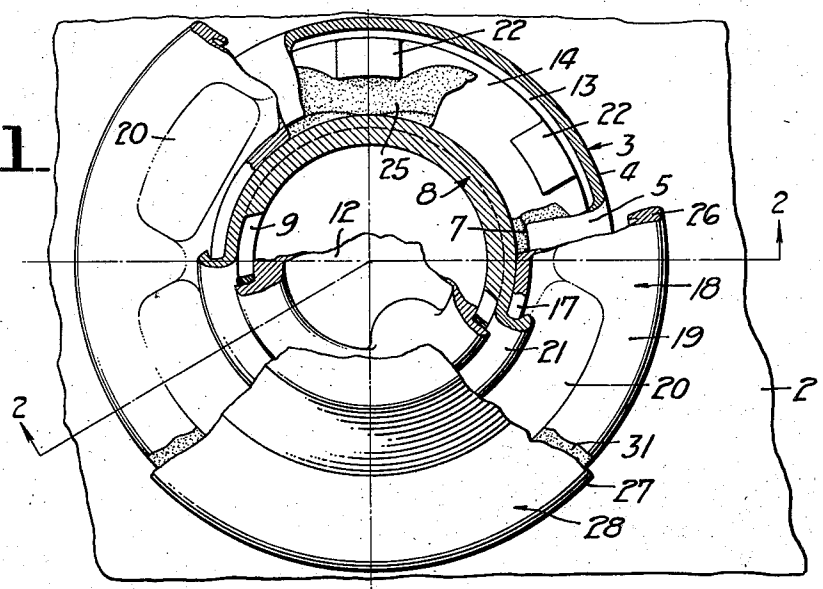
Feb. 18, 1936. R. S. RHEEM 2,031,351

CONTAINER FITTING

Filed Jan. 22, 1935

FIG. 1.



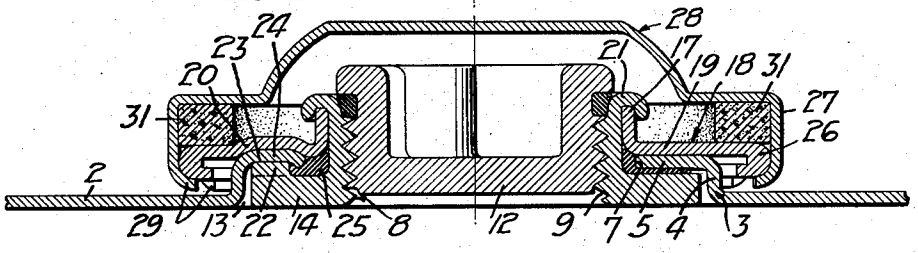
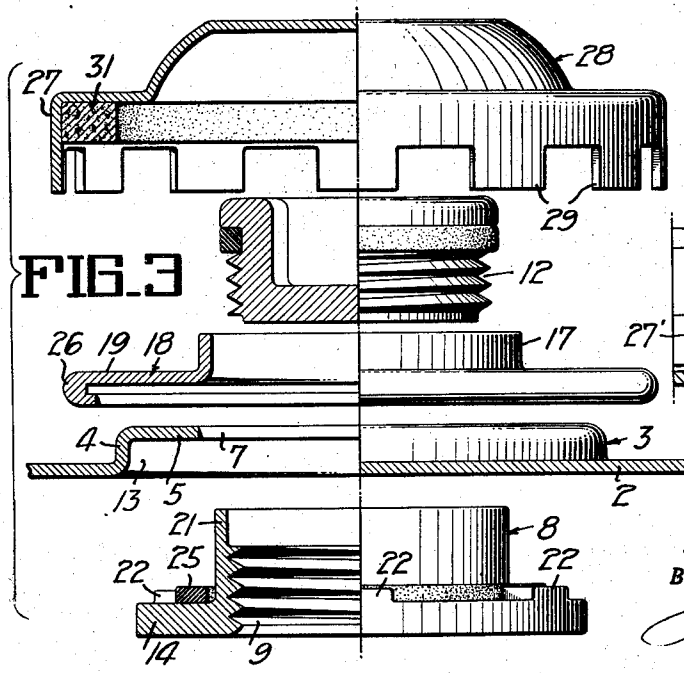
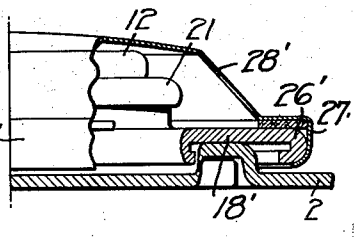


