

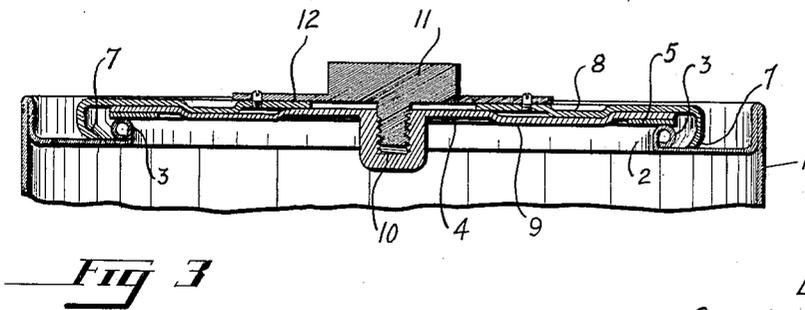
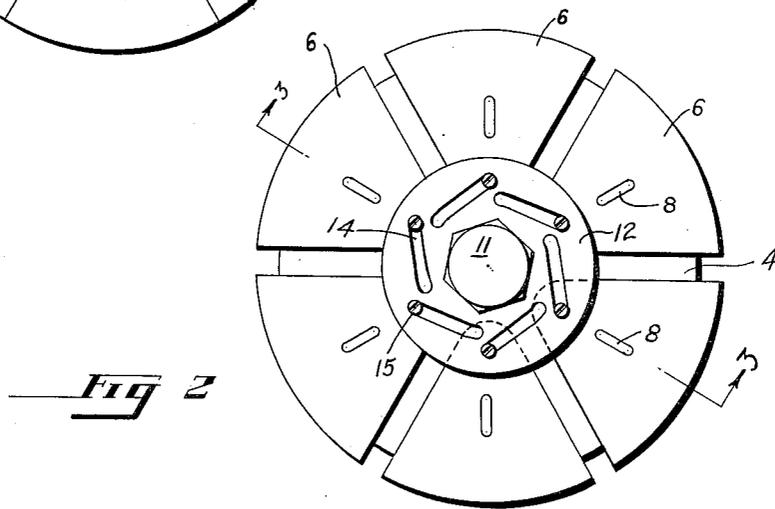
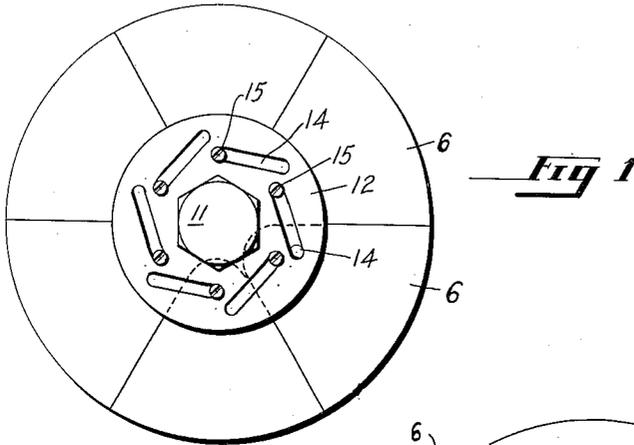
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BARREL CLOSURE

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BARREL CLOSURE

Application filed January 31, 1931. Serial No. 512,559.

This invention relates to covers or closures for barrels and other receptacles, and more particularly to metal closures for metal barrels, drums and similar containers.

5 An object of the invention is to provide a closure of the character described which may be quickly, easily and sealedly secured in place, and removed with equal facility.

10 Another object is to provide a closure of the character described, which is applicable to various kinds of containers having openings provided with outstanding marginal beads or flanges, without necessitating any additions to and changes in the construction of such
15 containers.

A further object is to provide a closure of the character described which is applicable to container openings of various sizes in that it will automatically adjust itself to and seal openings within its range, when merely manipulated as aforementioned to secure it in
20 place.

25 Still another important object of this invention is to provide a closure such as described, which is comparatively simple as to construction and operation, strong, durable, reliable and relatively inexpensive in consideration of repeated use over long periods of
30 time.

35 Yet another object is to provide a closure which may be secured and sealed in place and also released by a single turning movement of an operating member which is placed to be conveniently manipulated with a wrench or other tool, and does not rotate or
40 turn the closure proper when so manipulated.

