Sept. 25, 1928. 1,685,744

J. O. HAAS

BOTTLE SEAL AND METHOD OF FINISHING THE SAME

Filed Dec. 18, 1926

FIG. I.

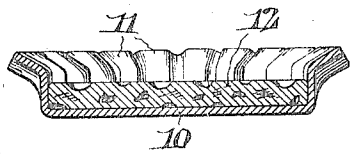


FIG. II.

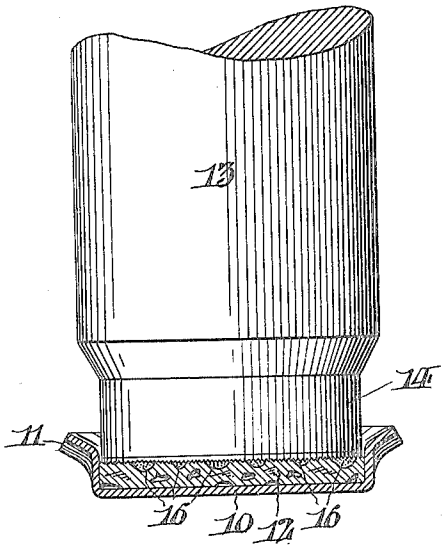


FIG. IV.

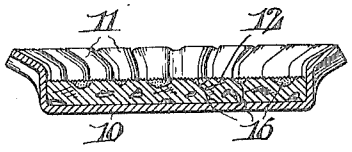


FIG. V.

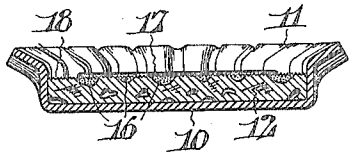


FIG. VI.

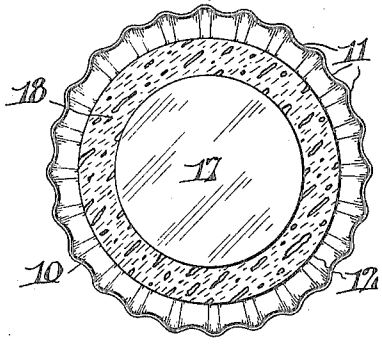
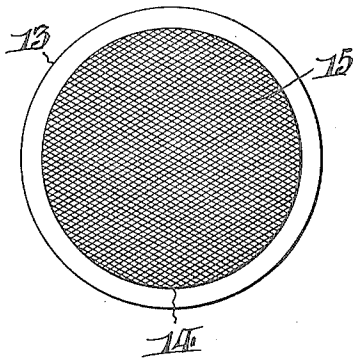


FIG. III.



WITNESSES

John C. Bergner.

Alfred C. Tschinger.

INVENTOR:

Jackson O. Haas,

BY Fraley & Paul

ATTORNEYS.

Patented Sept. 25, 1928. 1,685,744

UNITED STATES PATENT OFFICE.

JACKSON O. HAAS, OF PHILADELPHIA, PENNSYLVANIA; GERTRUDE M. HAAS EXECUTRIX OF SAID JACKSON O. HAAS, DECEASED.

BOTTLE SEAL AND METHOD OF FINISHING THE SAME.

Application filed December 18, 1926. Serial No. 155,643.

This invention relates to bottle seals or closures composed either wholly or in part of cork, and to methods of finishing to render them impervious to liquids.

Cork,—even that of the best quality—is more or less pitted and porous and therefore not entirely impervious to liquids, this being especially true when it is used in comparatively thin layers, for example as sealing disks in connection with metallic bottle caps, or as gaskets for preserving bottles, etc. As a result of the porosity of the cork, the liquid contents of the bottles stoppered with seals of this kind are often ruined either from contamination by unsanitary vegetable or other matter contained in the pits or pores, by access of the fluids to the metal of the caps, with resultant chemical interaction, or by air from without,—any or all of which are likely to affect the quality or taste of the contents. Various expedients,—such as constructing the seals of composite layers, employing interposed layers of paper, metallic foil, or coatings of wax—have heretofore been resorted to in attempting to offset the penetration of the seal either by air or the contents of the bottles; but these have, for various reasons, been found more or less unreliable and therefore unsatisfactory.

The objects of my invention are to overcome the various difficulties and objections noted, and to provide an inexpensive, yet efficient method of finishing the seals whereby the desired results can be easily attained.

The drawings herewith illustrate by way of example, how my invention may be practiced in finishing the cork sealing disks of metallic bottle caps otherwise complete and assembled. Referring to the illustrations separately, Fig. I is a sectional view of a conventional form of bottle cap.

Fig. II shows the first step of my improved finishing process.

Fig. III is an end view of the tool shown in Fig. II.

Fig. IV shows the cap after having undergone the first step referred to.

