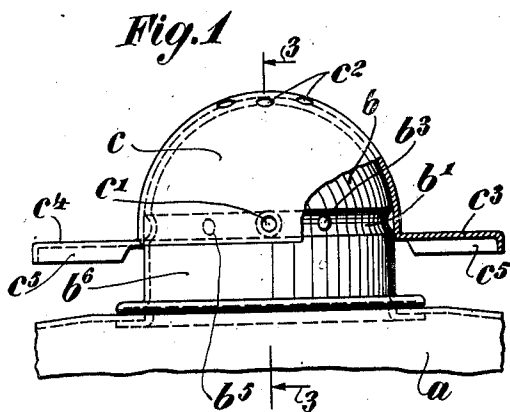
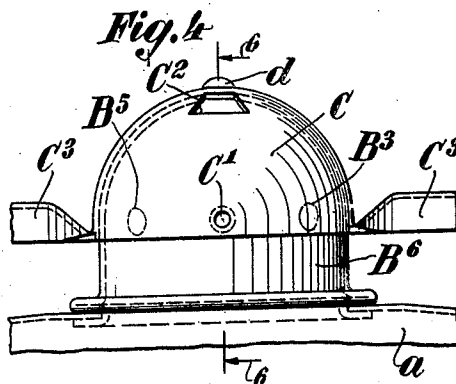
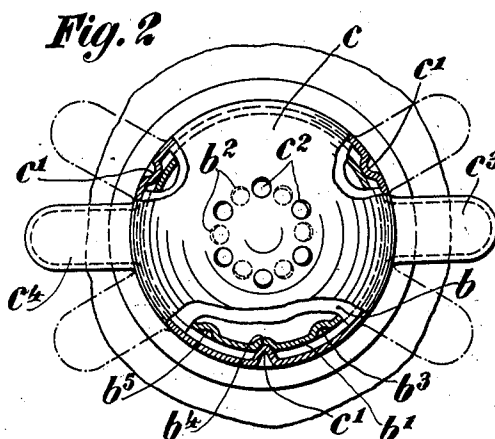
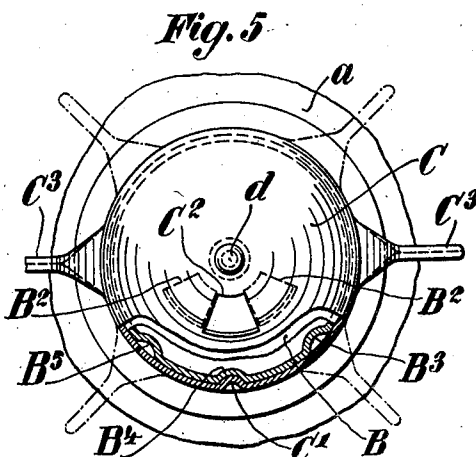
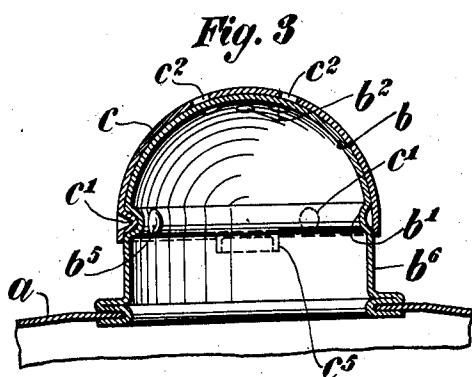
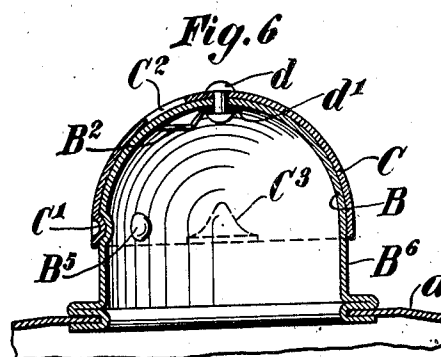


Sept. 8, 1936.

R. W. WILSON
CLOSURE FOR CONTAINERS

2,053,788

Filed April 7, 1934



INVENTOR:
Ralph W. Wilson,
BY
Residing, Greeley, O.
HIS *Heard Campbell* ATTORNEYS

UNITED STATES PATENT OFFICE

2,053,788

CLOSURE FOR CONTAINERS

Ralph W. Wilson, New York, N. Y.

