

June 2, 1959

C. W. DEARING ET AL

2,889,156

THREADED CLOSURE FLANGE WITH LOCKING PROJECTIONS

Filed Oct. 8, 1953

3 Sheets-Sheet 1

Fig. 1.

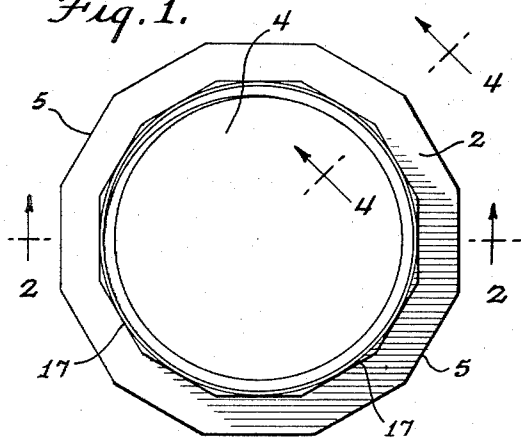


Fig. 2.

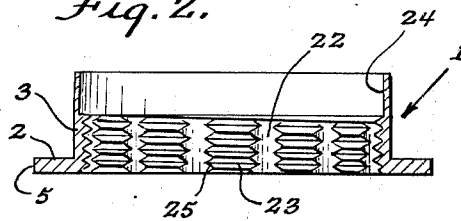


Fig. 3.

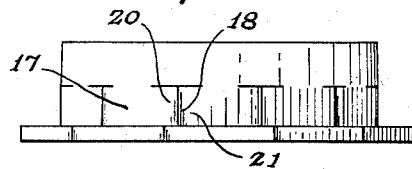


Fig. 5.

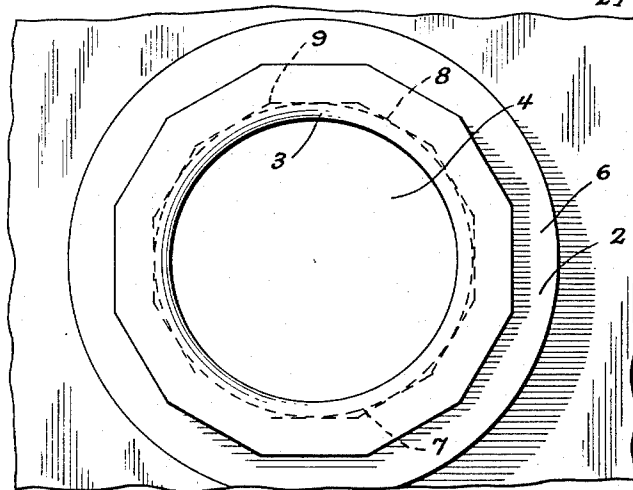


Fig. 6.

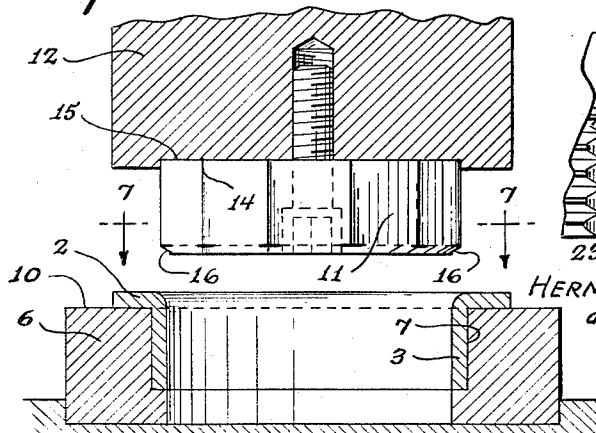
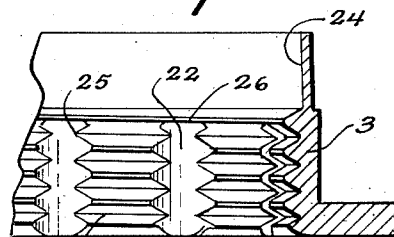


Fig. 4.



