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BUNG FIXTURE FOR SHEET METAL CONTAINERS

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Fig. 1.

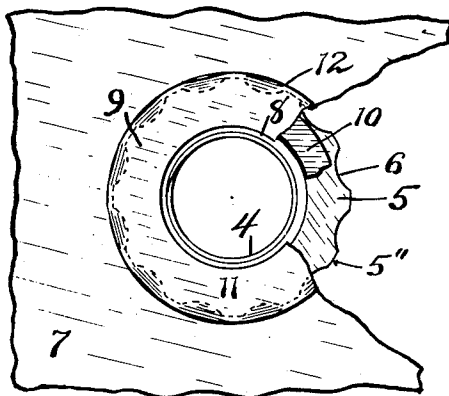


Fig. 2.

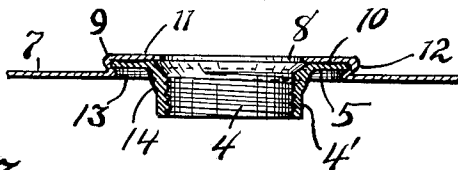
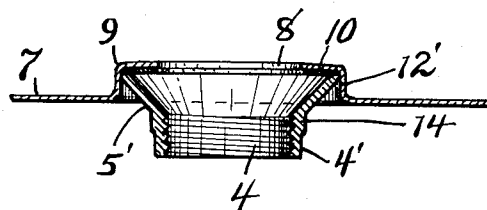


Fig. 3.



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## UNITED STATES PATENT OFFICE

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## BUNG FIXTURE FOR SHEET-METAL CONTAINERS

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This invention relates to improvements in bung fixtures for sheet metal containers and to the method of applying a bung ring to the wall of said container.

5 The object of the invention is to provide an improved bung ring and to secure said ring in the wall of a container in such manner as entails but few operations. Another object is to so form the ring and apply it to the wall of a container so that turning of the fixture relative to the wall to which it is applied is prevented. A further object of the improvement is to so construct the bung fixture that economy in the manufacture of the ring and in its application to the container is effected. It is also contemplated in the invention to apply the ring to the wall of a container in such manner as to prevent leakage between the flange of the ring and the wall of the container.

These objects are accomplished by the construction illustrated in the accompanying drawings, in which:—

Fig. 1 is a fragmentary plan view of a container to which the invention is applied, parts being broken away;

Fig. 2 is a central section projected from Fig. 1; and

Fig. 3 is a similar section showing the bung ring and the sheet of the container as they are formed and positioned at a preliminary stage in applying the ring to the sheet of the container.

The characters appearing in the description refer to parts shown in the drawings and designated thereon by corresponding characters.

The invention consists of an internally threaded bung ring 4, having at one end thereof a radially disposed flange 5, the outer marginal edge of which flange has a series of indentations 6, equally spaced and extending entirely around the flange. The head or wall 7 of the container, which is formed of sheet metal, has made therein an opening 8 and an embossment 9 concentric therewith, in which embossment the flange 5 of the bung ring is securely held. 10 is a gasket interposed between the top 11 of the embossment and the corresponding face of the flange 5 of

the ring, the gasket being tightly compressed in place during the operation of emplacement of the ring in connection with the wall. The top 11 of the embossment overhangs the flange 5 of the ring and forms a gasket seat for a bung, which bung being of ordinary structure of any well known type, is not here illustrated.

The embossment 9 has an outwardly expanded annular wall 12 that encompasses the outer marginal edge of the flange 5 of the ring, which wall is distended radially outward over the container wall 7, which container wall, at its juncture with the distended wall, underlies the outer margin of the flange 5 so that an annular shoulder 13 is thereby formed, and the outer margin of said flange is pocketed in the distended wall 12 between the top of the embossment and the shoulder 13.

In Fig. 3 the bung ring 4 and the embossment 9 are shown as in their initial stages of formation and grouped together with the gasket 10 preparatory to the operation whereby the ring and the gasket are compressed into the embossment and permanently held in connection therewith. In the preliminary stage of the embossment 9, the outer annular wall 12' thereof extends approximately at right angles to the container wall 7, and the flange 5' of the ring is frustum shaped. That is, the flange extends diagonally outward from the sleeve or threaded portion 4' of the ring.

