

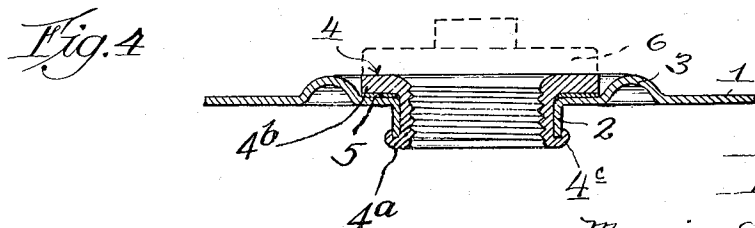
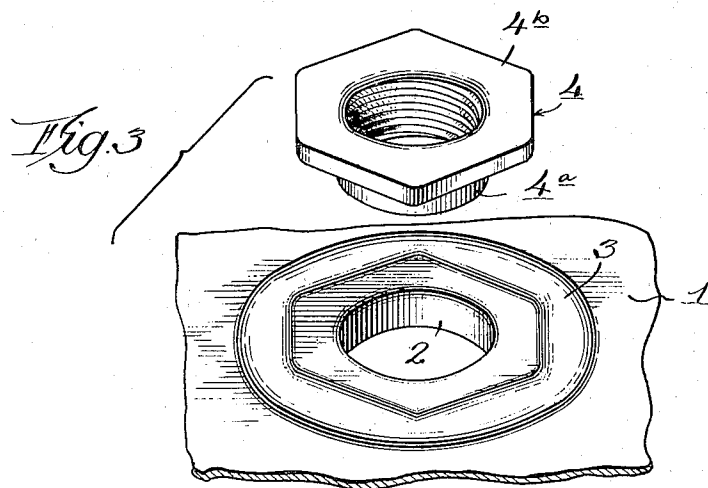
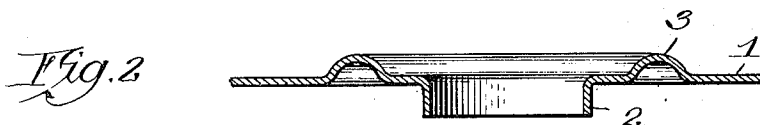
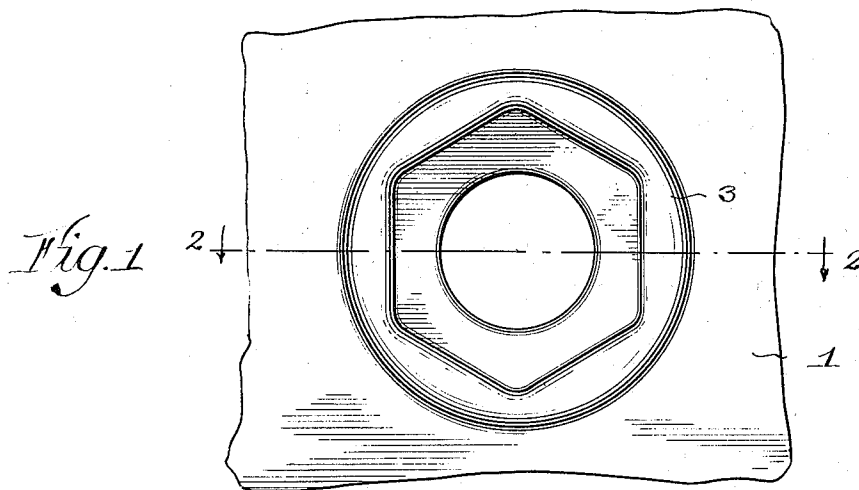
Oct. 28, 1924.

1,513,637

M. SCHWARTZ

BUSHING

Filed Aug. 17, 1922



Inventor,
Morris Schwartz,
By Alfred Roda Hutton & Scott, Attys.

UNITED STATES PATENT OFFICE.

MORRIS SCHWARTZ, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO WINNIFRED B. PARISH, OF CHICAGO, ILLINOIS.

BUSHING.

Application filed August 17, 1922. Serial No. 582,370.

To all whom it may concern:

Be it known that I, MORRIS SCHWARTZ, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Bushings, of which the following is a specification.

This invention, in one aspect, relates to improvements in methods of manufacturing metal containers, and more especially to an improved method of forming the bushings or stoppered openings in containers such as are used for the storage and shipping of oil and gasoline.

The invention, in another aspect, relates to bushings and mountings therefor. In accordance with my invention, the annular bushing has a flange with edge portions upon its perimeter at different distances from the axis of the bushing, a support through which the bushing extends and formed with a seat that has portions which engage the aforesaid edge portions of the flange perimeter to hold the bushing from rotation with respect to the support.

The invention will be more fully explained by reference to the accompanying drawings, wherein—

Fig. 1 is a top plan view of a portion of the container wall stamped in blank form,

Fig. 2 is a sectional view taken on line 2, 2 of Fig. 1,

Fig. 3 is a perspective view of the ring in position for assembling, and

Fig. 4 is a cross-sectional view of the completed bung.

The type of container herein illustrated is the large barrel or drum, although the same method may be employed in the making of small containers, tanks, and the like, made of lighter materials. Oil containers are usually made of a heavy stock, such as sheet steel, to withstand considerable pressure and hard usage. These containers are ordinarily equipped with threaded stoppers or bungs which are screwed into bushings or rings, the same in turn being fitted into the head or other part of the container wall in such a manner as to form a leak-proof joint, and which will withstand long and severe usage without the development of leakage.

