Aug. 28, 1928. 1,682,234

P. S. MOYER

CLOSURE

Filed July 3, 1924

Fig. 1.

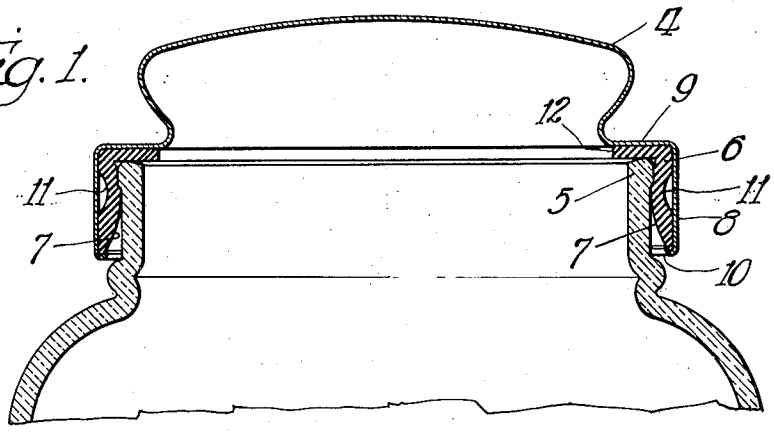



Fig. 2.

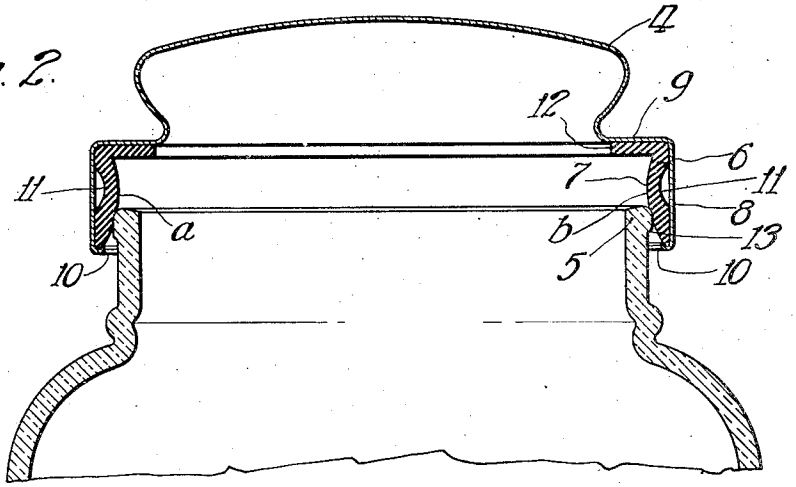
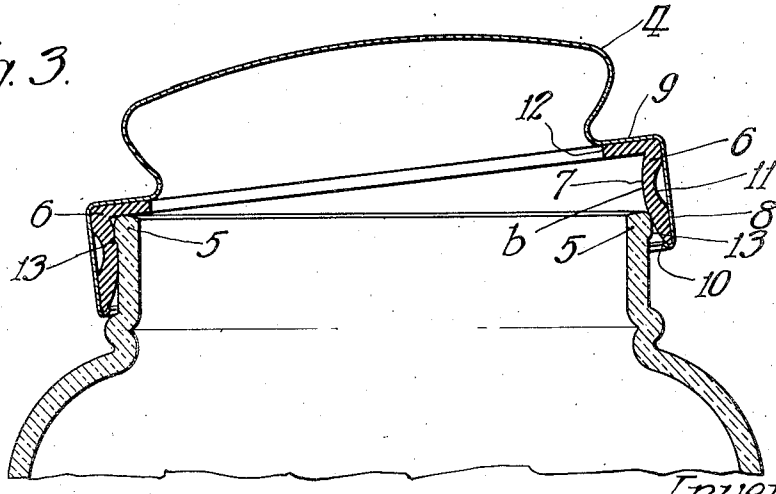



Fig. 3.




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# UNITED STATES PATENT OFFICE.

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## CLOSURE.

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The present invention provides improved covering means for closing receptacles,—jars, for example,—such that they may be closed quickly and easily, while desired tightness of closure may be effected even though the covering means be hurriedly or carelessly applied.

The nature of the invention will be readily understood by reference to one practical embodiment of the invention, which is shown, for illustration, in the accompanying drawings in which:

Fig. 1 is a sectional elevation of the open end of a jar and its closure, the latter being shown in the position occupied when fully seated over the mouth of the jar;

Fig. 2, a view similar to Fig. 1, shows the closure applied to a jar, but only partially seated over the mouth thereof;

Fig. 3 is another sectional elevation, showing the closure applied to the jar in a tilted position, and only partially seated, to illustrate the effect of careless application of the closure.

