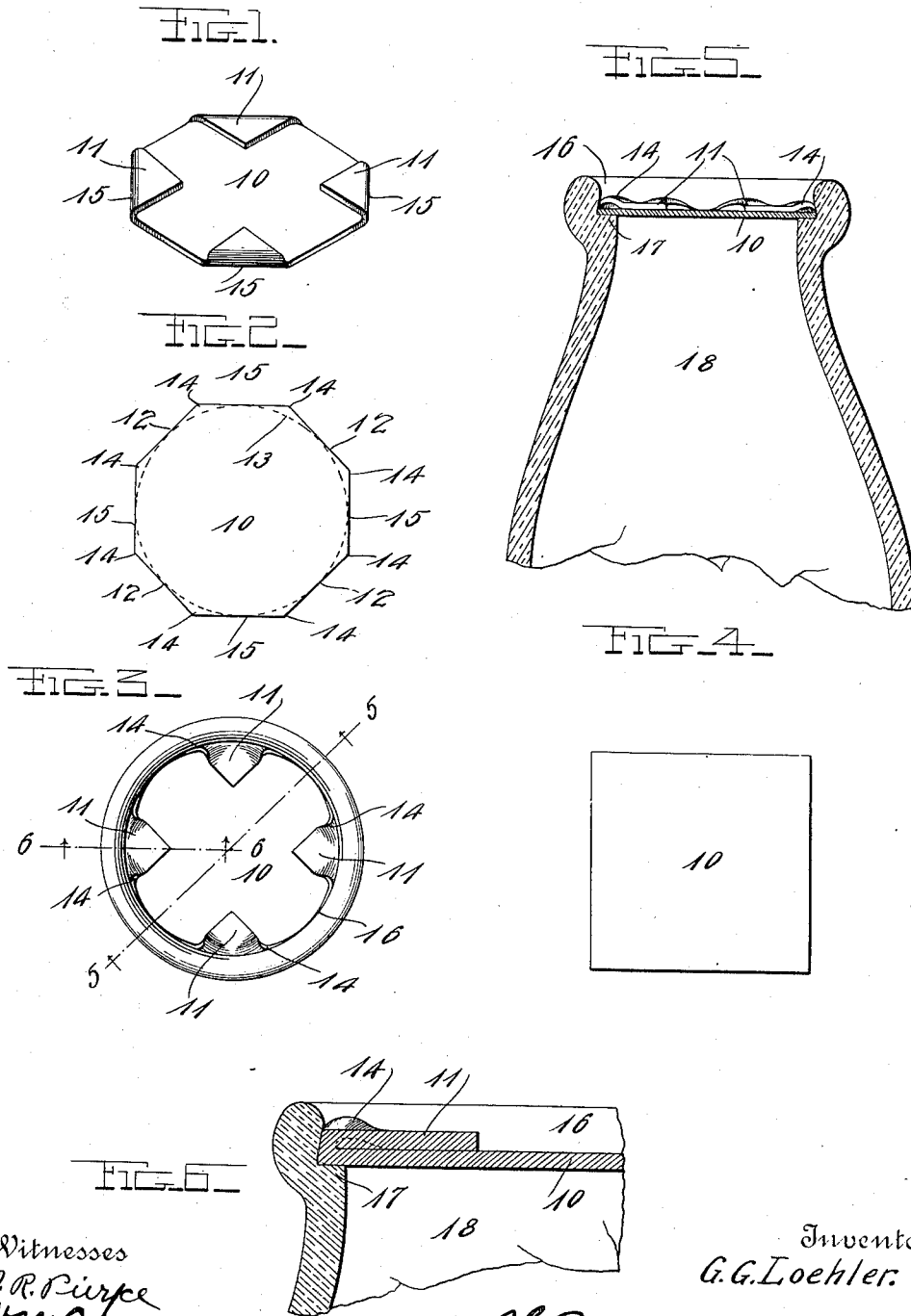


G. G. LOEHLER.
BOTTLE CLOSURE.
APPLICATION FILED SEPT. 12, 1911.

1,028,040.

Patented May 28, 1912.



Witnesses
J. R. Pirce
J. W. Somers.

Inventor
G. G. Loehler.

