

April 24, 1934.

P. H. SCHMITZ ET AL

1,956,135

CLOSURE FOR METALLIC CONTAINERS AND THE LIKE

Filed March 1, 1932

4 Sheets-Sheet 1

Fig. 1.

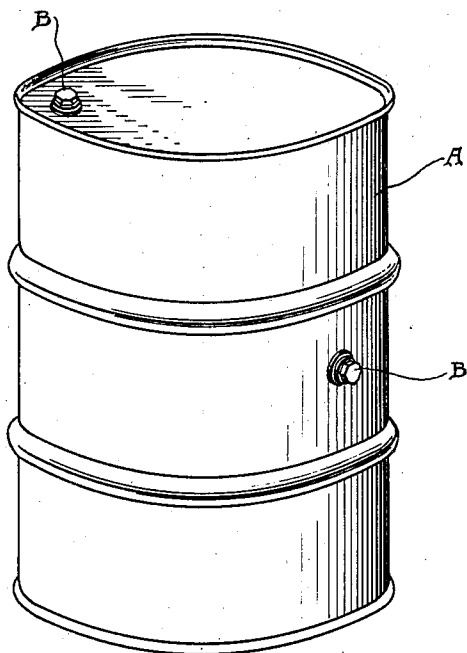


Fig. 2.

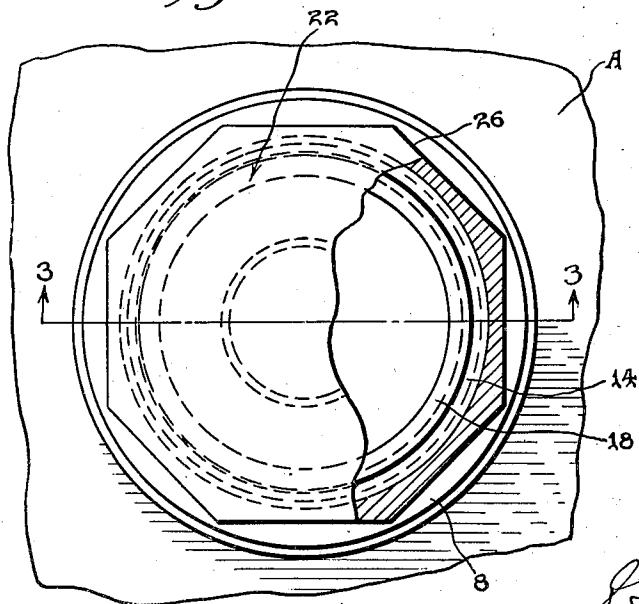
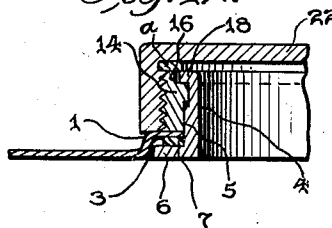


Fig. 12.



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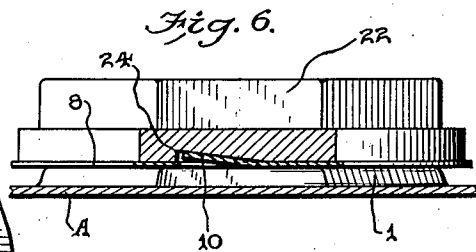
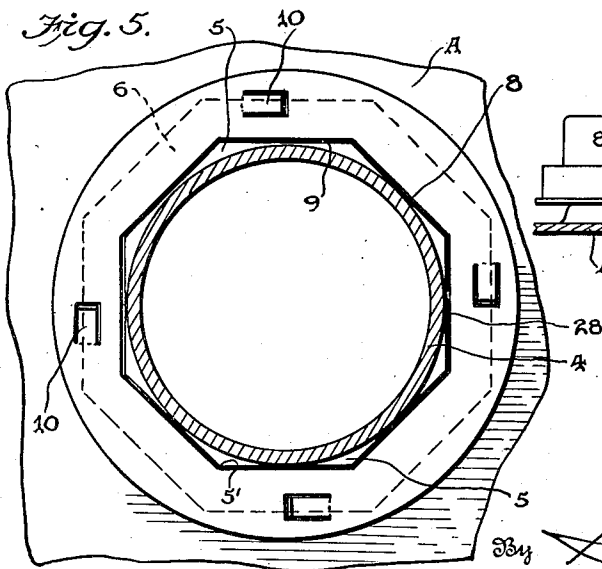
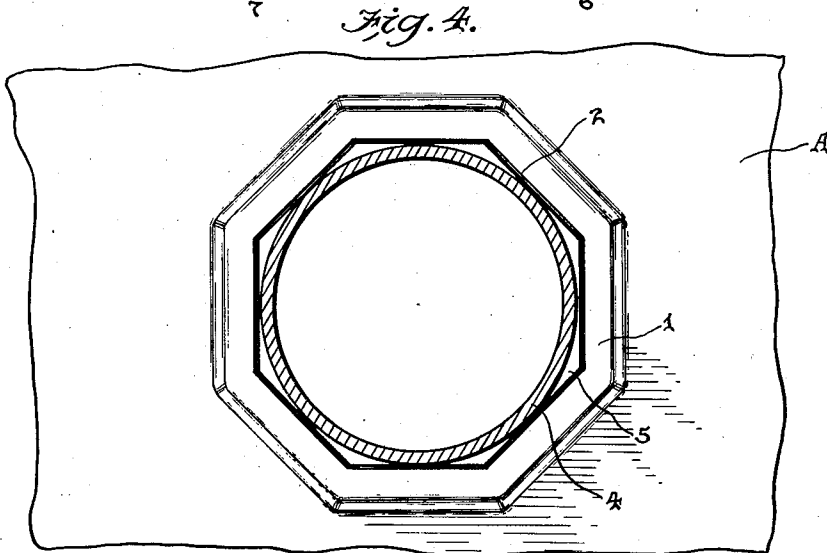
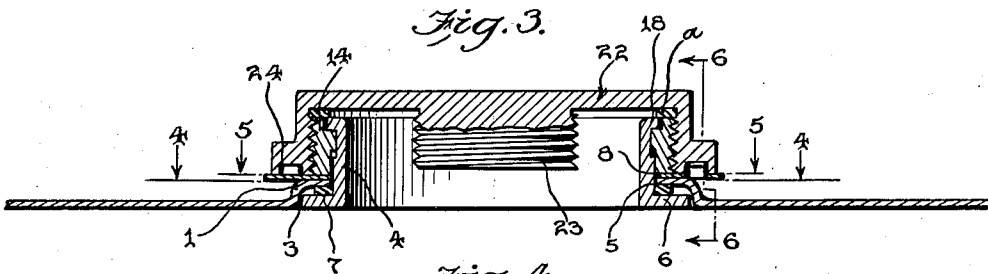
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CLOSURE FOR METALLIC CONTAINERS AND THE LIKE

