Dec. 6, 1927. 1,651,669

R. H. CARPMAEL

CLOSURE FOR BOTTLES AND OTHER CONTAINERS

Filed Oct. 11, 1926

Fig. 1.

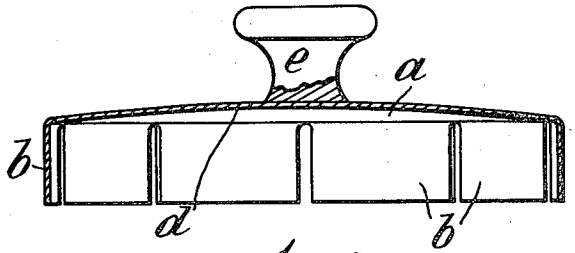


Fig. 2.

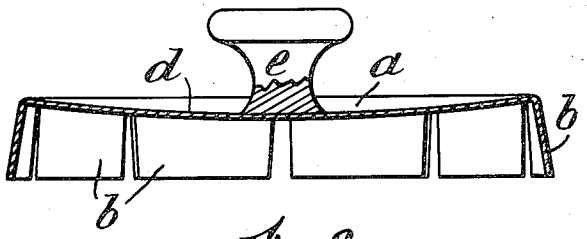


Fig. 3.

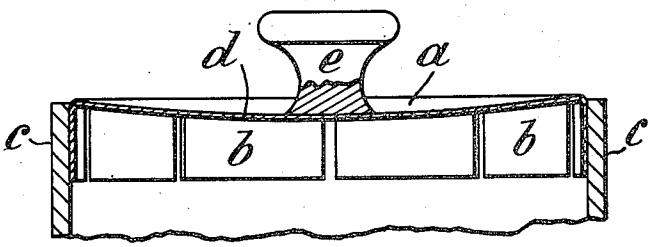
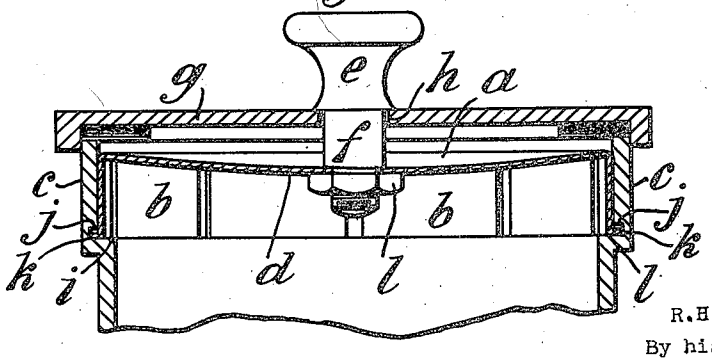


Fig. 4.



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Patented Dec. 6, 1927. 1,651,669

UNITED STATES PATENT OFFICE.

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CLOSURE FOR BOTTLES AND OTHER CONTAINERS.

Application filed October 11, 1926, Serial No. 140,953, and in Great Britain July 14, 1926.

This invention relates to improvements in closures for bottles and other containers and has for its object a closure that may be rapidly secured in position and which is particularly adapted for use on petrol tanks and cans.

According to this invention a closure comprises a resilient disk formed with a number of peripheral fingers while the interior of the mouth of the neck of the container is of a size to be frictionally engaged by the fingers or is provided with a ledge on which the ends of the fingers rest; the sides of the fingers being adapted to be sprung into firm engagement with the internal wall of the mouth of the container by deformation of the disk member which has a central bulged portion capable of being sprung into release and secure positions, the first of which is above and the second below the horizontal.

A knob or its equivalent is preferably formed on or attached to the central portion of the disc when it is desired to provide a permanently operable closure which is capable after removal from the container of being replaced thereon whenever desired.

According to a further feature of this invention an outer cap may be provided connected to the disk by the shank of a knob secured to the latter and on which it has limited movement corresponding to the displacement of the central bulged portion, said cap forming a cover adapted to lie on the rim of the neck of the container. The cap member may consist of a flat or flanged cap, and in the latter case a washer is preferably provided located against the flange in order that in some cases the closure when first applied may form an airtight seal.

According to another feature of this invention the peripheral fingers of the resilient disk are flanged, said flanged portions being adapted to engage a groove in the neck of the container or the like in which case the neck of the container may be undercut to form a groove above the ledge.

It will be seen that such a closure is capable of a number of applications, and for instance may be used for sealing milk bottles, potted meat jars where it is particularly useful in that the jar may be effectively resealed when once the jar has been opened.

The invention is illustrated in the accompanying drawings in which Figs. 1 and 2 are diametral sections of a disk in the release and secure positions.

Fig. 3 is a similar view of the disk in the container in the secure position.

Fig. 4 is a similar view but showing the disk provided with an outer cap, and the neck of the container with ledge and an undercut groove.