By *A. B. Wilson & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

GUSTAV G. LOEHLER, OF WASHINGTON, DISTRICT OF COLUMBIA.

BOTTLE-CLOSURE.

1,028,040.

Specification of Letters Patent.

Patented May 28, 1912.

Application filed September 12, 1911. Serial No. 648,937.

To all whom it may concern:

Be it known that I, GUSTAV G. LOEHLER, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Bottle-Closures; and I do 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.

This invention relates generally to closures for bottles, jars and the like receptacles and more particularly to that class of removable closures designed to be used upon bottles, jars and the like which are provided with internal annular ledges in their mouths against which the closure is pressed during the act of sealing.

The primary object of the invention is to provide a closure of the class specified which while effective in operation will be easily removable without the use of tools and will be of sufficiently economical construction as to permit of their being thrown away after a single using.

A further object of the invention is to provide a closure of the class specified which will be of increased strength and holding qualities, without material increase of cost of manufacture.

A further object of the invention is to generally improve the construction and operation of this class of closures, as hereinafter fully described and afterward specifically claimed.

In order that the construction, operation and advantages of my invention may be readily comprehended, I will now proceed to fully describe the same, in connection with the accompanying drawings in which I have illustrated a preferred embodiment, and in which:

Figure 1 represents a perspective view of a closure constructed in accordance with my invention, the parts being shaped and in position for application to a bottle, jar or the like; Fig. 2 represents a bottom plan view of my improved closure ready for use, the size of the opening to be closed being indicated by a dotted circle. Fig. 3 represents a top plan view of the upper end or mouth of a bottle, jar or the like, with my invention applied in position therein in operative sealing position; Fig. 4 represents a plan

view of a blank from which to form one of my improved closures; Fig. 5 represents a vertical sectional view through the upper portion of a bottle, with my improved closure in position therein, on the plane indicated by the broken line 5—5 of Fig. 3; Fig. 6 represents an enlarged vertical sectional view through one side of a bottle with my improved closure in position therein, on the plane indicated by the broken line 6—6 of Fig. 3.

Like reference characters mark the same parts wherever they occur in the several figures of the drawings.

While as before mentioned, my invention is applicable for use in bottles, jars and the like having an open mouth to receive the closure, and a ledge within the mouth against which the closure is pressed in the act of sealing the invention is intended primarily for use in bottles in which milk and cream are delivered to consumers and in carrying out my invention, I have had primarily in view the needs of a successful closure for such bottles, and will, in the ensuing description, use the term bottle as specially referring to milk bottles but as comprehending any bottle, jar or the like in which a closure of the class described may be utilized.

For many years the desirability of an efficient temporary closure for milk bottles has been fully recognized and many devices have been produced for this purpose, only to be soon discarded for one reason or another. The closure almost universally used for milk bottles is the simple disk of paper, paper-board, pasteboard or the like coated or impregnated with paraffin or the like, and forced, under a moderate pressure, into the mouth of the bottle, against the inner ledge. In using this simple device, more or less objection has developed, to remove which much inventive effort has been expended. To overcome the difficulty encountered in the removal of a plain disk from a bottle, which usually involved the puncture of the disk with a sharp tool and the use of the edge of the bottle as a fulcrum in prying out the punctured disk, and which always impaired the usefulness of the disk for further temporary use after part only of the contents of the bottle had been removed, and sometimes resulted in damage to the edge of the mouth of the bottle by chipping or breaking off

small particles, such disks have been provided with means of various form to be utilized in removing them from the bottles, but as before stated, the plain disk remains almost exclusively in general use.

In the embodiment of my invention illustrated I use a sheet or blank 10, preferably, but not indispensably, square in outline, the material of which the blank is formed being any material suitable for the purpose, such as has been used in the plain disks, and the sides being substantially of a length equal to the diameter of the bottle mouth. To approximately shape this sheet or blank to fit the mouth of the bottle I turn over the four corners 11 upon the body on the same side of the blank 10, as clearly shown in Fig. 1, so that the outline of the blank is octagonal and substantially equilateral, as best shown in Fig. 2, which represents the inner side thereof. The sides 12 of the blank are tangential to a circle 13 inscribed on the blank with a diameter equal in extent to the sides of the original square blank, which inscribed circle represents in extent the mouth of the bottle. Owing to this relative equality in size of the inscribed circle and the mouth of the bottle, all of the now completed closure outside of that circle will be distorted or displaced in forcing the closure into the mouth of the bottle, the parts to be distorted or displaced being indicated at 14, each of them being bounded by the circle 13 on the inside, and on the outside by one of the original sides 12 of the square blank and one of the sides 15 of the octagonal closure formed by folding over the corners of the blank. These displaceable parts 14 are partially of a single and partially of a double thickness, that part of each which comprises part of the folded over corner being of double thickness and the balance being of single thickness.

