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H. L. LONSDALE ET AL

SEALING CLOSURE FOR BOTTLES AND CONTAINERS

Filed April 19, 1923

Fig. 1.

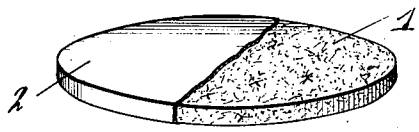


Fig. 2.

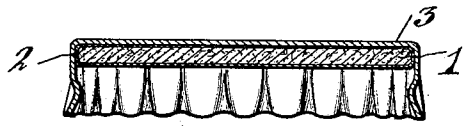
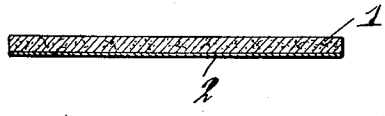


Fig. 3.



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UNITED STATES PATENT OFFICE.

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SEALING CLOSURE FOR BOTTLES AND CONTAINERS.

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This invention relates to improvements in sealing disks for containers or receptacles, and refers more particularly to the thin resilient disks used in connection with metallic closures which are formed in the shape of caps on the tops of bottles, jars or other containers, for the purpose of closing the containers.

Fig. 1 is a view of one of the sealing disks having the sealing film over the entire disk and broken away in the drawings to show the manner in which it covers the disk.

Fig. 2 is a sectional view through the disk and metallic cap to show the positioning of the disk in the cap.

Fig. 3 is a modified form of construction in which the disk has the sealing film only over the lower surface of the disk, or that portion which is in contact with the contents of the container.

The metallic caps having a liner of resilient material, have been adopted as one of the most satisfactory and inexpensive sealing elements which have been devised for sealing containers. A cap of this character not only furnishes a perfect gas and airtight seal to prevent the contents of the bottle from deteriorating, but is also unaffected by conditions involved in the capping and sterilization of the bottle and its contents.

It is a well known fact that cork is the most satisfactory material for use in the thin sealing liners.

In making the thin sealing elements for the metallic caps, cork of different characters is used. In some cases the native cork is sliced or cut into thin layers or sheets and punched into rings or disks to fit into the metal caps. This however, is an expensive procedure and usually the waste cork left after producing bottle stoppers is ground up into a relatively comminuted form and this is combined with a binder such as glue or other adhesive insoluble sizing which serves to unite the particles when the comminuted or ground cork is pressed into forms from which the caps are cut. These forms may be either sheets or cylindrical rods subsequently punched or sliced into thin caps adaptable to be inserted into the tops of the metallic caps which are applied upon the containers.

In this connection it will be noted that in addition to use in the small metallic caps for bottles, the sealing caps may also be used for sealing the tops of containers which have a larger mouth or opening such as jars which are equipped with screw caps or patented cap fastenings. Resilient sealing disks such as hereinafter described are as adaptable to such uses as they are to the sealing of bottles for liquid. In fact, the seal may be used in connection with any type of liquid, solid or semi-solid substance.

Sealing caps of the character described, are now well known in the art, and it is the improvement of the sealing portion of these caps that is the salient feature of the present invention. It is a well known fact that certain products which are sealed in this manner, attack the cork, producing discoloration and deterioration of the contents, and also causing the cork to lose its sealing properties. To prevent this, numerous attempts have been made to prevent the contents from coming in contact with the sealing material. This has been accomplished by affixing a disk of paraffined or oiled paper, tinfoil or other relatively inert substances applied in the form of a thin sheet to the face of the sealing disk. Such material is also applied to certain fibrous materials when the latter are used as sealing substances. A material applied to the cork in this manner, however, is objectionable for the reason that it has not the resilient properties of the cork, and consequently when the closures are affixed to the containers, the material will tear or crack and the contents immediately permeate behind the substances and attack the cork.

To obviate these objections and to prevent the contents in the sealed products from reaching the cork of the sealing disks, we have conceived the idea of applying an inert mixture in the form of a liquid which will produce a film upon the surface of the cork which will be of a resilient character and will conform with any deformity caused by the pressure of a cap upon the container top.

In its broader aspects this substance may be any inert liquid that will not strike into the cork and saturate the same, but may be applied to produce a thin film or skin upon the surface of the cork exposed to the action of the sealed products. We have produced this effect by treating the cork sealing disks first, with a glue size which fills the surface pores of the cork and prevents the linseed oil varnish subsequently applied from striking into the body of the cork. After the

application of the linseed oil varnish, the cork is heated to temperatures regulated to satisfactorily oxidize the linseed oil varnish upon the cork surface and produce a uniform, impervious and resilient skin or film.

The cork disks made in this manner can be manufactured cheaper than when a disk of material is affixed to each of the caps, and besides the cost of manufacture, the inert film will produce a more satisfactory insulating material due to the fact that it will more readily conform the deformities produced by compression upon the seal.

In place of a linseed oil varnish, numerous types of coating materials may be used which will give a satisfactory inert coating material. The preferable form, namely, the oxidized linseed oil varnish, is disclosed as being the most satisfactory under conditions to which the sealing caps are subjected, but it is appreciated that this substance may be replaced with other liquid coatings to give as satisfactory results.

Referring in detail to the drawing, the cork disk 1 is coated with an inert film of compressible material 2. This coated cork disk may be then placed within the upper portion of the metallic sealing cap 3. The inert film of impervious stretchy material such as oxidized varnish, may entirely surround the cork disk, or one side only may be coated.

In its broader aspects, the invention lies in the coating of the cork surface with a film of inert substance which will produce a resilient skin or coating.

We claim as our invention:

1. The combination with a metallic sealing closure for containers, of a sealing disk positioned therein, comprising a cork body portion coated with a sizing substance and a stretchable impervious oxidized film.

2. The combination with a metallic sealing closure for containers, of a sealing disk positioned therein, comprising a body portion of flexible stretchable material having the surface adapted to be in contact with the contents of the container, coated with a sizing substance and a compressible inert oxidized film.

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