Aug. 22, 1939. G. O. CONNER 2,170,010

TAP ATTACHING DEVICE FOR CONTAINERS

Filed April 11, 1936

Fig. 2.

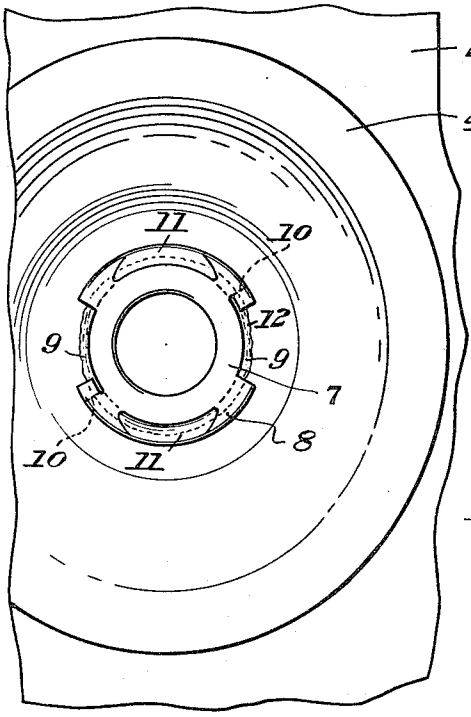


Fig. 1.

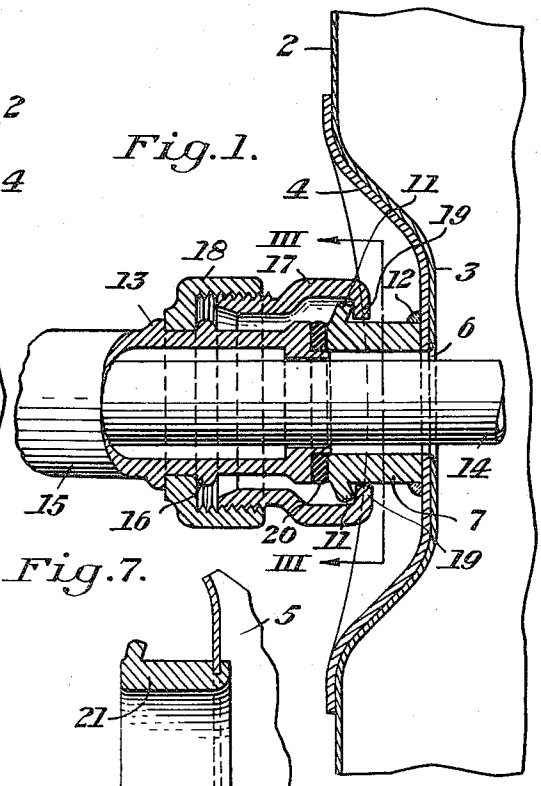


Fig. 7.

Fig. 4.

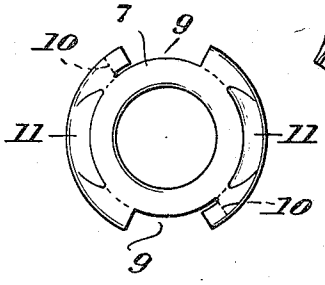


Fig. 3.

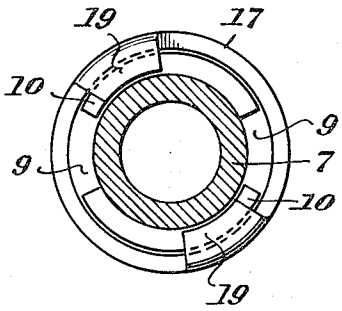


Fig. 6.

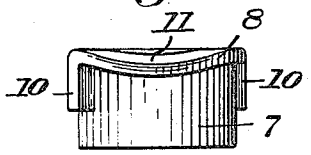
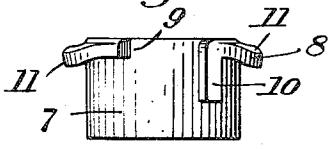


Fig. 5.



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UNITED STATES PATENT OFFICE

2,170,010

TAP ATTACHING DEVICE FOR CONTAINERS

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Application April 11, 1936, Serial No. 73,926

5 Claims. (Cl. 285—40)

This invention relates to containers and a tap attaching device therefor. It relates more particularly to the manufacture of containers adapted to have their contents tapped, as, for example, beverage barrels. It relates still more particularly to an improved tap attaching device adapted particularly for application to metal containers and which is of greatly reduced cost and enables manufacture of containers such as metal beverage barrels at a considerable saving.

