

C. R. KEERAN.
JAR SEAL.
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976,659.

Patented Nov. 22, 1910.

Fig. 1.

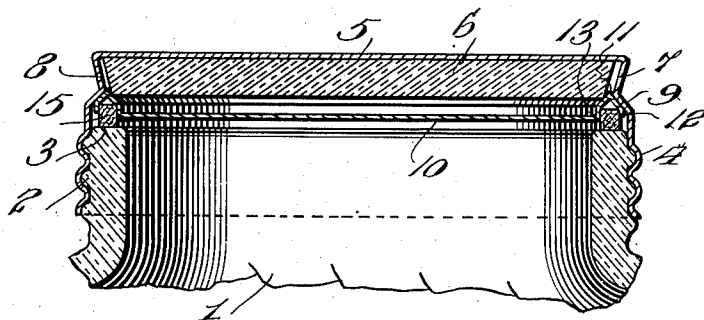
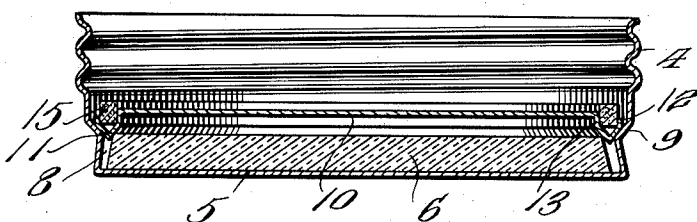


Fig. 2.

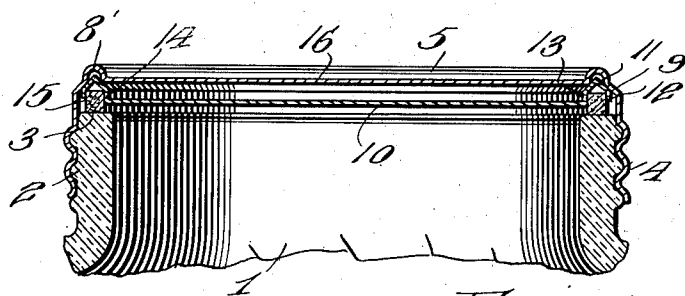


Fig. 3.

Inventor

Charles R. Keeran

By

Victor J. Evans

Attorney

Witnesses

Frank Hough

C. C. Hines.

UNITED STATES PATENT OFFICE.

CHARLES R. KEERAN, OF BLOOMINGTON, ILLINOIS.

JAR-SEAL.

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To all whom it may concern:

Be it known that I, CHARLES R. KEERAN, a citizen of the United States, residing at Bloomington, in the county of McLean and State of Illinois, have invented new and useful Improvements in Jar-Seals, of which the following is a specification.

This invention relates to bottle or jar seals of the vacuum type, and one of its objects is to provide a simple, cheap and effective seal of this type which may be applied with ease convenience and facility.

Another object of the invention is to provide a seal which may be held in position either permanently or temporarily until the vacuum is formed by a screw cap or cover of the type commonly employed as a closure for Mason jars.

Still another object of the invention is to provide a seal which will be held positively by the cap from slipping laterally on the rim edge of the jar whereby a positive seal is insured and the necessity of using wide and expensive sealing rings or gaskets obviated.

The invention consists of the features of construction, combination and arrangement of parts hereinafter fully described and claimed, reference being had to the accompanying drawings, in which:—

Figure 1 is a vertical section through a screw cap in inverted position with the seal therein ready for application to a jar. Fig. 2 is a similar view, showing the cap and seal applied to a jar. Fig. 3 is a view like Fig. 2, showing a modified form of holding cap.

Referring to the drawing, 1 designates a bottle or jar of that type having its neck portion provided with external screw threads 2 and a plane or flat transverse rim edge 3, which threads are adapted to be engaged by the threaded flange 4 of a screw cap or cover 5, the jar and cap herein shown being of the well-known Mason type. The cap is provided with a porcelain lining 6 bearing against the inner side of its crown or top wall and spaced at its peripheral edge from the adjacent portion 7 of the flange 4, such space providing an annular intervening recess 8. As shown, the lining 6 projects a little below the portion 7, which is connected with the underlying portion of the flange of the cap by a connecting outwardly and downwardly inclined or beveled portion 9.