Figs. V and VI are respectively a sectional view and a plan view of the cap after having undergone the second and final step of my process.

The bottle closure, as shown in Fig. I of these illustrations, comprises the usual crown-like metallic cap 10 with the corrugated periphery 11, and the inset disk of cork 12 secured either by gluing or through compression within the recess of the cap. Assuming these parts to have been assembled in the customary manner, I proceed with the finishing process in accordance with my invention, by first subjecting the surface of the cork disk 12 to an abrading action. For this purpose it is convenient to employ a cylindric tool such as shown at 13 in Fig. II, the lower end 14 whereof is reduced to the diameter of the cork disk 12 and its bottom face coated with sand or otherwise roughened as diagrammatically represented in Fig. III. By relative motion as between the tool 13 and the cap and by maintenance of a certain amount of pressure therebetween, the surface of the cork 12 is not only roughened, but the grindings resulting from such treatment are worked into the pits or pores of the seal and incidentally closely compacted therein, as conventionally indicated at 16. This initial treatment is continued for a period sufficient to insure complete filling and stopping of the pits or pores whereupon the bottle closure will appear as shown in Fig. IV.

With the sealing disk thus prepared, I next apply a thin coating of a suitable quick-congealing chemically-inert colloidal solution—such for example as cellulose—to form a fluid-impervious protective skin 17 over the central part of the disk, leaving but a narrow circumferential margin 18 of raw cork exposed for contact with the bottle mouth, see Figs. V and VI. By application of the colloid in diluted or liquid form, the same not only attaches itself effectively to the roughened surface of the sealing disk, but penetrates the pulverized cork in the pits or pores and insures the filler against subsequent disintegration and dislodgment.

With the cork pores thus filled up and the skin coating applied, the surface of the sealing disk is rendered absolutely impervious to the fluid contents of the bottle (which may be either liquid or gaseous) with which the closure is used, thereby off-setting the possibility of contamination either from vegetable or other matter originally in the pores, or chemical interaction with the metal of the cap, or by air leakage from without.

It is of course to be understood that in lieu of the ground cork and cellulose colloid specifically hereinbefore mentioned, any other chemically-inert filler or coating hav-

ing resilient properties comparable to that of the cork itself, may be employed for the purposes of my invention. Also, if desired, or found convenient in practice, continuous lengths of cork may be passed beneath an abrading roll, the colloidal surfacing applied and the strip fabricated into individual disks for subsequent placement in the bottle caps.

Moreover, while I have herein described my improved process with regard to finishing bottle closures of a specific kind, it will readily be appreciated that the same is applicable to other types of closures constructed either wholly or partly of cork.

Having thus described my invention, I claim:

1. A cork seal having its surface abraded and its pit holes or pores stopped with the pulverulent cork resulting from the abrasive action.

2. A cork seal having its surface roughened and its pit holes or pores stopped with the pulverulent cork resulting from the roughening treatment, and coated with a fluid-impervious colloidal skin, to prevent dislodgment or disintegration of the pulverulent cork.

3. A cork seal having its pit holes or pores stopped with compacted pulverulent filling, and its surface, except for a circumferential marginal portion adapted to contact with the container mouth, coated with a fluid-impervious skin of congealed colloidal solution.

4. A bottle closure including a metallic cap with an inset cork sealing disk, the pit holes or pores of said disk stopped with compacted ground cork, and its surface, except for a circumferential marginal portion adapted for contact with the bottle mouth, coated with a fluid-impervious skin of congealed colloidal solution.

5. The method of finishing sealing cork by abrasion of the cork surface to provide powdered cork for incidental filling of the pit holes or pores.

6. The method of finishing sealing cork by packing its pits or cores with chemically-inert pulverulent material, and surfacing the cork with a fluid-impervious skin of congealable colloidal solution.

7. The method of finishing sealing cork by abrasion of its surface to provide powdered cork for incidental filling the pit holes or pores, and at the same time to roughen the surface for better retainment of a subsequently applied fluid-impervious skin of congealable colloidal solution.

8. The method of finishing metallic bottle caps with inset cork sealing disks, by subjecting said disks, while in the caps, to abrasive action to provide powdered cork for incidental filling the pit holes or pores, and thereafter applying a fluid-impervious skin of congealable colloidal solution over the roughened filled surface.

9. A cork seal having its pit holes or pores stopped with a compacted pulverulent filling.

10. A cork seal for a bottle having its pit holes or pores stopped with a compacted filling of ground cork.

11. A method of finishing sealing cork by packing its pits or pores with a chemically-inert pulverulent material.

12. The method of finishing bottle sealing cork by packing its pits or pores with ground cork.

In testimony whereof, I have hereunto signed my name at Philadelphia, Pennsylvania, this 14th day of December, 1926.

JACKSON O. HAAS.