No. 829,914. PATENTED AUG. 28, 1906.

W. H. DODGE.

CAP OR CLOSURE FOR BOTTLES, JARS, CANS, AND THE LIKE, AND METHOD OF MAKING THE SAME.

APPLICATION FILED FEB. 12, 1906.

FIG. 1

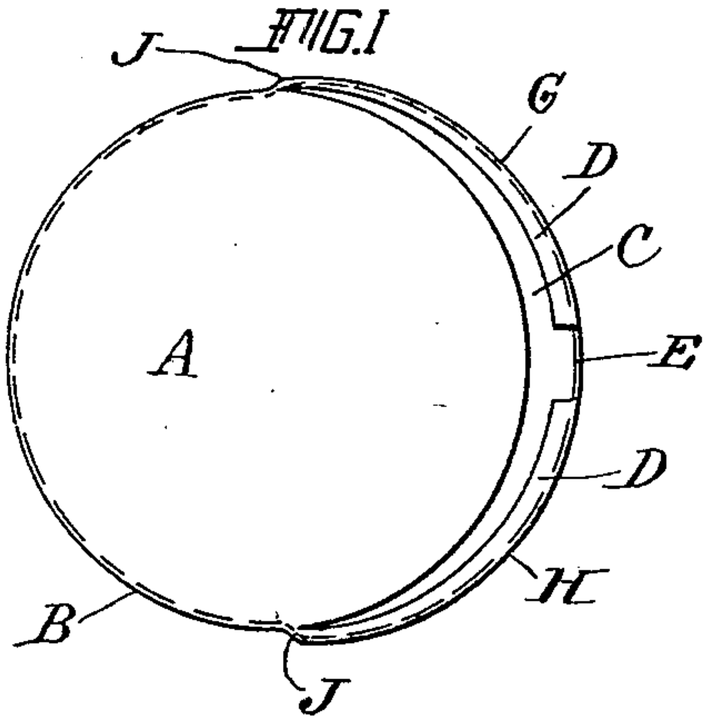


FIG. 2

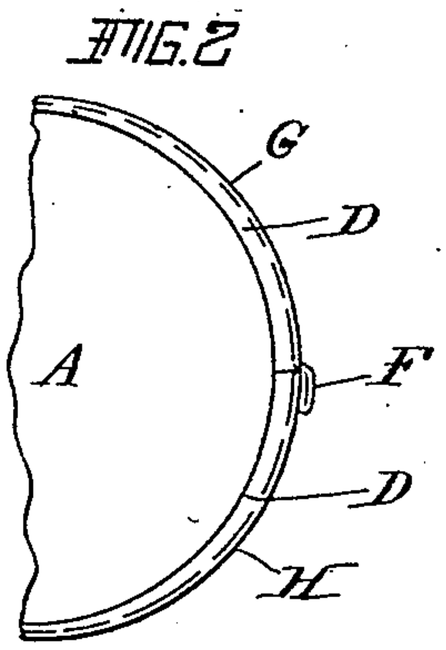


FIG. 3

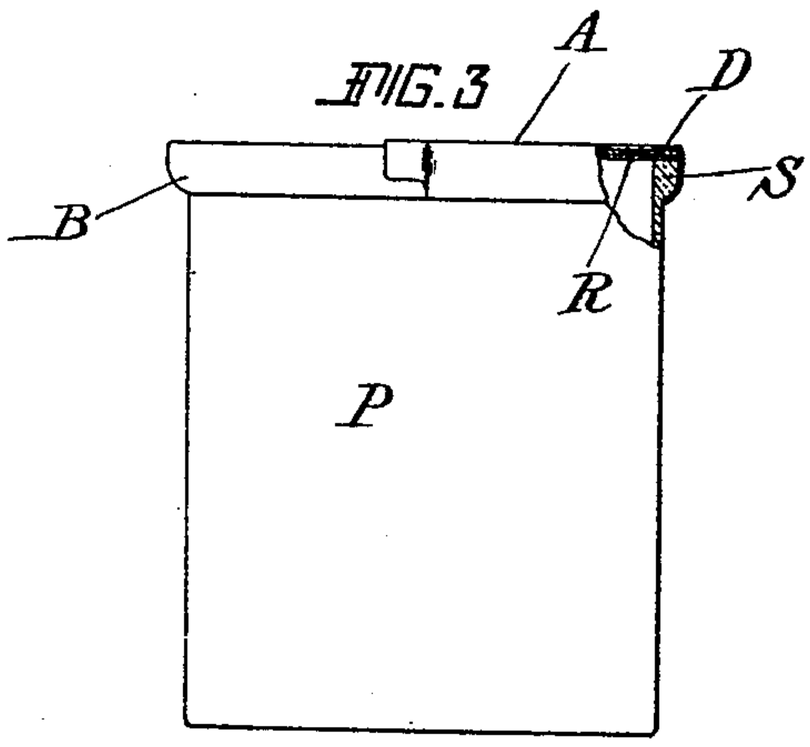


FIG. 4

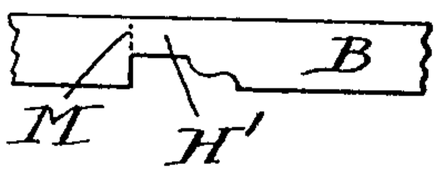


FIG. 5

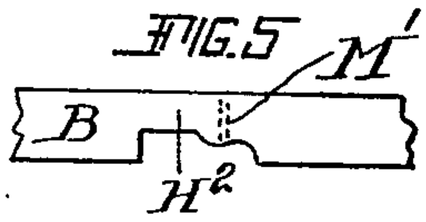
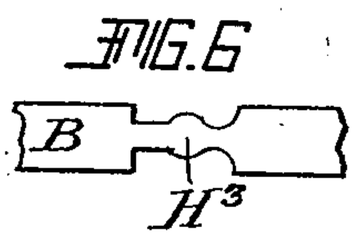


FIG. 6



Witnesses
W. S. Babcock
Edward K. Miller

Inventor
William H. Dodge
By his Attorneys
Procor, Darby & Hopkins

UNITED STATES PATENT OFFICE.

WILLIAM H. DODGE, OF MONTCLAIR, NEW JERSEY.

CAP OR CLOSURE FOR BOTTLES, JARS, CANS, AND THE LIKE, AND METHOD OF MAKING THE SAME.

No. 829,914. Specification of Letters Patent. Patented Aug. 28, 1906.

Original application filed October 31, 1905, Serial No. 285,255. Divided and this application filed February 12, 1906. Serial No. 300,801.

To all whom it may concern:

Be it known that I, WILLIAM H. DODGE, a citizen of the United States, residing at Montclair, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Caps or Closures for Bottles, Jars, Cans, and the Like, and Methods of Making the Same, of which the following is a specification.

This invention relates to caps or closures for bottles, jars, cans, or the like and methods of making the same.

The object of the invention is to provide a cap or closure for bottles, jars, cans, or the like which is simple in construction, economical in manufacture, and efficient as a hermetic sealing device and which can be quickly and readily applied to or removed from the bottle, jar, can, or the like.

A further object of the invention is to provide a cap or closure of the character referred to made from a single piece or sheet of metal or other suitable material and having a base or top with an integral continuous peripheral flange separated from such base or top for a portion of the circumferential length of such flange, the separated part of the flange having a foldable portion formed therein intermediate the ends thereof, whereby such separated portion of the flange is formed into two contractible parts, enabling the flange to be circumferentially contracted in diameter.

Other objects of the invention will appear more fully hereinafter.

The invention consists, substantially, in the construction, combination, location, arrangement of parts, and mode of operation, all as will be more fully hereinafter set forth, as shown in the accompanying drawings, and finally pointed out in the appended claims.

Referring to the accompanying drawings and the various views and reference-signs appearing thereon, Figure 1 is a top plan view of a cap or cover embodying the principles of my invention and showing a portion of the flange separated from the base or top. Fig. 2 is a broken view in plan showing the portions of the flange contracted in diameter when the cap or closure is applied for use. Fig. 3 is a view in side elevation, parts in section, of a bottle, jar, can, or the like, showing the application thereto of a cap or closure embodying the principles of my invention. Figs. 4, 5, and 6 are detail views illustrating various designs and shapes of integral connecting web portions formed in the flange and designed to be bent into a fold to circumferentially contract the flange.