It has heretofore been customary to provide metal beverage barrels with a bung hole of considerable size and which is internally threaded and adapted to receive a threaded plug having formed integrally therewith a tap receiving portion having a tap receiving opening of much smaller size than the bung hole. This has been considered necessary in order to enable the provision of attaching means for the tap. The cost of the threaded plug having the tap attaching means integral therewith and which is of considerable size and weight is so great that it affects to a very substantial extent the cost of the entire container. Moreover, the provision of the internally threaded means on the container for reception of such plug further materially increases the cost thereof.

I provide a tap attaching device for containers of the type above mentioned which reduces to a very important extent the cost of the container as a whole. The cost of my tap attaching device may range from 10 to 15% of the cost of the threaded metal plug above referred to, and the cost of the container is further reduced by elimination of the necessity of the provision of internally threaded means therein for reception of such plug. Moreover, I accomplish a further important advantage by entirely doing away with the necessity of providing a bung hole of relatively large size, and I need provide only a tap hole, that is to say, a hole or opening of such size as to receive a tap with only a convenient clearance thereabout.

I preferably provide a tap attaching device in the form of a flanged sleeve adapted for direct connection with a container in alignment with an opening, which opening, as mentioned above, may be of such size as to receive a tap with only a convenient clearance thereabout. I preferably permanently connect the tap attaching device with the container, as, for example, by crimping or welding, preferably the latter. The tap is applicable directly to such device without the necessity of the provision of any separate plug.

I also provide for formation of the tap attaching device in a novel manner which greatly reduces the cost thereof. I preferably provide a flanged metal sleeve and displace material from the flange of the sleeve at a plurality of points to provide apertures through the flange to permit application of a tap thereto. The displaced material is preferably left integrally connected with the remaining material of the flange and is preferably positioned so as to limit relative rotative movement between the tap and the tap attaching device when the tap is applied. I also preferably depress the material of the flange at a plurality of points thereabout to provide means to insure proper sealing of the tap, as will presently appear. Both the displacing and depressing functions may be performed simultaneously in a single operation, and, as the blank from which the tap attaching device is made is itself very cheap, and as only a single deforming operation which may be performed in a single stroke of a suitable forming die is required, the cost of making the tap attaching device is extremely low.

Other details, objects and advantages of the invention will become apparent as the following description of certain present preferred embodiments thereof and certain present preferred methods of practicing the same proceeds.

In the accompanying drawing I have shown certain present preferred embodiments of the invention and have illustrated certain present preferred methods of practicing the same, in which—

Figure 1 is a central vertical cross-sectional view through a sheet metal barrel having my tap attaching device applied thereto and showing a tap in place thereon;

Figure 2 is an elevational view of a portion of the barrel and showing the tap attaching device with the tap removed;

Figure 3 is a transverse cross-sectional view through the tap attaching device, taken on the line III—III of Figure 1;

Figure 4 is a top plan view of the tap attaching device before application to the container;

Figure 5 is an elevational view of the device shown in Figure 4;

Figure 6 is an elevational view of the device shown in Figure 4, taken at right angles to Figure 5; and

Figure 7 is a detail cross-sectional view showing a modified form of tap attaching device attached to a sheet metal barrel.

Referring now more particularly to the drawing, there is shown at 2 a sheet metal barrel which may be of standard construction. The

barrel has an inwardly depressed portion 3 reinforced by a plate 4 which may be welded to the barrel externally thereof. The reinforcing plate 4 may be omitted in certain cases and the modified construction shown in Figure 7 shows a sheet metal barrel 5 with such plate omitted. The barrel has a tap opening 6 in the depressed portion 3, which opening is preferably of such size as to receive a tap with only a convenient clearance thereabout.

I provide a tap attaching device of which one present preferred form is shown in detail in Figures 4, 5 and 6. Such device is made out of a flanged metal sleeve or ferrule. Such sleeve or ferrule is initially internally and externally cylindrical and is provided at one end with a continuous flat radially projecting flange. The sleeve is shown at 7 and the flange is designated generally by the numeral 8. In order to provide for the attachment of a tap I displace material from the flange at a plurality of points to provide apertures through the flange. As shown, apertures 9 are provided at two diametrically opposite points of the flange, adapting the device for reception of a tap of standard construction.

The material displaced from the flange to provide the apertures 9 is shown at 10. The displacement is preferably effected by placing the flanged sleeve or ferrule in a suitable die and operating on it in a single stroke to sever the material 10 from the flange except at one end point of the material 10 where it is left integrally connected with the remaining material of the flange as shown. The material 10 is otherwise severed from the flange and from the body of the sleeve and is displaced downwardly until it assumes a substantially vertical position when the sleeve stands upright, as shown in Figure 5. The two portions 10 provide means to limit relative rotative movement between the tap and the tap attaching device, as will presently appear.

