

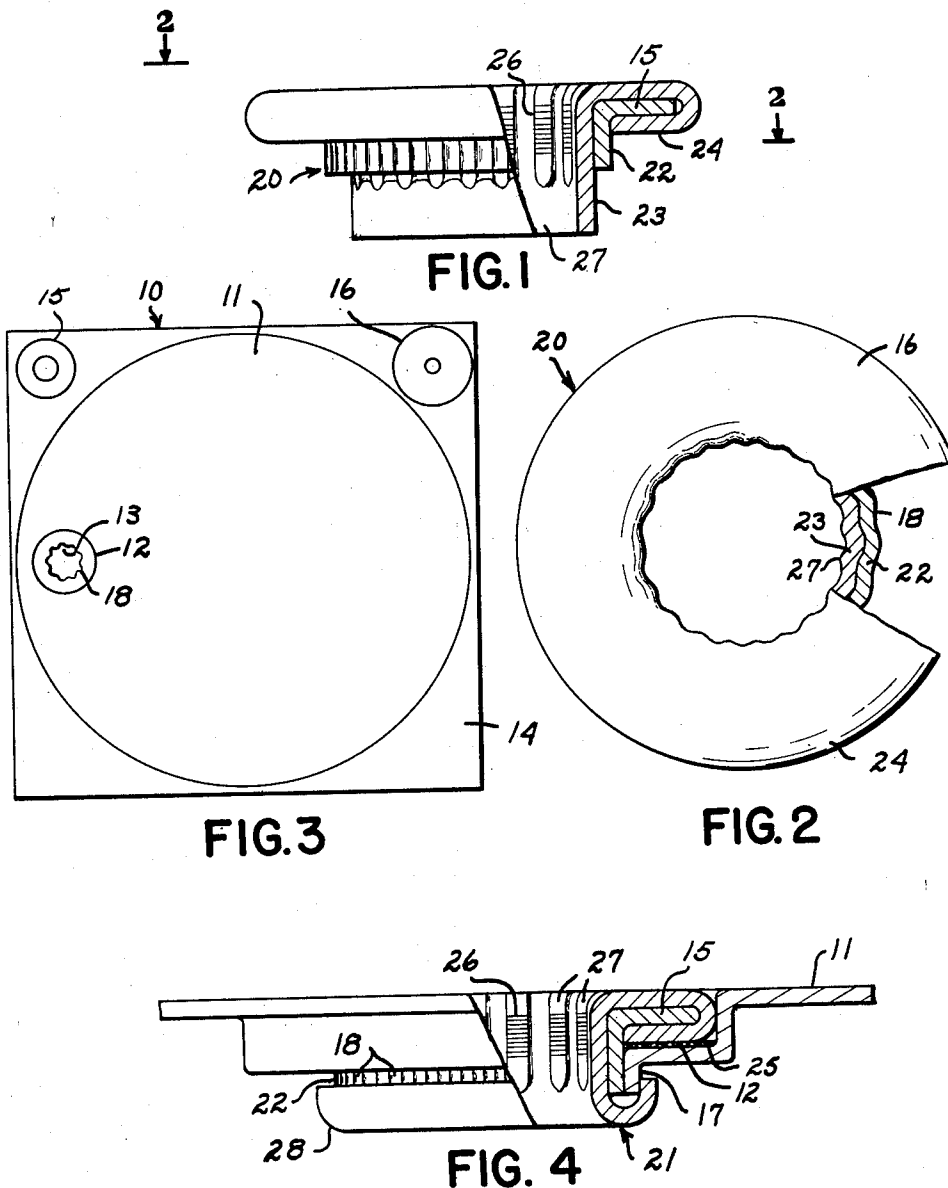
Sept. 11, 1951

C. E. VANDERHOLT

2,567,628

BUNG OPENING

Filed May 17, 1947



CHARLES E. VANDERHOLT
INVENTOR

BY *Lester B. Clark*
Ray L. Smith
ATTORNEYS.

UNITED STATES PATENT OFFICE

2,567,628

BUNG OPENING

Charles E. Vanderholt, Beaumont, Tex.

Application May 17, 1947, Serial No. 748,799

6 Claims. (Cl. 285—49)

1

This invention relates to a bung seat construction and method of making the same and has for an object to provide an improved bung seat construction and to provide an improved and economical method of making the bung seat, such method including the utilization of material normally wasted in construction of the container end wall to which the bung seat is to be applied.

A further object of this invention is to provide a bung seat construction made of the same piece of sheet metal of which the container end wall is made, and preferably of that part of the sheet metal normally wasted in making a round end wall for the container, thus insuring that there will be no possibility that the bung seat may be of different metal than the end wall, with its possible electrolytic action and eventual decomposition of the bung seat or end wall, and spoilage or leakage of the container contents.

