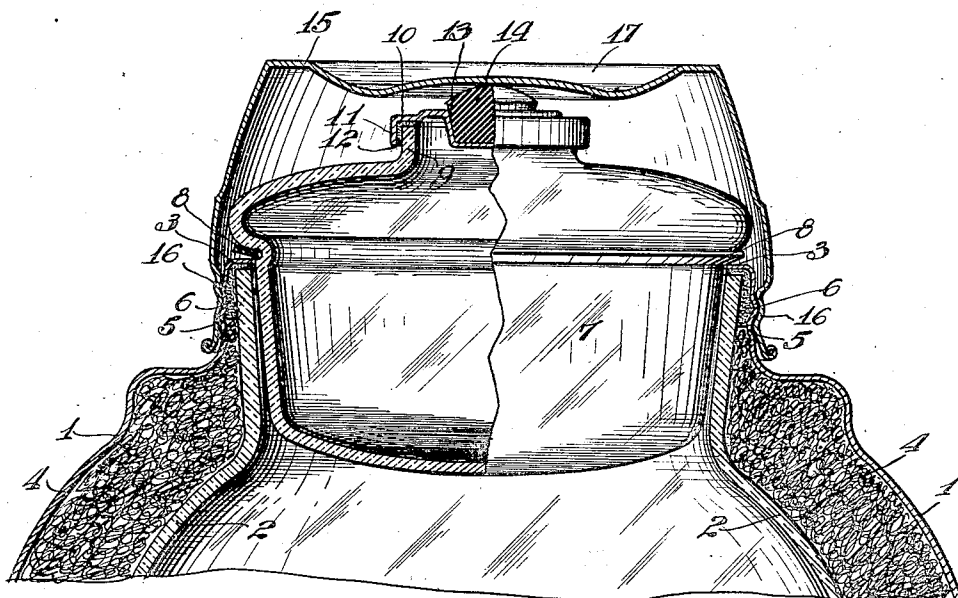


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V. S. JOHNSON
CUSHIONED VITREOUS STOPPER

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UNITED STATES PATENT OFFICE.

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CUSHIONED VITREOUS STOPPER.

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To all whom it may concern:

Be it known that I, VICTOR S. JOHNSON, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Cushioned Vitreous Stoppers, of which the following is a specification.

The invention relates to frangible stoppers of the heat-insulated type, and of the kind that are to be used with heat-insulated containers.

The stoppers in which my invention is embodied, are made of glass or other vitreous material which is used, not only because of its cleanliness, but on account of its good heat-insulating properties. Glass, however, is very brittle and is liable to be broken by jars occurring during transportation and use, and I have, therefore, devised means, as herein set forth, for insulating these frangible stoppers from shocks, the stoppers being mounted on a body of cushioning material, such as rubber, and surmounted by another body of cushioning material which may also be rubber, and preferably carried by the stoppers. The stoppers are held in closed position by retaining means which, as herein set forth, is a drinking cup secured, as by screw threads, to the outer jacket with which the container is provided.

The stoppers of heat-insulated containers, as heretofore constructed, were held in closed position by caps or drinking cups having direct contact with the stoppers, but these devices were not satisfactory because the thrust of the caps against the stoppers was liable to break them, and in time reacted upon the caps and caused their deformation so that they would no longer hold the stoppers against their seats. The cushioning means with which the herein-described stoppers are provided affords a remedy for this difficulty, since they may yield sufficiently to relieve the retaining caps of the strain which, if exerted in full force, would cause deformation of their disc-like tops.

The invention will be best understood if reference is made to the accompanying drawing in which the figure shows in vertical section the upper portion of a heat-insulated container embodying my invention.

1 is the protective jacket of the device, and 2 is the container which is made of glass or other suitable substance, such as

metal coated with a suitable enamel. The jacket has an inturned flange 3 at its upper end resting on the top edge of the container, and between the jacket and the container there is disposed a mass of comminuted material 4 which assists in the heat insulation of the container.