FIG. 2.

FIG. 4.

FIG. 3.





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CONTAINER FITTING

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Application January 22, 1935, Serial No. 2,933

13 Claims. (Cl. 220—39)

The invention relates to fittings for adapting openings in the wall of a metal container or the like for closure by a threaded plug.

An object of the invention is to provide a device of the character described in which the parts thereof are so designed and arranged for connection with each other and with the container, that without requiring connection of such parts and wall by interlocking seams or joints, no axial or rotative displacement of the parts relative to the wall may take place even during extremely rough handling of the container.

Another object of the invention is to provide as part of the device, without any extra parts, a means permitting the ready and effective attachment to the device, of a cap or covering which will fully shield the device and its connection with the container wall, against any unauthorized or undetectable access.

A further object of the invention is to provide a fitting of the character described which may be made flush with the container wall on the inner side without causing an undue protrusion of the device and the shielding cap or enclosure therefor at the exterior of the container.

A still further object is to provide the device with an attaching portion for the cap which will permit the cap to be formed of one piece and positioned on the device with its rim practically against the container wall.

Yet another object of the invention is to provide particularly effective means for preventing any leakage of the container contents between the various parts of the device.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of the preferred form of the invention which is illustrated in the drawing accompanying and forming part of the specification. It is to be understood, however, that variations in the showing made by the said drawing and description may be adopted within the scope of the invention as set forth in the claims.

Referring to said drawing:

Figure 1 is a plan view of the device with the enclosure cap in position thereon, portions being broken away and shown in section in order to show the hidden parts.

Figure 2 is a longitudinal sectional view of the assembly shown in Figure 1, the plane of the section being indicated by the line 2—2.

Figure 3 is a view, half in section and half in side elevation, showing the parts of the device as they appear before being assembled.

Figure 4 is a fragmentary sectional view similar to Figure 2, but showing a somewhat modified design of the device and enclosing cap.

The device of my invention as illustrated in Figures 1 to 3 inclusive is designed for use on a metal container wall 2 provided with an outward offset or embossment 3 formed with a cylindrical portion 4 and an outer portion 5. In offset portion 5 is provided an opening 7 in which is positioned a bushing ring 8 here shown with an internally threaded opening 9 arranged for the reception of a threaded closure 12. Seated within the recess 13 formed at the inner side of the container wall by the offset 3 is a flange 14 preferably formed integrally with the bushing ring and arranged to underlie the offset portion 5 and form a substantial backing or support therefor.

The central or body portion of the bushing ring projects from the container wall at the outer side thereof, and embracing such projecting portion of the ring is a sleeve 17 formed at the inner periphery of an annular reenforcing member 18. The latter is provided with a laterally extending portion 19 which as will be clear from Figure 2, bears upon the outer surface of the offset portion 5 of the container wall so as to provide a backing therefore substantially over its entire area. The member 18 is desirably formed of sheet metal of a thickness at least as great as that of the container wall and therefore provides an effective reenforcement for both the bushing body and container wall.