The seal embodying my invention com-

prises a sheet metal disk 10, the body portion of which is of somewhat greater diameter than the diameter of the mouth opening of the jar, so that when in sealing position it will project slightly over upon the rim edge 3. This disk is formed at its outer edge with an annular offset portion disposed above the plane thereof, said offset portion forming a V-shaped or tapered rim 11 having a short outer depending vertical flange 12 and a longer inner depending vertical flange 13, the latter connecting the inner inclined walls of said V-shaped rim with the edge of the body of the disk 10. By this construction an annular retaining groove 14 is formed between the flanges 12 and 13 to receive the upper portion of a sealing ring or gasket 15, which ring or gasket may be made of any suitable elastic material, such as rubber, but is preferably composed of a fibrous material, such as asbestos or blotting paper, combined with a fusible wax, such as ordinary sealing wax, which will melt at a temperature above normal atmosphere temperature. The gasket may be held within the groove and the disk and gasket so connected in this manner as a complete article of manufacture ready for use.

In employing the invention, the cap or cover 5 may be used for either permanently or temporarily holding the seal in position. As a convenient manner of applying the cap and seal, the cap may be inverted, as shown in Fig. 1 and the seal dropped in an inverted position therein. When this is done the beveled outer wall of the rim 11 of the seal will engage the beveled portion 9 of the flange of the cap, which will operate as a guide to bring said rim 11 into engagement therewith and with the adjacent edge of the lining 6, so that the apex of the rim will project slightly into the groove 8, such surfaces of the cap forming a seat for the rim of the seal by which the seal, on being simply dropped therein, will be automatically guided into position for application to the jar, without care or any specified manipulation on the part of the operator. The cap with the contained seal is then simply turned over to normal position above the mouth of the jar, as shown in Fig. 2, and screwed down upon the same, the bottom face of the gasket 15 being thereby brought to bear against the rim 4 and maintained in close contact therewith by the pres-

sure of the cap. If the contents of the jar are cold when filled into the jar, the cap may be allowed to remain upon the jar as a medium for permanently retaining the seal in position, by which an hermetic closure will be effected. If, on the other hand, the contents of the jar are filled in while hot, the cap may be held applied to the jar to retain the seal in position until the rarefied air in the neck of the jar above the contents is condensed and forms a partial vacuum, whereby the seal will, upon the removal of the cap, be held firmly in position to close the jar by external atmospheric pressure. Under such conditions, it may be advisable to make the gasket or sealing ring of a fibrous material and wax, as the latter will be fused by the heat of the contents and thus become cemented to the rim 3, making the seal absolutely proof against leakage. It will thus be seen that the seal may be employed in connection with an ordinary screw cap to secure a tight closure, in the event that a vacuum holding action is not desired or cannot be attained, or that the cap may be used simply as a medium for holding the seal in place until a vacuum is formed. It will be observed that when the cap and seal are placed in position, the seal will be held against lateral shifting by its receiving seat in the cap and the beveled portion 9, so that it will be accurately brought into engagement with the rim 3 of the jar, without any further care or attention on the part of the operator other than is required to apply the cap to the jar in the

customary manner. Through this guiding connection between the cap and seal, the necessity of employing a comparatively wide gasket in order to insure its seating on the rim is obviated, and hence an inexpensive form of gasket of restricted size may be used.

In Fig. 3 I have shown a modified form of cap which may be employed if desired, the said cap having a depressed panel 16 forming the receiving groove 8', the lining 6 being dispensed with, but the construction of the cap being otherwise the same.

Having thus described my invention, I claim:—

In a vacuum jar seal, the combination with a screw cap having portions forming a retaining recess and beveled guide surfaces leading thereto, of a seal comprising a disk having an offset peripheral portion extending from its upper side, said offset portion being bent to provide inner and outer parallel flanges, converging walls above said flanges forming beveled faces to engage the retaining recess and beveled guiding surfaces of the cap, and a seal fitted in the groove formed between said flanges and clamped by the latter and projecting below the bottom surface of the disk.

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

CHARLES R. KEERAN.

Witnesses:

BRUCE L. CROSTHWAIT,
CLYDE E. SHOPE.