Another object of this invention is to provide a corrugated bung seat construction.

A still further object of this invention is to provide a bung seat construction wherein the component metal parts are made of the same gauge of sheet material as the wall through which it is applied, and which is made more rugged and stronger than its original gauge would permit by corrugating the same.

A further object of this invention is to utilize a single piece of rectangular sheet metal for providing both a circular end wall for a cylindrical container, and for providing all the necessary sheet metal for making the bung seat construction which is applied through the same end wall of the container.

A further object of this invention is to provide economy in the production of cylindrical containers by providing an end wall and bung seat construction therefor wherein both the end wall and the bung seat construction have their metal parts punched simultaneously from the same piece of sheet metal.

A further object of this invention is to provide a strong and rugged bung seat construction made of comparatively thin gauge sheet metal.

A further object of this invention is to provide a bung seat that is corrugated parallel to its axis, thus making it impossible for the seat to slip or rotate as the bung or closure member is either being inserted or being removed, thus making it possible to replace and remove the bung or closure member repeatedly without causing leakage through seat slippage.

With the foregoing and other objects in view, as will hereinafter become apparent, this invention relates to the method, construction, and combination of parts hereinafter set forth, claimed and disclosed on the accompanying drawings, wherein:

Fig. 1 is a partly elevational, and partly sectional view of the improved bung seat of this invention, before it is assembled in the end wall;

Fig. 2 is a top view on line 2—2 of Fig. 1, partly in section;

2

Fig. 3 shows a piece of sheet metal from which the container end wall and the parts for assembling the bung seat are pressed and punched simultaneously; and

Fig. 4 is a view similar to Fig. 1 of the bung seat assembled in the end wall.

There is shown at 10 a square piece of sheet metal of suitable material and of suitable gauge for stamping out a cylindrical container end wall or barrel head 11 therefrom, simultaneously with a bung seat recess 12 and bung hole 13. In conventional procedure, the annulus 14 left over is wasted except for its scrap value, and a bung seat is usually made up as a separate operation, usually purchased from another manufacturer specializing therein. One reason for this is that it has been found desirable to make a bung seat of heavier gauge than the gauge of the sheet metal, because it has not been possible, with the prior method of construction, to make a satisfactory bung seat unless it is of substantially heavier gauge metal than the metal of the end wall. This, of course, is both wasteful of the annulus metal and expensive as to the cost of the bung seat materials. Another undesirable factor of conventional construction is that electrolytic action and decomposition may occur if the metal of the bung seat differs electrolytically from that of the end wall to which it is attached.

These undesirable features of the prior art are avoided in this invention, wherein a bung seat may be made from the same gauge and from the same piece of sheet metal as that from which the end wall 11 is made, and which is as mechanically strong as or even stronger than a bung seat made of heavier gauge according to conventional methods. Furthermore, the factor that imparts mechanical strength to the bung seat of this invention also makes the bung seat nonrotatable, and thus insuring against any accidental slippage or leakage as the bung or closure member is inserted or removed.

In this invention, simultaneously with the stamping out of the end wall 11 from the sheet metal square 10, there is stamped out from the annulus 14 two different sized annuli 15 and 16, the annulus 16 having a substantially larger outer diameter and substantially smaller inner diameter than the annulus 15.

At the same time, or subsequently if desired, that the bung depression 12 is formed in the end wall 11, a bung hole wall or tube 17 is formed with axially extending corrugations 18 therein by suitable machinery and dies.

In making up the bung seat, shown separately at 20 in Figs. 1 and 2, and assembled in the end wall 11 at 21 in Fig. 4, the inner portion of the small annulus 15 is formed into a corrugated pipe or tube portion 22, and the inner portion of the larger annulus 16 is similarly formed into a corrugated pipe or tube portion 23 extending into, through, and beyond the first pipe portion 22, while the outer portion of the larger annulus 16

3

is flanged as at 24 over the edge of and then under and against the bottom of the smaller flange 15 as far as the pipe portion 22, firmly securing the two flanges together in interlocked assemblage. As thus formed, the outer diameter of corrugated pipe portion 22 is substantially identical with the inner diameter of corrugated bung hole wall or tube 17, and the corrugations in the pipe portions 22 and 23 align with each other and with corrugations 18 in bung hole wall 17. Also, the outer diameter of flange 23 of annulus 16 is substantially equal to the inner diameter of depression 12 in the end wall 11.