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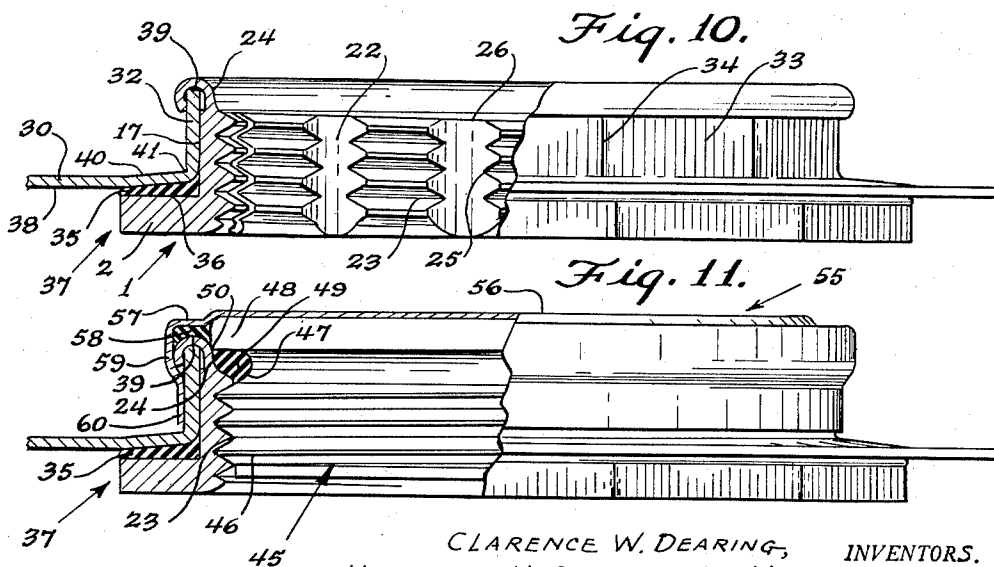
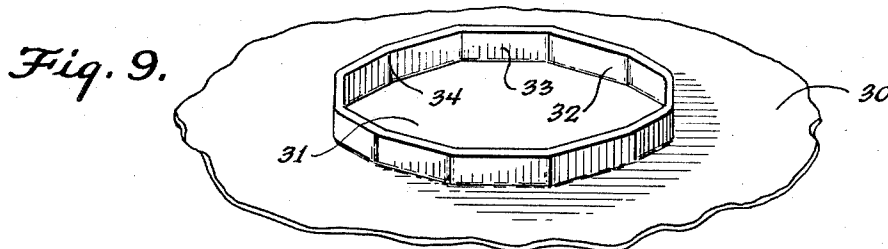
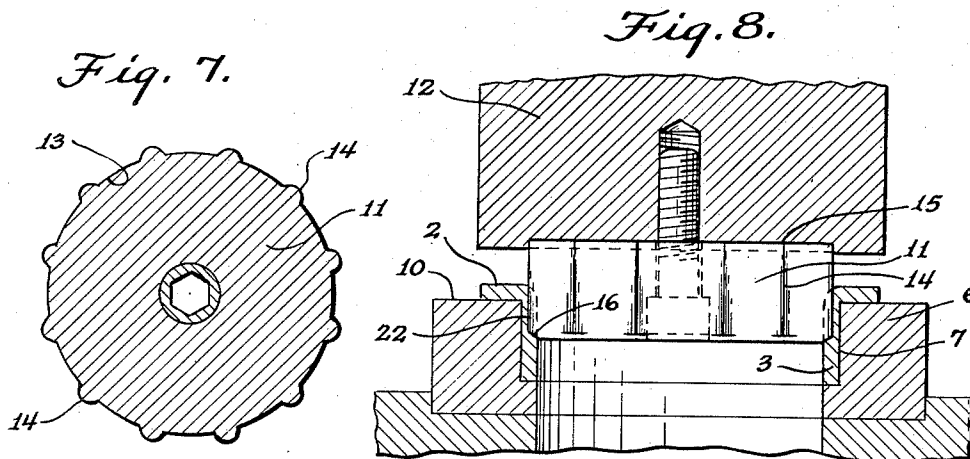
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3 Sheets-Sheet 3

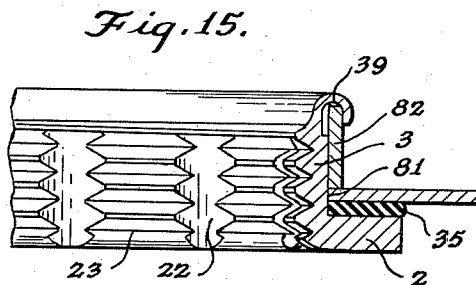
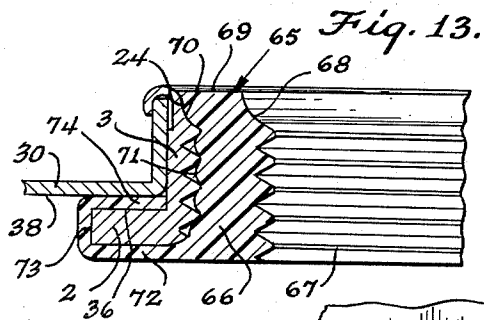


Fig. 12.

