

Nov. 17, 1936.

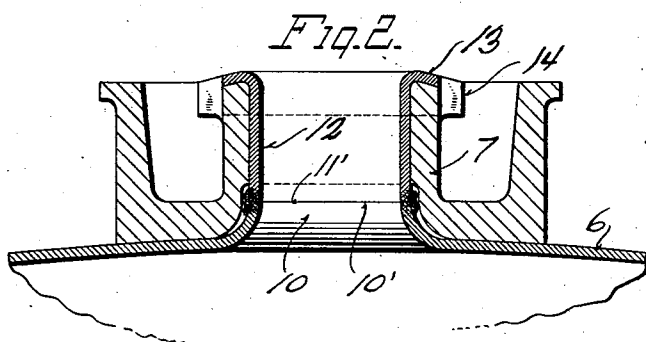
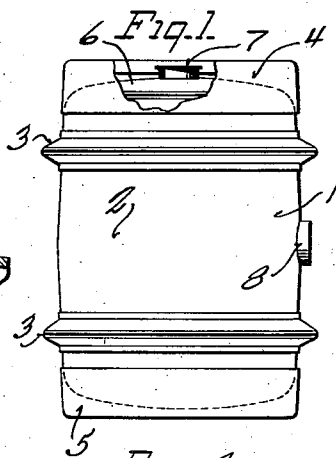
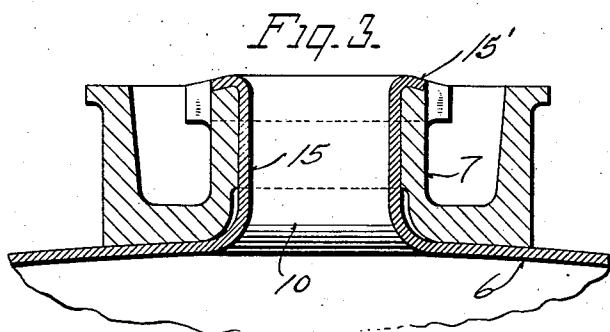
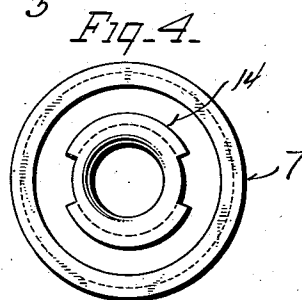
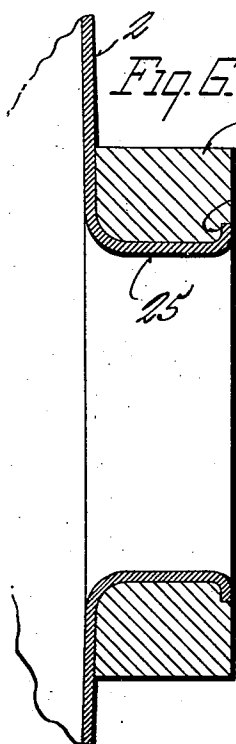
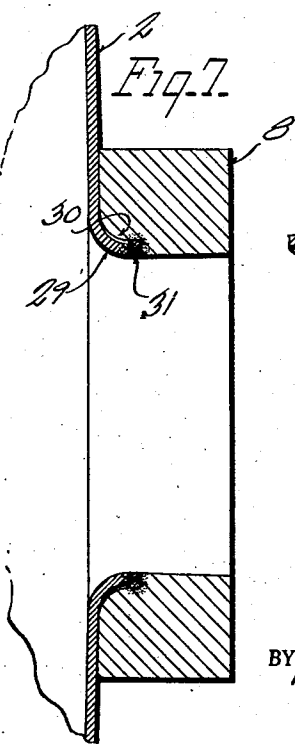
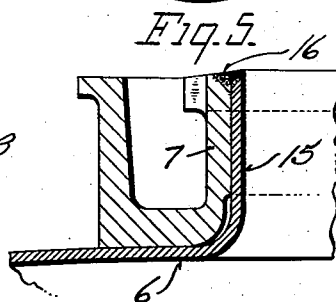
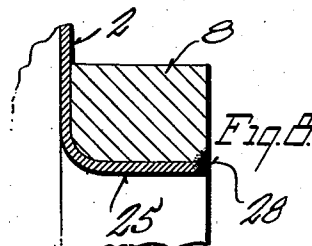
W. E. COAKLEY

