Mar. 13, 1923.

1,448,706

P. B. DALEY

CLOSURE FASTENER

Filed Dec. 2, 1920

Fig. 1.

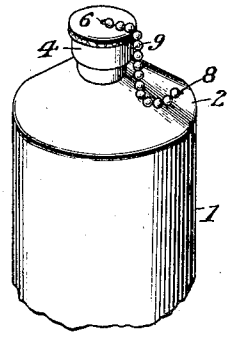


Fig. 2.

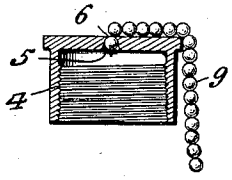


Fig. 3.

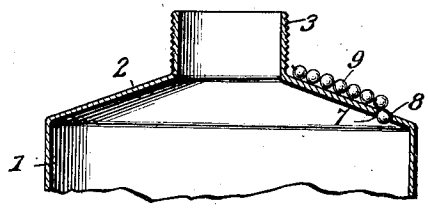
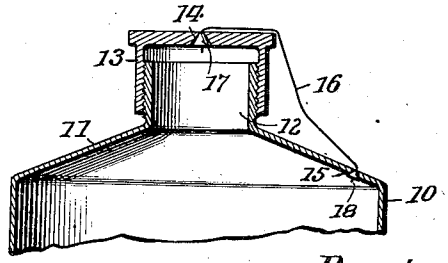


Fig. 4.



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UNITED STATES PATENT OFFICE.

PRESTON B. DALEY, OF PHILADELPHIA, PENNSYLVANIA.

CLOSURE FASTENER.

Application filed December 2, 1920. Serial No. 427,715.

To all whom it may concern:

Be it known that I, PRESTON B. DALEY, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Closure Fasteners, of which the following is a specification.

This invention relates to new and useful improvements in closure fasteners and more particularly to a fastener or securing means for the closure of collapsible tubes, bottles, receptacles or other similar containers, and the primary object of the invention is to provide a fastening means of a flexible character which will enable the closure, when removed, to be suspended from the container. Thus the danger of loss by displacement or the like of such closure is obviated.

A further object of the invention resides in providing a connection between the container and the cap which will permit said cap or closure to be rotated or revolved within a radius of 360°, and a further object is to provide a similar connection with the container proper.

A still further object resides in providing a flexible connection between the container and the closure therefor with substantially a ball and socket joint formed in the container and in the closure, affording a means for readily manipulating the closure and the connection, without danger of damaging the latter.

Still another object of the invention resides in providing a device which is simple and durable in construction, inexpensive to manufacture and one which will be very efficient in use.

With these and other objects in view, my invention consists in the novel features of construction, combination and arrangement of parts as will be hereinafter referred to and more particularly pointed out in the specification and claims.

In the accompanying drawing forming a part of this application—

Figure 1 is a perspective view of a container having a cap thereon illustrating the fastener or connection between the cap or closure and the container;

Fig. 2 is an enlarged detail section through the cap member showing the means of engagement of the flexible connection therewith;

Fig. 3 is an enlarged detail section through the container showing the means of engagement of the flexible connection therewith; and

Fig. 4 is a section through the container with the cap thereon showing a slightly modified form of flexible connection between the cap and the container.

In describing my invention I shall refer to the drawing in which similar reference characters designate corresponding parts and in which 1 designates a container of any preferred construction having a shoulder portion 2 formed thereon, the said shoulder terminating in an externally threaded neck portion 3. An internally threaded cap or closure 4 is provided therefor and my invention contemplates the provision of a fastener or connection whereby when this cap or closure is removed the same may be suspended from the container without danger of loss.

It is a well known fact that many devices have been invented for the elimination of a removable cap or closure for the purpose of avoiding the possible loss of such cap by removal. Moreover other devices have been invented for the purpose of retaining the cap or closure to the container but none of such devices discloses such a means as herein shown and described.

The inner face of the upper or top wall of the cap 4 is provided with a concaved socket 5 which terminates at its inner end in a restricted opening 6 through the outer face of said cap, as shown in Fig. 2 of the drawing. The shoulder portion 2 of the container is also provided with a concaved socket 7 formed on the inner wall, said socket terminating in a restricted opening 8 in the outer wall. A flexible connection 9 is provided which is preferably constructed of spherical members mounted on a wire, not shown, permitting said spherical members to rotate thereon and the end spherical members or balls of this connection are respectively mounted in the sockets 5 and 7, as clearly shown in Figs. 2 and 3 of the drawing. Thus a ball and socket joint is provided between the connection and the cap and also between said connection and the container which will permit the cap to rotate within a radius of 360°, and will also permit the connection to be turned and twisted with respect to the container without danger of damage to said connection.

In Fig. 4 I have shown a slightly modi-

fied form of the invention wherein a container 10 having a shoulder portion 11 thereon and a neck portion 12 is provided with a cap 13, the latter being provided with a substantially conical socket formed in the under face and terminating in the outer face in a restricted opening. The shoulder 11 has a similar conical socket 15 formed in the inner face and terminating in a restricted opening in the outer face thereof. A flexible connection 16 formed of wire or the like is provided, the one end of which has a conical member 17 secured thereto while the other end thereof has a similarly shaped member 18 secured thereto. These members 17 and 18 are respectively mounted in the sockets 14 and 15 of the cap and retainer, as clearly shown in Fig. 4 and afford a means of securing the cap to the retainer and simultaneously permitting the rotation of the cap and rotation of the wire or flexible connection without liability of injury or damage to either.

It will be seen from the foregoing description and the illustration made in the attached drawing, that I have provided a means for fastening or securing a cap or closure to a container which will permit of said cap being readily removed without danger of loss. It will further be seen that I have provided a simple, inexpensive and efficient means for carrying out the objects of this invention.

While I have described the elements best adapted to perform the functions set forth, it is obvious that various changes in form, proportion, and in the minor details of the construction may be resorted to, without departing from the spirit or sacrificing any of the principles of the invention.

What I claim is:

1. In a device of the class described, a container having a threaded neck portion formed thereon, and also having a ball-shaped socket formed therein adjacent the neck portion, a screw cap for said container also provided with a ball-shaped socket therein, a flexible connection, ball members carried at the ends of said connection and respectively mounted in the ball-shaped sockets of said cap and container.

2. In a device of the class described, a container having a threaded neck portion thereon, a ball-shaped socket formed therein adjacent the neck portion, a screw cap for said container, said cap having an extra thick top portion, said top portion of the cap being provided with a ball-shaped socket, a flexible connection, provided with ball members at the ends thereof fitting respectively in the aforesaid ball sockets of said container and cap, said ball members provided with means whereby the cap is rotatable about the adjacent ball member and also affording means to prevent leakage of contents of the container at the connection with said ball members.

In testimony whereof I affix my signature.

PRESTON B. DALEY.