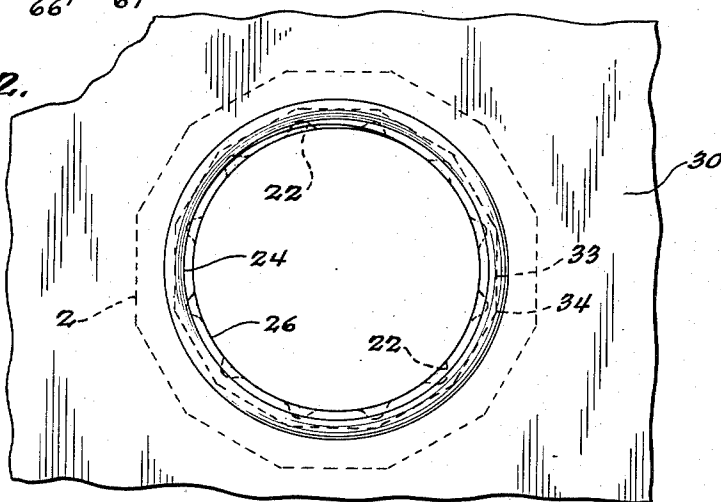


Fig. 16.

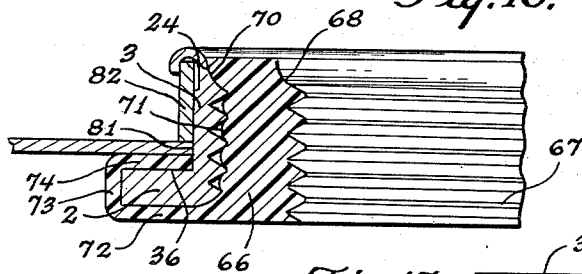


Fig. 14.

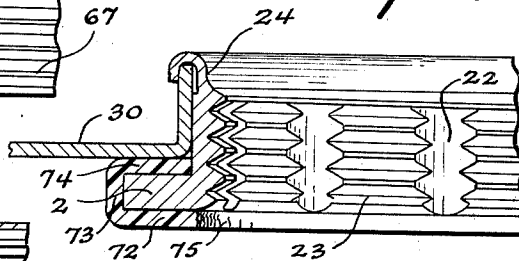
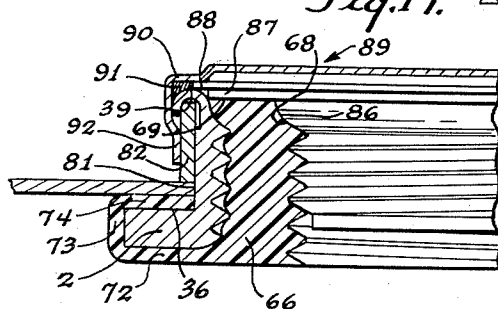


Fig. 17.



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THREADED CLOSURE FLANGE WITH LOCKING PROJECTIONS

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Application October 8, 1953, Serial No. 384,983

3 Claims. (Cl. 285—55)

This invention relates to closure flanges for container wall openings, to methods for forming such closure flanges and to combinations of the same with container walls and is particularly concerned with closure flanges for container walls where such walls are formed from pre-coated sheets and with combinations of such closure flanges with such container walls.

Steel shipping containers, particularly in the category of steel barrels and drums, have been developed over the years to a point where they are now a well recognized and most essential package for the shipment of a variety of commodities. They have found a wide market in the shipment of commodities which had no effect on or are not affected by the uncoated steel out of which they are made. So useful and effective have they proven themselves that a demand has arisen for the fabrication of such containers with interior coatings to protect the container walls against corrosion and the commodities against contamination, etc. by the container wall material, and the industry has found such coatings which can be effectively employed.

Since almost the inception of the light weight steel drum it has been the recognized practice to coat the exteriors thereof for protection of the steel and for the imparting of distinctive and attractive appearances thereto. For many years this has been done by the painting or lacquering of the drums after they were formed. The results are reasonably satisfactory but this method of coating calls for considerable work, equipment and floor space due to the necessity, among other things, of applying the lacquer to the finished drums, baking those drums in ovens and then, in addition, or alternatively, conveying the drums for considerable distance through the air to allow the lacquer to set. Efforts to similarly coat the interiors of assembled drums, particularly if they are not of the removable head type, involve so many additional factors that the results achieved hardly warrant the effort involved.

In recent years at least one manufacturer developed exterior coatings which could be applied to flat sheets prior to the fabrication of them into drums and which resisted abrasion and fracture from the steps involved and equipment employed in the forming of such sheets into drums. More recently, coatings, designed for the interior linings of drums, and the application of them to flat sheets, have been developed to withstand the forming of the sheets into drums without serious abrasion or fracture. Certain of these coatings, like the exterior coatings just mentioned, not only adhere well to the metal but are also tough. Others, such as Saran, adhere well to the metal and are good coatings for preventing the contact of food products with the metal of the container, but are rather easily fractured.