Referring to the drawing *a* is a disk formed with a number of peripheral fingers *b*. *c* is the mouth of a container. The disk has a bulged portion *d* to which is connected an operating knob or handle *e*.

Referring now to Fig. 4 the disk *a* has attached to it a shank *f* on which is formed the operating knob or handle *e*, an outer cap *g* being provided having a central hole *h* through which passes the shank *f* of such a length as to allow movement of the cap corresponding to the displacement of the disk *a*. The neck of the container is provided with a ledge *i*, and an undercut groove *j*, though in some cases the groove may be omitted. When the groove *j* is provided, the peripheral fingers have flanges *k* adapted to enter the groove.

The shank *f* is preferably attached to the disk *a* by a nut *l*.

The above drawings are made to a scale twice the size of an actual cap for use on a petrol tank.

What I claim is:—

1. A closure for containers comprising the combination with a resilient disk formed with a number of peripheral fingers, capable of being sprung into release and secure positions, of a container the internal wall of whose mouth is of such a size that the sides of said fingers when in the secure position frictionally engage said wall.

2. A closure for containers comprising a resilient disk formed with a number of peripheral fingers adapted to engage the internal wall of the mouth of the container and having release and secure positions.

3. A closure for containers comprising a resilient disk formed with a number of peripheral fingers and having a central bulged portion capable of being sprung into release and secure positions the first of which is above and the second below the horizontal, said fingers being adapted to engage the internal wall of the mouth of the container when in the secure position.

4. A closure for containers comprising the combination with a resilient disk formed with a number of peripheral fingers and having a central bulged portion capable of

being sprung into secure and release positions the first of which is above and the second below the horizontal, of a container the internal wall of whose mouth is of such a size that the sides of said fingers when in the secure position frictionally engage said wall.

5. A closure for containers comprising the combination with a resilient disk formed with a number of peripheral fingers adapted to engage the internal wall of the mouth of the container and having release and secure positions, of a shank fast on the disk, and an outer cap mounted on said shank on which it has limited movement corresponding to the displacement of the disk.

6. A closure for containers comprising the combination with a resilient disk formed with a number of peripheral fingers, capable of being sprung into release and secure positions, of a container the internal wall of whose mouth is of such a size that the sides of said fingers when in the secure position frictionally engage said wall, a shank fast on the disk, and an outer cap mounted on said shank on which it has limited movement corresponding to the displacement of the disk.

7. A closure for containers comprising the combination with a resilient disk formed with a number of peripheral fingers and having a central bulged portion capable of being sprung into release and secure positions the first of which is above and the second below the horizontal, said fingers being adapted to engage the internal wall of the mouth of the container when in the secure position, of a shank fast on the disk, and an outer cap mounted on said shank on which it has limited movement corresponding to the displacement of the disk.

8. A closure for containers comprising the combination with a resilient disk formed with a number of peripheral fingers and having a central bulged portion capable of being sprung into release and secure positions the first of which is above and the second below the horizontal, of a container the internal wall of whose mouth is of such a size that the sides of said fingers when in the secure position frictionally engage said wall, a shank fast on the disk, and an outer cap mounted on said shank on which it has limited movement corresponding to the displacement of the disk.

9. A closure for containers comprising a resilient disk formed with a number of peripheral fingers adapted to engage the internal wall of the mouth of the container and having release and secure positions, said wall being provided with a ledge upon which the ends of the fingers rest.

10. A closure for containers comprising the combination with a resilient disk formed with a number of peripheral fingers, capable of being sprung into release and secure positions, of a container the internal wall of whose mouth is of such a size that the sides of said fingers when in the secure position frictionally engage said wall, and is provided with a ledge upon which the ends of the fingers rest.

11. A closure for containers comprising the combination with a resilient disk formed with a number of peripheral fingers and having a central bulged portion capable of being sprung into release and secure positions the first of which is above and the second below the horizontal, said fingers being adapted to engage the internal wall of the mouth of the container when in the secure position, and rest upon a ledge provided on said wall.

12. A closure for containers comprising a resilient disk formed with a number of peripheral fingers adapted to engage the internal wall of the mouth of the container and having release and secure positions, said wall being provided with a ledge and an undercut groove, and the ends of the fingers with flanges which engage the groove.

13. A closure for containers comprising the combination with a resilient disk formed with a number of peripheral fingers, capable of being sprung into release and secure positions, of a container the internal wall of whose mouth is of such a size that the sides of said fingers when in the secure position frictionally engage said wall, and is provided with a ledge and an undercut groove, the ends of the fingers having flanges formed thereon which engage the groove.

14. A closure for containers comprising the combination with a resilient disk formed with a number of peripheral fingers and having a central bulged portion capable of being sprung into release and secure positions the first of which is above and the second below the horizontal, said fingers being adapted to engage the internal wall of the mouth of the container when in the secure position, and having flanges formed on their ends which engage a ledge and an undercut groove formed in said wall.