Next, a gasket 25 of suitable yieldable material, such as natural or synthetic rubber or plastic, or the like, is placed in the depression 12 and the bung seat 20 is forced or placed therethrough, and then the lower end of pipe portion 23 is flanged over at 28 about the outer diameter of bung hole wall 17, to lock the thus assembled bung seat 21 in operative position through the end wall 11, ready to receive a bung or closure member therein, after the standard pipe threads 26 have been formed within the corrugations 27 of the inner pipe portion 23. Obviously, threads 26 may be formed either in the unassembled bung seat 20 as in Fig. 1, or may be formed therein after it has been assembled into position as at 21.

The corrugations in the pipe portions and bung hole wall have the effect of increasing the mechanical strength of the bung seat 21, the gauge of the seat being further increased by the presence of the smaller flange 15 and its pipe portion 22 to provide further mechanical strength. The interfitting bung hole wall corrugations and pipe portion corrugations not only add mechanical strength, but also make it impossible for the bung seat 21 to revolve or slip within the bung hole wall 17 as the bung or closure member is inserted or removed.

While leakage may apparently occur along the corrugations 27 past the threads 26, such is prevented by the placing of a suitable sealing gasket between the bung or enclosure member and the upper surface of the bung seat, such sealing gasket extending over and beyond the depression 12, if desired, to thus provide a double seal against leakage between the bung seat 21 and the end wall 11, such suitable sealing gasket cooperating with a suitable flange on the bung or enclosure member.

While the bung seat has been shown and structure and method of making it has been described in detail, it is obvious that this invention is not to be considered as limited to the exact form and method of making and assembling disclosed, and that changes may be made therein within the scope of what is claimed without departing from the spirit of the invention.

The invention claimed is:

1. In a bung seat structure for a container, a container wall of sheet metal of light gauge formed with a depression having a bung hole and contiguous tube extending about said hole, a bung seat formed of concentric pipe portions extending through said bung hole and having interlocked flange portions seated within said depression, an inner pipe portion extending beyond the outer pipe portion and flanged outwardly over said outer pipe portion and about said tube to interlock said bung seat to said container wall, said bung seat portions being of similar light gauge sheet metal with the container wall.

4

2. In a bung seat structure for a container, a container wall of sheet metal of light gauge formed with a depression having a bung hole and contiguous axially corrugated tube extending about said hole, a bung seat formed of axially corrugated concentric pipe portions extending through said bung hole and having interlocked flange portions seated within said depression, an inner pipe portion extending beyond the outer pipe portion and flanged outwardly over said outer pipe portion and about said tube to interlock said bung seat to said container wall, said bung seat portions being of similar light gauge sheet metal with the container wall.

3. In a bung seat structure for a container, a circular container wall of sheet metal of light gauge, formed with a depression having a bung hole and contiguous axially corrugated tube extending about said hole, a bung seat formed of axially corrugated concentric pipe portions extending through said bung hole and having interlocked flange portions seated within said depression, inner pipe portion extending beyond the outer pipe portion and flanged outwardly over said outer pipe portion and about said tube to interlock said bung seat to said container wall, said bung seat portions being of similar light gauge sheet metal with the container wall, and a female thread on said inner pipe portion adjacent its flange end.

4. A corrugated bung seat comprising a pair of concentric pipe portions, plane overlying flange portions extending from the pipe portions, the flange portion from the inner pipe portion extending beyond and flanged over and about the flange portion of the outer pipe portion, the inner pipe portion extending beyond and flanged outwardly about the outer pipe portion.

5. A corrugated bung seat comprising a pair of concentric axially corrugated pipe portions, plane overlying flange portions extending from the pipe portions, the flange portion from the inner pipe portion extending beyond and flanged over and about the flange portion of the outer pipe portion, the inner pipe portion extending beyond and flanged outwardly about the outer pipe portion.

6. A corrugated bung seat comprising a pair of concentric axially corrugated pipe portions, plane overlying flange portions extending from the pipe portions, the flange portion from the inner pipe portion extending beyond and flanged over and about the flange portion of the outer pipe portion, the inner pipe portion extending beyond and flanged outwardly about the outer pipe portion, the inner pipe portion being female threaded adjacent the flanged end.

CHARLES E. VANDERHOLT.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,040,274	Chambers	Oct. 8, 1912
1,529,929	Schwartz	Mar. 17, 1925
1,619,603	Dillhoefer	Mar. 1, 1927
1,677,841	Nice	July 17, 1928
1,689,510	Wackman	Oct. 30, 1928
1,930,102	Liner	Oct. 10, 1933
2,005,087	Kamack	June 18, 1935
2,026,431	Punte	Dec. 31, 1935
2,289,409	Connors	July 14, 1942