2,061,269

METHOD OF SECURING BUSHINGS TO CONTAINERS

Filed Feb. 8, 1934

2 Sheets-Sheet 1



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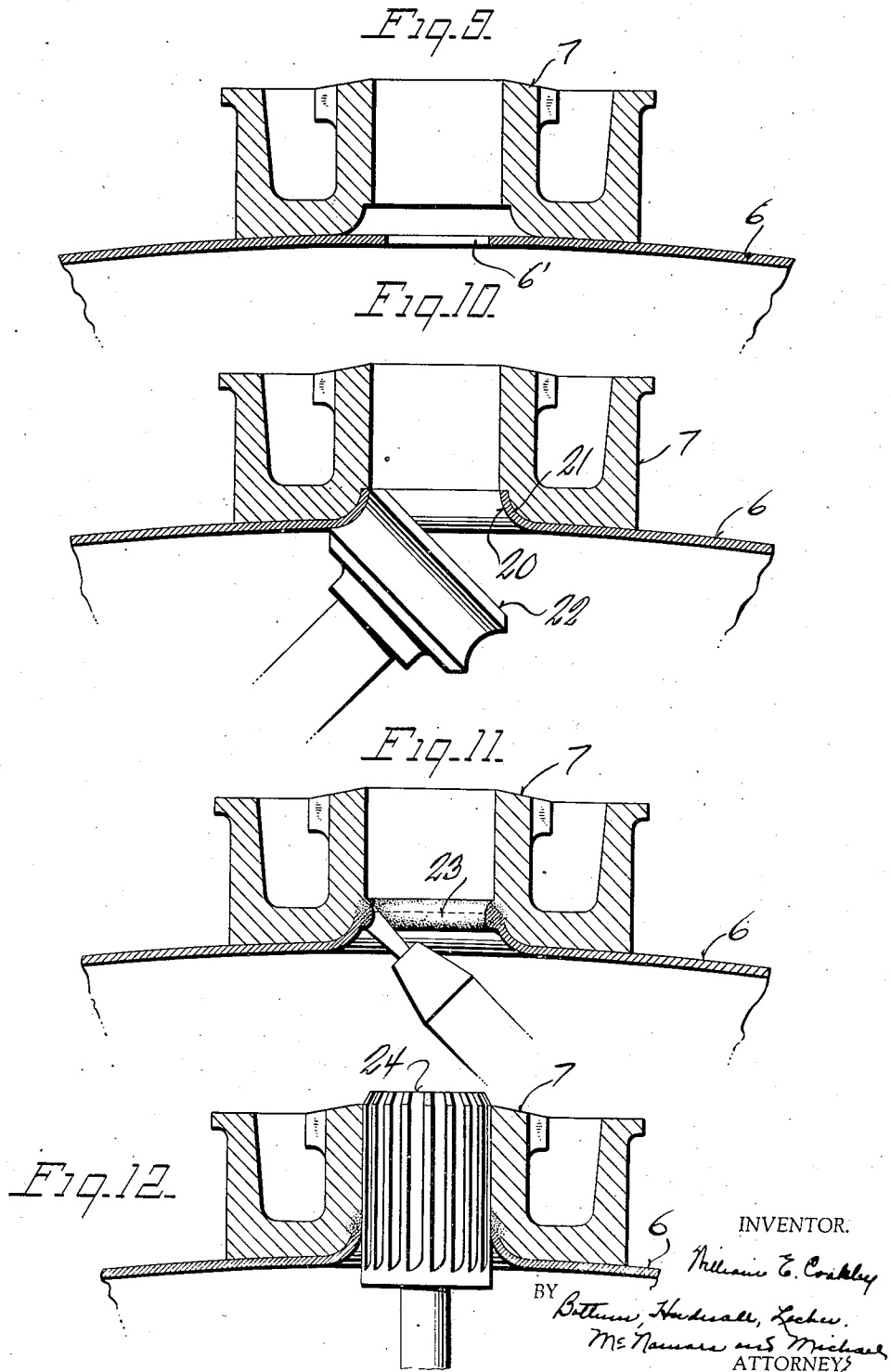
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METHOD OF SECURING BUSHINGS TO CONTAINERS