15. A closure for containers comprising the combination with a container having a ledge in its mouth of a resilient disk formed with a number of peripheral fingers adapted to engage the internal wall of the mouth of the container and having release and secure positions, a shank fast on the disk, and an outer cap mounted on said shank on which it has limited movement corresponding to the displacement of the disk, the fingers when in the secure position resting upon said ledge.

16. A closure for containers comprising the combination with a resilient disk formed with a number of peripheral fingers capable of being sprung into release and secure posi-

tions, of a shank fast on the disk, an outer cap mounted on said shank on which it has limited movement corresponding to the displacement of the disk, and a container having a ledge in its mouth on which the ends of the fingers rest when in the secure position and the internal wall of which is of such a size that the sides of the fingers engage therewith.

17. A closure for containers comprising the combination with a resilient disk formed with a number of peripheral fingers and having a central bulged portion capable of being sprung into release and secure positions the first of which is above and the second below the horizontal, of a shank fast on the disk, an outer cap mounted on said shank on which it has limited movement corresponding to the displacement of the disk, and a container having a ledge in its mouth, said fingers being adapted to engage the internal wall of the mouth of the container when in the secure position and rest upon the ledge.

18. A closure for containers comprising the combination with a container having a ledge and an undercut groove in its mouth of a resilient disk formed with a number of peripheral fingers adapted to engage the internal wall of the mouth of the container and having release and secure positions, a shank fast on the disk and an outer cap mounted on said shank on which it has limited movement corresponding to the displacement of the disk, the fingers being formed with flanges at their ends which engage the groove in the secure position.

19. A closure for containers comprising the combination with a resilient disk formed with a number of peripheral fingers which are flanged at their ends and are capable of being sprung into release and secure positions, of a shank fast on the disk, an outer cap mounted on said shank on which it has limited movement corresponding to the displacement of the disk, and a container having a ledge and an undercut groove in its mouth with which the flanged ends of the fingers engage when in the secure position and the internal wall of which is of such a size that the sides of the fingers engage therewith.

20. A closure for containers comprising the combination with a resilient disk formed with a number of peripheral fingers flanged at their ends and having a central bulged portion capable of being sprung into release and secure positions, the first of which is above and the second below the horizontal, of a shank fast on the disk, an outer cap mounted on said shank on which it has limited movement corresponding to the displacement of the disk, and a container having a ledge and an undercut groove in its mouth, said fingers being adapted to engage the internal wall of, and the groove in, the mouth of the container when in the secure position.

21. A closure for containers comprising a resilient disk formed with a number of peripheral fingers adapted to engage the internal wall of the mouth of the container and having release and secure positions, and operating means connected to the disk for operating the closure.

22. A closure for containers comprising a resilient disk formed with a number of peripheral fingers and having a central bulged portion capable of being sprung into release and secure positions, the first of which is above and the second below the horizontal, said fingers being adapted to engage the internal wall of the mouth of the container when in the secure position, and a knob on the central bulged portion for operating the closure.

23. A closure for containers comprising a resilient disk formed with a number of peripheral fingers adapted to engage the internal wall of the mouth of the container and having release and secure positions, said wall being provided with a ledge upon which the ends of the fingers rest, and a knob connected to the disk for operating the closure.

24. A closure for containers comprising the combination with a resilient disk formed with a number of peripheral fingers, capable of being sprung into release and secure positions, of a container the internal wall of whose mouth is of such a size that the sides of said fingers when in the secure position frictionally engage said wall, and which is provided with a ledge and an undercut groove, the ends of the fingers having flanges formed thereon which engage the groove and a knob connected to the disk for operating the closure.

25. A closure for containers comprising the combination with a resilient disk formed with a number of peripheral fingers adapted to engage the internal wall of the mouth of the container and having release and secure positions, of an outer cap connected to the disk and adapted when the closure is applied to engage with the top of the mouth of the container.

26. A closure for containers comprising the combination with a container having a ledge in its mouth, of a resilient disk formed with a number of peripheral fingers adapted to engage the internal wall of the mouth of the container and having release and secure positions, an outer cap connected to the disk and adapted when the closure is applied to engage with the top of the mouth of the container, the fingers when in the secure position resting upon said ledge.

27. A closure for containers comprising the combination with a container having a ledge and an undercut groove in its mouth

of a resilient disk formed with a number of peripheral fingers adapted to engage the internal wall of the mouth of the container and having release and secure positions, a shank fast on the disk and an outer cap mounted on said shank on which it has limited movement corresponding to the displacement of the disk, the fingers being formed with flanges at their ends which engage the groove in the secure position and an outer cap connected to the disk and adapted when the closure is applied to engage with the top of the mouth of the container.

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