Application April 7, 1934, Serial No. 719,510

3 Claims. (Cl. 221-64)

This invention relates to improvements in closures for containers, as particularly adapted for the dispensing of powder such as talcum powder. The principal object of the invention is to provide a closure for a container which is simple in construction, inexpensive in manufacture and readily operable with a thumb or finger when the container is held in one hand. A further object of the invention is to provide such a closure in which the cap is restrained yieldingly in both opened and closed positions. Still another object of the invention is to provide a construction characterized by the features indicated and which shall, in addition, insure a tight closure except when the dispensing openings in the cap are aligned with the openings in the neck shell.

In accordance with the invention there is provided a hemispherical neck shell on which is mounted in intimate nested relation a hemispherical cap means being interposed operatively between the cap and the neck shell to retain the cap in place while permitting oscillation thereof on a vertical axis. Dispensing openings are formed in the neck shell and in the cap in such relationship as to be carried into and out of registry upon oscillation of the cap and it is preferred in addition, to provide cooperative restraining means whereby the cap is held yieldingly in its extreme positions of oscillation, as when the openings are in registry and out of registry.

The invention will be described in greater detail in connection with the two embodiments shown in the drawing by way of illustration and in which:

Figure 1 is a view in side elevation of the improved closure, a part of the cap being broken away in the interest of clearness and a fragment of the container being illustrated.

Figure 2 is a view in plan of the closure shown in Figure 1 with parts of the cap and neck shell broken away to show the detent and means for engaging the cap with the neck shell.

Figure 3 is a view in vertical section taken on the plane indicated by the line 3-3 of Figure 1 and looking in the direction of the arrows.

Figure 4 is a view in elevation showing a modified construction embodying the improvements.

Figure 5 is a view in plan of the embodiment illustrated in Figure 4 with parts of the cap and neck shell broken away.

Figure 6 is a view in vertical section taken on the plane indicated by the line 6-6 of Figure 4 and looking in the direction of the arrows.

A container *a* of any suitable type is indicated fragmentarily in Figure 1. On the breast of this

container is mounted a neck shell *b* which is hemispherical in form. This hemispherical shape not only lends itself to the structural improvements to be described but is highly desirable in the use of the container since it directs the contents towards the dispensing openings. On the hemispherical neck shell is mounted in intimate nested relation a similar hemispherical cap *c*. In accordance with the improvements the cap such as *c* is to be engaged with the neck shell so that these parts are held against separation and yet the cap is to be capable of having an oscillatory movement on the neck shell to bring the dispensing openings into and out of registry. In the embodiment illustrated in Figures 1-3 there is shown suitable means for effecting this relationship. The neck shell *b* is formed with a circumferential groove *b'*. Below this groove the neck shell is preferably of cylindrical form, as indicated at *b²*, to facilitate its engagement with the breast of the container. The cap *c* is formed with a plurality of nibs *c'* adapted to engage within the groove *b'* and hold the cap against separation from the neck shell while permitting oscillation thereof. In the form shown three such nibs are illustrated at equidistant points thereby giving a secure interengagement between the cap and the neck shell. In the upper part of the neck shell *b* are formed a plurality of dispensing openings *b²* with which cooperate a plurality of dispensing openings *c²* formed in the cap. Rotation of the cap *c* in one direction about its vertical axis will bring the openings *c²* into registry with the openings *b²* thereby permitting the contents of the container to be dispensed. Rotation of the cap *c* from such a position in either direction will bring the openings *c²* out of registry with the openings *b²* so that the dispensing openings are wholly closed. It is preferred to provide detent means for restraining the cap yieldingly in its opened and closed position, and to oscillate the cap to effect the opening and closing of the dispensing holes, rather than to provide for continued uni-directional rotation of the cap to accomplish this end. For instance, as shown in Figure 2, the circumferential groove *b'* in the neck shell may be formed with three dimples *b³*, *b⁴*, *b⁵*, at equidistant points for engagement by one of the nibs *c'* formed in the cap. When the nib *c'* engages the middle dimple *b⁴* it may be assumed that the dispensing openings are out of registry. When the cap is rotated in one direction or the other the nib *c'* will be brought into engagement with either the dimple *b³* or the dimple *b⁵* at which time the dispensing openings are