For holding the parts against axial displacement on the container, the outer end 21 of the ring body is flanged over the corresponding end of the reenforcing sleeve 17, thereby clamping the member and wall against the flange 14. To prevent rotative displacement of the parts the flange 14 is provided on the side against the wall, with a plurality of projections 22 which seat in recesses 23 in wall portion 5, formed by providing offsets 24 therein. The protruding sides of the offsets in turn seat in recesses 20 formed in corresponding offsets in the laterally extending portion 19 of the member 18. It will thus be seen that when the parts are in operative assembled relation on the container wall, neither the bushing ring nor the reenforcing member may be displaced rotatively relative to each other or to the wall. It is important to note that by reason of the fact that the projections 22 are on the flange 14, the offsets in the wall and reenforcing member may be formed by merely forcing the flange against the wall while a suitably recessed

die is held against the exposed side of the reenforcing member. After the end 21 has been flanged over as aforesaid, which operation if desired may be effected at the time the projections form the offsets, the parts of the device will be most securely locked in position, it being understood that by reason of the firm grip which the flanged end has about the ring sleeve, the locking engagement between the reenforcement member and wall will also materially aid in preventing rotation of the ring on the wall.

By reference particularly to Figure 2, it will be seen that the projections 22 are disposed preferably exclusively near the outer periphery of the flange so as to leave clear the surface near the inner periphery. On such surface there is seated a resilient gasket 25 which is arranged to be forcibly compressed when the parts of the device are clamped together as aforesaid. Preferably the body of the bushing ring lies somewhat spaced from the edge of the wall at the opening 7 so that when the gasket is compressed is will fill such space and forcibly bear simultaneously against the ring, wall, and reenforcing member. In this way a triple seal is provided, that is between flange and wall, between the wall and the portion 19 of the reenforcing member, and between the sleeve of the member and the body of the ring.

An important part of the present invention lies in the feature of adapting the device for enclosure by a cap or hood so as to guard or shield the device against tampering and prevent unauthorized, or at least undetectable, access to the closure plug. As will be most clear from Figures 2 and 3, the member 18 is designed to extend laterally considerably beyond the portion of the offset 3 engaged thereby, and is formed at its outer periphery with a bead 26 which extends toward the wall so as to lie in the space surrounding said offset. The bead 26 while being desirably disposed in extreme proximity to the container wall proper, is preferably sufficiently spaced therefrom to permit of the insertion therebetween of the rim 27 of a cap or hood 28 arranged to enclose the device. The cap 28 is here shown of one piece and designed to provide a complete enclosure for all parts of the fitting including the closure plug and the wall offset. In the forms of the invention illustrated, the cap is arranged to be interlocked with the member by crimping the rim 27 about the bead 26, and as shown in Figures 2 and 3, the rim is formed with tongues 29 designed to extend over and around the bead so as to substantially close the space between the bead and the adjacent surface of the wall. A gasket 31 may be positioned within the rim of the cap so as to seal the space within the cap and facilitate the resilient gripping of the bead by the rim. It is to be noted that since the laterally extending portion of the reenforcing member projects substantially perpendicular to the fitting axis, for its entire width, no difficulty will be encountered in having to force around the bead the rim portion of a cap even when the latter is formed of relatively heavy gauge sheet metal.

In the form of the invention illustrated in Figure 4, the rim 27' of the cap 28' is formed smooth, that is without the tongues 29. With this design the use of a comparatively light gauge sheet material for the cap is particularly appropriate, since the tampering with or removal and replacement of the cap, can be readily detected. In this case, as in the previously described embodiment the outer periphery or bead 26' of the member 18' is brought in close proximity to the wall so that the cap will provide a more complete enclosure for the device and at the same time make more difficult its unauthorized removal.

I claim:

1. In a device of the character described, the combination with a wall having an opening, of an internally threaded bushing member extending through said opening and having an annular portion surrounding said opening and arranged on one side of said wall, a substantially rigid reenforcing backing member surrounding said bushing member and provided with inner and outer portions respectively engaged with and spaced from the other side of said wall said backing member serving with said bushing member to brace said wall on opposite sides thereof and thereby to prevent the breaking loose of said members under service conditions, means on the bushing member to clamp the backing member and wall against said annular portion of the bushing member, said members and wall having interlocking parts interlocking with each other and the wall to prevent rotational displacement of said members on said wall, and a cap for enclosing said members on said other side of the wall having a portion interposed between the wall and said spaced portion of the backing member.

