No. 706,771. Patented Aug. 12, 1902.

W. B. McCROSKY.

JAR CLOSURE.

(Application filed June 27, 1901.)

(No Model.)

Fig. 1.

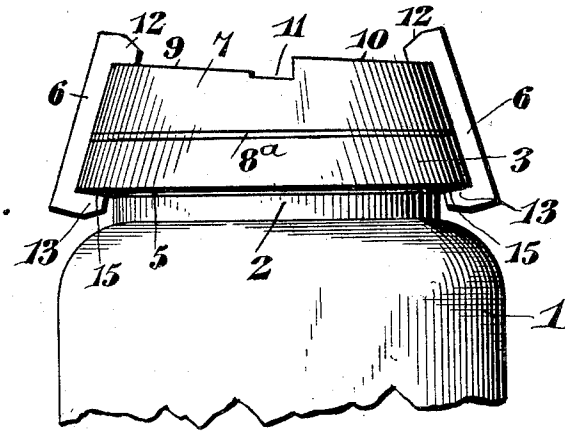


Fig. 2.

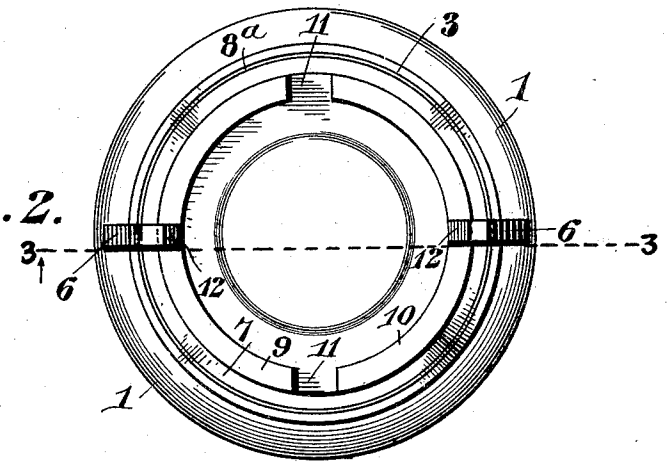
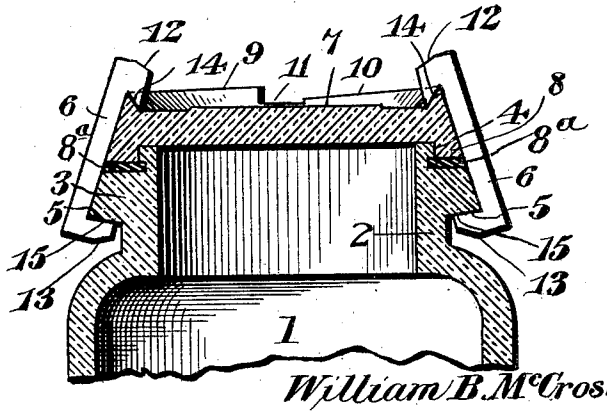


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM BLAIR MCCROSKY, OF EUREKA SPRINGS, ARKANSAS.

JAR-CLOSURE.

SPECIFICATION forming part of Letters Patent No. 706,771, dated August 12, 1902.

Application filed June 27, 1901. Serial No. 66,298. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BLAIR MCCROSKY, a citizen of the United States, residing at Eureka Springs, in the county of Carroll and State of Arkansas, have invented a new and useful Jar-Closure, of which the following is a specification.

This invention relates to jar-closures, and more particularly to that class wherein the cap or cover is held assembled with the jar by detachable clamps.

The device of the present invention is designed as an improvement upon a closure for jars for which I obtained Letters Patent in the United States, dated January 18, 1898, No. 597,687. In this patent the peripheries of the neck-flange and of the cap are disposed in a plane parallel with the long diameter of the jar and the under surface of the neck-flange is disposed in a plane at right angles to the peripheries of the neck-flange and the cap. While the disposition of the parts named is generally effective in operation, there are two inherent objections to constructing a jar-closure in this manner, the first being that when the clamps are brought into engagement with the upper edge of the cap and the under surface of the neck-flange there will not be a positive locked coaction between the clamp and the lateral flange by reason of the fact that the latter, as stated, is disposed at right angles to the peripheries of the cap and the neck-flange, so that no matter how tightly the clamps may be seated upon the cap and neck-flange there will be no positive assurance that accidental separation of the clamps from the jar will not take place. The second objection is that where the under side of the neck-flange is disposed at right angles to the peripheries of the cap and the neck-flange the jar cannot be drawn from the mold to present a smooth and finished surface on the under side of the neck-flange, it being apparent that a certain amount of draft must be allowed to effect the purpose named.

It is the object of the present invention in a simple, thoroughly-efficient, and ready manner to obviate the objections above noted; and with this object in view the invention consists generally in disposing the peripheries of the cap and the neck-flange at an angle to the long diameter of the jar and slightly to incline or bevel the under surface of the neck-flange in an upward and outward direction from the body of the jar, the pitch of the angles of the under side of the neck-flange and the peripheries of the cap and neck-flange to be less than a right angle, so that when the clamps are associated with the parts there will be a positive hooked coaction therebetween, thereby positively obviating any tendency of the clamps to become accidentally detached from the jar when the same is handled or is being transported.

Further and other salient objects of the invention will appear as the nature of the invention is better understood.