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4 Sheets-Sheet 2



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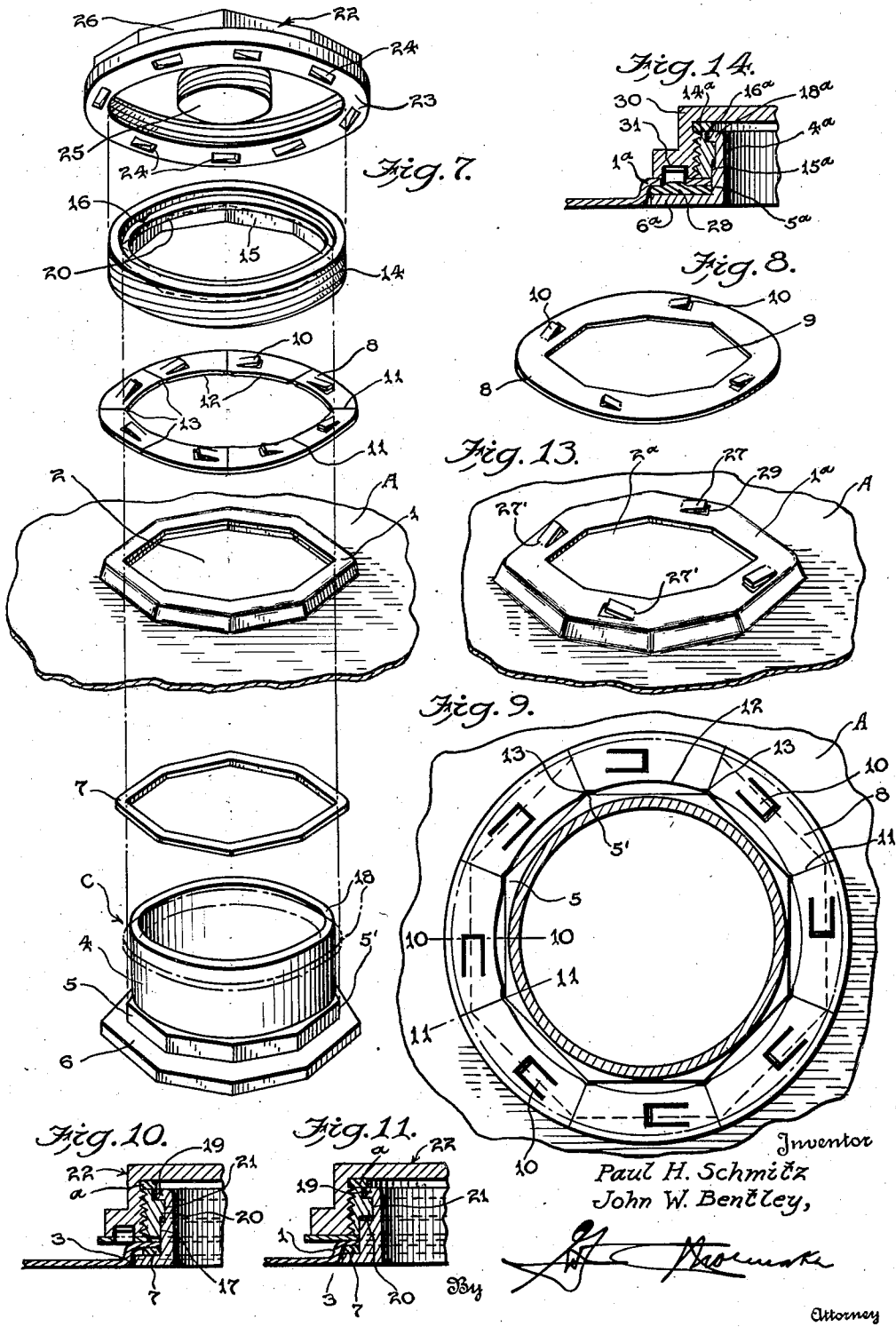
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CLOSURE FOR METALLIC CONTAINERS AND THE LIKE

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GLOSURE FOR METALLIC CONTAINERS AND THE LIKE

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4 Sheets-Sheet 4

Fig. 15.

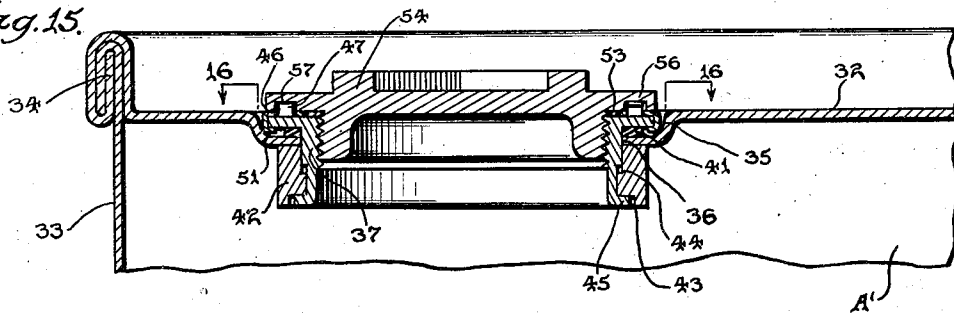


Fig. 16.