When the closure is forced into the mouth of the bottle, shown at 16 in Figs. 5 and 6, the parts 14 outside of the line indicated by the inscribed circle 13, will be upturned and displaced, being upset or spread, much owing to the fact that by such pressing into the mouth of the bottle, the folded edges at the sides 15 are changed from the outline of an obtuse angle to that of a circle of a lesser diameter. This pressure of the closure 10 into the mouth 16 of the bottle, will set up a frictional contact with the walls of the mouth and firmly hold the closure in place, the usual ledge 17 forming a seat to prevent the closure entering the body 18 of the bottle. This frictional contact will ordinarily be sufficient to hold the closure in place but, where the mouth 16 of the bottle is undercut, as at 18, the closure will expand into the groove and the upset and displaced parts 14 will fill the groove and maintain a more positive and stronger contact to prevent re-

moval of the closure. The changing of the outer edges of the folded over corners 11 will cause these corners to be held down on the top of the body of the closure and thus prevent the corners projecting outward beyond the mouth edge of the bottle. To remove the closure from the bottle, either of the folded over corners may be used as a tab, it being only necessary to raise either of them from its folded down position and to pull outward thereon. To facilitate the operation of folding over the corners 11, it will be permissible to form a crease in the surface of the blank 10 either on a line tangential to the inscribed circle at the crossings of the diagonals of the blanks therewith, whereby the corners will be folded on straight lines, or on the line of the inscribed circle, whereby the corners will be folded on curved or partly curved lines. In either form the displacement and upsetting of the parts outside of the inscribed circle will take place as before described. Should one, or more, of the folded corners become broken off, or give way under the pull thereon in removing the closure, any of the others may be used for the purpose, thus avoiding the necessity of using a tool of any kind.

The simple rectangular form of the blank renders its production easy and economical as it may be cut off the end of a strip, or from a rectangular sheet, every part of the strip or sheet being utilized. Should the form of the bottle mouth be other than circular, the disks will be made of a form to correspond therewith, and their action will be the same, the term disk being herein used to include any form to suit variously shaped bottle mouths, and variations in this outline of the disks, or in the material of the closures, may be made without departing from the spirit and scope of the invention.

It will be obvious that the form of the blank, with more or less success, may be triangular, pentagonal, hexagonal, octagonal, or other polygonal form, within the scope of my invention and claims.

Having thus fully described my invention, what I claim as new and desire to secure by Letters-Patent of the United States is:—

1. A closure for a bottle consisting of a polygonal blank of a size whereby the greatest inscribable circle is substantially equal in area to the opening to be closed, the corners of the blank being folded over outward on lines tangential to said circle at the points of crossing of radii bisecting the angles of the corners, whereby said corners may be used as tabs by which to remove the closure from the bottle and whereby parts are left beyond the circle which will be upset in forcing the closure into the neck of the bottle, increasing the thickness and strength of these parts and affording a

greater frictional surface to bear against the bottle and resist the displacement of the closure.

2. A closure for a bottle consisting of a
5 square blank of suitable flexible sheet material, the sides of which are of a length substantially equal to the diameter of the circular mouth of the bottle in which the
10 closure is to be used, the four corners of the blank being folded over outward upon the body on lines tangential to the greatest inscribable circle at the intersection thereof with the diagonals of the square blank,

whereby said corners may be used as tabs to remove the closure from the bottle, and 15 whereby parts are left beyond the circle to be displaced and upset in forcing the closure into the neck of the bottle.

In testimony whereof I have hereunto set my hand in presence of two subscribing wit- 20 nesses.

GUSTAV G. LOEHLER.

Witnesses:

S. C. HILL,

J. A. GRUSBAUER, Jr.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."