The embossment in the container head is first formed as shown in Fig. 3 and the bung opening is made by applying suitable dies, such as are commonly employed for performing such operations, and the bung ring is formed preferably of sheet metal by the use of suitable dies applied in the ordinary manner. The bung ring is preferably formed so as to have around that portion thereof at the juncture of the threaded portion 4' and the flange 5', an enlargement or thickened portion that constitutes a reinforcement 14 for the ring. By applying pressure uniformly to the outer face of the flange 5' in the direction of the axis of the ring toward the top of the embossment, and counter pressure upon

the top of the embossment toward the ring, the flange 5' of said ring is flattened so as to extend radially and lie flat in a plane parallel with the inner face of the top portion of the embossment, the gasket 10 being compressed between the adjacent faces of the flange 5 and the embossment. This operation is performed by means of suitable dies such as may readily be prepared by the exercise of ordinary skill in the art. The flattening of the conical flange 5' to form the radially disposed flange 5 causes outward expansion thereof, and also of the annular wall 12'. However, expansion of said annular wall is more or less resisted by that portion of the head 7 that is contiguous with the adjacent end of said wall, and thus when the flange 5' is flattened and expanded outwardly the annular wall becomes distended and folded outwardly over the top face of the head, and the shoulder 13 is left extending beneath the outer margin of said flange.

As the flange 5' of the ring is flattened and expanded outwardly against the annular wall of the embossment, said wall yields to the outward pressure of the flange, especially at the points of immediate contact 5'' on said flange, and said wall conforms more or less with the indentations 6 in the flange. As the ring is pressed into the embossment, the annular shoulder tends to resist the outward expansion of the annular wall which is integral therewith, so that portions of said wall are drawn into said indentations in the flange, and when the ring and embossment are pressed into their final form, rotation of the flange in the embossment is thereby prevented.

As the pressure upon the gasket 10 between the top of the embossment and the flange of the ring is great during the flattening operation upon the flange, the gasket is compressed so that it is reduced in thickness and a very tight joint is thereby formed as the flange is pressed into place in the embossment. In this manner leakage from the container between the flange and the adjacent face of the embossment is obviated.

What I claim is:—

1. The method of applying a bung fixture for a container having a sheet metal wall, consisting of forming an embossment in said wall, which embossment has an annular distensible wall and a bung opening; forming a bung ring with a conical flange at one end thereof, the outer perimeter of said flange having a series of indentations therein; placing a gasket within the embossment; inserting the flanged end of said bung within said embossment upon the gasket, with the perimeter of said flange fitting against said distensible wall; and applying pressure to said embossment and conical flange so that the said flange becomes flattened and said annular wall distended and a pocket thereby formed securing

said flange in said embossment, and so that said gasket is compressed and a tight joint thereby formed between the embossment and flange.

2. The method of applying a bung fixture for a container having a sheet metal wall, consisting of forming an embossment in said wall, which embossment has an annular distensible wall and a bung opening; forming a bung ring with a conical flange at one end thereof, the outer perimeter of said flange having a series of indentations therein; inserting the flanged end of said bung within said embossment with the perimeter of said flange fitting against said distensible wall; and applying pressure to said embossment and conical flange, so that said flange becomes expanded and said annular wall distended and a pocket thereby formed securing said flange in said embossment.

3. The method of applying a bung fixture for a metallic container, consisting of forming an embossment in the wall of said container, which embossment has an annular distensible wall and a bung opening; forming a bung ring with a conical flange; fitting the flange within said embossment against said wall; and expanding said flange by flattening it, so that said annular wall is distended and a pocket thereby formed securing said flange in fixed relation therewith.

4. The method of applying a bung fixture to the wall of a container, consisting in making a bung opening in said wall and forming an embossment about the opening to provide a gasket seat and a distensible annular wall contingent therewith; forming a bung ring with a frustrum shaped flange at one end thereof; and pocketing said flange in said sheet by applying pressure to said flange and embossment while said flange is inserted in said embossment.

In testimony whereof I affix my signature.  
THEODORE W. RIEKE.