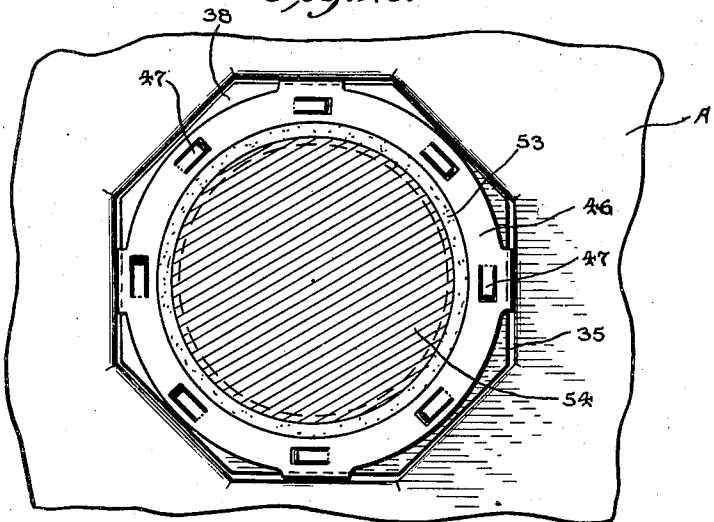


Fig. 17.

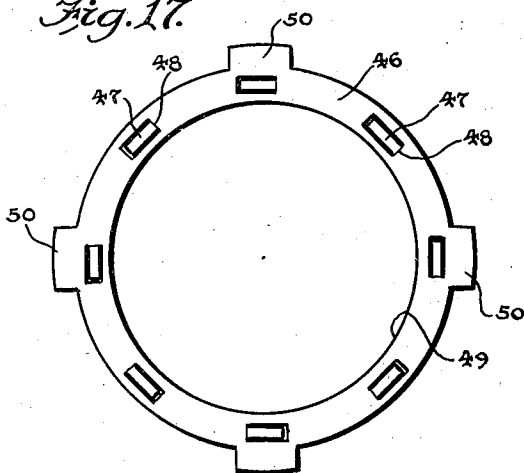
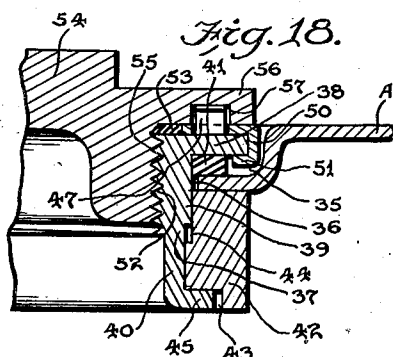
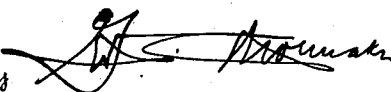


Fig. 18.



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CLOSURE FOR METALLIC CONTAINERS AND THE LIKE

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Application March 1, 1932, Serial No. 596,094

24 Claims. (Cl. 220—39)

This invention relates to closures for metallic containers and the like.

One object of the invention resides in the provision of a closure device for metallic or other containers or the like wherein a bushing cooperates with the closure and wherein the closure device may be readily applied to the container or other support.

Another object of the invention is to provide a sealing means for metallic containers and the like including a closure and a bushing cooperating to effect ready application of the closure to the bushing, preventing removal of the closure without disrupting the seal, and thereby giving notice to the user that the container has been previously opened.

Another object of the invention is to provide a seal for bushing structures in combination with a closure whereby the seal, upon removal of the closure, will be ruptured and dislodged from the bushing and, will render the container leakable and unfit for reuse.

Another object of the invention is to provide a seal for closures in combination with a bushing structure for metallic containers and the like whereby upon removal of the closure the seal will be ruptured thereby giving notice to a user that the closure has been previously removed.

Another object of the invention is to provide a particular seat and opening in the container or like support and having combined therewith the bushing structure seated in the seat and extending through the opening and provided with means to secure the bushing in the opening to prevent turning of the bushing with respect to the container or like support.

A still further object of the invention is to provide the sealing means directly in the support to prevent removal of the closure from the container or like support so that upon removal of the closure, the container will be disfigured and torn to give notice to a user that the container has been previously opened.

It is still further designed to provide a seal closure in combination with a container or like support which is of inexpensive construction and capable of ready insertion and application to the container yet providing a highly efficient and durable structure, and one which permits the removal of the entire contents of the container.

With these and other objects in view, the invention consists in the construction and novel arrangement of the parts hereinafter described, illustrated in the accompanying drawings and

pointed out in the claims hereto appended, it being understood that various changes in the form, proportion and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

The invention will be more readily understood by referring to the annexed drawings, wherein:

Fig. 1 is a perspective view of a metallic container showing our application of the closure and bushing to the same.

Fig. 2 is a plan view of the closure with parts broken away to show the manner of securing the bushing in the container opening.

Fig. 3 is a transverse sectional view showing a modification of the invention.

Fig. 4 is a plan view partly in section looking in the direction of the arrows on the line 4—4 of Fig. 3.

Fig. 5 is a plan view partly in section looking in the direction of the arrows on the line 5—5 of Fig. 3.

Fig. 6 is a side elevation partly in section taken on the line 6—6 of Fig. 3.

Fig. 7 is a disassembled view showing the parts in their positions to be applied to the container or support and to the bushing.

Fig. 8 is a perspective view of a modification of the sealing member.

Fig. 9 is a top plan view partly in section showing the sealing member applied to the bushing.

