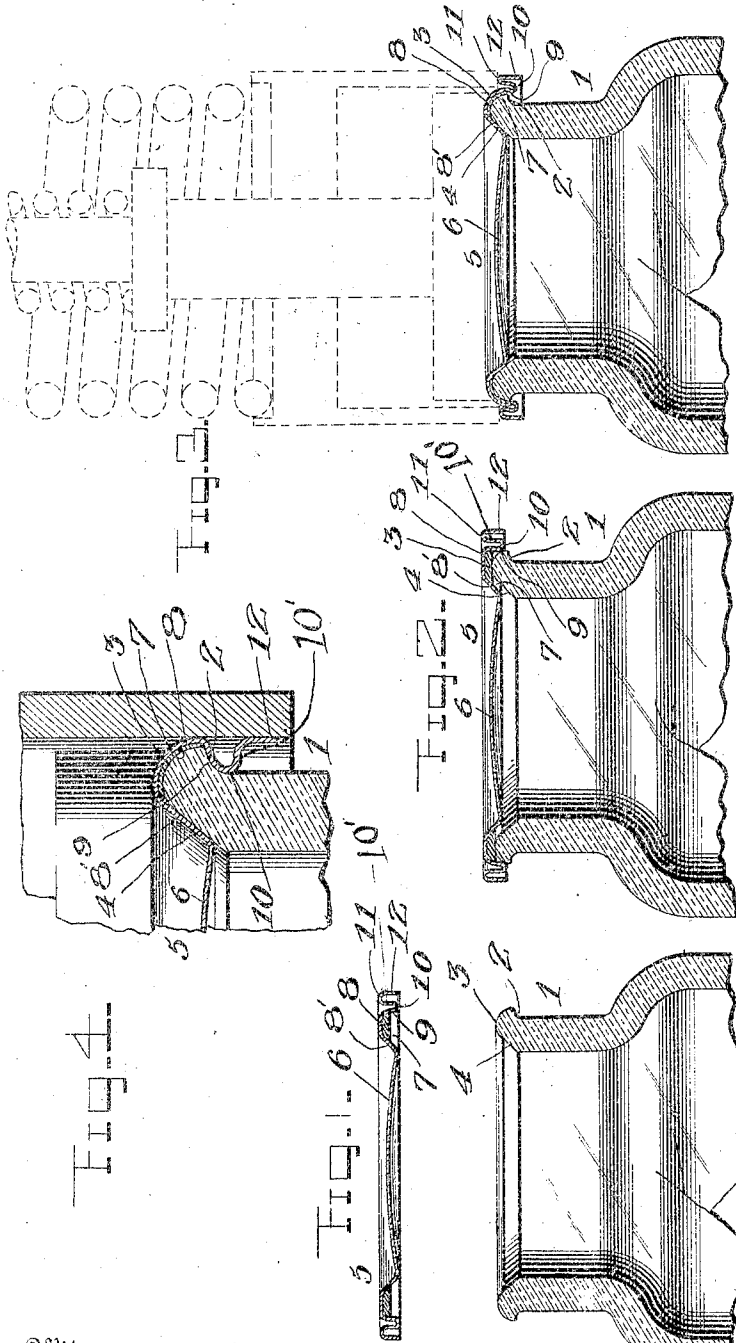


E. D. SCHMITT.
JAR CAP OR CLOSURE.

APPLICATION FILED NOV. 18, 1909. RENEWED FEB. 14, 1911.

1,025,314.

Patented May 7, 1912.



Witnesses

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JAR CAP OR CLOSURE.

1,025,314.

Specification of Letters Patent.

Patented May 7, 1912.

Application filed November 18, 1909, Serial No. 528,782. Renewed February 14, 1911. Serial No. 608,595.

To all whom it may concern:

Be it known that I, EDWARD D. SCHMITT, a citizen of the United States, residing at Baltimore city and State of Maryland, have invented certain new and useful Improvements in Jar Caps or Closures, of which the following is a specification.

This invention relates to improvements in jar caps or closures and more particularly to a cap adapted to close a jar in which the contents are cooked or processed after sealing.

The construction is such that a positive and permanent lock is effected between the flange of the cap and the locking shoulder on the bottle, thus producing an hermetic seal and at the same time permitting an expansion or movement of the central portion of the cap, without destroying the hermetical character of the seal.

In my Patent Number 933,347, dated September 7, 1909, I have described and shown a cap, the central portion of which is adapted to expand under the pressure generated in cooking or processing the product in the jar, and to this extent the present invention is not unlike the invention set forth in the patent but in the present instance, I have devised a novel means for locking the cap to the jar which produces an absolutely positive lock while permitting a certain portion of the closure to expand and a construction wherein the final form of the cap when applied to the jar, will present a flange or engaging point by which the cap may be readily removed from the jar by a suitable tool or instrument.

So far as I am aware, I am the first to provide a closure for jars adapted to receive fruit, vegetables and like food products, with which the jar is closed and permanently sealed prior to cooking or processing the product. Since the pressure generated in the cooking of the product is considerable during the cooking process, it is essential that a portion of the closure or cap give or expand to accommodate such pressure, as well as being capable of a certain movement which takes place after the cooking process, due to changes of conditions which occur in the cooling process, but such movement must not affect the her-

metic character of the seal. With this purpose in view, I have devised a closure shown in the accompanying drawing and which will be fully described in the following specification, and the points of novelty set forth in the claims.

