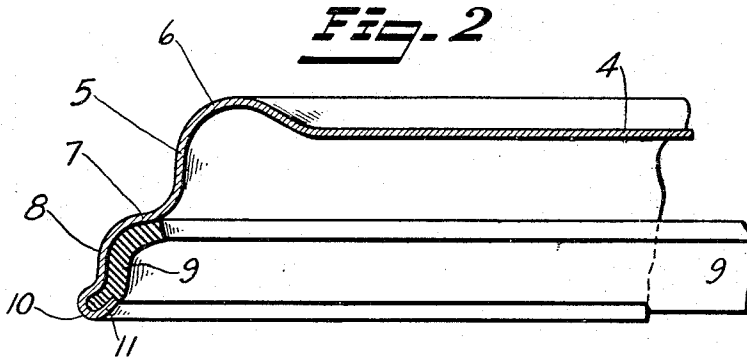
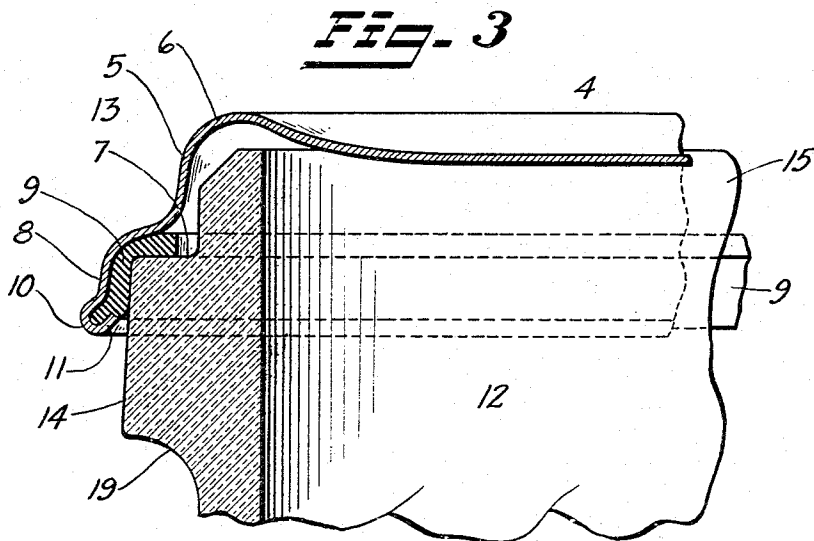
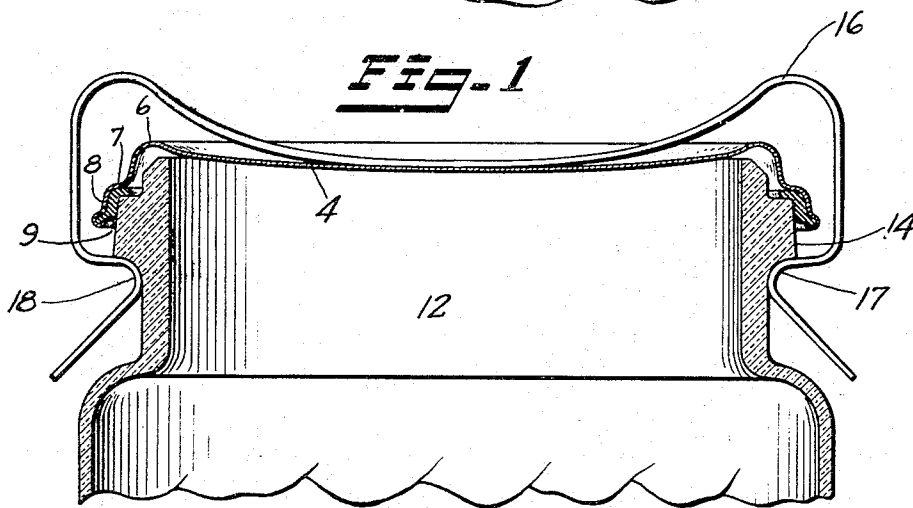


C. HAMMER.
PROCESS JAR CLOSURE.
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1,244,496.

Patented Oct. 30, 1917.



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By his Attorney

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UNITED STATES PATENT OFFICE.

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PROCESS JAR CLOSURE.

1,244,496.

Specification of Letters Patent.

Patented Oct. 30, 1917.

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To all whom it may concern:

Be it known that I, CHARLES HAMMER, a citizen of the United States, residing at Queens, in the county of Queens and State of New York, have invented certain new and useful Improvements in Process Jar Closures, of which the following is a specification.

This invention relates to the form of jar closures intended to be sealed by the vacuum process, which can be done by placing the sealed jar and closure in a chamber and exhausting the air, or the contents can be boiled to produce a steam or vapor, and the closure then applied; whereby the condensation of the vapor, with the closure under a slight pressure on the jar, will produce a partial vacuum; so that the sealing is effected in both instances solely by the atmospheric pressure and without the employment of mechanical pressure by a chuck or other means.