Fig. 10 is a transverse sectional view on the line 10—10 of Fig. 9.

Fig. 11 is a transverse sectional view on the line 11—11 of Fig. 9.

Fig. 12 is a transverse sectional view showing a further modification of the invention without the use of the sealing ring.

Fig. 13 is a still further modification of the invention showing a container of like support with the sealing means formed therein.

Fig. 14 is a transverse sectional view showing the application of the modification shown in Fig. 13 with the bushing applied in the opening and the screw closure applied to the bushing.

Fig. 15 is a transverse sectional view of still another modification of the invention showing the closure and bushing applied to the head of a metallic container or like support.

Fig. 16 is a plan view taken on the line 16—16 of Fig. 15 looking in the direction of the arrows.

Fig. 17 is a plan view of the circular seal before it is applied to the bushing.

Fig. 18 is a fragmentary enlarged transverse

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sectional view of a portion of the container, bushing and cap showing the application of the different parts to the container or like support.

Referring now more particularly to the accompanying drawings, A indicates a standard container or drum, preferably metal, showing the application of the invention. The closure and bushing structures are indicated, generally, at B, and one of the closures is shown in the top of the container and the other in the side thereof, both closures being the same but of different sizes. It will be understood that the closure and bushing structure might be applied to any part of a container or like support. Where two or more closure and bushing structures are employed, they may be of the same or different sizes.

In one form of the invention, as disclosed in Figs. 1, 2, 7, 9, 10 and 11, the container or like support A is provided with a raised polygonal seat 1, having cut out or stamped therefrom a polygonal opening 2, thereby forming a recess or seat 3.

An annular bushing C consisting of a cylindrical portion 4, an external polygonal shoulder portion 5, and a polygonal outwardly directed flange 6 is adapted for insertion within the polygonal opening 2 in the container or like support. The polygonal flange 6 is of such dimensions as to properly conform to the dimensions of the polygonal seat 3 so that when the bushing is inserted through the opening the perimeter of the flange 6 will engage in and seat in the polygonal seat 3. The polygonal shoulder 5 of the bushing surrounds the bushing and is disposed on the flange 6, being of smaller diameter than the latter and extends through the opening and is of such dimensions and shape as to conform to the polygonal opening 2 and serve as a guide to lead the flange 6 to the seat 3. A gasket 7 surrounds the polygonal shoulder 5 and engages the under side of the seat 3. The polygonal formation of the flange 6 and shoulder 5 prevents turning of the bushing with respect to the container when inserted therein. The polygonal shoulder 5 projects outwardly through the opening 2 and a circular seal 8 surrounds the same. This seal is preferably in the form of a ring and preferably of brittle, springy metal, but may be made of any suitable material, and has a central opening 9. This ring seal 8 is provided on its upper face with a plurality of tongues 10 which may be struck up therefrom, and is scored at various points, as at 11, to weaken the ring. The circular seal 8 is also provided with curved portions 12 and notches 13. The notches 13 are adapted to engage the corners 5' of the polygonal shoulder 5 to prevent turning of the seal thereon and the curved portions 12 are between the notches and are intermediate the corners 5' of the polygonal shoulder 5 as will be clearly seen in Fig. 9.

The ring seal 8 may be scored at 11 as shown in Fig. 7 both on the top and bottom of the ring. In some instances, however, it may be desirable to only have the ring scored on its top portion or its bottom portion.

After the flange 6 has been placed on the seat 3 and the shoulder 5 and the cylindrical portion 4 thereof are inserted through the opening 2 in the container, an exteriorly threaded ring 14, having its lower portion 15 of polygon formation and its upper portion 16 recessed circumferentially interiorly thereof, is placed over the cylindrical portion 4 of the bushing and the polygon portion 15

of the ring extends over the shoulder 5, as at 17, and contacts with the circular seal 8 which has been previously placed over the polygonal shoulder 5 exteriorly of the opening in the container and resting on the seat 1, as clearly shown in Figs. 10 and 11.

To secure or fasten the ring 14 on the bushing, the upper end 18 of the cylindrical portion 4 of the bushing is upset or swaged into the circumferential recess 16 in the upper end of the ring 14 as shown at 19 in Figs. 10 and 11. The upsetting or swaging of the upper end 18 of the bushing may be accomplished by hammering by hand, or by an air machine, or a drop hammer and a leak-proof joint between the bushing and container thereby formed. The ring 14 has an annular flange 20 intermediate the recess 16 and the polygon formation 15, which engages the cylindrical portion 4 of the bushing, as best shown at 21 in Figs. 10 and 11.

After the bushing has been inserted and secured within the recess and opening as above described, and after the container has been filled with any suitable contents and it is desired to seal the container, an interiorly screw threaded cap 22 may be applied to the screw threaded ring 14. The screw cap 22 is provided on its lower portion 23 with a plurality of inclined recesses 24 corresponding to the number of tongues 10 on the seal 8, and may also have an exteriorly screw threaded projection 25 centrally interiorly thereof which is adapted to receive a faucet or the like.

It will be seen that when the cap 22 which is provided with a portion 26 for engagement of a wrench or other suitable tool is screwed down over the threads of the ring 14 in a clockwise direction, the recesses 24 will ride over the spring tongues 10 of the seal 8. However, when it is desired to remove the cap 22 it must be done by turning the same in an anti-clockwise direction, and the spring tongues 10 of the seal 8 will project into the inclined recesses 24 of the cap 22 and by turning the cap 22 to remove the same, the tongues will be torn from the seal 8 and the seal will be broken at its scored portions 11 and the entire seal will be disrupted and dislodged from between the exteriorly screw threaded ring 14 and the top of the seat 1 upon which the seal rests.

