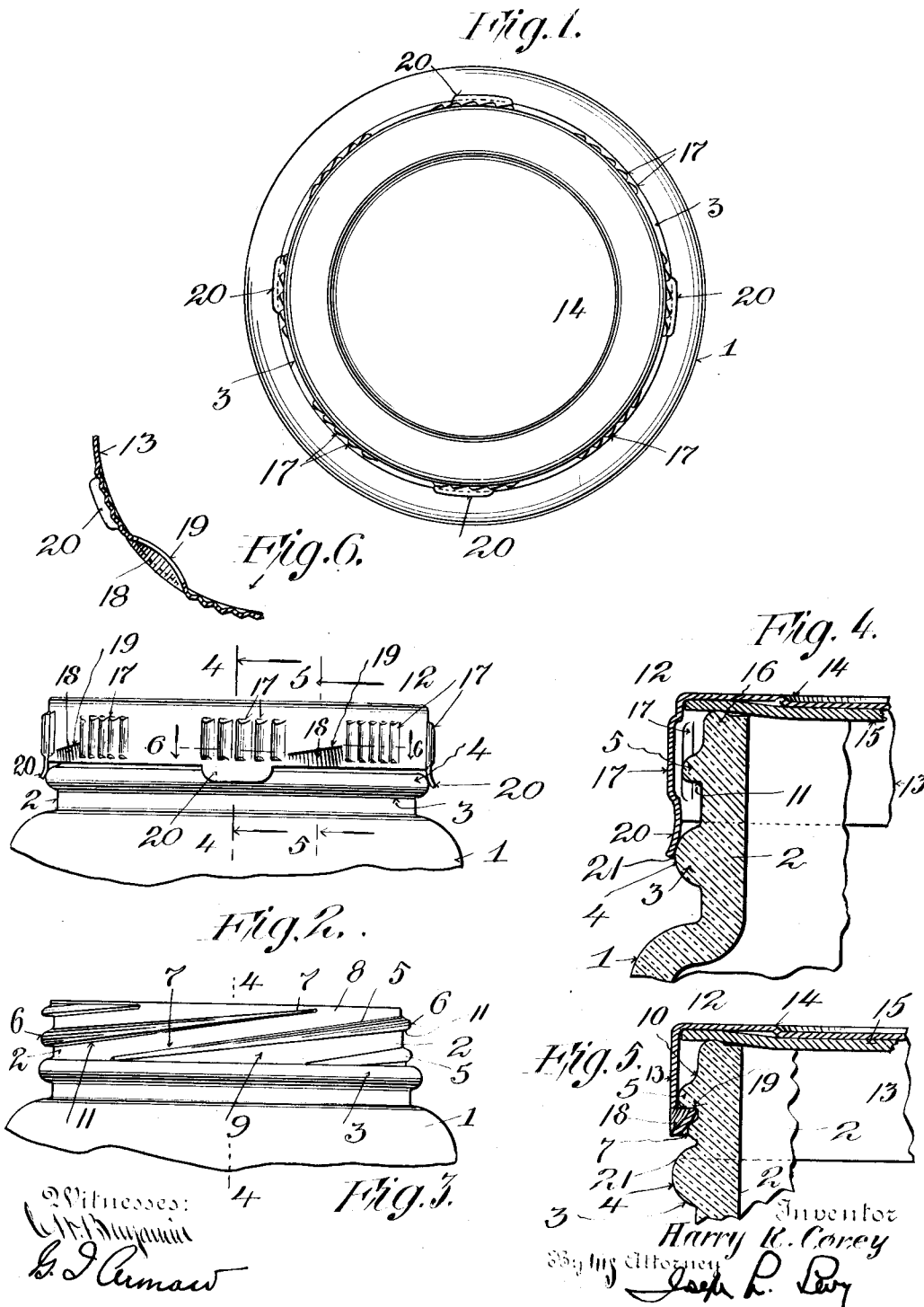


H. R. COREY.
BOTTLE OR JAR CLOSURE.
APPLICATION FILED OCT. 31, 1910.

1,025,375.

Patented May 7, 1912.



UNITED STATES PATENT OFFICE.