Filed Feb. 8, 1934

2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE

2,061,269

METHOD OF SECURING BUSHINGS TO
CONTAINERS

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Application February 8, 1934, Serial No. 710,255

4 Claims. (Cl. 29—148.2)

This invention relates generally to containers of the type having bushings or bungs attached thereto and more particularly to containers of the type of beer barrels to which tapping bushings and bungs are secured.

The invention proposes a novel method of and means for uniting or securing such a bushing to the container wall with which it is associated.

One of the objects of the invention is to provide for the secure and permanent interconnection of the bushing with its container and yet eliminate internal crevices or irregularities in the container or bushing.

Another object is to provide a container and bushing organization having the advantages mentioned and yet one which may be readily fabricated on a commercial scale in an economical and practical fashion.

Other objects and advantages reside in certain novel features of the construction, arrangement and combination of parts which will be hereinafter more fully described and particularly pointed out in the appended claims, reference being had to the accompanying drawings, forming a part of this specification, and in which:

Figure 1 is a view in elevation showing one type of container to which the present invention is applicable, a portion of the upper chime of the container being broken away for the sake of illustration;

Figure 2 is a view in vertical cross section taken diametrically of the tap bushing of the container and illustrating one mode of interconnecting the bushing and container in accordance with the present invention;

Figure 3 is a view similar to Figure 2 but showing another embodiment of the invention;

Figure 4 is a plan view of the tap bushing shown in Figure 3;

Figure 5 is a fragmentary view similar to Figures 2 and 3 but illustrating still another embodiment of the invention;

Figures 6, 7 and 8 are similar views illustrating the invention as applied to the bung bushings employed at the side of beer barrels and showing three different ways in which such bung bushings may be combined with and attached to the barrel in accordance with the present invention;

Figure 9 is a view similar to Figure 2 but illustrating the first step in the method of forming one type of connection between the container and the tap bushing;

Figure 10 illustrates the second step of the method; and

Figures 11 and 12 illustrate diagrammatically the third and fourth steps, respectively, of the method.

Referring to the drawings, and more particularly to Figure 1, the numeral 1 designates a metal beer barrel which may be of any suitable construction which is shown in the present instance as having a shell 2, rolling hoops 3 and upper and lower chimes 4 and 5. The upper end or head 6 of the barrel is provided with a suitable tap bushing 7. At the middle of the barrel a suitable bung bushing 8 is provided.

In general, the present invention proposes several novel modes of interconnecting the tap bushing 7 with its head or end wall 6 and the bung bushing 8 with the shell 2 of the barrel.

Referring first to Figure 2, it will be seen that a portion 10 of the upper end wall 6 of the barrel is displaced or spun into the bore or opening of the bushing and the edge 10' of such portion 10 is then welded to the lower edge 11' of a lining sleeve 12 snugly fitted in the upper portion of the opening of the bushing and having its upper end flanged over the upper end of the inner wall of the bushing as indicated at 13. This flange 13 terminates short of the lugs 14 which interlock with the tap (not shown) in the usual way.

