Feb. 10, 1931. V. E. CORNELL 1,792,280

METALLIC RECEPTACLE AND CLOSURE THEREFOR

Filed Jan. 25, 1930

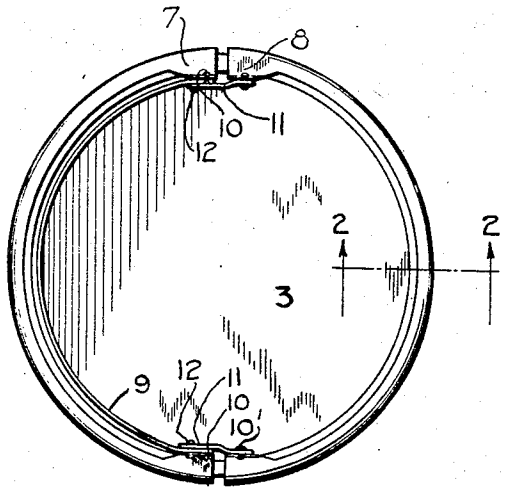


Fig. 1

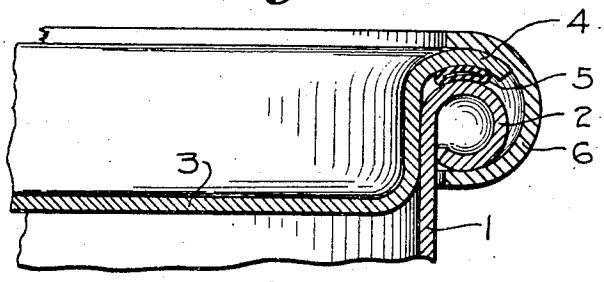


Fig. 2

Fig. 3

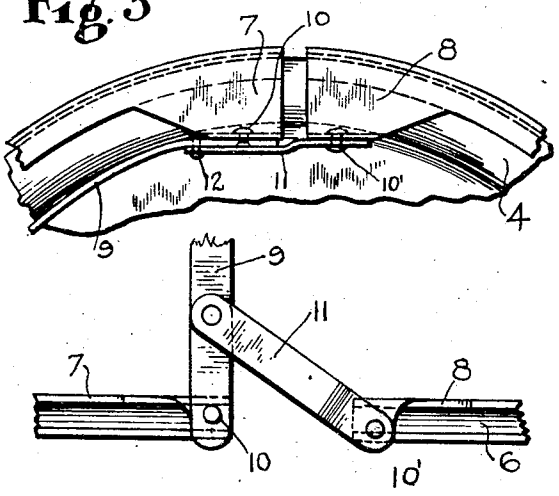


Fig. 4

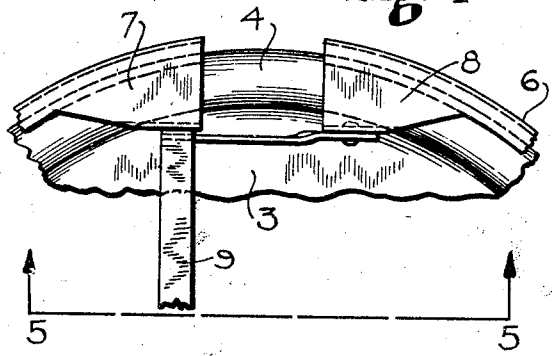


Fig. 5

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UNITED STATES PATENT OFFICE

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METALLIC RECEPTACLE AND CLOSURE THEREFOR

Application filed January 25, 1930. Serial No. 423,335.

My invention is an improvement in metallic receptacles or containers, and relates more particularly to closures for the same and to means for effecting a fluid tight seal between the receptacle and the closure.

One of the objects of my invention is to enable metallic receptacles such as drums or barrels to be fitted with a full removable cover providing a tight fluid proof seal between the cover and the receptacle, without aid of tools.

Another object of my invention is to insure a fluid tight seal between the cover and the receptacle by uniformly distributing the sealing pressure about the periphery of the cover and container.

A further object of the invention is to seal the cover in place against unauthorized removal.

Other objects and advantages of my invention will become more apparent from the following description of an embodiment thereof, reference being made to the accompanying drawing in which like reference characters are employed to designate like parts throughout the same.

In the drawing—

Fig. 1 is a top plan view of an embodiment of my invention, showing the cover on the receptacle in fluid tight sealed relation.

Fig. 2 is an enlarged fragmentary section taken on line 2—2 of Fig. 1.

Fig. 3 is a fragmentary plan view of the locking or clamping ring contracted to seal the cover on the receptacle.

Fig. 4 is a view similar to Fig. 3 except that the ring is shown partly expanded as in removing the ring and cover from the receptacle.

Fig. 5 is an elevation of the locking or clamping ring looking in the direction of the arrows in Fig. 4.

My invention is particularly applicable to metallic containers or receptacles such as barrels or drums and the like, which are provided with a circumferential bead at their open ends for supporting a cover and for reinforcement purposes.