Jar covers and the like heretofore have been open to certain objections, that apply with particular force to counter display and dispensing jars or other receptacles, which are intended to be kept tightly closed, but which sales people are required to open and close frequently in making retail sales. With reference to these objections, it may be said that covers which have been capable of making adequately tight closures when carefully applied, have involved somewhat complicated procedure in applying them. Screw-tops fall in this category. If well fitted and thoroughly screwed down, they will form satisfactorily tight closures. But the average sales person, in the haste of retail trade, is likely not to seat the top fully, but to leave it only resting upon the jar mouth or partially screwed down so that tight closure is lacking. Furthermore, those covers which are easily and quickly applied and removed (e. g., without being screwed on or off) do not close the jars adequately if carelessly applied.

The present invention aims to avoid these objections, in a cover which may be easily applied and removed.

Referring to the accompanying drawings, the illustrative embodiment of the invention includes a cover 4 applied to the mouth 5 of a jar or the like.

Disregarding for the present the particular form and material of the cover and of the jar mouth, the direct cooperation between the two is characterized by a resilient wall 6 on one of the parts, arranged to form a tight closure with the other part.

As shown, the resilient wall 6, carried by the top 4, is in the form of a depending annular flange having a convex or torus-like inner surface 7. The least diameter of the annular convex inner surface of the wall 6, e. g., between the points *a* and *b*, Fig. 2, is slightly less than the outside diameter of the jar mouth with which the resilient wall is intended to be engaged. With this arrangement, if the cover 4 is pressed down upon the jar mouth, the resilient wall will be compressed in cross section and will be made to grip the outer surface of the jar mouth.

From the points *a* and *b*, the convex surface 7 recedes to provide an enlarged circular opening at the lower extremity of the wall to receive the jar mouth when the top is initially applied; and also an enlarged annular space to receive the jar mouth when the top is fully seated over the mouth of the jar.

The material of which the wall is formed may be of such consistency as to retain its normal shape and at the same time possess sufficient pliability to be readily compressed, so as to adapt itself to the form of the jar mouth at whatever angle the cover may be placed thereon.

In the specific embodiment shown, the resilient wall 6 comprises a gasket of rubber or the like which may be positioned within a depending wall portion 8 of the cover 4, and held against longitudinal displacement with reference thereto by a shoulder 9 adjacent its upper or inner edge and by a narrow inwardly extending annular flange 10 formed on the lower or outer edge of the wall portion 8.

The wall 6 may be provided on its outer surface with a relatively broad annular groove 11, thereby producing a wall of concavo-convex cross-sectional form which, in addition to being compressible as above mentioned, is capable also of being distorted laterally when placed over the jar mouth.

It will be observed that when the gasket is placed within the cover 4, as shown, the concave surface of the annular groove 11 on the outer surface of the wall 6 will form an

annular hollow chamber between the wall and the inner surface of the wall portion 8 of the cover to provide sufficient space for the maximum distortion or bulging of the wall 6 of the gasket when the cover is placed upon the jar.

If desired, the wall 6 may be provided with an additional jar engaging surface in the form of a laterally and inwardly extending annular flange 12, preferably at its upper or inner edge and adjacent the shoulder 9 of the cover 4.

It will be observed that when the cover and gasket in the form illustrated in the drawings, are positioned on the jar in proper alignment therewith, as shown in Fig. 1, and fully seated over the mouth of the jar, there will be two separate areas of contact established between the gasket and the open end of the jar, i. e. where the wall 6 engages the outer annular surface of the jar mouth 5, and where the edge of the jar mouth engages the flange 12. The annular wall 6 of the gasket, by reason of its resiliency grips the outer annular surface of the jar mouth and, in addition to establishing a tight connection between the cover and jar, assists in preventing the accidental displacement of the cover.

To further assist in preventing the accidental displacement of the cover and to provide a more efficient connection between the cover and jar, the neck portion of the latter may be provided with a narrow annular flange or flattened bead 13, and when the cover and gasket are placed over the mouth of the jar, the gasket, by reason of its pliability and resiliency, will be compressed or bulged outwardly as above described, and when the cover is pressed "home" will resume a position in back of the bead (see Fig. 1) thereby assisting, in a measure, the frictional contact between the gasket and jar in resisting removal of the cover, and providing additional surface for the contact of the gasket to prevent the admission of air. This also assists in holding down the cover with a tight connection between the flange 12 and mouth of the jar.

The flange 12 in addition to providing a seat for the outer edge of the jar mouth, tends to stiffen the inner edge of the wall 6 and prevent any possible collapsing, or withdrawal of the gasket from the cover when the latter is removed from the jar.