By referring to Fig. 10, it will be seen that the curved out portions 12 of the seal 8, which are intermediate the notches 13, extend only to approximately the depth of the screw threads on the ring 14. The notched portions 13 of the seal 8, however, are in engagement with the corners 5' of the polygonal shoulder 5 and extend to the perimeter of the polygon formation 15 of the lower portion of the ring 14 as will be clearly seen by reference to Fig. 11. In this manner, the seal 8 which rests on the upper exterior portion of the seat 1 is firmly gripped at the portions which are notched and engage the corners of the polygonal shoulder, the curved cut out portions 12 are only engaged by the outer lower edge of the threaded ring 14, which permits of removal, dislodgment and rupturing of the seal ring 8 from between the threaded ring 14 and its seat 1 when the cap 22 is removed. In other words, when the cap 22 is removed, the spring tongues 10 of the seal 8 will engage in the inclined recesses 24 of the cap 22 and the seal 8 will be entirely dislodged and ruptured and freed from between its connection with the bushing and seat 1, and the bushing will then drop down and be loose within the

opening, thereby rendering the container leakable and unfit for reuse.

In the modification of the invention as disclosed in Figs. 3, 4, 5, 6 and 8, the container A or like support is formed with the polygonal seat 1 and polygonal opening 2 and the bushing C and the threaded ring 14 and the cap 22 are all formed and assembled as shown and described above. In this modification, however, it is desirable only to rupture the seal 8 but not to dislodge or remove the same from between the threaded ring 14 and the seat 1. With this in mind, the seal 8 in this modification is formed with the polygonal opening 9 and has on its upper face the spring tongues 10. This seal ring 8 is applied to the shoulder 5 of the bushing in the same manner as previously described but the portions in between the corners of the polygonal opening 9 are not cut out, and they engage the polygonal shoulder 5 of the bushing, as at 28 in Fig. 5. The threaded ring 14 engages a substantial part of the seal 8 adjacent the polygonal opening therein as shown in Fig. 3 and when the upper portion 18 of the bushing is swaged or upset, a firm grip between the ring 14 and the seat 1 is obtained to tightly grip the seal 8 therebetween and form a leak-proof joint.

After the closure cap 22 has been inserted on the screw threaded ring as shown in Fig. 3 and it is desired to remove the same, the spring tongues 10 will project into the inclined recesses 24 of the cap and the tongues will be torn from the seal 8, but the seal will not be dislodged from between the threaded ring 14 and the seat 1. In other words, the removal of the cap 22 will merely rupture or tear the tongues from the seal, the seal remaining in between the threaded ring 14 and the seat 1, thereby giving notice that the cap has been removed but the container upon replacement of the cap will be capable of reuse.

In another modification of the invention, as disclosed in Fig. 12, the polygonal flange 6 having the washer 7 thereon engages in the seat or recess 3 and the polygonal shoulder portion 5 extends through the opening 2 and outwardly of the same. The cylindrical portion 4 of the bushing is the same as heretofore described and has the exteriorly screw threaded ring 14 surrounding the same. In this modification, the screw threaded ring 14 engages and rests on the seat 1, there being no seal interposed between these two elements.

When the upper end 18 of the bushing has been upset or swaged into the circumferential recess 16, as previously described, a tight leak-proof joint is formed between the bushing, ring and seat 1. The interiorly screw threaded cap 22 may then be turned onto the exteriorly screw threaded ring 14 and the opening in the bushing thereby closed. In this manner, the polygonal flange 6 resting on the polygonal seat 3 and the polygonal shoulder 5 extending through the polygonal opening 2, turning of the bushing with respect to the container or other support is prevented and when the upper end 18 of the bushing is swaged or upset a leak-proof joint is formed between the ring and bushing and the seat 1. The screw threaded cap in this modification is removable and replaceable at will without rendering the container unfit for reuse.

In a modification of the invention, as disclosed in Figs. 13 and 14, tongues 27 are struck up from the polygonal seat 1^a of the container metal. These tongues are of a springy, brittle nature and the polygonal seat 1^a is of somewhat wider

dimensions than the other modifications of the invention. The flange 6^a is also of greater dimension than the flange in the other modifications of the invention. The annular bushing with the cylindrical portion 4^a and the polygonal shoulder 5^a is receivable in the opening 2^a of the seat in the same manner as heretofore described. The exteriorly screw threaded ring 14^a surrounds the cylindrical part of the bushing 4^a and is provided in the same manner as shown in Fig. 7 with a circumferential recess 16^a at its upper portion and a polygonal formation 15^a at its lower portion. The upper end 18^a of the bushing is swaged or turned over into the circumferential recess 16^a and thereby forms a leak-proof joint between the ring 14^a and the seat 1^a.

A relatively wide gasket 28 rests on the polygonal flange 6^a and seals the openings 29 formed by the struck up tongues 27. An interiorly screw threaded cap 30 having inclined recesses 31 in its lower portion is adaptable for engagement with the ring 14^a to close the opening in the bushing. It will be seen in Fig. 14 that when the cap has been screwed down to its lowermost position, the tongues 27 project into the inclined recesses 31. Upon the removal of the cap 30, the tongues 27 in the seat 1^a will be torn and disrupted and give notice to a subsequent user that the container has been previously opened. In this modification of the invention, instead of using the separate seal 8 as disclosed in the other modification of the invention, the tongues 27 are formed integral with the container or like support. The tongues 27 are scored as at 27'. These tongues may be scored either on their top or bottom or both on the top and bottom as in the invention disclosed in Fig. 7. Upon removing the cap 30, the tongues 27 will be torn at their scored portions 27' and thereby give notice to a user that the container has been previously opened.

It is to be noted that the flanges 6 and 6^a when in the recess or seat are flush with the interior of the container or the like and provide for complete drainage of the contents thereof.

In the modification of the invention as disclosed in Figs. 15 to 18, inclusive, the bushing extends interiorly of the container but nevertheless practically all of the contents of the container may be removed by tilting or turning of the container.

