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T. R. SMITH

2,404,409

CONTAINER

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Fig. 1

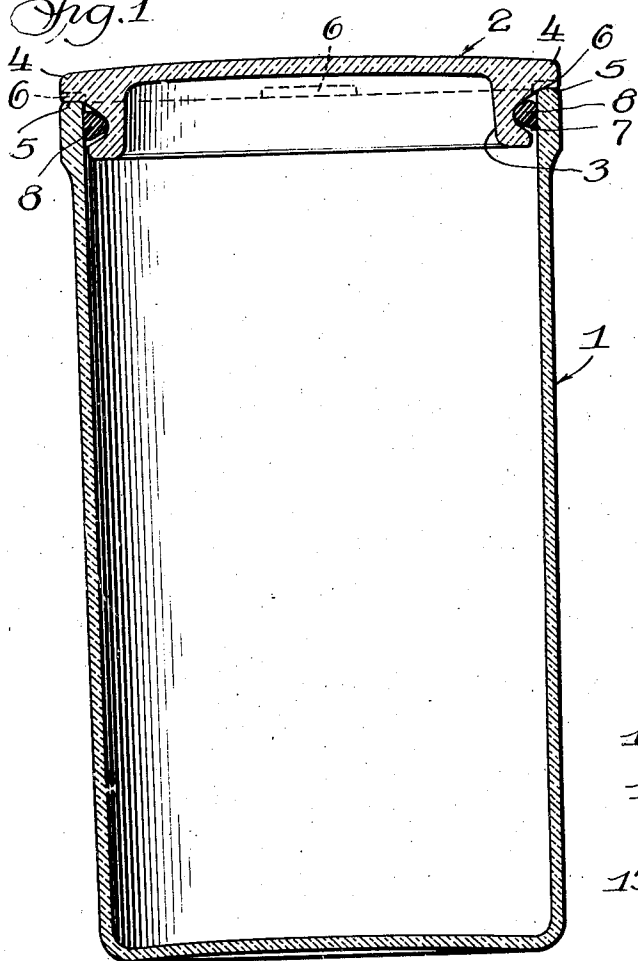


Fig. 2

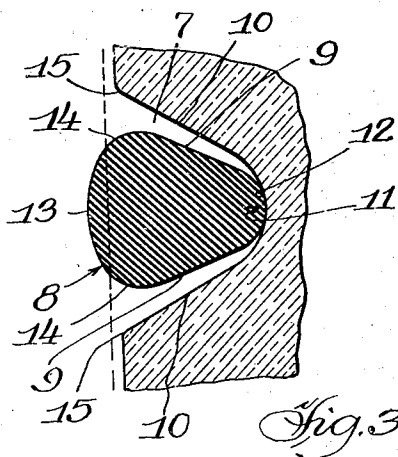
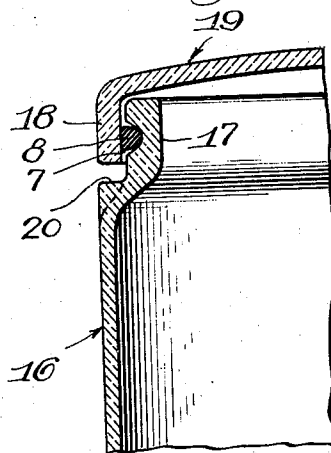
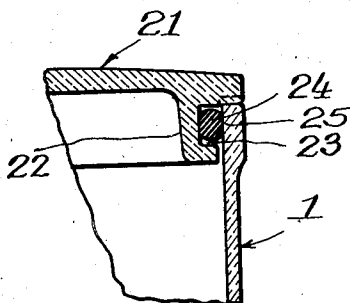


Fig. 4



Witness:
Chas. R. Horvath

INVENTOR.
Thomas R. Smith,
BY
Parkinson & Lane
Attys.

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CONTAINER

Thomas R. Smith, Newton, Iowa, assignor to The
Maytag Company, Newton, Iowa, a corporation
of Delaware

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2 Claims. (Cl. 215-40)

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The present invention relates to containers or glass jars and especially to a novel sealing means in which the sealing of the jar or container is not dependent upon the downward pressure applied to the lid.

In the construction of containers or jars now on the market and particularly those of the Mason type, metal is employed in the lid or closure. The present construction obviates the use of all metal and relies solely upon a sealing member of suitable resilient material forming a closure between the lid and jar. It is a simple operation to seal or unseal the jar or container and eliminates all of the difficulty now encountered in the ordinary types of jars. In addition, the present construction provides a much larger opening than the prior types which greatly facilitates the filling or emptying of the jar, and which also makes it easier to keep clean.

The invention further comprehends a novel sealing means which quickly and effectively seals the contents of the container when the lid is applied.

Further objects are to provide a construction of maximum simplicity, efficiency, economy and ease of assembly and operation, and such further objects, advantages and capabilities as will later more fully appear and are inherently possessed thereby.