It will be observed that no matter how the closure is placed on the jar (see Figs. 2 and 3), a substantially air-tight connection is established between the jar and closure; the pressure incidental to the mere placing of the closure on the jar being sufficient to to distort or compress the wall 6 of the gasket to provide contact throughout the periphery of the jar mouth.

In the use of the present invention, no appreciable amount of time or care is required in placing the closure on the jar to insure a proper connection therebetween, for even though the closure be carelessly applied the jar immediately is made substantially air-tight. This is highly important and most desirable when jars or the like equipped with such closures are used as dispensing receptacles in stores, candy shops and the like, as above mentioned, especially during rush periods when sufficient time cannot be taken to properly place the closures on the jars, as is necessary in the case of screw caps and other types of jar closures, heretofore referred to, and having various forms of clamping means for providing substantially air-tight connections between the jars and closures.

Obviously the present invention is not limited to the particular embodiment thereof herein shown and described.

Having thus described my invention, I claim:

1. A device of the class described comprising a container and removable cap having walls surrounding one the other and spaced apart a substantial distance, and a gasket of resilient yieldable material such as rubber or the like fitted to and in retained engagement with the cap; said gasket comprising a resilient wall of concavo-convex cross-section squeezed between said walls of the container and cap and bulging against and releasably clasping the container wall, and a flange extending laterally from the upper end of said concavo-convex wall of the gasket, said flange stiffening the gasket and adapted to seat on the mouth of the container.

2. A device of the class described comprising a container and a removable cap having a depending flange surrounding and spaced substantially from the mouth portion of the container, and a gasket seated in said flange and releasably clasping the mouth portion of the container, said gasket characterized by a resilient clasping wall having a convex inner face engaging the container and a grooved or recessed outer face and being compressed between said flange and mouth portion of the container in such manner as to form a substantially air-tight connection between the container and cap whether the cap be fully seated in alignment with the container or applied at an angle thereon.

3. A device of the class described comprising a container and a removable cap having a depending flange surrounding and spaced substantially from the mouth portion of the container, and a gasket of resilient yieldable material seated in and retained by the cap comprising an inwardly bowed wall and a flange extending inwardly from the upper end of said inwardly bowed wall, said in-

wardly bowed wall adapted to be compressed or distorted between the cap flange and external wall of the container so as to releasably clasp the latter with a substantially air-tight connection and said flange of the gasket adapted to seat on the mouth of the container when the cap is fully seated in alignment with the container.

4. The combination with a container such as a jar or the like, of a removable closure therefor comprising a jar cap having a gasket of resilient yieldable material such as rubber or the like fitted in and retained by the cap and releasably clasping the jar adjacent to its mouth, said gasket characterized by a resilient clasping wall of an inwardly bowed cross-section having its convex surface in engagement with the jar.

5. A device of the class described comprising, in combination, a jar having an external bead at its mouth; a removable cap having a depending flange surrounding the neck of the jar and spaced therefrom a substantial distance; and a gasket of resilient yieldable material fitted in said cap, said gasket characterized by a resilient wall of inwardly bowed cross-section adapted to clasp the neck of the jar to releasably secure the cap with a substantially air-tight connection and cooperable with said bead to resist removal of the cap.

6. A jar closure comprising a cap having a gasket of resilient yieldable material such as rubber or the like fitted in the cap in retained engagement therewith and adapted to hug a jar adjacent to its mouth and to form a substantially air tight connection therewith whether the cap be fully seated in alignment with the jar or carelessly applied at an angle thereto, said gasket characterized by an inwardly bulging resilient jar-clasping wall having a convex inner surface and having a depression in its outer side allowing lateral distortion of said wall to conform to the rim portion of the jar at various angular relations of the jar and closure.

7. A jar closure comprising a cap having a depending flange to surround the mouth portion of a jar and having a gasket of resilient yieldable material such as rubber or the like fitted in the cap in retained engagement therewith, said gasket comprising a jar-clasping wall seated in the flange of said cap and a gasket flange extending inwardly from the upper end of said wall and seated against a shoulder of the cap above said flange of the cap, said wall being of an inwardly bowed cross-section and adapted to clasp the jar adjacent to its mouth with a substantially air-tight connection.

8. As a means for establishing connection between a jar and removable closure therefor, a gasket of resilient yielding material such as rubber or the like shaped to provide a jar clasping wall of inwardly bowed cross-section adapted to fit within a jar cap and to be compressed around the mouth portion of the jar when the cap is applied thereover so as to hold the cap in place with an adequately tight closure.

9. As a means for establishing connection between a jar and removable closure therefor, a gasket of resilient yielding material such as rubber or the like shaped to provide a jar clasping wall of inwardly bowed cross section and an inwardly extending flange at the top of said jar clasping wall, substantially as and for the purpose described.

In testimony whereof, I have signed my named to this specification.

PAUL S. MOYER.