No. 829,698. PATENTED AUG. 28, 1906.

W. H. DODGE.

CAP OR CLOSURE FOR BOTTLES, JARS, CANS, OR THE LIKE.

APPLICATION FILED APR. 23, 1906.

FIG. 1

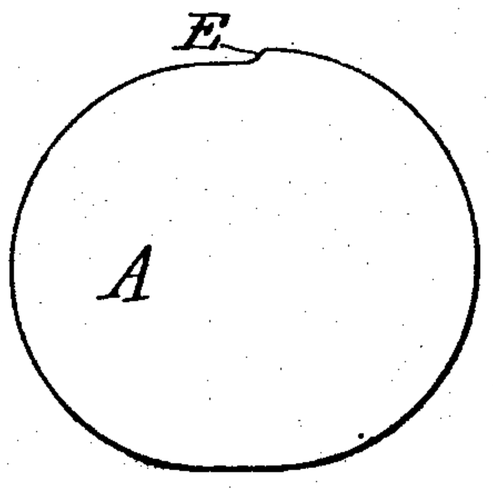


FIG. 2

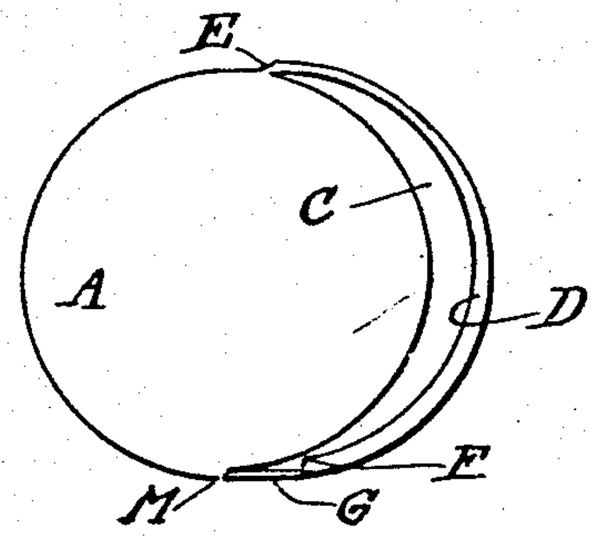


FIG. 3

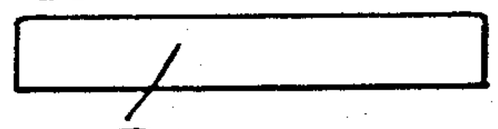
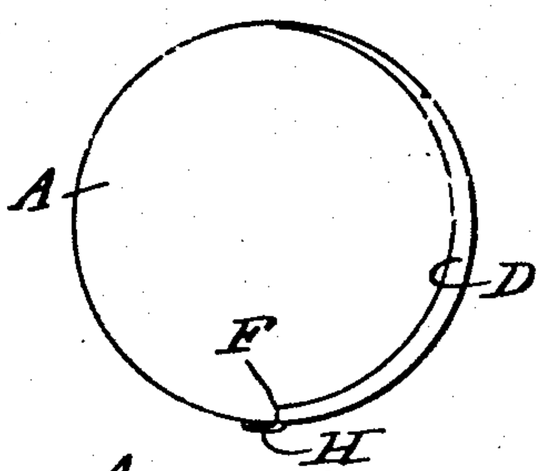


FIG. 4



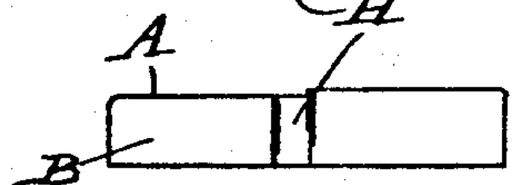
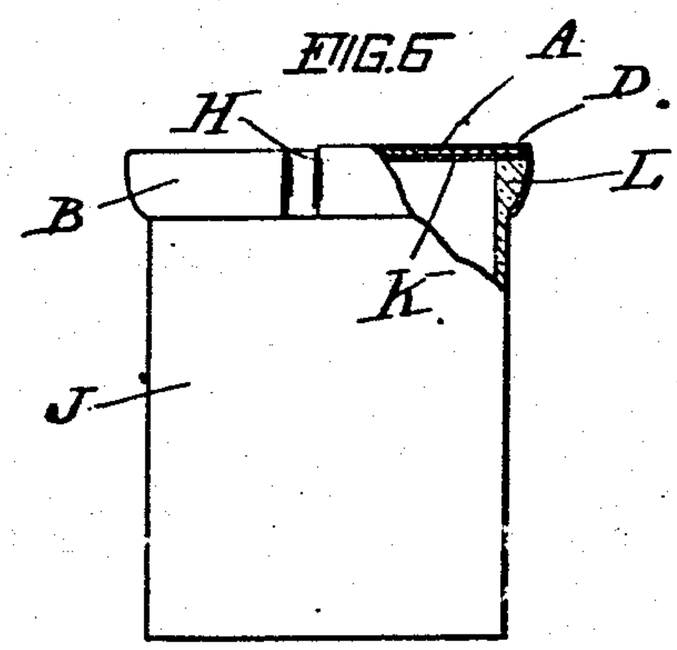