I also depress or bend the material of the flange at opposed points 11, such depression or bending being in a direction generally parallel to the axis of the device and so as to provide at the under surface of the flange means to insure proper sealing of the tap. The downwardly projecting portions 11 engage a portion of the tap, as will presently appear, in such manner as to permit the same to properly adjust itself to insure effective sealing of the tap to the container. The depressing or bending of the portions 11 is preferably effected simultaneously with the displacing of the material 10 and a suitable die may be provided for accomplishing both of these functions in a single stroke.

In Figure 1 the tap attaching device shown in Figures 4, 5 and 6 is indicated as being welded to the outer surface of the barrel and in alignment with the opening 6, the welding being indicated diagrammatically at 12. The structure thus produced is one of great simplicity and consequent low cost but is strong and rugged and provides for application of a tap more easily than the threaded plug heretofore used, as there is no shell about the tap attaching device to interfere with application of the tap.

In Figure 1 there is shown a tap designated generally by reference numeral 13 and which may be of standard construction. Such tap comprises a stem 14, a sleeve 15 having an annular exterior shoulder 16, a thimble 17 and a nut 18. The thimble 17 has inwardly projecting portions 19 adapted upon application of the tap to pass through the apertures 9 whereupon the thimble is turned to position the portions 19 behind the flange portions of the tap attaching device and in engagement with the downwardly bent or depressed portions 11 thereof, thus affording the thimble secure engagement with the tap attaching device but allowing its position with respect thereto to be rockably adjusted. A gasket 20 is interposed between the tap attaching device and the sleeve 15 and the nut 18 is screwed up on the thimble 17 to maintain the tap in place, the rockable adjustment of the thimble on the tap attaching device allowing proper adjustment of the sleeve to effect a seal with the gasket and the tap attaching device. The displaced portions 10 of the flange of the tap attaching device serve as stop means to limit relative rotative movement between the tap and tap attaching device, the portions 19 of the thimble 17 engaging the portions 10 after such portions 19 have been passed through the apertures 9 and the thimble turned as above explained. As the tap herein disclosed is of well known construction we have not explained all of its features in detail.

In Figure 7 there is shown at 21 a modified form of tap attaching device the head or outer portion of which may be substantially the same as that of the tap attaching device shown in Figures 4, 5 and 6 but which is connected with the sheet metal barrel 5 by crimping as shown at 22. The tap attaching device may be connected with the barrel in various different ways, although it is preferred to attach it permanently. The connection must, of course, be sufficiently strong to enable performance of the desired function without fracture or leakage.

Certain of the subject matter herein disclosed is claimed in my copending application Serial No. 148,881, filed June 18, 1937, which application is a division of this application.

While I have shown and described certain present preferred embodiments of the invention and certain present preferred methods of practicing the same, it is to be distinctly understood that the invention is not so limited but may be otherwise variously embodied and practiced within the scope of the following claims.

I claim:

1. A tap attaching device for containers, comprising a hollow tap receiving portion having outwardly projecting discontinuous flange means, said flange means having adjacent a discontinuity therein a portion disposed in a direction generally parallel to the axis of the device, said portion being at least in part separated from the tap receiving portion.

2. A tap attaching device for containers, comprising a hollow tap receiving portion having discontinuous outwardly projecting flange means, the greater portion of such flange means being disposed in generally annular relationship about said hollow tap receiving portion, the flange means having a part adjacent a discontinuity therein disposed generaly transversely with respect to the greater portion thereof, said part being connected with the tap attaching device only by connection with said flange means at an extremity of said part, said discontinuity providing an aperture through the flange means to permit application of a tap thereto.

3. A tap attaching device for containers, comprising a hollow tap receiving portion having discontinuous outwardly projecting flange means, the greater portion of such flange means being disposed in generally annular relationship about said hollow tap receiving portion, the flange

means having a part integral therewith adjacent a discontinuity therein disposed generally transversely with respect to the greater portion thereof, said part lying along the hollow tap receiving portion and being separated therefrom, said discontinuity providing an aperture through the flange means to permit application of a tap thereto.

4. A tap attaching device for containers, comprising a hollow tap receiving portion having outwardly projecting flange means disposed in generally annular relationship with respect to said hollow tap receiving portion, the surface of said flange means facing away from the direction from which the tap is applied having a plurality of projecting portions extending generally in the direction of the axis of the device away from the direction from which the tap is applied and adapted to engage the means holding the tap to the tap attaching device whereby to insure effective sealing of the tap to the tap attaching device.

5. A tap attaching device for containers, comprising a flanged sleeve with portions of the material of the flange disposed out of the general plane of the flange to provide tap receiving apertures, said portions serving as stop means to limit relative rotative movement between the tap and the tap attaching device, other portions of the flange projecting out of the general plane of the flange in a direction generally parallel to the axis of the device away from the direction from which the tap is applied to provide non-planar face portions adapted to engage the means holding the tap to the tap attaching device whereby to insure effective sealing of the tap to the tap attaching device.

GUY O. CONNER.