top of the upstanding reinforcement.

In practice, the effect of joining the reinforcement ring to the container on the lines of the principle disclosed, serves to produce a perfect air and water tight joint, as the pressure from the applied plug through the compression plate to flange 6
60 will serve to draw said flange into close contact with flange 10 on the reinforcement ring, and the action of the parts is likewise counterbalanced so that there is no strain upon the body of the container and no force
65 exerted to separate the ring from its seat.

The pivotal relation established between the plug 12 and the compression plate 17 enables said plate to remain stationary with relation to the turning movement of the plug when it is secured into position to effect a closure of the bung, and as a result of such permanent position of the compression plate upon the gasket, there is no grinding force exerted upon said gasket, as in the application of ordinary plugs. Because of the manner of seating of the gasket inside the reinforcement, it cannot readily be displaced, lost or squeezed out from between the metal parts.

The rockable relation existing between the compression plate and plug enables the former to adjust itself to cause equal seating upon the gasket, and furthermore because of the adjustability of said plate, the necessity of correct and accurate machine work is obviated in threading or seating the plug, thereby reducing the cost of manufacture.

I have shown herein my preferred form and manner of embodiment of my invention, but do not wish to be confined to the form or disclosed arrangement of parts, but claim any and all forms and arrangements of the same that fall legitimately within the principle thereof.

What I claim is:

1. In combination with a container body provided with a depression therein about a bung opening, and with a flanged portion extending laterally from the bung opening and in spaced relation with the container body to provide a channel, a reinforcement ring provided with an inwardly projecting flange engaging said channel, a gasket upon the laterally extending flange, and a plug adapted to be secured within the reinforcement ring and in contact relation with said gasket.

2. In combination with a container body provided with a depression therein about a bung opening and with a flanged portion extending laterally from the bung opening and in spaced relation with the container body to provide a channel, a threaded reinforcement ring provided with an inwardly projecting flange engaging said channel, a gasket upon the laterally extending flange, and a threaded plug adapted to be secured within the reinforcement ring and in contact relation with said gasket.

3. In combination, a container body provided with a bung opening therein and having a flanged portion extending laterally from the bung opening spaced apart from the body of the container to form a channel, a reinforcement ring associated with the bung opening provided with a laterally extending flange adapted to engage the channel about the bung opening, a gasket upon the laterally extending flange and a

plug adapted to be secured within the reinforcement ring in contact relation with said gasket.

4. In combination, a container body depressed at a point about a bung opening and formed to provide a channel about said opening, a threaded reinforcement ring provided with a flange to engage said channel about the bung opening to form an interlock, and with a laterally extending web extending to contact with the container body, a gasket upon said interlocked portions between the container body and the reinforcement ring, a threaded plug adapted for seating within said ring and a compression plate pivotally and rockably connected with said plug adapted for seating upon the gasket.

5. In combination, a container body depressed at a point about a bung opening, and formed to provide a channel about said opening, a threaded reinforcement ring provided with a flange to engage said channel about the bung opening to form an interlock, and with a laterally extending web serving as a stop against turning movement of the ring, a gasket upon said interlocked portions between the container body and the reinforcement ring, a threaded plug adapted for seating within the said ring and a compression plate pivotally and rockably connected with said plug adapted for seating upon the gasket.

6. In a barrel or the like, in combination, a metal body formed about a bung opening thereinto backwardly turned to form a groove thereabout, a gasket seat, a gasket, a plug seat formed with an inturned flange engaging the groove about the bung opening, a plug and a closure member rockably connected with said plug and having bearing relation when applied to the gasket.

7. In barrels and the like, in combination, a metal container body forming the barrel shell, the edges of the metal about a bung opening thereinto being turned backwardly from said opening and shaped to form a groove thereabout, a plug seat provided with an inwardly projecting flange at its lower portion engaging the groove about the bung opening forming an interlock and a gasket seat, a gasket, a plug and a closure member pivotally and rockably connected with the plug.

8. In barrels and the like, in combination, a metal container body depressed about the bung opening thereinto, the edges of the metal about the bung opening thereinto being turned backwardly from said opening and shaped to form a groove thereabout, a plug seat provided with an inwardly projecting flange at its lower portion engaging the groove about the bung opening forming an interlock and a gasket seat, a gasket, a plug and a closure member pivotally and rockably connected with the plug.

9. In barrels and the like, in combination, a metal container body depressed about the bung opening thereinto, the edges of the metal about the bung opening thereinto being turned backwardly from said opening and shaped to form a groove thereabout, a plug seat having an outwardly extending web at its upper portion engaging the metal body and serving as a closure for the depressed portion therein, said plug seat being provided with an inwardly projecting flange at its lower portion engaging the groove about the bung opening forming an interlock and a gasket seat, a gasket, a plug and a closure member pivotally and rockably connected with the plug.

10. The combination of a container body with an opening therein, a seat, a closing member adapted to have a pressure relation with the seat for closing the opening, an auxiliary closing member connected with the container body and provided with a part bearing against the closing member, said closing member and said part having their inter-engaging surfaces of different form so as to provide a rocking relation therebetween.

11. The combination of a body portion with an opening therein, the material around the opening being turned back therefrom, a reinforcing member with a flange underlying the turned back material of the body portion, a part adapted to be secured to the reinforcing member, and a closing member pivotally and rockably connected with the said part and having a pressure relation with the material of the body portion which overlies the flange of the reinforcing member.

12. The combination of a body portion with an opening therein, the material around the opening being turned back therefrom, a reinforcing member having a flange underlying the turned back material of the body portion, a closing member adapted to be secured to the reinforcing member, said closing member having a pressure relation with the material of the body portion which overlies the flange of the plug seat.

13. The combination of a plug receptacle, a seat, a closing member adapted to have a pressure relation with the seat, a removable plug adapted to be secured in the plug receptacle so as to press against the closing member, said closing member and plug being provided with inter-engaging surfaces of different form so as to provide a rocking relation therebetween, and means for rockably connecting the closing member with the plug.

14. The combination in a container with an opening therein, of an external reinforcing member provided with a flange underlying the rim of the opening, a closing member adapted to be secured to the reinforcing

member and have a pressure relation with the rim of the opening overlying the flange on the reinforcing member.

- 5 15. The combination in a container with an opening therein of a reinforcing member projecting exteriorly from the container and provided with a flange underlying the rim of the opening, a closing member adapted to be secured to the projecting portion of the

reinforcing member and have a pressure re- 10
lation with the rim of the opening overlying the flange on the reinforcing member.

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

ISAAC H. WILLIS.

Witnesses:

MARY E. COMEGYS,

W. V. TEFFT.