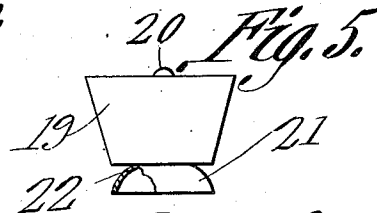
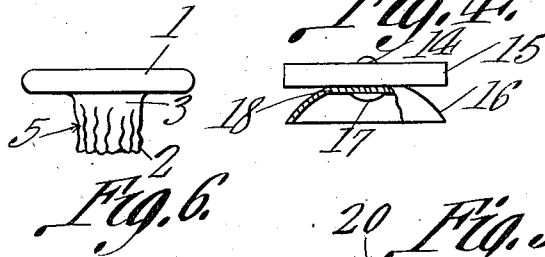
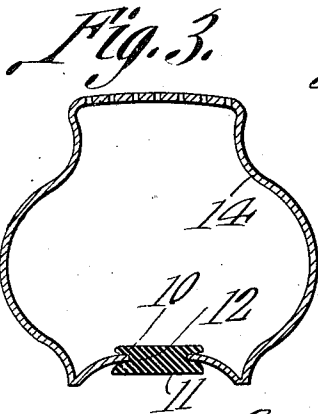
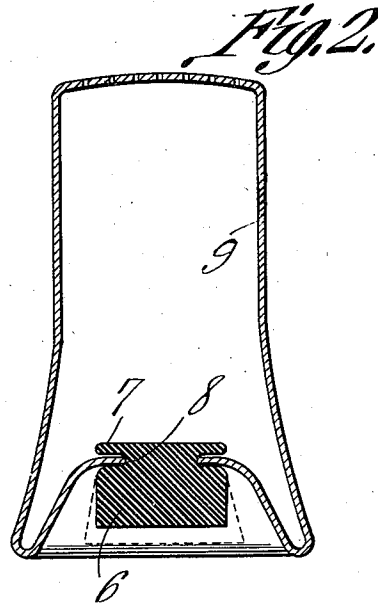
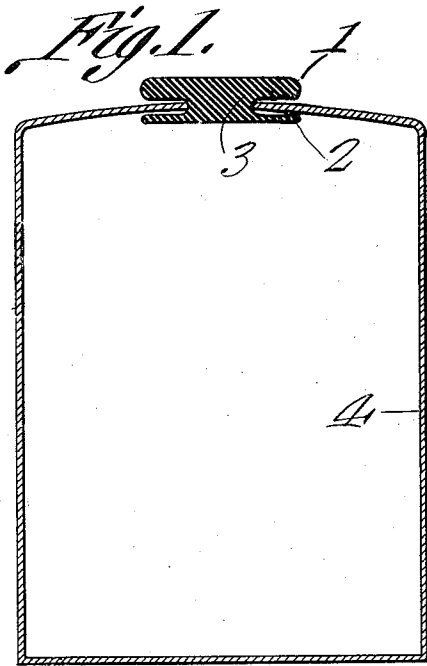


O. A. CARLSSON.
STOPPER.
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1,014,450.

Patented Jan. 9, 1912.



Witnesses

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UNITED STATES PATENT OFFICE.

OLOF ALBERT CARLSSON, OF CHICAGO, ILLINOIS.

STOPPER.

1,014,450.

Specification of Letters Patent.

Patented Jan. 9, 1912.

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To all whom it may concern:

Be it known that I, OLOF A. CARLSSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Stopper, of which the following is a specification.

It is the object of this invention to provide a stopper having a resilient flange which may be compressed readily into tubular form, for insertion into an opening in a receptacle, the flange expanding within the receptacle, to hold the stopper in place, the construction being such that the stopper may be used repeatedly.

Another object of the invention is to provide a stopper which may be inserted into and removed from a receptacle repeatedly, without injuring the stopper through cutting contact with the receptacle, during the insertion and removal of the stopper.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings,—Figure 1 shows a modified form of the invention in transverse section mounted in a receptacle; Fig. 2 shows another modified form of the invention in transverse section, mounted in a receptacle of slightly different form from that shown in Fig. 1; Fig. 3 is a transverse section showing a still further modification, the receptacle with which the device is assembled, differing in form from those receptacles appearing in Figs. 1 and 2; Fig. 4 is a side elevation of a form of stopper; Fig. 5 is a side elevation showing the stopper; Fig. 6 is a side elevation showing the stopper of Fig. 1 with its flange portion compressed for insertion into the receptacle; Fig. 7 is a sectional bottom plan of the stopper shown in Fig. 1; and Fig. 8 is a bottom plan of the stopper shown in Fig. 5.