It will also be noted that a gasket *a* is provided in all forms of the invention thus described, located between the closure and the bushing to prevent leakage between the cap or closure and the bushing.

In the modification of the invention as illustrated in Figs. 15 to 18, inclusive, it will be seen that the present invention may be positioned from the outside of the container and extend interiorly thereof rather than from the inside and extend exteriorly thereof as heretofore described. It will also be noted that in this last mentioned modification, a different type of closure proper is employed or may be used with this latest modification. In order that the invention may be applied from the outside rather than from the inside of the container, it will be stated that the bushing is positioned in the head or bottom or body of the container prior to the application of the head and bottom to the body. The fact is that in all forms of the invention, the device herein claimed is applied to different parts of the container prior to assembling the container. It will also be understood that the device may be applied to a side wall of the

body of the container rather than to the bottom or head. It will also be understood that this modified form of the invention may be applied to the head or to the side of the container as proposed in other forms of the invention and as illustrated particularly in Fig. 1. If the device is placed in the head of the barrel, it does not project beyond the edges of the chime of the barrel and if placed in the side wall of the container, the closure does not project beyond the outer edges of the common rolling beads or hoops, such as shown in Fig. 1 and thereby when the container is of cylindrical form and rolled, there is no danger of the closure contacting with obstacles and resulting in a bumping of the container as it is rolled along a skid or other supporting surface.

So, now, referring specifically to Figs. 15 to 18, inclusive, there is illustrated a sheet metal or other container A' provided with a head 32 which is secured to the side wall 33 of the container in the customary manner as at 34. A repressed polygonal seat 35 provided with a polygonal opening 36 is formed in the head 32 of the container. An annular bushing 37 consisting of a polygonal flange 38, a polygonal shoulder portion 39 and a cylindrical portion 40 is adapted for insertion within the opening 36. The polygonal flange 38 of the annular bushing rests in the polygonal seat 35. A washer 41 is interpositioned between the under side of the flange 38 and the top of the seat 35. The polygonal shoulder portion 39 of the bushing extends through the polygonal opening 36 as does also the cylindrical portion 40. A ring 42 provided with a circumferential recess 43 in its lower portion and an interior polygonal recess 44 at its upper portion surrounds the bushing 37 interiorly of the container. The interior polygonal recessed portion 44 of the ring 42 engages the polygonal shoulder 39 and the outer cylindrical portion 45 is swaged or overturned into the circumferential recess 43 in the ring thereby forming a leak proof joint between the ring and bushing and the bottom or the interior part of the polygonal seat 35. The formation of the polygonal flange 38 resting in the polygonal seat 35 and the polygonal shoulder 39 engaging in the polygonal opening 36 will prevent turning of the bushing with respect to the container, and as before stated the overturning of the end 45 of the bushing will form a leak proof joint between the ring, bushing and the container. The ring 42 will also be prevented from turning by its engagement with the polygonal shoulder 39 of the bushing.

A circular seal ring 46 is adapted to rest on and be secured to the top or the upper exterior portion of the polygonal flange 38. This seal ring 46 is provided with a plurality of struck up tongues 47 which are scored as at 48 either on their top or bottom or both the top and bottom. The ring has a central opening 49. The ring is provided with a plurality of bendable ears 50. After the ring has been placed on the top of the flange 38 the ears 50 are bent around the outer edge of the polygonal flange in engagement with the under side thereof as at 51, thus preventing turning of the circular seal with respect to the polygonal flange 38.

The annular bushing 37 is interiorly screw threaded as at 52. The opening 49 in the circular seal is so dimensioned that when applied on top of the polygonal flange 38 it will be spaced from the screw threads 52 of the annular bushing. A suitable washer or gasket 53 abuts the in-

ner edge of the circular seal 46 and extends substantially flush with the screw threads 52 of the bushing on the top of the flanged portion 38. An exteriorly screw threaded cap 54 provided with screw threads 55 and having a circumferential flange 56 which is provided on its lower portion with inclined recesses 57 corresponding in number to the tongues 47 on the circular seal 56 is adapted to be threaded into the annular bushing and engage the screw threads 52 of the bushing.

It will be seen that when the cap 54 is threaded into the bushing 37 in a clockwise direction the inclined recesses 57 will ride over the tongues 47 of the circular seal 46 until the lower portion of the circumferential flange 56 seats on top of the seal 46 and the gasket or washer 53, thereby forming a leak proof sealed closure for the container. When, however, it is desired to remove the cap 54, the same must be turned in an anti-clockwise direction and by doing so the tongues 47 of the circular seal 46 will break at their scored portions 48 and give notice to a user that the container has been previously opened. The circular seal 46 upon opening the container, that is, removing the cap 54, will not be dislodged from its connection with the polygonal flange 38 of the bushing. The tongues 47 will merely be torn from the ring seal and give notice that the container has been opened. It is to be understood that in assembling the bushing which carries the ring seal 46 on its flanged portion in the polygonal seat 35, the bushing and the overturned ears 50 of the circular seal will contact with the walls of the polygonal seat 35 and turning of the bushing will be prevented as in the other forms of the invention described herein.

From the above, it will be clear that we have provided a novel polygonal seat and opening in a container or like support in combination with a particular formation of annular bushing and having the seal cooperating with the bushing and closure to either remove or dislodge the seal entirely from between its connection with the bushing and form a leakable joint, or else merely disfigure or rupture the seal without removing the same from between its connection with the bushing and container. In some instances it is desirable to have no seal at all and merely provide our novel polygonal seat and bushing structure, and in others the seal is formed integral with the container or like support. This unique arrangement of parts provides a highly desirable and efficient screw seal closure and bushing structure which is adaptable for use with steel drums, barrels, etc. or as a matter of fact, the same might well be used anywhere wherein a closure and seal of this kind is desirable.