HARRY R. COREY, OF NEW YORK, N. Y., ASSIGNOR TO AMERICAN STOPPER COMPANY,
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Specification of Letters Patent.

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all whom it may concern:

Be it known that I, HARRY R. COREY, citizen of the United States, of the city of New York, borough of Brooklyn, county of Kings, and State of New York, (whose post-office address is 519 Fifth street, in said city,) have invented certain new and useful Improvements in Bottle or Jar Closures, of which the following is a specification.

My invention has relation to bottles or jars and closures for the same in which the bottle is preferably made of glass or other suitable material and the top or cap of thin metal.

In the use of closures of this kind difficulties are encountered in the formation of the threads on the neck of the bottle or jar by means of which the cap is secured or moved into place, and further difficulties are encountered in centering the cap on the bottle (which cap should be preferably comparatively shallow in depth), and further difficulties are encountered in retaining the cap in place, and in applying it to the jar.

My invention has for its object to provide a jar closure in which these difficulties are overcome; in which the thread on the neck of the bottle is easily and readily formed; wherein the cap may be made of thin metal and of shallow depth; which may be readily placed in position on the jar without the aid of machinery, and retained firmly in place during handling, storage and shipment; and which may be readily centered upon the jar-neck so that its movements upon the threads will be immediate and true, the latter avoiding uneven seating of the cap on the jar, leakage, and uncertainty in the application and removal of the cap, which result from an imperfect or difficult centering of the cap on the jar.

To this end my invention resides in the construction and combination of parts hereinafter described and further pointed out in the claims.

In the drawing forming part of this specification: Figure 1 is a plan view of the top of a bottle or jar with my improved cap attached. Fig. 2 is a side elevation of Fig. 1 showing a portion only of the jar. Fig. 3 is a side elevation of the neck and upper portion of the jar showing the construction

of the threads. Fig. 4 is an enlarged sectional elevation of a portion of the cap and jar the section being taken substantially on the line 4—4, Fig. 2, looking in the direction of the arrows. Fig. 5 is a like view taken substantially on the line 5—5 of Fig. 2, looking in the direction of the arrows. Fig. 6 is a plan and section of the cap taken substantially on the line 6—6 Fig. 2, looking in the direction of the arrows.

Throughout the several views of the drawing like reference characters indicate similar parts.

The preferred embodiment of my invention is shown in the accompanying drawing.

1 is a bottle or jar having a neck 2. Upon this neck is formed an outwardly extending annular rib or projection 3 having preferably a circularly inclined outer face 4; and above this a series of short interrupted screw threads 5 preferably having their greater diameter or thickness between their ends as at 6, terminating in the sharpened ends 7, with the enlarged entrant and terminal spaces 8, 9. While the outer and upper surface 10 of these threads may be curved upward toward the neck, I prefer that the lower surface be plane as at 11, and that said lower surface of each of the threads form with the outer surface of the neck of the bottle substantially a right angle.

The cap 12 consists of an annular and dependent flange 13 and a crown or top 14 preferably made in one piece of metal, and which may be very much thinner and lighter in construction than the usual cap closures are; and within the cap is placed a sheet of paper (or any other desired material) 15 for completing the seal which is formed when the crown of the cap forces the paper down upon the upper annular edge 16 of the neck of the bottle, as shown in Fig. 5.

In order to increase the grip of the hand upon the cap it may be provided with a series of projections 17.

Above the lower edge of the pendant flange of the cap are formed a series of inwardly and upwardly inclined lugs 18, the upper edges 19 of which are formed on an incline to correspond as near as possible to the inclination of the lower edge 11 of the interrupted screw threads. These lugs are formed by cutting and upsetting the metal

of the flange. They may be of any desired number corresponding with the number of interrupted threads on the neck of the jar, and may be located at any desired point about the circumference of the flange of the cap having regard for their position relative to the openings 8 between the screw threads.

At suitable points along the flange of the cap I form pendant lips 20, which are preferably expansive, and which depend from the lower edge of the pendant flange 13, and preferably have a slight flare outward, so that the circle which takes in the inner edge 21 of the lips will be slightly less than the extreme diameter of the annular shoulder 3, but which shall be of such a diameter as will allow the lower end of the lips to freely bear on the rounded and gradually outwardly extending surface 4 of the annular shoulder when the cap is being placed in position.