In the drawings illustrating the invention: Figure 1 is a central view of the upper portion of a jar with a cap section in juxtaposition thereto; Fig. 2 is a similar view of jar and cap, showing the cap in the position it assumes before the sealing pressure has been applied; Fig. 3 is a similar view of the jar with the cap applied, showing the cap in the position it assumes during the application of the sealing pressure, there being also shown in dotted lines, a sealing tool with which the seal may be applied; and Fig. 4 is an enlarged detail view of one edge of the jar mouth with a portion of the cap locked to the jar, and showing the final position of the cap and a portion of the edge of the sealing tool.

Referring to the drawings, the numeral 1 designates a jar with which the closure is adapted for use. This is formed with an external locking shoulder or bead 2, a rounding lip 3 which runs into an inclined surface 4 of the interior wall of the jar, the purpose of which formation will presently appear.

The numeral 5 indicates my improved cap, which is made of metal, preferably tin, and is formed with a slightly concavo-convex central portion 6, surrounded by an annular channel or groove 7 which, in the sealing operation, is adapted to receive a sealing-gasket 8, of compressible material such as rubber, and the lip or upper edge of the jar. The inner wall of the channel is inclined, as indicated at 8', to adapt it to make sealing-contact with the inclined surface 4 of the jar-mouth when the seal is applied. Integral with the outer wall 9 of the channel is a compound flange formed by the bend 10, intermediate wall 10', bend 11, and the outer wall 12, by means of which latter wall the cap may be removed from its sealing-contact with the jar or bottle-mouth, by means of a suitable tool. The bend 10 serves as a locking-bead, and will be hereinafter referred to as such. The bend 11

serves as an engaging-bead for the sealing-tool, and will be hereinafter referred to as such. By reference to Fig. 4 which shows a portion of the cap in final, locked position, it will be noted that the position of the locking-bead is in locked-contact directly under the locking-shoulder 2, and that the intermediate, vertical wall has assumed an approximately horizontal position, causing the outer wall to become spaced apart from the neck of the jar, thereby providing ample room for the insertion of the removing-tool.

In applying the cap, the same is placed upon the jar in the position shown in Fig. 2 and the central member of a sealing tool is brought with required force down upon the top of the channel, sufficient to compress the gasket or ring 8 upon the upper lip of the bottle to effect an air-tight seal between said gasket and the lip of the bottle. This force is also sufficient, or may be so, to bring the inclined wall 8' into close contact with the inclined surface 4 in the bottle mouth. The sealing tool then exerts a pressure upon the annular bead 11, crushing or distorting the outer edge of the cap, from its original shape, and folding the bead 10 under the locking shoulder 2 of the jar. This movement of the outer edge of the cap is continued until the tool is moved down a sufficient distance to crush or bend the edge of the cap out of the path of movement of said tool, and folding the bead 10 and the wall of the cap, that is to say, that portion of the wall intermediate between the channel wall and the outer periphery of the cap, under the locking shoulder of the bottle, as shown in Fig. 4.

The seal effected between the upper edge of the bottle is hermetic, but at the same time, an auxiliary seal is formed between the inclined wall 8' of the channel and the inclined surface in the mouth of the bottle, and the formation of the cap is such that initial pressure exerted against the dome of the cap, which, while it may spring the central portion of the cap slightly upward, will not affect the seal between the gasket and the upper edge of the bottle.

Having thus fully described my invention, what I claim is:—

1. As an article of manufacture, a cap or

closure having a sealing-flange composed of a plurality of annular, vertical walls, arranged in substantially the same horizontal plane with the cap-body, said sealing-flange being so formed as to provide a locking-bead adapted to be forced into locked-contact with the shoulder of a jar or bottle.

2. As an article of manufacture, a cap or closure having a sealing-flange composed of a plurality of annular, vertical walls, arranged substantially in the same horizontal plane with the cap-body, said sealing-flange being so formed as to provide a locking-bead, adapted to be forced into locked-contact with the shoulder of a jar or bottle, and an engaging-bead adapted to be engaged by a suitable sealing-tool.

3. As an article of manufacture, a cap or closure having a sealing-flange composed of a number of annular, vertical walls, arranged in substantially the same horizontal plane with the cap-body, said sealing-flange being so formed as to provide a locking-bead, adapted to be forced into locked-contact with the shoulder of a jar or bottle; an engaging-bead, adapted to be encountered by a suitable sealing-tool, and with a suitably-spaced edge to be engaged by a suitable removing-tool.

4. In combination with a jar or bottle, having a locking surface on the exterior of its neck and an inclined surface on the interior of the neck adjacent to the lip, a cap or closure having a channel which receives the bottle lip, said channel being formed with an inclined inner wall adapted to make contact with the inclined surface of the bottle neck, and a sealing flange composed of a plurality of annular vertical walls, arranged in substantially the same horizontal plane with the cap body, said sealing flange being so formed as to provide a locking bead adapted to be forced into locking contact with the locking surface on the exterior of the jar or bottle.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD D. SCHMITT.

Witnesses:

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