In the manufacture of caps or closures for bottles, jars, cans, or the like it is desired to produce a device which is simple in construction, economical in manufacture, and capable of being readily, easily, and quickly applied to or removed from the mouth of the bottle, jar, can, or the like, while at the same time efficient in hermetically sealing the bottle, jar, can, or the like when applied thereto. In my pending application, Serial No. 285,255, filed October 31, 1905, of which the present application is a division, I have shown, described, and claimed generically various constructions of cap or closure wherein these various objects are accomplished. In the present application I have shown and will now describe and claim one of the specific forms of construction and the method of making the same shown, described, and claimed generically in my prior application, and wherein I provide a cap or closure consisting of a top or base A, having an integral continuous peripheral flange B. The flange B is separated for a portion of its circumferential length from the base or top A—as, for instance, by the removal from the base or top of a strip—an outline of one form thereof being indicated by the space C in Fig. 1. This may be produced by cutting, punching, or otherwise through the base or top A. Preferably this cut or removal is effected along and adjacent to the peripheral edge of the base or top, so as to leave the portion of the base or top (indicated at D) attached to the separated portion of the flange, thereby forming a lip or rim thereon adapted when the cap is completed and applied to a bottle, jar, can, or the like, as indicated in Fig. 3, to lap past, over, or upon the adjacent edge of the base or top, thereby not only permitting the flange to be circumferentially contracted, but also efficiently closing and sealing the cut made through the top or base to form the separated part referred to. In order that the flange may be circumferentially contracted in order to apply the same and to close the cut made through the base or top, I propose to provide the separated part of the flange at a convenient point intermediate the ends thereof with an integral web portion E, which is capable of being formed into a bend or fold, as indicated at F, whereby by suitably bending or folding the web portion into a loop the separated portion of the flange is circumfer-

entially contracted to enable the cap to be efficiently applied for use upon a bottle, jar, can, or the like, and by simply unfolding the bent or folded web the flange is circumferentially expanded in length, thereby loosening the same and enabling the cap to be readily removed. By the provision of the web E in the separated part of the flange and at a point intermediate the ends thereof it will be observed that a separated portion E H of the flange lies on opposite sides of said web.

It will be observed that in the initial stage of production of the cap and before the removal of the strip from the top or base, as above referred to, the said top or base is of eccentric shape, and the removal of the strip reduces the top or base to circular shape, thereby leaving the flange of greater circumferential length than the peripheral length of the top or base, and the fold formed in the flange serves to contract the length of the flange, thereby drawing the flange closely around the top or base to produce the completed cap.

In practice I propose to form a shoulder J in the shell from which the cap or closure is made at a point adjacent the terminals of the slit or cut made through the top or base A to separate the portion of the flange referred to. The object and purpose of these shoulders is to enable the slits or cuts to terminate before reaching the extreme periphery of the base or top, and therefore so as to insure that an engaging lip or rim D is left on the separated portion of the flange throughout the length of such separated portion. Of course after the cut is made through the top or base the shoulders J are removed or rolled out in any suitable or convenient manner.

It is to be understood that the particular shape or contour or design of the integral connecting-web is not of material consequence so long as it is capable of being formed into a fold or bend, and in Figs. 4, 5, and 6 I have indicated at H′, H², and H³ various styles of connecting-web, each of which is well adapted for my purposes. If it should be desired that the connecting-web portion be ruptured or broken to remove the cap or closure from the bottle, jar, can, or the like, one or more scores or grooves may be formed transversely across the connecting-web at any convenient point, or said connecting-web may be otherwise suitably weakened, as indicated in dotted lines at M, Fig. 4, and M′, Fig. 5.

In the application of a cap or closure embodying the principles of my invention to a bottle, jar, can, or the like (indicated at P, Fig. 3,) I first placed a sealing-disk R over the mouth of the cap of a bottle, jar, can, or the like or within the shell of the cap or closure, and the flange B of the cap or closure is crimped under the shoulder S, formed at and encircling the mouth of the bottle, jar, can, or the like, as clearly shown in the drawings.

In practice I propose to form the cap or closure from a single piece of suitable material, preferably metal, such as tin; but in this respect I do not desire to be limited or restricted.

Having now set forth the object and nature of my invention and a construction embodying the principles thereof, what I claim as new and useful and of my own invention, and desire to secure by Letters Patent, is—

1. A cap or closure for bottles, jars, cans or the like, having a base or top and a continuous flange formed integrally therewith, said flange being separated from the base for a portion of the circumferential length thereof, the separated portion of the flange having a foldable part formed therein intermediate the ends thereof.

2. A cap or closure for bottles, jars, cans or the like, having a base or top and a continuous flange formed integrally therewith, said flange being separated from the base or top for a portion of the circumferential length thereof, the separated portion of the flange having a foldable part formed therein intermediate the length thereof, and also having an engaging lip or rim on opposite sides of the foldable part.

3. A cap or closure for bottles, jars, cans or the like, formed from a single piece of material and having a continuous flange, said flange being separated from the base or top of the cap or closure for a portion of its circumferential length, and having an integral foldable connecting-web interposed between the ends thereof.

4. A cap or closure for bottles, jars, cans or the like, having a base or top and a continuous flange formed integrally therewith, said flange being separated from the base or top for a portion of the circumferential length thereof and having a weakened part formed therein intermediate the ends thereof.