In the form of the invention shown in Figure 3, the separate lining sleeve 12 is omitted but its function is performed by a portion of the upper wall 6 of the container. As illustrated in Figure 3, a substantial portion 15 of the upper wall 6 of the container is spun, drawn or otherwise suitably displaced into the opening of the bushing and functions to completely line the same. This portion 15 has its upper end flanged over as at 15' to mechanically interlock the container with the bushing. If desired, the flange 15' may be omitted, and, as illustrated in Figure 5, the upper end of the lining 15 may then be welded as at 16 to the bushing 7.

In Figures 9 to 12, inclusive, still another construction or mode of uniting the container to the tap bushing is illustrated and these views also show how the method of the present invention may be advantageously carried out. As illustrated in Figure 9, the tap bushing 7 is set over the opening 6' in the upper wall 6 of the container and while suitably held in such position a portion 20 of the upper end wall 6 is spun into a recess or seat 21 provided on the bushing 7 by means of a spinning tool or roll 22. When this has been accomplished the portion 20 is welded to the bushing as indicated at 23 in Figure 11. The in-

terior of the bushing 7 especially in the region of the weld 23, and also the metal of the portion 20 which has been fused into the weld may then be smoothed and finished down by means of a reaming tool or the like designated at 24 in Figure 12.

As previously indicated, the invention is also applicable to the fastening of the bung bushings 8 to the shells 2. Thus, as illustrated in Figure 6, a portion 25 of the shell may be displaced out through the opening of the bushing and then flanged over as at 26 into an annular seat 27 provided therefor on the bushing 8. The portion 25 thus completely lines the bushing and it, together with the portion 26, provides the desired mechanical interlock. If it is desired to omit the flange 26, this may be done and the desired strength of attachment secured by means of a weld 28 as shown in Figure 8. Then again it is not necessary to carry the displaced portion of a shell entirely through the bushing. The method illustrated in Figures 9 to 12 may be resorted to, that is, a small portion 29 of the shell may be displaced into a seat 30 provided on the bushing and then welded thereto as at 31, the weld, bushing and displaced portion 29 being thereafter smoothed and finished by reaming, grinding or any other suitable way.

By combining and securing the tap or bung bushings to the shell or container in the manner described not only is a permanent, rigid and strong mechanical interlock had but the occurrence of undesirable crevices or irregularities is avoided. A smooth and finished interior connection between the shell and the bushing is obtained.

While I have shown and described a number of different modifications of the invention, it is to be

understood that these have been selected merely for the sake of example or illustration, and that various changes may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

The invention claimed is:

1. In combination with a container having an opening and a bushing for said opening, means for securing the bushing to the container comprising a portion of the wall of the container displaced into the interior of the bushing to line the same, the end of such portion being flanged over the outer end of the bushing to mechanically interlock the bushing to the container.

2. In combination with a container having an opening, a bushing for said opening, said container wall around the opening being displaced into the bushing and a lining sleeve interlocked with the bushing and welded to the displaced portion of the container wall.

3. In combination with a container having an opening provided with an integral flange formation around the margin thereof, a bushing into which said flanged formation extends and a liner for the bushing welded to said flange formation and having a portion overlying the outer surface of the bushing and in interlocking engagement therewith.

4. The herein described method of lining a bushing and securing it to a container which comprises spinning a portion of the container in against the inner wall of the bushing, fitting a liner in the bushing with its inner edge in proximity to the edge of the flanged formation, and welding the adjacent edges of the flanged formation and bushing together.

WILLIAM E. COAKLEY.

CERTIFICATE OF CORRECTION.

Patent No. 2,061,269.

November 17, 1936.

WILLIAM E. COAKLEY.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 2, second column, strike out lines 7 to 14 inclusive, comprising claim 1, and for the claims now appearing as 2, 3, and 4 read 1, 2, and 3 respectively; and that the said Letters Patent should be read with these corrections therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 2nd day of February, A. D. 1937.

Leslie Frazer

Acting Commissioner of Patents.

(Seal)