In the accompanying drawings, forming a part of this specification, and in which like numerals of reference indicate corresponding parts, I have illustrated one form of embodiment of my invention, it being understood that the same may be embodied in many other ways and still be within the scope of my invention, and in these drawings—

Figure 1 is a view in side elevation of the upper portion of the jar, exhibiting my invention applied thereto. Fig. 2 is a view in plan. Fig. 3 is a view in transverse section taken on the line 3 3 of Fig. 2 and exhibiting clearly the coactive relation between the different parts of the jar-closure.

Referring to the drawings, 1 designates the upper portion of the body of a jar or bottle, and 2 the neck thereof, the latter being provided with an outwardly-projecting peripheral flange 3 and an upwardly-extending flange 4, constituting the mouth. The under side of the flange 3 is slightly beveled from the neck upward to the flange 3, as shown at 5, and the periphery of the flange is inclined or beveled inward toward the center of the jar, as clearly shown in Figs. 1 and 3, to intersect the under side of the flange at an acute angle, the degree of pitch of the angle of the periphery being determined by the locking coaction to be effected between the clamps 6 and the neck-flange 3 and cap 7 now to be described.

The cap 7 has its under portion recessed to present a peripheral depending flange 8 to engage the flange 4 of the mouth, and between the cap and the neck and encircling the flange

4 is a rubber gasket 8^a, by which to effect an air-tight closure between the cap and the neck, as will be readily understood. The periphery of the cap is beveled at an angle corresponding to that of the periphery of the neck-flange and is provided on its upper edge with two peripheral oppositely-inclined knife-edged cam-surfaces 9 and 10, separated at diametrically opposite points on the cap by recesses 11, as clearly shown in Fig. 2. These cam-surfaces have a gentle rise, so that a firm and stable locking may be effected between them and the locking-clamps when the clamps are positioned as shown in Figs. 1 and 3.

The locking-clamps 6, to which reference has been made and of which there are two employed in this instance, are each constructed of a piece of metal provided on one side with two undercut shoulders 12 and 13, the undercut 14 of the shoulder 12 being at a sharper angle than that of the undercut 15 of the shoulder 13, this for the reason that the angular pitch of the upper edges of the cam-surfaces 9 and 10 are sharper than that of the inclined surface 5 of the neck-flange; but it is to be understood that the invention is not to be limited to this difference in the pitches of the engaging surfaces of the two shoulders, as both may be pitched at the same angle and still be within the scope of my invention; but in any event the undercut shoulders should present acute angles with respect to the adjacent face of the clamp in order that the shoulders may form hooks.

By having the two inclined surfaces engaged by the shoulders of the locking-clamps when the clamps are seated, as shown in Fig. 3, the locked relation between the shoulders of the clamps and the beveled surface 5 of the neck-flange and of the cam-surfaces will be such that the clamps will be securely held against separation from the parts, inasmuch as any attempt to move the clamp away from the neck-flange will result in causing the surface 15 of the shoulder 13 more firmly to grip the surface 5 of the neck-flange, as will be readily apparent by reference to Fig. 3.

In assembling the parts of the closure the gasket will first be seated upon the neck of the jar around the flange 4 and the cap will then be placed in position. The clamps will then be brought into engagement with the cam-surfaces by inserting the shoulders 12 of the clamps through the recesses 11 and then moving the clamps to the left by hand as far as possible, the final locking of the clamps in position being effected by a suitable wrench, which will be passed over the cap and the neck and turned against the locking-clamps.

It will be seen from the foregoing description that by reason of the inclined surface 5 of the neck-flange there will be no obstruction presented to prevent the jar from being readily detached from the mold, and by reason of the acute angle between the surface 5 and the inclined peripheries of the neck-flange and the cap that certain effective hooked locking of the clamps 6 upon the surface 5 and upon the cam-surfaces of the cap will be effected.

The importance of a smooth under face for the neck-flange 3 will now be readily understood, for the reason that the lower shoulders of the clamps are slid over said surface when the clamps are being applied to tighten the cover, and I have determined by experiment that the most effective and economical manner of insuring a smooth under surface for the flange is to have said surface inclined upwardly and outwardly in order that there may be no drag thereon when removing the jar from the mold.

From the foregoing it is thought that the construction, operation, and many advantages of the herein-described invention will be apparent to those skilled in the art without further description, and it will be understood that various changes in the size, shape, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

What I claim is—

The combination of a jar, having an external annular flange upon the neck thereof, the under edge of the flange being inclined upwardly and outwardly and the outer edge of the flange being inclined upwardly and inwardly, the two inclined faces intersecting at an acute angle, with a cover applied to the outer end of the neck and having its marginal edge inclined upwardly and inwardly to correspond with the inclined outer edge of the neck-flange, and also provided with oppositely-inclined cam-surfaces upon the top of the cover, and clamps to connect the cover to the jar, each clamp comprising a rigid body portion lying against the corresponding inclined outer edges of the neck-flange and the cover, and provided at opposite ends with rigid laterally-projected shoulders which are undercut at acute angles corresponding to and for engagement respectively with the under inclined edge of the neck-flange and one of the cam-surfaces of the cover, each clamp being separate from and slidably movable in a circular direction about the peripheries of the cover and neck-flange.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM BLAIR McCROSKY.

Witnesses:

I. E. SEWARD,

JACOB BUTTS.