The application of closure flanges or bushings to openings in such coated sheets and the forming of the sheets to receive them have involved troublesome problems. The perforating and embossing of such sheets, in manners heretofore practiced, and the action of securing existing

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closure flanges in such perforations could not be followed where the sheets were pre-coated either exteriorly or interiorly or both, without the likelihood of seriously scuffing or fracturing the coating. When the coating on the outside of the drum is scuffed or fractured on the head of the drum, it makes for an unsightly package and, in addition, the metal is quite likely to be exposed to corrosion. Thus the full effectiveness of the drum is lost and the quality of the product is reduced. When the coating on the interior of the drum is badly scuffed or fractured, in a position where the contents of the drum can come in contact with it, the drum becomes worthless as a coated container, for the contents, such as food products and chemicals, would be likely to be contaminated by coming into contact with the metal. A great demand has accordingly arisen for closure flanges and applying methods which can be employed while avoiding these causes of rejection of the drums as a marketable product while, at the same time, following established effective closure principles and keeping down the price of closures.

Applicants have met this demand and solved the problem in a straightforward, economical, manner, though in doing so they have evolved a novel flange construction and a novel method of forming the same as well as a novel combination of closure flange with a container wall opening. These have all been done while following pre-existing practices to such an extent as to avoid material changes in manufacturing or applying machinery, with which latter all the drum manufacturers throughout the world are equipped. Furthermore the closure flanges of the invention enable the application thereto of closure plugs and caps in manners in which workers in the art are accustomed.

It is accordingly a primary object of the invention to improve upon closure flanges and the application of the same to container walls.

Another primary object is to provide for such improvements in connection with pre-coated container wall sheets.

Another primary object is to provide improved methods for the forming of closure flanges.

Another object is to provide closure flanges for, and the application of the same to, sheets used in the forming of container walls which are equally effective whether the sheets be uncoated or be pre-coated, either exteriorly or interiorly or both.

Another object is to provide such closure flanges for, and the application of the same to, pre-coated container wall sheets without disturbing the coating on either the interior or exterior thereof.

Still another object is to provide such closure flanges which will not contaminate the contents of such shipping containers or be contaminated by such contents.

A further object is to provide such closure flanges formed for the reception of closure members which closure members will likewise preclude the contamination of the contents of the container.

A still further object is to provide such closure flanges and the application of the same, to container walls, that the use of the container for non-contaminating commodities will be preserved after the container is no longer useable for the shipment of products subject to contamination by metal container walls.

Further and more detailed objects of the invention will in part be obvious and in part be pointed out as the description of the invention, taken in conjunction with the accompanying drawing proceeds.

In that drawing:

Fig. 1 is a top plan view of a closure flange in accordance with the invention.

Fig. 2 is a vertical section thereof, taken on lines 2—2 of Fig. 1 and looking in the direction of the arrows.

Fig. 3 is a front elevation of the closure flange of Fig. 1, as viewed from the underside thereof.

Fig. 4 is a fragmentary vertical section taken on lines 4—4 of Fig. 1 and looking in the direction of the arrows.

Fig. 5 is a top plan view of a partially formed flange blank seated in the female die member prior to the forming of rotation resisting elements on the flange neck.

Fig. 6 is a vertical section of the male and female die members in position to form the flange neck and showing the flange blank in place in the female die member as in Fig. 5.

Fig. 7 is a horizontal section of the male die member, taken on lines 7—7 of Fig. 6 and looking in the direction of the arrows.

Fig. 8 is a vertical section, similar to Fig. 6, showing the die parts in the final position with the flange neck having been formed.

Fig. 9 is a fragmentary perspective view of a section of drum stock formed for the reception of the finished flange of Figs. 1 through 4.

Fig. 10 is an elevation, part broken away and shown in section, of a completed assembly of the closure flange of Figs. 1 to 4, with the container wall of Fig. 9.

Fig. 11 is a similar view including, in addition, a closure plug and a capseal thereover.

Fig. 12 is a top plan view of the assembly of Fig. 10 as viewed from the outside of the container.

Fig. 13 is a fragmentary sectional view of a closure-flange-container wall assembly, incorporating a plastic over-lay.

Fig. 14 is a similar view showing the neck portion of the overlay as broken away, leaving merely a collar overlying the periphery of the flange base.

Fig. 15 is a fragmentary vertical section of a modified form of closure flange-container wall assembly.

Fig. 16 is a fragmentary vertical section of the modification of Fig. 15, including the application of a plastic over-lay thereto.

Fig. 17 is a view similar to Fig. 16 including relevant portions of closure plug and capseal.

Referring first to the flange per se and the method of forming same, as illustrated in Figs. 1 through 8, the complete flange is given the general designation 1 and is seen to have a base 2 from which an upstanding neck 3 extends, bordering the opening 4 provided by the flange. The perimeter of the base is here shown in the form of a polygon having flats 5 which, in the form illustrated, are twelve in number. This polygonal formation, with this number of sides, is chosen for symmetry with the flats formed on the neck, as will appear hereinafter, and serves for the holding of the flange while the interior of the neck is being threaded and reamed. Otherwise the perimeter of the base 2 need not be of any particular configuration save for the necessity of alignment in the inserting die and holding while threading and reaming.