2. In a device of the character described, the combination with a wall having an opening, of a bushing member extending through said opening and provided with a portion arranged upon one side of said wall and a portion projecting from the opening at the other side of the wall, a substantially rigid reenforcing member surrounding said projecting portion of the bushing member and having a laterally extending annular portion overlying and spaced from said other side of the wall said reenforcing member serving with said bushing member to brace said wall on opposite sides thereof and to thereby prevent the breaking loose of said members under service conditions, and a cap for enclosing said members engageable with said lateral projecting portion to secure the cap in position.

3. In a device of the character described, the combination with a container wall having an opening, of a bushing member having a body extended through said opening and a backing flange lapping the inner side of said wall, a substantially rigid reenforcing member having a sleeve embracing said body and a backing portion on the outer side of said wall cooperating with said backing flange to confine the wall therebetween said reenforcing member serving with said bushing member to brace said wall on opposite sides thereof and to thereby prevent the breaking loose of said members under service conditions, and means on said bushing member engageable with said reenforcing member to clamp same and the wall against said backing flange, said flange and said backing portion having parts interlocking with each other and with the wall to prevent rotation thereof relative to the wall.

4. In a device of the character described, the combination with a container wall having an opening, a bushing member extended through said opening having a portion lapping the inner side of the container wall, an annular substantially rigid reenforcing member located on the opposite side of said wall from said bushing and encircling said bushing and confining said wall

against said bushing portion and having a laterally extending peripheral portion overlying the wall in immediately spaced relation said reenforcing member serving with said bushing member to brace said wall on opposite sides thereof and to thereby prevent the breaking loose of said members under service conditions, and a cap for enclosing said members having its rim inserted into and substantially closing the space between said peripheral portion and the wall.

5. In a device of the character described, the combination with a container wall provided with an outwardly extending portion with an opening therein, a ring member in said opening, a substantially rigid reenforcing annular member of a thickness at least as great as that of the container wall positioned on the outer side of said wall in concentric relation with said ring member and having an annular portion thereof encircling said offset portion in spaced relation, and a cap for enclosing said members locked in position by engagement with the offset-encircling portion of said annular member, said reenforcing member serving with said ring member to brace said wall on opposite sides thereof and to thereby prevent the breaking loose of said members under service conditions.

6. In a device of the character described, the combination with a container wall having an opening, a threaded ring in said opening, a substantially rigid reenforcing annular member positioned on the outer side of said wall in concentric relation with said ring and having an outer peripheral portion overlying said wall said reenforcing member serving with said ring to brace said wall on opposite sides thereof and to thereby prevent the breaking loose of said ring and reenforcing member under service conditions, and an enclosing shield for said ring and member embracing said peripheral portion and extending substantially to said wall.

7. In a device of the character described, the combination with a container wall having an opening, a threaded ring in said opening, a substantially rigid reenforcing annular member positioned on the outer side of said wall in concentric relation with said ring and having its outer peripheral portion overlying and extended toward said wall, said reenforcing member serving with said ring to brace said wall on opposite sides thereof and to thereby prevent the breaking loose of said ring and reenforcing member under service conditions, and an enclosure for said ring and member extending over and under said peripheral portion.

8. In a device of the character described, the combination with a container wall having an opening, a threaded ring in said opening, a substantially rigid reenforcing annular member of a thickness at least as great as that of the container wall positioned on the outer side of said container wall in concentric relation with said ring and extending substantially at right angles to the ring axis substantially uninterruptedly from its inner to its outer periphery and being spaced at said outer periphery from said wall, and an enclosing covering over the ring and member embracing said member along its outer periphery and extending inwardly thereunder to lock said cover against detachment from the member, said reenforcing member serving with said ring to brace said wall on opposite sides thereof and to thereby prevent the breaking loose of said ring and reenforcing member under service conditions.