The outer jacket 1 has screw threads 5, and is further heat insulated from the container by a bond 6 made of heat-treated and chemically altered lac, or other suitable bonding substance.

The stopper 7 is made of glass or similar material, and it contains rarefied air, or is entirely exhausted of air, to afford heat insulation at the top of the container. This stopper rests on a gasket 8 of rubber, or the like, which makes a tight closure and also cushions the stopper from below. The stopper is provided with an upwardly-extending flange 9 to which is sealed a cap 10 having a down-turned flange 11 encircling the flange 9 and concealing the sealing material 12. The cap is provided with a cavity 13 in which is tightly held a cushion 14 of rubber or other suitable cushioning material.

15 is a drinking cup provided with screw threads 16 for engaging the screw threads 5 of the jacket 1, and having a flexible, dished top 17 bearing upon the cushion 14 of the cap 10, the proportions of the parts being such that when the cup 15 is screwed home the compression of the cushion 14 will be insufficient to react upon the disc-like top of the said cup with force enough to distort it.

The cushion 14 has, as will be observed, a single point of contact with the cup 15, while the gasket 8 which underlies the stopper, has a circumferential contact with said stopper. The advantage derived from this disposition of said elements is equalization of the pressure upon all parts of the gasket, and the consequent avoidance of leakage at any point of contact.

Having thus described my invention, what I claim is:

1. A hollow frangible stopper provided with a centrally-disposed cushioning element secured to its top.

2. A hollow frangible stopper having a centrally-disposed recess in its top for a cushioning element.

3. A hollow frangible stopper having an opening in its top, and a cap for closing

said opening, said cap being provided with a cavity containing a cushioning element.

4. A hollow frangible stopper having a cap sealed to its upper end, said cap having a cavity for a cushioning element.

5. A frangible stopper having a superimposed and centrally-disposed cushioning element, and a marginal cushioning element secured to said stopper and on which it may rest.

6. A frangible stopper having a superimposed cushioning element presenting a single-point contact at its top, and a circular cushioning element on which it may rest.

7. The combination with a container of a frangible stopper closing said container, a retaining cap for said stopper secured in adjustable position on said container, and two cushioning elements between which said stopper is sustained, one of said cushioning elements being carried at the top, and the other surrounding the body of said stopper.

8. The combination with a container of a frangible stopper closing said container, a retaining cap for said stopper secured on said container by screw threads, and two cushioning elements between which said stopper is sustained, one of said cushioning elements being carried at the top, and the other surrounding the body of said stopper.

9. The combination with a container of a jacket surrounding said container and provided with screw threads at its top, a frangible stopper closing said container, a retaining cap for said stopper engaging said screw threads and a cushioning element disposed between said stopper and said cap, said cushioning element being a part of said stopper.

10. The combination with a container of a frangible hollow stopper closing said con-

tainer, a cushioning element surmounting said stopper, and a cap having a resilient portion bearing on said cushioning element.

11. The combination with a container of a frangible stopper closing said container, resilient retaining means for said stopper, and cushioning elements disposed above and below said stopper, the upper cushioning element being a part of, and the lower cushioning element surrounding said stopper.

12. A hollow frangible stopper having an opening at its top and a shoulder in its body portion, a groove below said shoulder for holding a resilient gasket, and a cap closing the opening at its top, said cap having a depression and a resilient member secured within said depression.

13. A stopper for use with a container having a retaining cap adapted to be adjustably secured to said container, said stopper being provided at its top with a cavity containing a cushioning element adapted to be engaged by the retaining cap for holding the stopper in position on said container.

14. The combination with a heat-insulated container, of a hollow frangible stopper closing said container, retaining means for said stopper, and two resilient and non-metallic cushioning elements between which said stopper is sustained, one of said cushioning elements being carried by the stopper and cooperating with and being compressed by said retaining means, and the other cushioning element being a gasket surrounding and carried by said stopper.

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

VICTOR S. JOHNSON.

Witnesses:

C. W. DAVIS,
A. H. GLANTZ.