The neck 3 is formed by drawing the same up from the blank out of which base 2 is formed and subsequently perforating the same to remove the top portion and then opening the neck out to extend at right angles to the base 2.

That leaves both the internal and external surfaces of the neck as concentric cylinders. What is desired, however, is to provide sufficient projections and flat portions on the exterior of the neck to prevent rotation of the flange with respect to the drum stock neck receiving it when the flange is assembled in the wall of the drum. Also it is desired to have sufficient threads within the wall of the neck for the strong, effective reception of a suitable closure plug, while providing a gasket seat on the inserted flange, above the threads,

for the engagement of a suitable gasket carried by the head of the plug.

These ends are achieved in a straightforward simple manner, in accordance with the invention. First the neck of the formed flange blank is inserted into a female die member 6, as illustrated in Figs. 5, 6 and 8. The surface 7 of this die member surrounding the neck 3 of the flange, as seen in Figs. 6 and 8, has a polygonal formation to be imparted to the exterior of the neck 3. Thus the center parts of the flat portions 8 of the surface 7 will lie on the same diameter as that of the exterior of the neck 3 but will depart therefrom at the corners 9, formed at their ends. The base 2 of the flange seats down on the upper surface 10 of the die member 6 thus locating the flange depth-wise within the die member.

The male die member 11, for use in swaging the stock of the flange neck 3 outwardly into conformance with the contour of the surface 7, is shown at 11 in Figs. 6, 7 and 8. This is secured to a ram 12 of a suitable press.

The male die member 11 is generally in the form of a cylindrical member whose base radius is substantially the same as the internal radius of the neck 3, giving it a base circular periphery 13. This periphery, however, is interrupted at a number of positions therearound, with outwardly extending ribs 14 in the same number and in the same spaced relationship as the corners 9 of the surface 7 of the female die 6. The peripheries of the ribs 14 are rounded to cause the metal of the flange neck to flow into the recess 9 in effective manner while preventing fractures of the neck and preserving the die life. The ribs 14 also extend throughout the height of the die member 11, the upper portion of which die member is received in a recess 15 formed therefor in the die block 12. The lower ends of the ribs 14 are rounded off as shown at 16 to give the die member a lead or start in to the neck of the flange.

Thus to form the flange neck into the desired configuration the male member 11 is driven down into the neck 3, as illustrated in Fig. 8, to the extent desired to provide a polygonal exterior of the desired height. Reverting to Figs. 1 and 3 it will be seen that this exterior is not quite polygonal, inasmuch as the centre portion 17 of each side is not quite flattened out but retains a little of the original curvature of the neck. What is important, however, is that abrupt corner elements 18, corresponding to the recess 9, are formed with flat faces 20 and 21 extending thereto from the small curved portions 17 remaining. These abrupt corners 18 protrude adequately for rotation preventing engagement with a similar formation imparted to the drum stock neck as shown in Fig. 9.

Internally the stock of the neck is not so abruptly formed but, rather, is rounded into depressions 22 in the same number as the corners 18 and in opposed position with respect thereto. These depressions, however, prevent the formation of continuous threads in the neck. Nevertheless sufficient material remains between the depressions 22 to enable the formation of threaded segments 23 of sufficient extent and strength to effectively receive a closure plug.

In order to thread these segments the neck 3 is first reamed internally at 24 down to the upper end of the depressions 22. This reaming cuts the metal back at least as far as the roots of the threads to be formed, so that a tap may be introduced to effect the threading. Each thread portion of the threaded segments 23 extends to abrupt sharp ends 25 so each threaded segment will have substantial engagement with the thread of the closure plug inserted in the flange. Also such sharpness will enhance the engagement and the free running of the plug in the flange.

A slight modification of the foregoing design to further expedite the reception of a plug by the flange is shown in Fig. 4. Here the reaming of the neck 3 at 24 is stopped sufficiently above the upper end of the recesses

22 to enable one full thread 26 to be formed above the thread segments 23. This not only expedites the threading of the plug with the flange but, also, improves the gasket seating of the plug gasket with respect to the flange.

The section of container wall formed for the reception of the flanges just described is shown at 30 in Fig. 9. Here the stock 30 has been perforated at 31 and is drawn up in a neck 32 bordering that perforation. The neck 32, in the drawing of it, is formed into a polygon shape for the mated reception of the substantially polygonal formation on the exterior of the flange neck 3. Thus the neck 32 has flats 33 meeting at recessed corners 34, which corners snugly receive the extending corners 18 on the exterior of the flange neck.