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,
45 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 the drawing,

50 Figure 1 is a top plan view of a closure made in accordance with this invention, with

the parts contracted thereof in position assumed when the closure is in a sealing position.

Figure 2 is a top plan view showing the closure as when expanded and released as
55 would be the condition in first placing it on a container or preparatory to its removal from the container.

Figure 3 is a sectional view taken on the plane of line 3—3 of Figure 2.
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The present embodiment of the closure of this invention is especially adapted for application to metal containers of a common type which, as shown in the accompanying drawing, comprise a body 1 formed with an
65 opening 2 having an outwardly extended circular marginal bead or flange 3 or its equivalent. Heretofore the openings of these containers have usually been sealed with closures that are pressed, crimped, screwed or bolted
70 in place.

The closure of this invention is designed to take the place of the various types of closures which are applicable to containers of the aforementioned type and is of such construction and arrangement that it may be
75 used without necessitating any change or modification thereof or of the containers to seal containers having beads or flanges or the many different forms necessary to accommodate said various closures. Furthermore, the
80 container is constructed in such manner that it will automatically adjust itself to bead irregularities and to openings of varying sizes while being manipulated to effect the simultaneous securing and sealing thereof by a
85 simple turning movement of a single operating member thereon. These characteristics are provided by making the closure of sectional form in an arrangement whereby the
90 sections are simultaneously contracted into closure securing and sealing position on turning said operating member in one direction and are expanded to release the closure when
95 turning said member in the opposite direction and in both instances without necessitating the turning of the closure.

As here shown, the closure is in circular form and comprises an imperforate body
100 plate 4 provided with an annular, compressi-

ble sealing gasket 5 adhered to its inner side and arranged to engage upon the flange or bead 3 in such manner that when the gasket is forced against said bead, the opening 2 will be sealed.

Means is provided on the body plate 1 to secure and press said plate inward towards the bead, by a clamping engagement of such means with the outer side of the bead. Such means comprises segmental plates 6 reciprocally radially of and upon the plate 1 with their outer ends spaced outwardly from and overhanging the periphery of the plate. On the outer ends of the segmental plates are inwardly extending jaws 7 curved or otherwise shaped to hook around or closely conform to the overhang of the bead in such manner that when the opposed surfaces of bead and said jaws are forced together the body plate will be moved towards the bead and the gasket will be pressed tightly in sealing engagement with said bead. This engagement of said parts also prevents outward displacement of the closure when in bead clamping position. These jaws may be easily provided by bending the outer ends of the slidable plates into the form here described and shown, yet it should be noted that although the inner ends of the jaws engage the container end as shown in Figure 3, and thus add strength and security to the joint, this is not necessary inasmuch as the jaws will operate effectively if spaced from said container end.

It will be noted that the segmental plates 6 are arranged in a circular series on the body plate 1 and each thereof is formed with a guide rib 8 extending radially with respect to the body plate and slidably engaged in a similarly extended guiding depression 9 formed in said body plate. Formed in the center of the imperforate body plate is a screw threaded depression 10 which receives an operating member 1 having the form of a hexagonally headed screw. Means of operative connection is provided between this operating member and the slidable plates 6 whereby on rotation of said member the plates may be moved radially of the body plate 1 into and out of operative position. As here shown, this means includes a circular plate 12 fixed in any suitable manner to turn with the head of the operating member and which engages and overlies the inner ends of the several plates 6. Formed in the plate 12 are a plurality of slots 14 which extend obliquely to the paths of movement of the plates 6 and in such manner that when said plate is turned as when manipulating the operating member, lugs 15 fixedly carried by the plates 6 and slidably engaged in said slots will cause the latter plates to move radially in or out as the case may be.

It will now be apparent that to affix the closure of this invention it is placed over the

opening 2 with the gasket 5 resting on the bead 3 and the plates 6 disposed in the extended position as shown in Figures 2 and 3. The operator now applies a suitable tool, not shown, to the head of and turns the operating member to the right whereupon the plate 12 is correspondingly moved. By reason of the lug and slot connection of the plate 12 with the plates 6, the latter move radially inward whereby the jaws 7 on said plates will clamp against the outer side of the bead 3 and the parts will assume the position shown in Figure 1. It should be noted that this operation of the member 10 may be quickly and easily effected with a single turning movement thereof, it being unnecessary to follow the first movement with a tightening turn inasmuch as the closure will be secured to and forced inward against the bead simultaneously. This is due to the operating member screwing into the depression 10 when it is moved as aforementioned and to the fact that such inward movement is transmitted to the body plate 1 and gasket 5, through plates 10 and 6 and the jaws 7. Thus it is seen that on tightening the operating member as aforementioned, three operations are simultaneously effected inasmuch as the closure is locked to, centered on and pressed inward against the bead 3. Removal of the closure is easily effected by turning the member 10 counterclockwise and disposing the plate 6 in position shown in Figures 2 and 3 whereupon the closure is free to be lifted from the container.