The openings 8 between the upper terminals of each of the threads are intentionally made wider than the space between the threads so as to allow the lugs 18 to freely enter between threads 5 and that the inclined edge 19 of the lugs may, by a slight turn engage the lower edge 11 of the threads, so that by the conjoint action of these elements and the engagement of the flexible lips 20 with the inclined surface of the annular shoulder 3 the cap may be readily and accurately centered upon the jar neck.

The movement necessary to engage the crown of the cap with the top of the jar will, as is apparent from the drawing, be comparatively slight, and during its turning movement the flexible lips 20 are making frictional contact with the annular shoulder 3 and are being continuously expanded or sprung outwardly the farther down the cap is moved; so that when the cap is moved "home" the lips will be bearing with sufficient relative pressure on the annular shoulder to prevent the inadvertent turning or release of the cap, but without sufficient friction to form a substantial opposition to the reverse movement of the cap, or in other words its intentional unseating and removal; while at the same time the friction of the lips on the annular shoulder, tending to retard the downward movement of the cap, will tend to force the upper inclined edge 19 of the lugs 18 forcibly against the under surface 11 of the threads, thereby providing means for locking the lugs against the threads.

The result of the foregoing is that at the termination of the downward movement of the cap, or in other words its "screwing on" movement, the lips will bear upon the annular shoulder with sufficient friction to prevent the inadvertent turning of the cap without impairing its ready removal, and

will at the same time constitute means for firmly locking the lugs and screw threads together, this locking being secured by the action of friction of the lips 20 on the surface of the shoulder 3, the friction causing an upward pressure of the lugs 18 against the surface 11 of the threads 5, the inclination of the lugs and the threads causing the parts 6 to act in a direction laterally of the line of movement of the cap or substantially perpendicular to the bottle neck, the nearer the inclined lugs reach the lower end of the threads and the rib 5, the greater the friction, due to this action and the more firmly are the parts held together. Another function performed by the projections 20 is that of centering the cap when it is applied to the bottle or jar. Then these projections perform the very important function of centering the cap on the bottle in a manner which facilitates the placing of the cap in position; both with regard to centering and with regard to the threads.

If desired the lugs may be located directly above the lips, and the projections 17 otherwise conveniently located upon the flange of the cap; and other modifications may be made in the embodiment of my invention which fall within the purview of the claims appended hereto.

Having described my invention, I claim:

1. In a bottle or jar closure, the combination of a cap comprising a crown and a pendant annular flange, the bottle having a series of interrupted threads formed on its neck, lugs extending inwardly from the flange of the cap, a circumferential projection formed on the neck of the bottle, and pendant freely resilient lips on the flange of the cap adapted to engage said projection.

2. In a bottle or jar closure, the combination of a cap comprising a crown and a pendant flange, lugs extending inwardly from the flange of the cap, means on the bottle or jar for engaging said lugs, a circumferential projection formed on the neck of the bottle, the lower edge of said flange being provided with projections extending below the lower edge of said flange, said projections being freely resilient and adapted to resiliently engage the circumferential projection on the neck of the bottle.

3. In a bottle or jar closure, the combination of a cap comprising a crown and pendant annular flange, a bottle or jar having a projection thereon, threads on the neck of the bottle, lugs on the flange of the cap and projections on said flange between which said lugs are disposed, and resilient means carried by the cap flange adapted to cause said lugs to forcibly engage said threads by engagement with the said bottle or jar projection.

4. In a bottle or jar closure, the combination of a cap comprising a crown and pend-

ant annular flange, a bottle or jar having
a projection thereon, means for engaging
the cap with the neck of the jar or bottle,
and further means secured to the cap
5 flange, and projecting below the bottom
edge thereof, said means being freely re-
silient and adapted to engage with the
bottle or jar projection so as to center said
engaging means carried by the cap with

respect to the engaging means on the bottle 10
or jar.

Signed at the city of New York, county
of Kings, State of New York, this 28th day
of October, 1910.

HARRY R. COREY.

Witnesses:

J. L. CANNOLD,
WM. D. McLEAN.