in registry. By then rotating the cap in the opposite direction the nib will be restored to engagement with the dimple b^4 . Small holes instead of dimples may be provided in the cap for engagement by an outwardly protruding nib on the shell. It is evident, of course, that continued rotation of the cap in one direction will alternately bring about the opening and closing of the dispensing openings. In order to provide for convenient operation of the cap when the container is held in one hand, diametrically opposed radially extending finger pieces c^3 , c^4 , may be carried by the cap. In practice, these finger pieces may be formed integral with the cap as shown in Figure 1 and of suitable configuration to facilitate finger operation. Thus, the metal c^3 is extended outwardly from the lower edge of the cap and then formed with depending flanges c^5 which may be readily engaged by the thumb or finger to facilitate rotation of the cap.

The principle heretofore described is embodied in the construction shown in Figures 4-6. The structural differences will now be pointed out. The hemispherical neck shell B has secured thereon the nested hemispherical cap C by means of a stud or rivet d located on the vertical axis of the cap. If desired, a spring washer d' may be operatively interposed between the headed rivet d and the neck shell so as to maintain a yielding frictional engagement between the cap C and the neck shell without unduly restraining the rotation of the cap on the neck shell. In this embodiment the cap is formed with a nib C' which constitutes a detent engageable with any one of three dimples B^3 , B^4 , B^5 formed at equidistant points in the neck shell. When the cap is rotated in one direction or the other about the securing rivet d the detent C' will be brought into engagement with one or another of these dimples. As described in connection with the embodiment shown in Figure 2 these several dimples serve to restrain the cap yieldingly in positions where the dispensing openings are in registry or out of registry as the case may be. The operating finger pieces C^3 in the modified embodiment may be formed integral with the cap C and while they are disposed at diametrically opposite points it will be seen that the metal is drawn and bent into double thickness presenting smooth and extended vertical surfaces for engagement by the thumb or finger. The cap C is shown as provided with an opening C^2 which may be segmental in outline while the neck shell has similar openings B^2 with which the opening C^2 may be brought into registry, respectively, when the cap is rotated in one direction or the other. The base of the neck shell is preferably cylindrical as indicated at B^6 .

From the description given the mode of operation will be apparent. The construction has

several practical advantages by reason of its cheapness in manufacture and assembly, its certainty of operation, its tightness, and its slightly appearance. The cap presents a pleasing external appearance and constitutes a covering for the neck shell. The operating finger pieces by their form and relationship suggest their intended use. The permanent engagement of the cap with the neck shell is, of course, highly desirable and yet a tight closure is insured with most convenient operation of the cap to permit the dispensing of the contents of the container.

Changes in details of construction, particularly in such matters as size, shape and form of the constituent parts, may be made without departing from the essential principles disclosed.

I claim as my invention:

1. A closure for the purpose set forth comprising a hemispherical neck shell, a hemispherical cap mounted thereon in intimate nested relationship, said neck shell and cap having openings, means engaging the cap with the neck shell with capacity for rotation about the vertical axis of the cap to bring the openings into and out of registry, and diametrically opposed finger pieces formed integral with the cap at its lower edge and comprising radially extending flanges formed with extended vertical surfaces.

2. A closure of the character described comprising a neck shell having a cylindrical base and a hemispherical dome and formed with a circumferential groove adjacent the base of the said hemispherical portion, a hemispherical cap of similar form mounted on said hemispherical portion of the neck shell in intimate nested relationship thereto, nibs formed in the cap on its inner surface to engage said groove to secure the cap on the neck shell with capacity for rotation about its vertical axis, and means formed in the neck shell at the bottom of the groove at equidistant points for engagement by one of said nibs to hold the cap yieldingly in predetermined angular positions.

3. A closure of the character described comprising a neck shell element having a hemispherical dome, a hemispherical cap element of similar form mounted on said dome in intimate nested relationship thereto, one of said elements having a circular groove adjacent the base thereof and the other of said elements having a nib formed thereon to engage said groove to secure the cap on the neck shell element with capacity for rotation about its vertical axis, and means formed in the element having the groove and at the bottom of the groove at equidistant points for engagement by the nib to hold the cap yieldingly in predetermined angular positions.

RALPH W. WILSON.