What we claim is:

1. In combination with a metallic container having a polygonal seat provided with a polygonal opening, an annular bushing having a polygonal flange resting in said seat and a polygonal shoulder extending into and through the said opening to prevent turning of the bushing, an exteriorly screw threaded ring on the annular bushing in engagement with said shoulder, means to secure the ring on the bushing and in engagement with said shoulder to prevent turning of the bushing and ring with respect to the container, and a closure engageable with said ring to close the opening.

2. In combination with a metallic container having a polygonal seat provided with a polygonal opening, an annular bushing having a polygonal flange resting in said seat and a polygonal shoul-

der extending into and through the said opening to prevent turning of the bushing, an exteriorly screw threaded ring surrounding the bushing and having its lower interior portion polygonally formed and its upper interior portion recessed, the polygon formation of the interior of the ring being engageable with the polygon shoulder to prevent turning of the ring, and the upper end of the annular bushing overturned into said recess in the upper interior portion of the ring, whereby the flange and ring are brought into close relationship with respect to the polygonal seat to form a tight connection with the container.

3. In combination with a support having an opening therein, an annular bushing in said opening, said bushing being provided with a flange engaging the underside of the support adjacent the opening, a circular seal surrounding the annular bushing on the outer side of the support opening, means to secure the bushing and seal in engagement with the support, a closure for said bushing adapted for engagement with the seal, and means on the seal engageable by means on the closure so that when the closure is removed, the seal will be disfigured.

4. In combination with a metallic container having a raised polygonal seat provided with a polygonal opening, an annular bushing in said opening, said bushing having a polygonal flange seated in said seat interiorly thereof and a polygonal shoulder extending through said opening, a circular seal, said seal being provided with a polygonal opening and engaging said shoulder exteriorly of the container, a closure for said bushing, and means on the seal adaptable for engagement with means on the closure so that the closure cannot be removed unless the seal is disfigured.

5. In combination with a metallic container having an opening therein, an annular bushing in said opening, said bushing having a flange engaging the underside of the container, an annular screw threaded ring on the annular portion of the bushing exteriorly of the opening in the container, a seal intermediate of the ring and opening, means to secure the bushing, ring and seal in association with one another, a closure for said bushing adaptable for engagement with said ring and seal, and means on the closure adaptable for engagement with means on the seal whereby upon removal of the closure, the seal is ruptured and dislodged from between the ring and opening in the container.

6. In combination with a metallic container having a raised polygonal seat provided with a polygonal opening, an annular bushing in said opening, said bushing having a polygonal flange seated in said seat interiorly thereof and a polygonal shoulder extending through said opening, a flat, circular seal having a polygonal opening surrounding said shoulder exteriorly of the seat, said seal being provided with upstanding tongues on its upper face, an exteriorly threaded ring encircling the annular portion of said bushing and having its lower interior portion formed and its upper interior recessed, the polygon formation of the interior of the ring being engageable with the polygon shoulder on the bushing, and the upper end of the annular bushing overturned into said recess in the ring, whereby the flange, ring and seal are brought into close relationship with respect to the polygonal seat to form a tight connection with the container, and a closure for the bushing, and said closure having recesses in its lower edge to engage the tongues whereby upon

the removal of the closure, the seal will be disfigured.

7. A sealed closure for metallic containers comprising an annular bushing in association with an opening in the container, a seal encircling the bushing, an annular ring also encircling the bushing, the said seal being intermediate of the ring and the exterior of the container opening, means for securing the bushing within the opening and in engagement with the container, a closure for the bushing, and means on the closure adapted to engage means on the seal so that upon removal of the closure, the seal will be ruptured and dislodged from between the ring and container, thereby rendering the container leakable.

8. A sealed closure for metallic containers or the like comprising an annular bushing in association with a polygonal opening in the container, said bushing having its lower portion polygonally formed to extend through said opening and means to engage the underside of the container adjacent the said opening, a flat seal encircling the bushing and provided with upstanding tongues, an annular ring also encircling the bushing, the said seal being intermediate of the ring and the exterior of the container opening, a closure for the bushing engageable with said ring, and means on the closure to engage the tongues on the seal so that upon the removal of the closure, the seal will be ruptured and dislodged from between the ring and container.

9. A container provided with a raised polygonal seat and a polygonal opening adapted to receive a complementary annular bushing having a polygonal flange resting in said seat interiorly of the container and a polygonal portion extending into said polygonal opening, a rupturable seal surrounding said polygonal portion of the bushing and seating on the said seat exteriorly of the container, a threaded ring also on said annular bushing in engagement with said polygonal portion and said seal, a closure for the bushing engageable with said ring and seal, means for securing the bushing within the opening, and means on said closure and means on said seal whereby upon removal of the closure the seal will be disrupted and dislodged from between the ring and seat.

10. A sealed closure for metallic containers or the like comprising an annular bushing in association with a polygonal opening in the container, said bushing having its lower portion polygonally formed to extend through said opening and means to engage the underside of the container adjacent the said opening, a flat seal encircling the bushing and provided with upstanding tongues, an annular ring also encircling the bushing, the said seal being intermediate of the ring and the exterior of the container opening, means for securing the bushing within the opening in the container, and a closure for the bushing engageable with said ring, and said closure being provided with recesses in its lower portion to engage the tongues on the seal so that upon removal of the closure, the seal will be ruptured and dislodged from between the ring and container.

11. In combination with a support having a polygonal seat provided with a polygonal opening, seal means integral with said seat, an annular bushing in the opening and having a polygonal flange resting in said seat, means to secure the bushing in the opening, and a closure for the opening provided with means to engage

the seal means so that upon removal of the closure, the seal means will be disfigured.

12. In combination with a metallic container having a polygonal seat provided with a polygonal opening, sealing tongues struck up from said seat, an annular bushing in the opening having a polygonal flange receivable in said seat interiorly of the container, a washer between the flange and the underside of the seat, a polygonal shoulder on said bushing, said shoulder projecting through said opening exteriorly of the container, means to secure the bushing in the opening, and a closure for the opening provided on its lower portion with recesses to engage the tongues so that upon removal of the closure, the sealing tongues will be disrupted.