The manner of perforating and forming the drum stock neck here shown is effected by separate die operation prior to the application of the flange thereto. It is also possible to so form the drum stock into a polygonal neck by employing a single stroke flange inserting mechanism. This mechanism first perforates the drum stock and, using the exterior of the flange neck as a male die, forms the drum stock neck into the desired polygonal formation as the flange is inserted thereto.

A flange as just described, fully applied to the perforation of the container wall is illustrated in Fig. 10. Here the flange neck 3 is seated within the neck 32, formed in the container wall stock, while the base 2 of the flange underlies the container wall stock around the opening therethrough. A compressible gasket 35 is secured in compressed condition between the upper surface 36 of the base 2 and the undersurface of the container wall stock. The gasket 35 extends all the way from the neck 3 out to the periphery 37 of the base 2. Thus the gasket 35 performs the dual functions of gasketing against leakage of the container contents and cushioning the base 2 of the flange with respect to the undersurface of the drum stock. This cushion, an important feature of the invention, prevents any fracturing of the coating or lining 38 carried by the inner surface of the container wall stock. In the absence of such a cushioning the metal of the flange base 2, particularly at its peripheral edge, would be quite likely to bite into and fracture the coating or lining 38 during the pressing and securing of the flange in place in the container wall.

Such pressing and securing of the flange in place is effected by suitable die mechanism acting against the flange base, the container wall above it and the reamed portion of the flange neck, to first seat the flange in place in the opening and then tightly secure it there. Such securing is effected by beading the reamed upper portion 39 of the flange neck outwardly and downwardly around the upper end of the container wall neck. This beading is accomplished by a suitable curling anvil which engages a surface 24 all round its periphery and swages it into the bead formation seen in cross-section in Fig. 10. The gasket material 35, being more pliable than the lining material 38 absorbs any shock involved in the securing. After the securing the gasket 35 serves as a cushion to prevent any shocks imparted to the flange from moving the flange far enough for the periphery of its metal base to engage the lining 38.

As to any coating at 40 on the outer surface of the drum stock 30, such will likewise be protected by the cushioning action, at least up to the position 41 where the neck turns upwardly. Should any fracture or abrasion take place of the coating on the exterior of the neck 32, that is of no particular consequence for liquid cannot collect on it and also while the finished container is in transit, the neck 32 will normally be covered by the skirt of a capseal. Likewise fracture or abrasion of the coating, or lining, on the inside of the neck would be of no consequence as it is not visible and it is protected by the gasket 35 from any contact with the contents of the container.

It is, of course, apparent, but none the less important, that the mated polygonal formations on the exterior of the flange neck and the interior of the drum stock neck will prevent any rotation of the flange with respect to the drum stock as the closure plug is screwed into and out of the flange neck.

A suitable plug 45, for closing the opening in the flange, is shown in place therein in Fig. 11. The plug 45 has a screw threaded body portion 46 whose threads engage with the threads of the threaded segments 23. The threads 46 of the plug are, of course, continuous rather than being segmental as is the case on the flange. The plug is recessed at 47 above its threaded body portion 46 and, above that, the plug has an outwardly extending head 48 which extends outwardly to a position just beyond the peaks of its threads.

The undersurface of the head 48 cooperates with the recess 47 to form a receiving seat for a gasket 49. This gasket is compressed against the opposed portion of the surface 24 and the upper surface of the thread or thread segment continuing from the surface 24. Proper seating of the plug is effected when the corner 50 of its head engages in metal-to-metal contact with the surface 24. When the plug reaches that position the gasket 49 is surrounded by metal and is properly compressed to form a leakproof joint.

Additional assurance against leakage and provision against undetected tampering is provided by a capseal generally indicated at 55, whose top has a surface 56 overlying the head 48 of the plug. The peripheral portion 57 of that top is recessed downwardly to overlie the beaded portion 39 of the flange. A gasket 58, preferably of the flowed-in type, is carried partly by the undersurface of the portion 57 and partly by the downwardly extending skirt 59 of the capseal. Thus when the capseal is seated over the plug and drawn tightly down thereover by a tool which contracts the lower portion 60 of the cap skirt against the drum stock neck beneath the bead 39, the gasket 58 is compressed and flows, as needed, to fill any space between the periphery of the plug head and the opposed portions of the capseal and flange bead.

In the foregoing description of the preferred embodiment of the invention it has been assumed that where the container would have an interior lining, or coating, to resist corrosive or other chemical action of the contents of the container, the flange would either be suitably coated to similarly resist action of the contents on the metal of the flange, or would be formed of material suitable to resist such action. Stainless steel and aluminum are illustrative of such materials. Likewise the closure plugs would be either coated or formed of suitable material. Where the exterior of the container only is coated, then the flange may, of course, be made of ordinary steel without any coating.