Referring to the drawing, in which I have illustrated an embodiment of my invention, the barrel or drum is indicated at 1. The upper edge of the container is rolled to form a peripheral bead at the open end thereof. A cover 3 comprising a cupped member having a peripheral upwardly and outwardly extending flange 4, is supported by the bead 2 in such a manner that the cupped portion of the cover may be telescoped for a short distance within the container, as illustrated in Fig. 2. It will be noted that a portion of the flange 4 is slightly arcuate in cross section to conform with the approximate curvature of the upper surface of the bead, and that the outer edge of the flange terminates at a point near that defined by the greatest outer diameter of the bead. Although I have shown the flange extending to a point equal to the greatest outer diameter of the bead, I find that the flange may extend to a point just short thereof, it being sufficient that the flange extend completely over the packing 5 between the flange and the bead. The packing may consist of an annulus of any suitable packing material, and I have found that an annulus of flexible rubber tubing is very satisfactory for this purpose.

I have provided a simple means for removably securing the cover on the receptacle to effect a fluid tight seal between the same by exerting a substantially uniform pressure on the cover and the bead in a direction substantially parallel to the axis of the container.

In the present embodiment this means includes a split contractible channeled ring 6 substantially U-shaped in cross section. The upper and lower flange and bead engaging walls respectively of the ring extend in substantially parallel planes only near their inner edges as shown in Fig. 2.

Thus it will be seen that upon contracting the ring the flange will be tightly pressed against the packing 5 and the supporting bead 2 under a substantially vertical pressure.

The contractible ring 6 comprises a pair of complementary sections, each section being provided with inwardly extending lugs 7 and 8 near its ends. The lugs may be formed integrally with or separately of the ring sections and welded thereto in a plane

lying in the upper inwardly extending side walls of the ring sections. Each of the lugs is apertured near its inner extremity.

In the illustration I have shown a lever 9 in the form of a bail of slightly less diameter than the inner diameter of the split ring, the ends of the bail being pivotally connected by means of pins 10 to the lugs 7. In order to permit the bail to swing about a horizontal axis, the inner portions of the lugs 7 are bent downwardly, which is more clearly illustrated in Fig. 5. One end of each of the links 11 is pivotally connected to the downwardly extending portions of the lugs 8 to swing about a horizontal axis, the other ends of the links being pivotally connected to the bail 9 at 12.

It is desirable that the pivots 12 be disposed slightly below a line drawn through the pins 10 and 10', when the bail is in the position shown in Fig. 1 to contract the ring sections about the cover and bead. In this manner the pin 12 may be moved beyond a dead center position when the ring is fully contracted to prevent accidental release of the bail and the ring sections. As the bail is moved from substantially vertical position over the cover to the position shown in Fig. 1, the ring sections will be drawn together laterally to tightly press the cover against the packing and the bead in fluid tight relation.

Although I have not shown on the drawing a means to seal the bail in ring contracted position, this may be accomplished by welding a tab to the ring section to the left in Fig. 1, the tab being apertured to receive a wire of the usual wire sealing device, and sealing the wires passed through the aperture and around the adjacent portion of the bail in the customary manner.

In Fig. 4 I have shown the bail in a substantially vertical position with respect to the cover, and the ring sections 6 in partly open position to allow the upper and lower walls of the ring to release the pressure on the flange and ring. Further movement of the bail about its horizontal axis to the right in Fig. 4 will expand the ring sections to a point where the thus enlarged circumference of the ring is greater than that of the flange or bead, permitting removal of the ring sections and cover from the receptacle.

It is to be understood that while I have shown my invention applied to receptacles having openings of the same diameter as the inner diameter of the receptacle, the invention is equally applicable to receptacles having restricted openings.

It will also be observed that by my invention the full removable cover may be clamped easily on the receptacle in fluid sealing contact and may be removed easily without the aid of tools.

In my copending applications Serial Numbers 423,333, 423,334, and 423,336 all filed January 25, 1930, I have disclosed several other types of closures for metallic receptacles.

Various changes may be made in the details of construction and arrangement of parts without departing from the spirit of the invention or the scope of the appended claims.

I claim:

1. The combination with a metallic receptacle having a bead rolled about its open end, and a removable cover for said receptacle having a marginal flange fitting over the bead, of a contractible channeled segmental clamping ring having walls engageable with the flange and the bead for pressing the same together when the ring is contracted, and means for contracting the ring including a bail pivotally carried by one of said ring segments and links, the ends of the links being pivotally connected to another ring segment and to the arms of said bail respectively, whereby movement of the bail in one direction will expand said segments and movement in the opposite direction will contract the segments securely about the flange and bead to press the same tightly together.

2. The combination with a metallic receptacle having a bead rolled about its open end and a removable cover for said receptacle having a marginal flange fitting over the bead, of a contractible channeled clamping ring having walls engageable with the cover flange and the bead for pressing the same together when the ring is contracted, means for contracting the ring, said means including a lever pivotally carried by the ring and movable about an axis lying transversely with respect to the longitudinal axis of the receptacle, and a link pivotally connected to said ring and to said lever.

3. A clamping device for a metallic receptacle having a bead rolled about its open end and a cover having a flange fitting over the bead, including a contractible channeled clamping ring having walls engageable with the cover flange and the bead to press the same together when the ring is contracted, and means for contracting the ring, said means including a lever pivotally carried by the ring and movable about an axis lying transversely with respect to the longitudinal axis of the receptacle, and a link pivotally connected to said ring and to said lever.

In testimony whereof, I hereunto affix my signature.

VERNON E. CORNELL.