The method of providing a suitable bung consists generally in punching in the head 1

of the container a round hole or opening 55 having an inwardly turned annular flange 2 surrounding the hole, and of the same diameter. The length of the flange is considerably less than the radius of the hole, hence indicating that a circular portion of metal of smaller diameter is removed in the punching operation. Around the hole is formed an annular boss 3 elevated or raised from the surface of the metal. This boss is substantially twice the diameter of the hole and concentric therewith, the outer edge being circular and its inner edge being hexagonal, thereby forming around the hole a shallow socket of like conformation. In practice the forming of the hole and the embossing or stamping of the elevated boss is accomplished in a single operation and by the use of a special die.

This operation being completed, a bushing or bung ring 4 is inserted into the hole, said ring being preferably sheet metal stamping, consisting of an internally threaded portion 4^a adapted to fit snugly into the hole, and an external flange 4^b, not only hexagonal in shape, but of a size to fit flush within the hexagonal socket formed by the boss 3. At the lower edge of the threaded portion 4^a is a marginal portion 4^c, which is reduced in thickness by cutting away the threads, and adapted to project beyond the edge of the flange 2.

The ring having been inserted in place, the same is made secure or sealed by rolling the marginal portion 4^c thereof over upon and around the edge of the flange 2, as is clearly shown in Figure 4, thereby forming a perfectly leak-tight joint.

As a preferred practice, particularly where metal is rough or uneven, a paper gasket 5 of hexagonal shape is placed around the hole before the ring is inserted. Thus, when the ring is finally secured in place, an additional sealing is effected. A threaded stopper 6 of any approved design may be used, the one illustrated being the ordinary cast metal stopper having cut threads and a square or hexagonal integral nut projecting from its upper face, to permit a wrench to be used in screwing it down, or in unscrewing it.

The advantage of this method will be understood from the following: In the handling of containers it often becomes neces-

sary to use a wrench with considerable force to start the stoppers, in order to remove them, due to their becoming rusted into the rings. Manifestly, this force tends to turn the ring with the stopper so that unless the ring is positively held from turning, other than by the sealing contact at the joint, it would ordinarily give away and turn within its seat. This in time would cause wear and leakage is certain to follow. However, by providing the ring with a hexagonal flange which seats within the similarly shaped socket formed by the boss, the ring is held from turning, and all strains tending to break the joint between the ring and flange are transferred to the container wall. As is apparent, the flange needs to be of such shape that edge portions upon its perimeter are at different distances from the axis of the bushing that carries the flange, these edge portions engaging the flange seat to hold the bushing from rotation.

I claim as my invention:

1. An annular bushing having a flange with edge portions upon its perimeter at different distances from the axis of the bushing, in combination with a support through which the bushing extends and formed with a seat that has portions which engage the aforesaid edge portions of the flange perimeter to hold the bushing from rotation with respect to the support.

2. An annular bushing having a polygonal flange, in combination with a support through which the bushing extends and formed with a seat that has portions which engage the edge of the flange perimeter to hold the bushing from rotation with respect to the support.

3. The method of applying bung rings to metal containers, consisting of punching an annular hole in the container wall, stamping the surrounding metal to form a socket of greater diameter than said hole, inserting a ring into said hole, having a flange seating in said socket, the contacting edges of said socket and flange being so shaped as to prevent the turning of said ring in seated position, and sealing said ring within said hole.

4. The method of applying bung rings to metal containers, consisting of stamping a non-circular shaped socket in the container wall, punching a circular hole in the central portion of said socket, inserting a ring in said hole having a radial flange shaped

to non-rotatively seat in said socket, and sealing said ring in said hole.

5. The method of applying bung rings to metal containers, consisting of punching and stamping in the container wall an annular hole within a socket of greater diameter and non-circular shape fitting into said hole, a ring having a flange-shaped to seat within said socket, and expanding the inner marginal portion of said ring within said hole.

6. The method of applying bung rings to metal containers, consisting of forming an annular hole in the container wall, stamping a raised boss of non-circular shape around said hole, inserting a ring in said hole having a flange shaped to seat within said boss, and sealing said ring within said hole.

7. The method of applying bung rings to metal containers, consisting of forming an annular hole in the container wall, stamping a boss around said hole having a polygonal shaped inner margin, and fitting into said hole, a ring having a polygonal shaped flange seating in said boss.

8. The method of applying bung rings to metal containers, consisting of forming an annular hole in the container wall, stamping a hexagonal shaped boss around said hole and fitting into said hole, a ring having a hexagonal flange seating in said boss.

9. A metal container having a bung hole comprising a threaded ring fitted within a hole punched in the container wall, said ring having an external flange of polygonal shape, seating within a socket of similar shape stamped in the metal surrounding said hole.

10. A metal container having a bung hole comprising a threaded ring fitted within a hole punched in the container wall, said ring having an external flange of polygonal shape seating within a socket formed by stamping a boss in the metal surrounding said hole having a polygonal internal circumference.

11. A metal container having a bung hole comprising a threaded ring fitted within a hole punched in the container wall, said ring having a hexagonal flange seating flush within a socket formed by stamping in the metal surrounding said hole, a raised boss having a hexagonal internal circumference.

In witness whereof, I hereunto subscribe my name this 14th day of August, A. D. 1922.

MORRIS SCHWARTZ.

DISCLAIMER

1,513,637.—*Morris Schwartz*, Chicago, Ill. BUSHING. Patent dated October 28, 1924. Disclaimer filed February 9, 1934, by the assignee, *American Flange & Manufacturing Co., Inc.*

Hereby disclaims from the scope of said claim 1 all annular bushings in combination with a support, in which the support is not a metal container having a hole in which the bushing is sealed by rolling the marginal portion of the bushing over, upon and around the edge of an annular flange surrounding the hole; and does disclaim from the scope of claim 3 all methods of applying bung rings to metal containers which do not include as the sealing step rolling the marginal portion of the ring over, upon and around the edge of the angularly projecting annular flange surrounding the hole.

[*Official Gazette March 6, 1934.*]