An alternative arrangement for the making of flanges out of ordinary steel and shielding their metal from contact with the contents of the container is shown at Fig. 13. Here the flange and container wall are formed and assembled in the same manner as that already described but all portions of the flange, which would otherwise be exposed to the contents of the container, are shielded or covered by an element 65 referred to herein as an over-layer.

This over-layer 65 is formed of a plastic material inert with respect to the contents of the container but still rigid and resilient enough to retain the desired formation and hold in place against the metal flange bordering the container wall opening. Polyethylene is illustrative of a plastic material which is satisfactory for this purpose. It is, of course, to be understood, that other plastic materials may be employed so long as they have the characteristics needed for an effective over-layer.

The over-layer 65 has a neck portion 66 whose interior surface is screw threaded at 67 for the reception of a

suitable closure plug as indicated at Fig. 17. This surface is recessed at 68, at the upper end of the threaded portion 67 to form a gasket seat for the gasket portion of the plug. Normally such plug would be formed of the same material as the over-lay and would have a gasketing portion formed integrally with it to seat against the surface 68. Also the plug would have a thin skirt-like portion overlying at least part of the flat top surface 69 of the over-lay.

The exterior of the neck 66 has an enlarged outwardly extending portion 70 at its upper end for engaging the surface 24 of the flange bead above the threads of the flange. Below that, portions of the neck 66, as seen at 71, extend at least part way into the flange threads of the segments 23. Also portions of the neck 66 extend into the recesses 22 between those segments. If the over-lay is pre-formed and then applied to the flange, the extension of its material into the threads and recesses will largely be such as results from the cold flow of the material. If, however, the overlay is rendered thermo-plastic when applied, or is formed using the flange as the matrix for a die in which the over-lay is moulded, then the over-lay material can be caused to flow fully into the threads and into the recesses, correspondingly increasing the holding engagement therebetween.

From the bottom of its neck 66 the over-lay extends outwardly in a collar portion which forms a pocket for receiving and covering the base 2 of the flange. This collar portion has a bottom portion 72 underlying the base 2, an end portion 73 turning up therefrom to overlie and cover the periphery of the flange base and a top portion 74 turning inward over the upper surface 36 of the flange base. Preferably the portion 74 extends inwardly to the outer edge of the flange neck 3 in the same manner as does the gasket 35 previously described. However the portion 74 may terminate at a position spaced from the neck 3 and that space may be filled by a compressible resilient gasket.

If the over-lay is pre-formed it is applied to the flange by springing the pocket formed by the portions 72, 73 and 74 sufficiently to enable the insertion of the base 2 therein. If, however, the over-lay is formed right on the flange in fluid state, it will already be in proper position when it sets.

The flange, with the over-lay applied thereto, is secured to the container wall in the same manner as already described for the securing of flanges without an over-lay. Here, however, the portion 74 of the over-lay replaces the gasket 35 and thus is the portion to be squeezed between the flange base and the drum stock. Being of pliable resilient material it forms an effective gasket and also serves as a cushion to prevent fracture of the liner 38, during the insertion and during subsequent working of the flange with respect to the container wall. Obviously the contents of the container are precluded from making contact with the metal of the flange since the over-lay covers all otherwise interiorly exposed surfaces thereof. The over-lay holds itself in position on the flange by means of the interengaging formations on the neck and the pocketing of the base 2 of the flange in the collar of the over-lay. Rotation of the flange with respect to the container wall is precluded by the polygonal neck engagement as already described and rotation of the over-lay with respect to the flange is precluded by the portions of the over-lay which flow into the recesses 22 as well as by engagement of the perimeter of the over-lay collar with the polygonal perimeter of the flange.

After the drum has served its purpose as a lined container it may be re-used, carrying commodities for which a lining is not needed. In such case the opening through the flange can be increased in size by cutting or breaking away the neck 66 of the over-lay around a line such as 75 in Fig. 14. The neck portion 66 would then be removed, leaving behind the remaining part of the collar portion 72 as well as all of the portions 73 and 74. All

that really needs to be left is the portion 74 to serve as a gasket between the flange base 2 and the container wall 30. The threaded segments 23 thus being exposed, a metal closure plug as illustrated in Fig. 11 can be employed for closing the opening.

A slightly modified form of the invention is illustrated in Figs. 15 through 17. The metal flange here is the same as that previously considered so will be given the same reference characters. The container wall 80 however, is merely perforated at 81 in an opening whose perimeter mates with the exterior of the flange neck. This provides an interlock, preventing rotation of the flange with respect to the container wall. In place of an integral neck on the container wall, a separate sleeve 82 is provided, formed to fit the exterior of the flange and secured in place by the beading of the portion 39 over the outer end thereof. This holds the sleeve in tight engagement with the exterior of the container wall. Such holding likewise secures the flange tightly in place and compresses the gasket 35 in the manner already described.