5. A cap or closure for bottles, jars, cans or the like, having a top or base and a continuous flange formed integrally therewith, said flange being separated from the base or top for a portion of the circumferential length thereof, the separated portion of the flange having a weakened part intermediate the ends thereof, and an engaging lip on opposite sides of the weakened part adapted to engage or lap past or upon the adjacent edge of the top or base when the weakened part of the flange is bent or folded into a loop.

6. In the manufacture of caps or closures for bottles, jars, cans or the like, the method which consists in forming a sheet of suitable material into an eccentric-shaped shell having a base or top portion and a continuous flange formed integrally therewith, then removing a strip from the base or top along and adjacent the peripheral edge thereof to reduce the top or base to circular contour and to separate a portion of the flange from the

base or top for a portion of the circumferential length of said flange, thereby leaving the flange of greater circumferential length than the peripheral length of the top or base, then forming a weakened part in the separated portion of the flange, and finally bending or folding the weakened part of the separated portion of the flange into a loop to peripherally contract the diameter of the flange.

7. In the manufacture of caps or closures for bottles, jars, cans or the like, the method which consists in forming a plate of suitable material into an eccentric-shaped shell having a top or base and a continuous integral flange, then removing a strip from the base or top along and adjacent the peripheral edge thereof to reduce the top or base to circular contour and to separate said flange from the base or top for a portion of the circumferential length of the flange, thereby leaving the flange of greater circumferential length than the peripheral length of the top or base, then forming a weakened part in the separated portion of the flange at a point intermediate the ends thereof, and finally bending or folding the weakened part of the separated portion of the flange into a loop or fold to contract the diameter of the flange.

8. In the manufacture of caps or closures for bottles, jars, cans or the like, the method which consists in forming a plate of suitable material into an eccentric-shaped shell having a top or base and an integral continuous flange, then removing a strip from the base or top along and adjacent to but somewhat removed from the peripheral edge thereof to reduce the top or base to circular contour and to separate the flange from the base or top for a portion of the circumferential length of the flange, leaving the flange of greater circumferential length than the peripheral length of the base or top, and also leaving an engaging lip connected to the separated portion of the flange, then folding a portion of the separated part of the flange into a loop to circumferentially contract the diameter of the flange.

9. In the manufacture of caps or closures for bottles, jars, cans or the like, the method which consists in forming a sheet of suitable material into an eccentric-shaped shell having a top or base and an integral continuous flange, then removing a strip from the base or top along and adjacent the peripheral edge thereof to reduce the top or base to circular contour and to separate the flange from the base or top for a portion of the circumferential length of the flange, thereby leaving the flange of greater circumferential length than the peripheral length of the top or base, and finally folding a portion of the separated part of the flange into a loop to contract the diameter of the flange.

10. In the manufacture of caps or closures for bottles, jars, cans or the like, the method which consists in forming a sheet of suitable material into an eccentric-shaped shell having a top or base and an integral continuous flange, then removing a strip from the base or top along and adjacent the peripheral edge thereof to reduce the top or base to circular contour and to separate the flange from the top or base for a portion of the circumferential length of the flange, thereby leaving the flange of greater circumferential length than the peripheral length of the top or base and finally bending or folding a part of the separated portion of the flange at a point intermediate the length of such separated portion into a loop to contract the diameter of the flange.

11. In the manufacture of caps or closures for bottles, jars, cans or the like, the method which consists in forming a sheet of suitable material into an eccentric-shaped shell having a top or base and an integral continuous flange, and forming offsets or shoulders at suitable separated points in the peripheral edge of the shell, then removing a strip from the base or top of the shell from a point adjacent one shoulder or offset to a point adjacent the other shoulder or offset, and along a line adjacent the peripheral edge of the shell thereby reducing the base or top to circular contour without reducing the circumferential length of the flange and also separating the flange from the base or top for a portion of the circumferential length of the flange, leaving a portion of the base or top connected to the separated portion of the flange to form an engaging lip, then folding a portion of the separated part of the flange into a loop to contract the circumferential length of the flange, the lip connected to the separated part of the flange lapping over or upon the adjacent edge of the top or base.

12. The method which consists in forming a sheet of suitable material into an eccentric-shaped shell having a top or base and an integral flange, then reducing the diameter of the top or base without reducing the diameter of the flange, and finally contracting the length of the flange.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 5th day of February, A. D. 1906.

WILLIAM H. DODGE.

Witnesses:
HENRY BEST,
S. E. DARBY.