The invention further resides in the construction, combination and arrangement of parts illustrated in the accompanying drawing, and while there is shown therein a preferred embodiment, it is to be understood that the same is susceptible of modification and change, and comprehends other details, arrangements of parts, features and constructions without departing from the spirit of the invention.

In the drawing:

Figure 1 is a view in vertical cross section through the novel container and sealing means.

Figure 2 is a fragmentary view in vertical cross section of an alternate construction of container.

Figure 3 is a fragmentary enlarged view in vertical cross section of the novel wedge-ring seal of Figures 1 and 2 and showing its position and relation to the substantially V-shaped groove.

Figure 4 is a fragmentary view in vertical cross section through the container and lid or closure of Figure 1, but showing an alternate form of sealing means.

Referring more particularly to the embodiment selected to illustrate the invention in Figures 1, 2 and 3 of the drawing, the novel jar or container comprises a receptacle 1 and a lid or closure 2

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having an annular depending portion 3 and peripheral flange or shoulder 4 projecting over the upper edge 5 of the receptacle. This flange is provided with a plurality of suitably spaced pockets or indentations 6 for receiving a knife or other object to be inserted therein for prying off the lid to open the jar or container.

The depending portion 3 of the lid or closure 2 is provided with a substantially V-shaped groove or recess 7 for receiving an internal wedge-shaped sealing ring 8 formed of a resilient material such as a natural rubber compound or of a compounded synthetic rubber suitable for the purpose. As shown more clearly in Figure 3, the cross section of the sealing ring is substantially wedge-shaped with its side walls 9 forming an angle of approximately 45°, while the angle made by the side walls 10 of the V-shaped groove is approximately 60°, to thereby allow for the sealing ring to slip or pivot from one side of the V-shaped groove to the other. This pivoting occurs about the radius of the vertex 11 of the sealing ring within the base or bottom 12 of the groove and to most effectively permit this pivotal movement, the vertex of the ring has a radius preferably slightly less than but substantially conforming to the radius of the base 12.

The base or outer edge 13 of the sealing ring is curved in a manner to maintain approximately the same amount of squeeze or compression as the sealing ring slips or pivots from one side of the groove to the other. The opposite corners 14 of the sealing ring are also rounded or curved at a proper radius to prevent these corners from being extruded or pinched at their sealing edges between the corners of the lid and the adjacent surface 15 on the interior of the neck or upper edge of the receptacle.

Figure 2 discloses an alternate construction of container in which the receptacle 15 is formed with a reduced neck 17 provided with a substantially V-shaped groove or recess 7, similar to that shown in Figure 1, for receiving and retaining the substantially wedge-shaped sealing ring 8 adapted to seal against an annular depending flange 18 on the lid 19. Unlike the embodiment shown in Figure 1, the sealing ring in this form is carried by the neck 17 of the receptacle and seals against the lid 19 rather than being carried by the lid and sealing against the neck or upper surface of the receptacle. In this alternate form, shoulders or embossments 20 provide a surface against or upon which a knife or other object may be placed to pry off the lid for opening the container.

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Figure 4 shows an alternate form of sealing means for the container shown in Figure 1. In this form the lid 21 is provided with an annular depending flange 22 having a channel-shaped groove or recess 23 for receiving a toroidal shaped, resilient ring 24 having a sealing contact with the inner upper edge 25 of the receptacle or jar 1. This sealing ring is of greater diameter than the depth of the groove or recess 23 so as to be compressed when the lid 21 is pressed or forced into its closed position, and the width of the groove or recess is greater than the diameter of the sealing ring to permit distortion and lateral movement of the ring when the lid is moved into closed position.

In either form of the novel construction disclosed, it is a simple matter to seal or unseal the lid. In addition, the present structure provides a larger diameter opening than possible with the prior constructions of jars having a threaded lid and wherein a too large diameter opening must be avoided to permit the threads of the lid to operate properly. The present construction further eliminates all strategic metal and the sealing of the container does not depend upon the amount of downward pressure applied to the lid.

Having thus disclosed the invention, I claim:

1. In a container including a receptacle member and a closure member having overlapping

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parts, a substantially V-shaped groove provided in one of the parts and a substantially wedge-shaped resilient sealing ring carried in the groove and having a sealing face for sealing contact with the other part, the sealing ring having a reduced and rounded vertex and outwardly diverging sides disposed at an acute angle and the groove having a rounded base and outwardly diverging sides disposed at an angle substantially greater than the outwardly diverging sides of the sealing ring whereby the sealing ring is free to pivot within the groove and effectively seal the members against leakage.

2. In a container including a receptacle having an open end and a lid therefor, an annular projection on the base of the lid and adapted to depend into the open end of the receptacle, an annular, outwardly opening substantially V-shaped groove provided in the periphery of the projection, and a resilient, substantially wedge-shaped sealing element mounted in the groove and having its outer end rounded to form a sealing face adapted to engage and seal against the open end of the receptacle and its inner end reduced and rounded and seating within the base of the groove, the sealing element being free to pivot in the groove about its reduced end and seal independent of the amount of pressure applied to the lid.

THOMAS R. SMITH.