9. In a device of the character described, the combination with a container wall having an outwardly offset portion provided with an opening, a threaded ring in said opening, a substantially rigid reenforcing annular member of a thickness at least as great as that of the container wall on the outer side of said wall in concentric relation with said ring and having a laterally extending portion providing a backing for said offset portion and formed at its outer periphery with a bead bent to surround said offset, said reenforcing member serving with said ring to brace said wall on opposite sides thereof and to thereby prevent the breaking loose of said ring and reenforcing member under service conditions and a cap arranged for positioning over said ring and member and having a rim portion designed to extend around said bead in clamped engagement therewith.

10. In a device of the character described, the combination with a container wall having an outwardly extending offset portion with an opening, an internally threaded bushing ring having a body with a portion within said opening and a portion extending therefrom at the outer side of said wall and having a flange seated within said offset portion to provide a backing for said wall at the inner side thereof, a reenforcing member having at its inner periphery a sleeve embracing the portion of said body extending from the opening and having a laterally extending portion overlying and forming a backing for said wall offset portion and having at its outer periphery bent toward said wall so as to lie in proximity thereto and in surrounding relation to said offset, interlocking offsets in the interengaging parts of the wall and member for preventing relative rotation thereof, projections on said flange engaging the offsets in said wall to prevent relative rotation of the member relative to the wall, the outer end of said body being flanged over the outer end of said sleeve to hold said member said wall and ring in operative engagement, and a cap completely enclosing said ring and member having its rim interlocked with said outer periphery of said member and extended therebetween and the wall.

11. In a device of the character described, the combination with a container wall having an opening, a bushing member extending through said opening and having a portion lapping one side of said container wall, a substantially rigid reenforcing annular member of a thickness at least as great as that of the container wall encircling said bushing at the other side of said container wall and provided with a laterally extending peripheral portion confining said wall against said bushing portion and extending into a position overlying and spaced from said wall said reenforcing member serving with said bushing member to brace said wall on opposite sides thereof and to thereby prevent the breaking loose of said members under service conditions, and a cap for enclosing said members having its rim inserted under said peripheral portion and into the space defined between said peripheral portion and said wall.

12. In a device of the character described, the combination with a container wall having an opening, a bushing member extending through said opening and having an offset portion engaging one side of said wall, a reenforcing member having tubular portion mounted over said bushing member at the other side of said wall and a laterally extending flange formed integrally with

said tubular portion at an end thereof, said tubular portion being connected at its other end to said bushing member for gripping said wall between said offset portion and flange and providing together with said flange the sole means of connection between said bushing member and the wall portion engaged by said bushing offset portion for supporting the axial pressure of said offset portion against said wall portion, said flange being extended at its outer periphery into spaced relation to said wall, and a cap enclosing said members and crimped under said flange outer periphery intermediate said periphery and wall.

13. In a device of the character described, the combination with a container wall having an opening, a bushing member extending through said opening and having an offset portion engaging one side of said wall, a reenforcing member having tubular portion mounted over said bushing member at the other side of said wall and a laterally extending flange formed integrally with said tubular portion at an end thereof, said tubular portion being connected at its other end to said bushing member for gripping said wall between said offset portion and flange and providing together with said flange the sole means of connection between said bushing member and the wall portion engaged by said bushing offset portion for supporting the axial pressure of said offset portion against said wall portion, said flange being extended at its outer periphery into spaced relation to said wall, a cap enclosing said members and crimped under said flange outer periphery intermediate said periphery and wall, and means axially offset from the planes of the engaged flange, wall and offset bushing portion for interlocking said flange, wall and last named portion against relative rotation.

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