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G. S. BOWMAN

RECEPTACLE CLOSURE AND SEAL

Filed Oct. 25, 1921

Fig. 1.

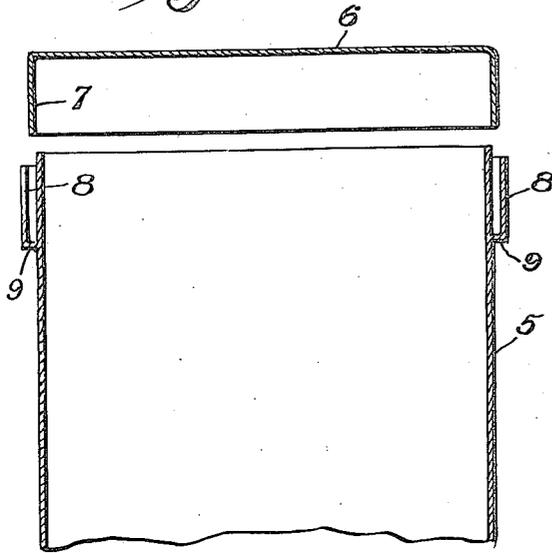


Fig. 3.

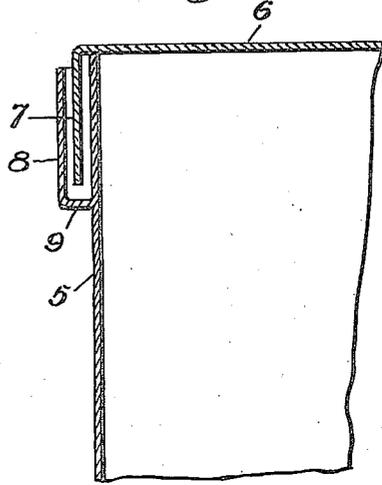


Fig. 2.

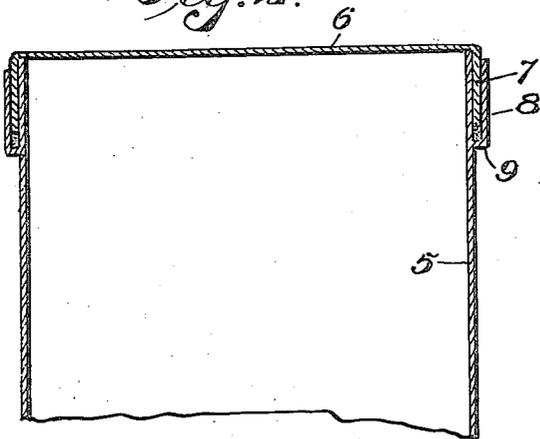
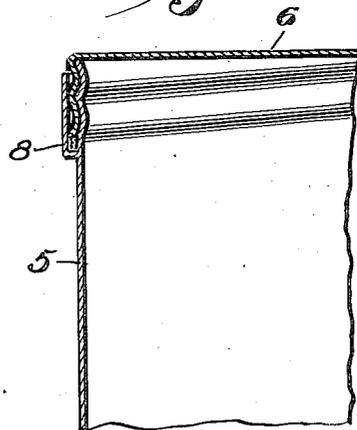


Fig. 4.



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RECEPTACLE CLOSURE AND SEAL.

Application filed October 25, 1921. Serial No. 510,333.

To all whom it may concern:

Be it known that I, GEORGE S. BOWMAN, a citizen of the United States, residing at James Post Office, in the county of Dorchester and State of Maryland, have invented new and useful Improvements in Receptacle Closures and Seals, of which the following is a specification.

This invention relates to receptacle closures and seals, the primary object of the invention being to provide means of a simplified and improved nature for securely closing and hermetically sealing a receptacle in a quick and easy manner and without the necessity of resorting to the use of gaskets, rings or other complicated sealing apparatus.

A further object of the invention is to provide a receptacle and closure therefor of such construction that air and water tight sealing of the receptacle may be attained without changing the construction of the vessel, top or the manner in applying the top to the vessel.

