Aug. 14, 1928. 1,680,763

L. R. N. CARVALHO

RECEPTACLE CLOSURE

Original Filed Oct. 29, 1921

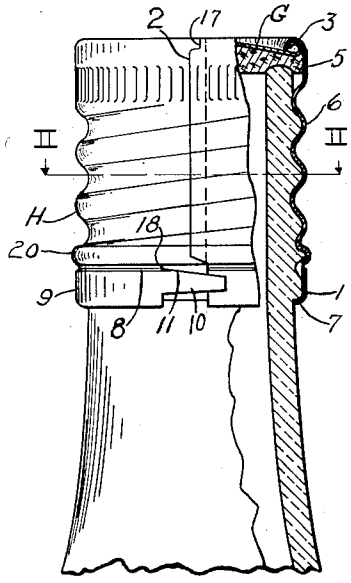


Fig. 1.

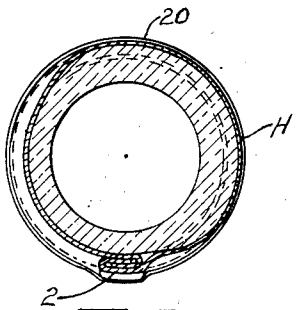


Fig. 2.

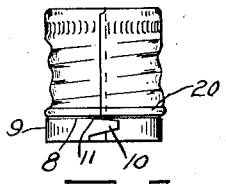


Fig. 3.

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UNITED STATES PATENT OFFICE.

LESLIE R. N. CARVALHO, OF TOLEDO, OHIO, ASSIGNOR TO THE CLOSURE SERVICE COMPANY, OF TOLEDO, OHIO, A CORPORATION OF OHIO.

RECEPTACLE CLOSURE.

Original application filed October 29, 1921, Serial No. 511,392. Divided and this application filed June 30, 1924. Serial No. 723,146.

My invention relates to a receptacle closure and, as herein shown, is particularly designed for use as a cap or closure for relatively small necked bottles, although it may be satisfactorily used as a closure for receptacles of other kinds and proportions.

An object of the invention is to provide an efficient closure which may be cheaply and easily manufactured and which will serve normally to seal the receptacle, and which may be readily released and when released will still be efficient for use as temporary closure.

In its preferred form, the closure comprises a top piece or cover portion formed of a piece of sheet material, and a depending flange portion formed of a separate piece from the cover portion, said parts united by a seam, the flange portion having its lower edge adapted to be torn off for releasing the closure, while leaving the upper part unchanged and ready for use as a satisfactory and temporary closure.

Other features of the invention will appear hereinafter.

The present application is a division of my co-pending application, Serial Number 511,392, filed October 29, 1921, for receptacle closure, on which Patent No. 1,510,457 was granted October 7, 1924.

In the accompanying drawings:

Figure 1 is a side elevation view of a closure, and the receptacle to which it is applied, the parts being shown partly in vertical section.

Figure 2 is a transverse sectional view at the plane of the line II—II on Figure 1.

Figure 3 is an elevation view of the closure.

The closure as herein shown comprises a cover portion G and a flange portion H formed of separate pieces of sheet metal and connected by an annular seam 3. The flange portion is stamped from a piece of flat sheet metal, is then bent into cylindrical form and its ends united by a seam 2 extending vertically of the closure.

The seam 3 is preferably, though not necessarily, of a character such that it holds the cover and flange parts rigidly and immovably connected together and at the same time provides an attractively rounded edge surface at the upper edge of the closure projecting above the uppermost surface of the cover, serving to frame the cover and protect against injury any lacquer, paint or other ornamentation carried by the cover. This seam also serves as an effective reenforcing element for maintaining the cover against distortion at all times.

Within the closure, resting against the inner surface of the cover, is a gasket 5 of cork or other suitable material, held in position by frictional engagement with the walls of the flange portion of the closure. The flange portion H is formed with screw threads or spiral portions 6 extending circumferentially of the closure to fit corresponding screw threads formed on the neck of the container. The lower edge 7 of the flange portion is bent or flanged inwardly to underlie an annular bead 1 formed on the neck of the receptacle below the threaded portion thereof.

At a point spaced a short distance above the lower edge, the flange portion H of the closure is formed with a score line 8 extending substantially throughout the circumference thereof and adapting the portion of the closure below said line to be severed or torn off from the portion above when it is desired to remove the closure.

As a convenient means by which to tear off the removable strip or portion 9 of the flange below the score, which strip is referred to herein as the attaching portion, a suitable tongue or finger piece 10 is continued from one end of said portion and overlaps the opposite end, said tongue being adapted to be lifted by the user's fingers and to constitute an efficient finger grip. If desired, the strip 9 may be wholly severed from the main portion of the flange as at 11 for a suitable distance along the score line 8, so as to provide an effective length for the tongue without the necessity of providing an added length or projection on the blank from which the flange H is formed. A decided economy in material is thus effected and yet a very satisfactory finger grip size given to the tongue by means of the slit 11.