The application of this two-piece construction with a flange having an over-lay is illustrated in Figs. 16 and 17. Here, again, all parts of the flange and over-lay are the same as set forth in Fig. 13 and are thus given the same reference characters. The sleeve 82 is again employed in place of the integral container neck to overlie the flange neck and to hold the flange and container wall in assembled relation. The gasketing and cushioning effected by the portion 74 of the over-lay is again the same as in the form of Fig. 13 and, likewise, acts the same as the gasket 35 previously described. Likewise also the neck of the over-lay can be broken away as shown in Fig. 14 if the use of it is no longer desired.

The addition of a closure plug and capseal to the form shown in Fig. 16 is illustrated in Fig. 17. Here the plug shown has a body 85 threadedly received within the threaded opening 67 of the over-lay. Above its threads the plug has an integrally formed gasketing portion 86 engaging the gasket surface 68 of the over-lay and its head has a portion 87 which overlies the upper surface 69 of the over-lay. A thin lip 88 extends from the portion 87 to overlie the upper end of the bead 99. Thus when a capseal 89 is secured in place over this closure plug, the depressed portion 90 thereof not only forces its gasket 91 into engagement with the bead portion 39 but also presses the lip 88 down against that bead. Securing of the capseal is effected by the inward and downward crimping of its skirt 92 against the exterior of the sleeve 82. Thus any liquid which possibly leaks up between the plug and the over-lay is prevented from going any further by the action of the capseal in securing the lip 88 and the gasket 91 about the bead 39.

From the foregoing it would be readily apparent that the invention provides a closure flange, a method of forming the same, a combination of the same with a container wall opening and the method of forming that combination which solved the problem of providing effective closures for exteriorly coated and interiorly lined containers without disturbing those coatings or linings.

In the foregoing description various materials have been specifically mentioned as being effective for the intended purposes. It is, of course, to be understood that such references are made for illustrative and not for limiting purposes and that the scope of the invention embraces the use of such materials as are suitable for the ends to be achieved.

In a larger sense it is, of course, to be understood that since certain changes may be made in the construction set forth and in carrying out the above method and since different embodiments of the invention may be made without departing from the scope of the invention, it is intended that all material contained in the above description or shown in the accompanying drawing shall be interpreted in an illustrative and not in a limiting sense.

Having described our invention what we claim as new and desire to secure by Letters Patent is:

1. A closure flange for container openings, comprising a one-piece member formed with a substantially cylindrical neck and a base, said neck being continuous from one end to the other thereof and being formed with a cylindrical opening therethrough for the reception of a closure member, said base extending laterally outwardly from and with respect to said neck at one end thereof, a portion of the end of said neck opposite said base being internally reduced in cross-section, the remainder of said neck being formed with circumferentially spaced vertically extending recesses extending radially outwardly from the inner cylindrical surface of the said opening and there being projections on the outer surface of said neck in mated relationship with respect to said recesses, the portions of the stock of said neck between said recesses presenting cylindrical segments of the internal cylinder of said neck, said segments extending longitudinally of said neck, the faces of said segments being formed with thread elements therein forming part of a thread formation interrupted at said recesses and an uninterrupted thread continuing the thread formation of said interrupted threads and formed in the stock of said neck between said reduced portion thereof and the adjacent ends of said segments.

2. A closure flange as in claim 1 and including a resilient plastic overlay applied to said flange, said overlay including a neck portion received within said closure flange neck, having its outer surface formed into engagement with said interrupted thread formation and having its inner surface formed as a threaded opening extending through said neck, and a collar portion underlying the lower surface of said base and, turned up past the periphery thereof and overlying part of the upper surface of said base.

3. A closure flange for container openings formed as a single one-piece member and including a substantially cylindrical neck and a base, said neck being formed with a substantially cylindrical opening therethrough for the reception of a closure member, said neck being circumferentially continuous throughout the height thereof and

being formed with three vertical band portions of differing conformation, said base extending laterally outwardly from and with respect to said neck at one end thereof, the portion of said neck at the opposite end thereof from said base being internally reduced in cross-section, the portion of said neck adjacent said base being formed with circumferentially spaced longitudinally extending recesses extending outwardly from the internal surface thereof and separating the remainder of the internal surface into cylindrical segmental portions with cylindrical inner faces and abrupt side walls, the external surface of said neck portion, opposite said recesses, being formed with outwardly extending projections forming substantially pointed vertical ribs, said remaining cylindrical segmental portions being formed with interrupted thread sections of a thread formation therein, said thread formation extending from one end to the other of said segmental portions and said third portion of said neck between said reduced portion and said interrupted thread portion forming a single continuous thread, said single continuous thread extending on a helix continuing the thread formation of said interrupted threads.

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