FIG. 5

FIG. 6



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UNITED STATES PATENT OFFICE.

WILLIAM H. DODGE, OF MONTCLAIR, NEW JERSEY.

CAP OR CLOSURE FOR BOTTLES, JARS, CANS, OR THE LIKE.

No. 829,698. Specification of Letters Patent. Patented Aug. 28, 1906.

Application filed April 23, 1906. Serial No. 313,342.

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 Cap or Closure for Bottles, Jars, Cans, or the Like, of which the following is a specification.

This invention relates to caps or closures for bottles, jars, cans, or the like.

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 in use.

A further object of the invention is to provide a cap or closure of the character referred to from a single sheet or plate of material in an expeditious and economical manner and which may be repeatedly applied to or removed from a bottle, jar, can, or the like.

A further object of the invention is to provide a cap or closure of the character referred to which is strong and durable and provided with an integral clamping-flange of contractible and expansible diameter and which may be contracted and expanded repeatedly for application to and removal from a bottle, jar, can, or the like.

Other objects of the invention will appear more fully hereinafter.

The invention consists, substantially, in the construction, combination, location, and arrangement of parts, 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 to the various views and reference-signs appearing thereon, Figure 1 is a view in plan of an eccentric-shaped cup or blank indicating the product of the initial step in the operation of producing a cap or closure embodying the principles of my invention. Fig. 2 is a similar view showing a crescent-shaped strip removed from the top or base of the eccentric-shaped cup or blank. Fig. 3 is a view in side elevation of the construction shown in Figs. 1 and 2. Fig. 4 is a plan view of a completed cap or closure embodying the principles of my invention. Fig. 5 is a view in side elevation of the same. Fig. 6 is a view in side elevation, partly in longitudinal section, of a can, jar, or the like, showing the application thereto of a cap or closure embodying the principles of my invention.

The same part is designated by the same reference-sign wherever it occurs throughout the several views.

In the manufacture of caps or closures for bottles, jars, cans, or the like it is desirable to produce a device which is simple in construction, economical in manufacture, and capable of being readily, easily, quickly, and repeatedly applied to or removed from the mouth of a bottle, jar, can, or the like, while at the same time forming an efficient hermetic seal therefor, and which may be reapplied to a bottle, jar, can, or the like after having been removed therefrom with the same or practically the same holding or clamping effect as when originally applied. In attaining these various objects in the present instance I propose to avoid employing a plurality of parts and the consequent necessity for assembling such parts by hand, and I propose to reduce to a minimum the number of manipulations through which the cap is carried in the production thereof and to provide means whereby the effective inclosing or surrounding diameter of the flange portion of the cap or closure is contractible without reducing the material strength thereof.

In carrying out my invention I first form a sheet or plate of suitable material, preferably of sheet metal—such, for instance, as tin—though in this respect I do not desire to be limited or restricted, into an eccentrically-shaped cup or shell, as shown in Fig. 1, having a top or base portion A and a depending flange B formed integrally therewith. From the top or base portion A of the eccentric cup or shell and adjacent the peripheral edge thereof of greatest eccentricity or diameter I remove a crescent-shaped strip, (indicated at C,) thereby separating the flange B from the base or top A for a portion of the circumferential length of the flange, as clearly shown in Fig. 2. Throughout the greater portion of the circumferential length of the separated part of the flange I leave a portion D of the top or base of the cup or shell attached to the separated part of the flange, thereby forming a lip adapted when the flange is contracted in diameter to lap over or past the adjacent edge of the top or base portion left by the removal of the crescent-shaped strip therefrom, thereby closing the opening made by the removal of such strip, as clearly shown in Figs. 4 and 6. In practice I form a shoulder

or offset E in the peripheral edge of the eccentric cup or shell, and from this point the cutting for the removal of the crescent-shaped strip begins, such cutting continuing for a length substantially equal to the semicircumference of the cup or shell; but in this respect I do not desire to be limited or restricted. Instead of continuing the lip D, which is left attached to the separated portion of the flange, to the full circumferential length of the separated portion of the flange said lip terminates, as at F, (see Figs. 2 and 4,) somewhat short of the complete length of the separated part of the flange, leaving the portion G thereof separated from the top or base A, but unprovided with the lip portion D.

