

G. W. BEADLE.
METHOD OF PERMANENTLY APPLYING END CLOSURES TO VESSELS.
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1,044,976.

Patented Nov. 19, 1912.

Fig. 1.

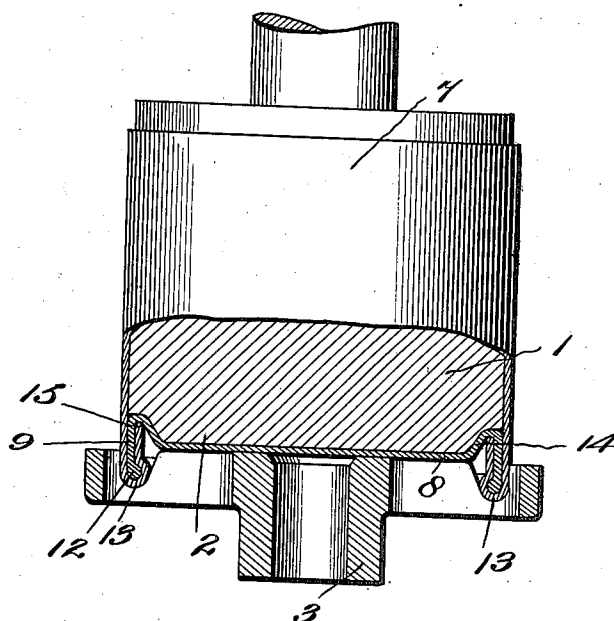


Fig. 2.

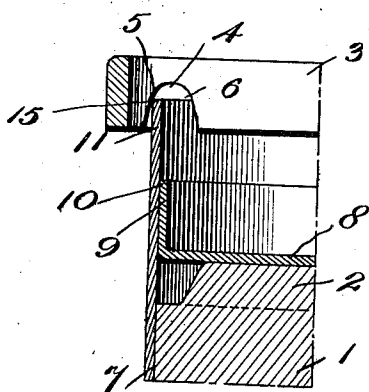
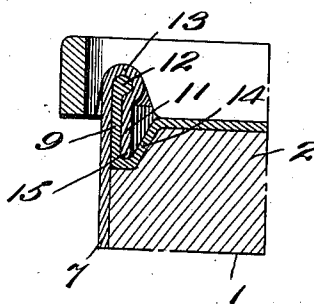


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

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METHOD OF PERMANENTLY APPLYING END CLOSURES TO VESSELS.

1,044,976.

Specification of Letters Patent.

Patented Nov. 19, 1912.

Application filed February 28, 1911. Serial No. 611,448.

To all whom it may concern:

Be it known that I, GEORGE W. BEADLE, a citizen of the United States, residing at Bayonne, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Methods of Permanently Applying End Closures to Vessels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to a method of permanently applying end closures to vessels, particularly for affixing to cartons flanged closures of the type hereinafter disclosed; and has for its purpose to effect, in one continuous and unbroken operation, the applying of such closures, by uniting the relatively deep flange thereof with an equal portion of the wall of the carton, to provide a liquid tight joint and rigid supporting rim for the vessel; forming complementary interlocking elements on the closure flange and wall of the carton to lock said joint; and dishing the closure to lock said wall portion against said flange.

A suitable apparatus for carrying out the method is shown in the accompanying drawings wherein:—

Figure 1 is a central vertical section, partly in elevation, of the apparatus, on the completion of the operation and showing the vessel with the closure applied thereto. Fig. 2 is an enlarged detail sectional view showing the position of the parts in Fig. 1 before the operation, and; Fig. 3 is an enlarged detail view of Fig. 1.

The apparatus consists of a mandrel 1 over which is adapted to be closely fitted the wall of the carton, and which is provided with a centrally projecting head 2 designed to dish the disk closure. Coöperating with the mandrel is a spinning tool 3 having an annular groove or channel 4 the inclined sides 5 and 6 whereof are adapted to form the liquid tight joint and beaded lock for said joint.

The method of affixing the closures consists in fitting the carton 7 on the mandrel 1 and inserting in said carton a disk 8 having a vertical flange 9 disposed longitudinally of the wall of the carton, and hav-

ing the marginal edge 10 of said flange located at such distance from the extreme edge of said wall as to leave free a projecting portion or rim 11, substantially equal in width to the width of said flange, as shown in Fig. 2. The rim 11 is then turned inwardly by being brought into contact with the inclined surface 5 and curved surface 4 of the spinner 3 to infold the flange 9 between said rim 11 and the outlying wall portion of the carton. This operation forms a relatively long and liquid tight joint between the closure and the vessel and further provides a rigid supporting rim therefor. As the pressure on the spinning tool is continued against the folded over portion 11 and the flange 9 an inwardly disposed bead 12 is formed on the marginal edge 10 of said flange, and a complementary bead 13 is formed on the overlying rim portion 11, which bead 13 interlocks with the bead 12 and provides an effective lock for the joint. Simultaneously with the above operations the head 2 of the mandrel 1 presses the disk portion 8 of the closure toward the beaded rim of the vessel and forms in said disk a dished portion 14 which partially overlies and firmly locks in place the extreme edge 15 of the inturned rim 11, as shown in Figs. 1 and 3. In this step of the process the head 2 is designed to dish the disk to a depth less than the width of the joint whereby the sustaining surface of said disk is located sufficiently within the edge of the supporting rim to be protected from any moisture which might otherwise be absorbed by the disk and cause the same to collapse.

I am aware of the Patents #941,085 dated November 23, 1909, to Marthinson, and #984,067 dated February 14, 1911, to Bond, and I make no claim herein to anything disclosed in either of said patents.

What I claim is:—

The process of permanently applying end closures to cartons consisting in fitting a flanged disk within the carton, leaving a wall portion projecting therefrom substantially equal in width to the width of said flange; by a spinning operation turning inwardly said projecting wall portion against the entire inner surface of said flange to provide a liquid tight joint, while forming an inwardly disposed solid bead on the

marginal edge of the flange, a complementary hollow interlocking bead on the infolded wall portion to lock said joint and leaving the remainder of said wall portion
5 extending parallel to and in contact with said flange; and dishing said disk for a depth less than the depth of the flange to accommodate the extreme marginal edge of said remaining wall portion to thereby lock

the said edge of the infolded wall portion 10 against said flange, for the purpose set forth.

In testimony whereof, I affix my signature, in presence of two witnesses.

GEORGE W. BEADLE.

Witnesses:

H. S. RODGERS,
J. HOUGHTON.