The object of the present invention is to provide a closure for this purpose, especially adapted for cooperation with a form of jar having a shoulder on the outer wall below the top, so that the pressure exerted by the atmosphere to force down the closure will produce a kind of double wedge action to tightly compress the washer or gasket between the top and side faces of the jar and a similarly arranged portion of the closure.

In the accompanying drawing showing one embodiment of my invention Figure 1 shows in section, the closure in sealed position on a jar. Fig. 2 is a partial section enlarged of the closure before use; and Fig. 3 is a similar view of the closure as applied to the jar.

As shown in the drawing, the closure comprises a top 4 and an inwardly extending flange denoted generally by 5, of annular shape and which is shown as having a slightly upwardly extending arch portion 6. The flange portion has a curved or rounded jar-engaging portion that first extends outwardly, as at 7, and then inwardly, as at 8, in a slightly divergent conical annular form.

Inside of the jar-engaging portion is placed a ring gasket or washer 9, arranged to engage the inner face of the said flange portions 7 and 8, as shown in Fig. 2, and which has an angular form in section. For

the purpose of conveniently retaining the gasket in proper sealing position in the cap, I preferably bend the lower margin of the flange inwardly to form a channel adapted to receive the lower edge of the gasket. As shown, the lower margin is first bent slightly outward as at 10, and then bent inwardly and upwardly as at 11, to form a channel open on the inner face of the closure. The gasket is preferably slightly compressed in the final bending of this channel portion to securely hold the gasket in the proper position. But it will be observed that the free edge of the channel portion is outside of the inner wall of the gasket, whereby it will not come in contact with the jar wall on application of the closure.

The form of jar 12 that is illustrated, is provided with a shoulder on the outer wall, formed by a horizontal face 13, and an upright face 14 that, as shown, is slightly divergent downwardly; and these two faces meet at a comparatively sharp angle with only the extreme edge rounded off or curved. Above this wall the jar has an extension or rim 15, located inwardly from the shoulder portion described, and which it will be observed will be entirely free from contact with the upper portion of the closure.

In the use of this form of cap, or cap and jar, after the jar is filled with the desired contents, the closure is applied by hand to rest lightly in proper position, and then the jar is subjected to the vacuum sealing process. To insure the retention of the closure on the jar during this process, a spring clamp 16 may be employed, of the usual or well-known form. This clamp will engage the closure at the middle portion only, while the inwardly bent hook end portions 17 and 18 will engage the jar at the bottom 19 of the shoulder extension, as shown in Fig. 1. In such process the contents of the jar are usually heated, to drive off any contained air, and to produce a kind of vapor at the top of the jar to assist in expelling the air. When the jar and closure are placed in the vacuum chamber and the air is exhausted, the slight pressure on the closure will permit it to rise sufficient to permit any contained air to be withdrawn, assisted by the steam or vapor below the closure. Then as soon as the atmospheric pressure is restored,

the closure will be very strongly forced down on the jar thereby. It will be understood from Fig. 3 that the comparatively sharp edge of the shoulder will compress the gasket more at the bend thereof than at the adjacent portions, but the adjacent portions of the jar wall will cooperate with the top and side portions of the rounded flange portion, whereby the gasket will assume a double wedge form, diverging both downwardly and inwardly from the edge of the shoulder. The upright portion of the wedge will serve to very tightly bind or lock the closure on the jar, and effectually exclude the atmospheric air therefrom, that will be assisted by the compressed portion of the gasket on the top face of the shoulder. Thereby the gasket will be forced into any cavities or irregular contours of the jar wall and effect a hermetic sealing of the jar. It will be further observed that the channel portion of the closure also serves as a strengthening means to prevent undue bending of the closure, while such portion remains off-set from the jar, and the closure will be seen to be free of contact with the jar at all places. Of course, after the sealing is effected the spring clamp 16 is removed and is not needed to retain the closure on the jar.

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

The combination with a jar provided with a rim at the top, the wall below the rim being extended horizontally outward and then abruptly downward in a slightly diverging conical form to provide a comparatively sharp edged sealing shoulder, of a jar cover comprising a top and an annular flange, the flange below the top having a curved portion that extends horizontally outward and then downwardly in a divergent form, the lower edge of the flange being bent first outwardly and then inwardly to form a channel, and a flat ring gasket of substantially cylindrical form held at its lower edge in said channel and lying against the inner face of said horizontal and vertical curved portion, and adapted for engagement with the top and side of the said sharp edged jar shoulder to thereby lock and seal the cover on the jar, whereby application of cover on the jar under strong pressure will compress the gasket between said shoulder and the said curved portion of the cover to a wedge shape diverging inwardly and downwardly from the edge of the shoulder, with the cover and gasket held entirely free of the jar wall at all other portions.

CHARLES HAMMER.