A still further object is to provide a device of the character stated wherein the receptacle may be used over and over again without necessity of repair of any of the parts; the receptacle and cover being constructed in such manner that injury to the same, either in the applying or removing processes of the cover, is impossible.

A still further and particular object of the invention is to provide a closure and seal device which requires no change in the construction or make up of receptacles and closures now generally adopted; which enables the receptacle and closure to be manufactured at minimum cost, which greatly reduces the expense in sealing the receptacles, and which will prove thoroughly practical and efficient in use.

With these and other objects in view, the invention consists of the features of construction, combination and arrangement of parts, hereinafter fully described and claimed, reference being had to the accompanying drawings, in which:—

Figure 1 is a sectional view through a conventional form of container and top therefor, and illustrating the vessel as equipped with a sealing channel constructed in accordance with the invention,

Figure 2 is a similar view illustrating the

parts in the position they will assume when the vessel is closed and sealed,

Figure 3 is a fragmentary sectional view illustrating a slightly modified form of the invention, and

Figure 4 is a similar view showing a further modification.

Referring now to the drawing, 5 indicates the body of the container with which the invention is used, and 6 is the cover therefor. In the present instance, the container may be a can, either round or square in cross section, and the cover, of course, is constructed so as to fit reasonably tight over the open end of the container. The cover is provided with a depending flange or apron 7 to engage over the exterior of the can adjacent the open end thereof.

The can, near its upper or open end, is provided with a spaced wall 8, the latter being spaced away from the side wall of the can and coextensive with the same a distance substantially equal to or perhaps a trifle greater than the breadth or thickness of the flange or apron 7, and the channel or chamber between the wall 8 and the adjacent wall of the can or container 5 receives and wholly encloses the said depending apron. The spaced wall 8 may be arranged either upon the interior of the can or the exterior thereof, it being understood that the inventive idea is to provide an apron receiving pocket at the open end of the can in which the apron depends and is practically wholly enclosed. The lower portion of the chamber is closed by a wall indicated at 9. The wall 8 is preferably of slightly greater depth than the flange or apron 7, thereby providing a pocket between the wall 9 and the lower edge of the said apron when the top is properly placed over the open end of the container.

Prior to or coincident with the application of the cover 6 to the can, a suitable sealing material or fluid is applied to the chamber 8. This fluid or material rests upon the bottom of the chamber, and adheres to the walls of the chamber and also to the lower portion of the flange 7 of the closure member. When this material congeals or solidifies, the vessel will be sealed in a water and air tight manner, as the pocket at the lower end of the chamber will be tightly closed by the sealing fluid.

In Figure 3 of the drawing, the chamber between wall 8 and receptacle 5 is of slightly greater breadth than as shown in the above form of the invention, and it is apparent that the sealing material may lodge between the inner and outer surfaces of flange 7 and the walls 8 and 5 respectively. This construction enables the container to be doubly sealed.

In Figure 4 of the drawing there is shown a further modification, wherein the invention is shown as applied to that type of container wherein the top 6 has its flange or apron 7 threaded to engage with corresponding threads upon the upper portion of the receptacle 5. It will be understood that the threads at the upper end of the container may be upon the interior or the exterior walls thereof, and that the apron upon the cap or cover 7 will be threaded so as to interengage with the threads of the said body. In this instance, of course, that portion of the receptacle body adjacent to the open end thereof must be round in order to receive the annular screw cap, and the threaded portion of the container is enclosed by an outstanding substantially parallel wall 8, as in the preferred form of the invention. In this instance, as above, the sealing material is deposited within the chamber between the walls 5 and 8, and as the top is screwed down tightly in place, the said material forms around the lower edge of the apron and after congealing hermetically seals the vessel.

In order that the cover, when applied to the body, may be conveniently removed when desired, the upper portion of the outermost wall, whether it be the body wall 5 or the wall 8, terminates below the corresponding or adjacent wall, thus enabling the fingers to be applied to the cap for the closing or opening operation.