The stopper shown in Fig. 1 comprises a body 1 and a flange 2, the stopper being diminished in diameter between the body 1 and the flange 2, to form a neck 3, adapted to be inserted into the top of a receptacle 4, which may be of any form. The inven-

tion, as depicted in Fig. 1, is a one piece structure, the same being preferably fashioned from rubber. The flange 2, compared with the body 1, is relatively thin, the body 1 being relatively rigid. The flange 2 is foldable away from the body 1, into a tubular form, as denoted by the numeral 5 in Fig. 6, the diameter of which tubular portion is no greater than the diameter of the neck 3, the construction, therefore, being such that the flange 2, when compressed into tubular form as shown at 5, may readily be inserted in the opening in the top of the receptacle, without causing the receptacle to cut into the stopper. When the flange 2, having been first compressed into the tubular form denoted by the numeral 5, is inserted within the contour of the receptacle 4, the flange will expand, as shown in Fig. 1, holding the stopper firmly in place. Owing, however, to the thin, resilient character of the flange 2, the stopper may readily be withdrawn from the receptacle.

In the form of the invention shown in Fig. 2, the body 6 is much thicker than the flange 7, the neck 8 fitting as before, into an opening in the bottom of the receptacle 9, the same, in the present instance, being shown in the form of a powder shaker. In the form of the invention shown in Fig. 2, the body 6, compared with the flange 7, is relatively rigid, the device being, as in Fig. 1, of one piece construction, and preferably of rubber.

In the form of the invention shown in Fig. 3, the flange 10 and the body 11 approach each other closely in relative thicknesses, the body 11, however, being thicker than the flange 10, so that the comparative rigidity of the body may be retained. The neck 12 of the stopper is, as before, insertible into an opening in a receptacle 14, the receptacle in Fig. 3, being shown in the form of a shaker from which powder of any sort may be dispensed. The stopper shown in Fig. 3, like the stoppers shown in Figs. 1 and 2, is preferably a one piece, rubber structure, although any other material possessing the desired resiliency, may be employed.

The foregoing descriptions set forth divers forms which a stopper of this type may take. Preferably however, the device is constructed as shown in Figs. 4, 5 and 8, the description of these figures being reserved until this place, in order that the de-

scription of the preferred forms shall stand in close relation to the claims. In the form of the invention shown in Fig. 4, the body 15 is in the form of a flat, rigid disk, the flange 16 being a cup shaped disk, fashioned from resilient material, and having its smaller end disposed toward the body 15. The body 15 and the flange 16 may be connected by means of a rivet 17 or the like, the portion 18 of the structure constituting the reduced neck of the stopper, which is inserted into the opening in the receptacle. In the form of the invention shown in Fig. 5, the body 19 is frusto-conical, and may be fashioned from rubber. Secured to the lower end of the frusto-conical body 19, by means of a rivet 20 or the like, is a cup shaped flange 21, the reduced neck of the stopper being shown at 22. Although the showing of Fig. 6 applies peculiarly to that form of stopper which is shown in Fig. 1, it is to be understood without specific delineation, that the flanges of the stoppers in all of the other figures of the drawings, may be disposed in the tubular form shown in Fig. 5, the insertion of the stopper into the receptacle, and the removal of the stopper therefrom, obviously being facilitated by the fact that the flanges in all forms of the invention may be disposed in tubular shape, as shown at 5.

The device is intended primarily for the purpose of retaining powders in shakers and other receptacles. The device, however, is not confined to this use, as Fig. 1 will show. The application of the invention shown in Fig. 1 makes it clear that a liquid, maintaining a pressure within the receptacle, may be restrained by the stopper of my invention. When a receptacle such as that denoted by the numeral 4 in Fig. 1 is made to serve as a container for a pressure exerting fluid, such, for instance, as beer or carbonated water, it will be obvious that the pressure exerted within the receptacle, will flatten out the flange 20, against the top of the receptacle, thereby sealing the receptacle effectively.

It is to be noted that no portion of the stopper is thrust forcibly into the opening of the receptacle, in contact with the receptacle, the reduced neck of the stopper, in all instances, approximating the diameter of the opening in the receptacle, the flange, as denoted by the numeral 5, being adapted to be so disposed, that it may be inserted into the opening in the receptacle, without coming into forcible contact with the receptacle. Owing to this construction, no portion of the stopper is likely to be sheared away, during the insertion of the stopper into the opening in the receptacle, nor will the stopper be materially reduced in diameter, through frequent insertions into an opening, as is the case with a common cork stopper.

When the device takes the form shown in Fig. 5, the same may be employed in the manner above described, or the frusto-conical body 19 may be thrust into an opening in a receptacle, after the manner of an ordinary plug stopper.

Having thus described the invention what is claimed is:—

1. A device of the class described comprising a body; and a resilient, inverted, open bottomed, cup-shaped disk having its smaller end disposed toward the body and secured thereto.

2. A device of the class described comprising a body; and a resilient, inverted, open bottomed, cup-shaped disk having its smaller end disposed toward the body and secured thereto; the body being frusto-conical, whereby the body may be inserted into the neck of a receptacle, to serve as a plug therefor; or, at the will of the operator, the neck of the receptacle may be engaged between the disk and the body.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

OLOF ALBERT CARLSSON.

Witnesses:

A. F. KOLBE,
C. MELGAARD.