The lower margin of the blank providing the gripping bend 7 is also omitted or cut away adjacent to the tongue 10 for approxi-

mately the same distance as the length of the slit 11 so as not to interfere with the proper functioning of the tongue.

The seam 2 may be of any form or kind, but is herein shown to be of the interlocking type, that is, the blank is provided with opposite end portions bent back upon themselves and these are interengaged with each other. This interlocking seam may extend for any desired portion of the vertical length of the flange H, the remaining portion being either a plain butt or lap joint, as indicated, for example, at 17. It is preferred that the interlocking seam shall appear at least at a point closely adjacent to the score 8 so as to thereby prevent opening of the seam when force is applied in tearing off the attaching strip 9. In this connection, it is to be noted that the provision of the slit 11 not only affords advantages as above mentioned, but also places the point 18, where the tearing operation begins, at a position sufficiently removed from the seam, so that the strain applied in beginning the tearing operation is felt by the body of the closure at a point removed from the seam, where it is less likely to cause the seam to open.

The tongue 10 is preferably formed on that end of the blank which in the completed closure lies under the opposite end, along seam 2, so that the ends of the flange H are less liable to be separated at the seam when the tongue is torn back.

As a further precaution against possible opening of the seam when the tongue is torn back, the seam, particularly at its lower end adjacent the tongue, may be distorted or otherwise operated upon so that the strain of tearing back the tongue, whether the tongue be upon the upper or nether end of the blank, will be resisted by positively locked portions of the seam.

A suitable distortion of the seam for this purpose is shown to consist of an annular bead 20 positioned so that it constitutes in effect an ornamental addition to the closure continuing across the seam, so that the various thicknesses of metal of the seam are bent to form the transverse curvature of the seam and are thus caused to present such opposing surfaces to each other, that separation would be unlikely.

By extending the seam to or near the point where the tearing off of the attaching portion 9 begins, said seam is made to constitute an efficient reenforcing element for preventing likelihood of distortion of the closure under the initial tearing strain, and this is particularly true where the seam is itself locked against separation, as just described.

It is to be noted that the position of the bead 20, being directly above and adjacent to the score 8, places said score in a protected position beneath the bead. When the attaching portion 9, therefore, has been torn off, the resultant raw-edge left upon the body of the closure will be so obscured and protected that it will offer neither an undesirable appearance nor a menace to the user's fingers. The bead also stiffens the lower edge of the closure and prevents distortion of said lower edge both during the tearing off operation and afterward. The score 8 may be formed by cutting into the metal from either the outer or inner surface.

A closure constructed as herein disclosed requires no additional or separately formed receptacle seal; that is, it carries its own sealing element as a substantial part of itself. It may be painted, lacquered or otherwise ornamented and protected on either or both of its top or its side surfaces.

Modifications may be resorted to within the spirit and scope of my invention.

What I claim is:

1. A receptacle closure comprising a cover part and a one-piece screw threaded skirt part, the skirt part having a side seam therein, the lower portion of the skirt part being adapted to be bent inwardly to constitute a holding means to retain the closure in sealing position upon a receptacle, and said skirt part having a vertical slit extending upwardly from the bottom edge thereof and having a finger grip continuing from one wall of said slit by which to tear off the lower portion of the skirt part, said wall of the skirt part being spaced from the seam for the purpose set forth.

2. A receptacle closure comprising cover and flange portions, the flange portion being formed from a piece of sheet material bent into cylindrical form and having its meeting edges seamed together by a seam extending vertically of the closure, the flange portion comprising an annular bead formed thereon intermediate the upper and lower ends of the flange, said bead extending circumferentially around the flange, the flange above the bead being formed with screw threads also extending circumferentially thereof and merging into and terminaitng at said bead, the flange being formed with a score line extending circumferentially thereof below and in close proximity to said bead, whereby the portion of the flange below the bead is removable and forms an integral attaching portion.

3. A receptacle closure comprising a one-piece screw threated skirt portion having a side seam therein, the lower portion of the skirt being adapted to be bent inwardly to constitute a holding means to retain the closure in sealing position upon a receptacle, said skirt portion having a circumferentially extending score line adjacent the inwardly bent portion and an outwardly formed bead immediately above said score

line, said skirt portion having a vertical slit extending upwardly from its lower edge, a finger grip extending circumferentially from one wall of said slit by which the portion of the skirt below said score line may be separated from the skirt permitting removal of the closure from the receptacle, said outwardly formed rib being so located that it protects the exposed raw edge formed by the tearing operation.

Signed at Toledo, in the county of Lucas and State of Ohio, this 27th day of June, 1924.

LESLIE R. N. CARVALHO.