From the above it is apparent that I have provided means of an extremely simple nature whereby vessels of various types may be easily and quickly sealed. In those forms of the invention wherein no means is employed for holding the cover upon the vessel, the hardened sealing material engaged with the flange 7 will materially assist in holding the cover against becoming loose, yet when it is desired to remove the cover it is but necessary to apply a comparatively small amount of pressure either in a rotary or upward direction to loosen the flange 7 from its anchorage in the channel.

It is obvious that the invention is capable of being equally as well carried out in types of receptacles or containers other than those shown in the drawing and referred to in the specification, and while the above is a description of the invention in its preferred forms, it is apparent that variations in the details of construction and arrangement of

parts may be liberally resorted to if desired without departing from the invention as defined by the claims.

Having thus fully described my invention, I claim:—

1. The combination of a receptacle of like internal diameter throughout and the vertical body walls of which are disposed in a single continuous vertical plane, said receptacle having at its top a pair of vertical walls, one of which is in the plane of and continuous with its body walls, and a horizontal wall connecting the same and forming a sealing chamber closed at its bottom and open at its top, one of said receptacle walls having its rim edge extending to a horizontal plane above the top of the chamber and slightly above the rim edge of the other vertical wall, said walls of the chamber being straight and parallel and in close relation so as to form a chamber of restricted width and minimum lateral displacement with respect to the plane of the body walls of the receptacle, a cover having a top wall to rest upon the rim edge of the higher vertical wall of the receptacle, and a depending apron to depend within said sealing chamber, said apron having its lower edge terminating above the horizontal bottom wall of the sealing chamber and its upper edge exposed above the rim edge of the shorter vertical wall, said top wall and upper edge of the apron of the cover being united so as to form a corner angle annularly continuous for gripping engagement and arranged to more or less substantially bridge or cover the gap between the rim edges of the long and short walls of the sealing chamber, and a sealing medium in said chamber in sealing contact with the vertical walls and the apron.

2. The combination of a receptacle having a pair of vertical walls and a horizontal wall connecting the same and forming an annular sealing chamber closed at its bottom and open at its top, one of said vertical walls having a rim edge extending to a horizontal plane above the horizontal plane of the rim edge of the other vertical wall, said vertical walls being spaced apart but arranged in close relation to form a chamber of restricted width, a cover having a top portion resting upon the rim edge of the higher vertical wall and a depending apron exposed at its top above the horizontal plane of the rim edge of the other vertical wall, said apron depending into said chamber and being of a width substantially equal to the width of the chamber and lying in frictional contact with the vertical walls and being of a depth slightly less than the depth of the chamber, so as to form a closed pocket between its lower edge and the horizontal wall forming the bottom of the chamber, and a body of a sealing medium

lying in said pocket in contact with the horizontal wall and exposed portion of the vertical walls below the lower edge of the apron and in contact with said lower edge, portion only of the apron.

5 3. The combination of a receptacle having a pair of vertical walls and a horizontal wall connecting the same and forming an annular sealing chamber closed at its bottom and open at its top, one of said vertical walls being threaded and one of said vertical walls having a rim edge extending to a horizontal plane above the horizontal plane of the rim edge of the other vertical wall, said vertical walls being spaced apart but arranged in close relation to form a chamber of restricted width, a cover having a top portion resting upon the rim edge of the higher vertical wall and a

depending apron exposed at its top above the horizontal plane of the rim edge of the other vertical wall, said apron depending into said chamber and being of a width substantially equal to the width of the chamber and threaded to engage the threaded vertical wall and lying in frictional contact with the vertical walls and being of a depth slightly less than the depth of the chamber, so as to form a closed pocket between its lower edge and the horizontal wall forming the bottom of the chamber, and a body of a sealing medium lying in said pocket in contact with the horizontal wall and exposed portion of the vertical walls below the lower edge of the apron and in contact with said lower edge portion only of the apron.

In testimony whereof I affix my signature.
GEORGE S. BOWMAN.