13. A sealed closure for metallic containers comprising an annular bushing in association with an opening in the container, a ring having a seal at its lower portion encircling said bushing, means for securing the bushing within the opening and in engagement with the container, a closure for the bushing, and means on the closure adapted to engage the seal so that upon removal of the closure, the seal will be ruptured.

14. In combination with a wall of a metallic container or the like having a depressed polygonal seat provided with a polygonal opening therein, an annular bushing having a polygonal flange resting in said seat and a polygonal shoulder extending into the said opening to prevent turning of the bushing, a ring surrounding the bushing, means to secure the ring on the bushing, and a closure for the bushing.

15. In combination with a support having an opening therein, an annular bushing in said opening, said bushing being provided with a flange engaging the support, a circular seal in engagement with said flange, means to secure the bushing in engagement with the support, a closure for said bushing adapted for engagement with the seal, and means on the seal adaptable for engagement with means on the closure whereby upon removal of the closure, the seal will be disfigured.

16. In combination with a metallic container having a depressed polygonal seat provided with a polygonal opening therein, an annular bushing in said opening, said bushing having a polygonal flange seated in said seat exteriorly of the container and a polygonal shoulder extending through and into the container, a circular seal, said seal being in engagement with the said flange exteriorly of the container, means interiorly of the container for securing the bushing in engagement with the container, a closure for the bushing, and means on the seal engageable with means on the closure so that when the closure is removed, the seal will be disfigured.

17. In combination with a metallic container having a depressed polygonal seat with a polygonal opening therein, an annular bushing in said opening, said bushing having a polygonal flange, a polygonal shoulder, and a cylindrical portion, the said flange resting in said seat exteriorly of the container, the shoulder and the cylindrical portion of the bushing extending interiorly of the container through the opening therein, a ring surrounding the bushing interiorly of the container and being in engagement with the shoulder and cylindrical portion thereof, means for securing the ring and bushing within the opening in the container to form a leak-proof joint therewith, and a closure for the bushing.

18. In combination with a metallic container having a depressed polygonal seat with a polygonal opening therein, an annular bushing in said opening, said bushing having a polygonal flange, a polygonal shoulder, and a cylindrical portion, the said flange resting in said seat exteriorly of the container, the shoulder and the cylindrical portion of the bushing extending interiorly of the container through the opening therein, a ring surrounding the bushing interiorly of the container and being in engagement with the shoulder and cylindrical portion thereof, means for securing the ring and bushing within the opening in the container to form a leak-proof joint therewith, a circular seal connected to the top of the flange of the bushing, said bushing being interiorly screw threaded, an exteriorly screw threaded closure adapted for engagement with the seal and the screw threads in the bushing to close the bushing, and means on the seal engageable with means on the closure whereby when the closure is removed, the seal will be disfigured.

19. In combination with a support having a non-circular seat provided with a non-circular opening, a bushing having a non-circular flange and a non-circular shoulder disposed on said flange, the flange of the bushing being adapted to be received in the said seat and the said shoulder being adapted to extend into the said opening, and guide said flange to said seat, the flange and shoulder reinforcing each other, providing interlocking connection between the bushing and the support to prevent turning of the bushing with respect to the support.

20. In combination with a support having a seat therein provided with a non-circular opening, a bushing having a flange and a non-circular shoulder surrounding the bushing and disposed on the flange and being of smaller cross sectional diameter than said flange, the said flange being adapted to be received in the said seat and the said shoulder being adapted to extend into the said opening, whereby turning of the bushing with respect to the support is prevented.

21. In combination with a support having a non-circular seat provided with a non-circular opening, a bushing having a non-circular flange and a non-circular shoulder adjacent said flange, the flange of the bushing being adapted to be received in the said seat and the said shoulder being adapted to extend into the said opening, whereby to provide a double interlocking connection between the bushing and the support to prevent turning of the bushing with respect to the support, and means for securing the bushing in the opening, a closure for said opening, a seal, and means on the closure engageable with means on the seal whereby upon removal of the closure, the seal will be disfigured.

22. In combination with a support having an outwardly directed portion forming an internal recess shaped to provide a polygonally edged seat, said seat having a central polygonal shaped opening whose configuration aligns with the configuration of said seat, and an annular bushing having a flange at one end thereof provided with a polygonal shaped edge and said bushing also having a polygonal shaped shoulder of smaller diameter than said flange and disposed on said flange, said polygonally edged shoulder extending into said polygonal opening of the seat and guiding said polygonally edged flange into said seat, whereby to provide a dual interlocking connection between the bushing and the support and

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so that said flange and shoulder cooperate with each other and the support to strengthen the connection between the bushing and the support to prevent turning of the bushing with respect to the support.

tion between the bushing and the support to prevent turning of the bushing with respect to the support.

23. In combination with a support having an outwardly directed portion forming an internal recess shaped to provide a polygonally edged seat, said seat having a central polygonally shaped opening, and an annular bushing having a flange at one end thereof provided with a polygonally shaped edge and also having a polygonally shaped shoulder of smaller diameter than said flange and disposed on said flange, said polygonally edged shoulder extending into said polygonal opening of the seat and guiding said polygonally edged flange into said seat, said flange and shoulder cooperating with each other and with the support to strengthen the connec-

24. In combination with a support having a polygonal seat provided with a polygonal opening, a closure for the opening, an annular bushing having a polygonal flange which rests in said seat and also having a polygonal shoulder disposed on said flange and of smaller diameter than the flange and which extends into said polygonal opening whereby to provide a dual interlocking connection between the bushing and the support to prevent turning of the bushing with respect to the container, and means on the annular bushing engageable by the closure to close said opening.

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