From the foregoing description it will be seen that I provide a cup or shell for a cap or closure in which the top or base and the engaging flange thereof are formed integrally with each other, the flange being separated from the top or base for a portion of its circumferential length. It will also be seen that by the removal of the crescent-shaped strip I reduce the top or base portion A to circular contour and of less diameter or less circumferential length than the diameter or circumferential length of the flange. It will also be seen that by providing the flange with the portion G without the lip D said portion G may be readily folded or bent upon itself to form a loop, thereby contracting the diameter of the flange and drawing the separated portion thereof into substantially circular shape, so that the lip D thereof may engage over or lap past the adjacent edge of the top or base, thereby closing the opening produced by the removal of the crescent-shaped strip.

The cap or closure is completed by forming the portion G of the flange into a loop or fold, as indicated at H, which, if desired, may be bent or folded down upon itself and upon the adjacent surface of the flange, as indicated in Figs. 4, 5, and 6. The location of the portion G of the separated part of the flange is immaterial so far as my present invention is concerned so long as it is within the length of the separated part of the flange. The cap or closure may be applied to a bottle, jar, can, or the like J in any suitable or convenient manner. In practice I propose to employ a sealing-disk K, placed within the bottom of the cap or closure or upon the edge of the mouth of the bottle, can, jar, or the like. The edge of the flange B, if desired, may be spun or bent underneath a shoulder L, formed on the mouth or neck of the bottle, jar, can, or the like; but I do not desire my invention to be limited or restricted in this respect.

It will be observed that the portion G of the flange which is folded or bent upon itself to form the loop H presents the entire transverse width of the flange to resist the rupture or breakage during the folding operation, and hence I am enabled to produce an exceedingly strong and durable cap or closure wherein breakage or rupture due to bending or folding the flange or to unbending the same is reduced and wherein after a cap or closure has been applied to a bottle, jar, can, or the like it may be removed therefrom by simply unbending or unfolding the loop or fold H, thereby expanding or increasing the diameter and releasing the clamping effect of the flange, and when it is desired to reapply the cap or closure to the bottle, jar, can, or the like the fold H is again closed and bent upon itself, thereby again contracting the diameter of the flange and restoring its clamping effect upon the edge or sides of the neck of the bottle, jar, can, or the like, and since the fold is formed throughout the entire transverse width of the flange such unfolding and refolding operations are effected without breaking or rupturing the flange.

When the flange is contracted in diameter to complete the formation of the finished product, the shoulder F, formed by the termination of the lip D, engages over the termination of the cut or opening at M produced for and by the removal of the crescent-shaped strip, so as to completely cover such opening, as clearly shown in Fig. 4.

I do not claim herein the broad idea of a cap or closure for bottles, jars, cans, or the like formed from a single piece of material and having a continuous partially-separated flange provided with a contractible portion, as the same is claimed in my pending application, Serial No. 285,255, filed October 31, 1905.

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, formed from a single piece of material and having an integral continuous flange partially separated for a portion of its circumferential length from the base or top of the cap or closure, the separated portion of the flange having a loop or fold formed therein and throughout the transverse width thereof.

2. A cap or closure for bottles, jars, cans or the like having a top or base and an integral flange of greater circumferential length than the circumferential length of the top or base, the flange adapted to be bent or folded upon itself for a portion of its length and throughout the transverse width thereof to contract the effective circumferential length of such flange.

3. A cap or closure for bottles, jars, cans or the like, having a top or base and an integral flange of greater circumferential length than that of the top or base, the flange adapt-

ed to be bent or folded upon itself for a portion of its circumferential length and throughout the transverse width thereof to contract the effective diameter of the flange, the contractible portion of the flange having a lip to engage the adjacent edge of the top or base.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 18th day of April, A. D. 1906.

WILLIAM H. DODGE.

Witnesses:
HENRY BEST,
S. E. DARBY.