It should be noted that the plates are arranged so that they may meet along their converging edges when the closure is clamped in place whereby a comparatively smooth surface is provided and dirt and other foreign matter is prevented from lodging between the parts of the closure. However, if the bead is thicker or wider than the one shown in Figure 3, or the opening 2 is larger and the bead is consequently engaged with the gasket nearer to the outer periphery of the latter, the plates 6 may not meet at their converging edges when the jaws 7 are properly engaged with the bead. In this case such spacing is not detrimental to the sealing effect of the closure. It is therefore apparent that the closure will automatically accommodate itself to a variation in the sizes of the openings and their beads.

A feature of importance is the provision of a simple but effective means for preventing the jarring and vibration which is occasioned incident to rough handling of the barrel, from working the clamping means loose. As here shown this means is provided by having the inner end portions of the slots 14 concentric with the axis of the plate 10. With this arrangement any movement of the lugs 15 caused by such jarring or vibration, when the lugs are in said con-

centric portions, will not cause rotation of the plate, the rotation of the plate requiring that the said lugs slide in the oblique portions of the slots.

5 I claim:

1. In a closure, a body plate arranged to seal the opening of a container, a plurality of clamping members arranged in a circular series on the outer side of said plate, claw shaped jaws on said members disposed to engage the container and means for sliding said members radially of the plate to move the jaws into and out of engagement with said container.

2. In a closure, a body plate arranged to seal the opening of a container, a plurality of clamping members arranged in a circular series on the outer side of said plate, jaws on said members disposed to engage the container and means for sliding said members radially of the plate to move the jaws into and out of engagement with said container, said jaws being hook shaped and arranged to form a substantially continuous clamping wall around said opening.

3. In a closure for the opening of a container having an outstanding circular bead about said opening, a body plate arranged to seal said opening, a plurality of clamping members arranged in a circular series on the outer side of said plate, jaws on said members disposed to engage the container and means for sliding said members radially of the plate to move the jaws into and out of engagement with said bead, said means comprising a rotary member on said body plate having slots extending obliquely to the path of movement of said members, and lugs on said members slidable in said slots.

4. In a closure for the opening of a container having an outstanding circular bead about said opening, an imperforate body plate arranged to rest on the bead and seal said opening, a plurality of segmental clamping plates arranged in a circular series on the outer side of said body plate, interengaging guide means on said clamping and body plates arranged to limit the clamping plates to sliding movement radially of the body plate, inwardly extending arcuate jaws on said clamping plates arranged to be moved into and out of clamping engagement with said bead, said body plate having a central screw threaded depression therein, a screw member turnable in said depression, a plate fixed to rotate with said screw member and having slots therein extending obliquely to the paths of movement of said clamping plates, and lugs on said clamping plates slidable in said slots.

5. In a closure for the opening of a container having an outstanding circular bead about said opening, an imperforate body plate arranged to rest on the bead and seal said opening, a plurality of segmental clamp-

ing plates arranged in a circular series on the outer side of said body plate, interengaging guide means on said clamping and body plates arranged to limit the clamping plates to sliding movement radially of the body plate, inwardly extending arcuate jaws on said clamping plates arranged to be moved into and out of clamping engagement with said bead, said body plate having a central screw threaded depression therein, a screw member turnable in said depression, a plate fixed to rotate with said screw member and having slots therein extending obliquely to the paths of movement of said clamping plates, and lugs on said clamping plates slidable in said slots, said slots having their inner ends formed concentric with the axis of said screw member.

6. In a closure for the opening of a container having an outstanding circular bead about said opening, a body plate arranged to seal said opening, a plurality of clamping members arranged in a circular series on the outer side of said plate, jaws on said members disposed to grip said bead, means for sliding said members radially of the plate to move the jaws into and out of engagement with said bead.

In testimony whereof, I have hereunto set my hand at Oakland, California, this 20th day of January, 1931.

LEWELLYN W. EVANS.

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