CLOSURE FOR BOTTLES OR OTHER CONTAINERS.


To all whom it may concern:

Be it known that I, JOHN BAKER WILLIAMSON, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Closures for Bottles or other Containers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same:

My invention relates to improvements in closures for bottles, jars, cans, and similar vessels or containers, and more particularly to that class of such closures which consists of an apertured cap having a rotary cut-off disk or plate.

The object of my invention is to effect improvements in the construction of the cap and cut-off disk of devices of this character, and thereby render the same less expensive to manufacture and at the same time more efficient and durable in use.

With the above and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be hereinafter more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a side elevation of a portion of a bottle or other container with my improved closure applied thereto. Fig. 2 is a top plan view of the same. Fig. 3 is a vertical sectional view taken on the line 3-3 of Fig. 2. Fig. 4 is a top plan view of the cap with its rotary cut-off disk or plate removed. Fig. 5 is a perspective view of the spring for operating the cut-off disk or plate. Fig. 6 is a perspective view of a modified form of closure. Fig. 7 is a vertical sectional view through the same; and Fig. 8 is a horizontal sectional view taken on the line 8-8 of Fig. 7 and looking upwardly in the direction of the arrow, the cut-off disk or plate being shown in full lines in its normal or closed position and in dotted lines in the position it assumes when it is to be removed or disengaged from its headed pivot-stud.

Referring more particularly to Figs. 1 to 5, inclusive, of the drawings, the numeral 1 denotes a portion of a container of any desired character, which is formed with a neck 2, having external screw-threads 3. Upon said neck is a cap 4, which is preferably stamped from a single piece of sheet metal and comprises a circular top portion 5 and a depending annular flange or rim 6, in which is stamped or pressed internal screw-threads 7 for engaging said threads upon the neck 2, and thereby holding said cap securely upon the latter. The top portion 5 of the cap is substantially frusto-conical in shape, being formed so by stamping or pressing in the same an annular groove or channel 8 and a centrally-disposed circular depression or seat 9. Said groove 8 is located adjacent to the edge of the top portion 5 and forms an annular bead or rib 10. As shown at 11 in the drawings, a portion of said top in the path of said groove is not depressed, but remains in the plane of the outer surface of said bead 10 and forms a V-shaped stop, the purpose of which will be presently explained. The said depression or seat 9 is concentrically disposed and has its center stamped up, as shown, and formed with an opening 12. Said depression 9 is circular or annular in form and is adapted to provide a seat for a spring 13, which actuates a revolving cut-off plate or disk 14. So arranged around the inclined or frusto-conical-shaped portion of the cap are openings or apertures 15, through which the contents of the container 1 is adapted to discharge. One or more of said openings 15 may be provided, as desired, according to the use which is to be made of the container. The cut-off plate or disk 14 conforms in shape to the shape of the top of the cap and has its periphery notched or cut away, as at 16, to form pointed or V-shaped radial projections 17, so that said plate or disk is of a star-like form.
and serves to ornament the cap. Said cut-off plate or disk is revolvably mounted upon said cap by passing a bolt 18 through a centrally-disposed opening 19, formed in said plate and through the opening 12 in said cap, and screwing a nut 20 upon the threaded end of said screw, as clearly shown in Fig. 3 of the drawings. When the cut-off plate is thus mounted, its radially-projecting points 17 are adapted to cover and uncover the openings 15 to prevent or allow the discharge of the contents of the container 1, as desired. The spring 18, which is in the form of a loop or coil, has one of its ends seated in an aperture 21, formed in the cut-off plate 14, and its other end seated in an aperture 22, formed in the depression or seat 9 of the cap 4, so that it exerts its stress or energy to hold the cut-off plate normally in its closed position to prevent the contents of the container from discharging through the openings 15. In order to permit the cut-off plate to be readily turned against the tension of said spring to its opened position, I preferably form one of the radially projecting points 17 with a downwardly and outwardly bent extension 23, which forms a finger or thumb piece. The V-shaped stop 21 upon the top of the cap 4 projects between two of the points or projections 17 on the cut-off disk, and thus limits the rotary movement of the latter, as will be readily understood.

It will be seen that the construction just described is simple, compact, durable, and comparatively inexpensive to produce. By stamping the cap 4 from a single piece of metal, with the spring-seat 9 and the stop 11 integral therewith, the cost of manufacture is materially reduced, and by constructing the cut-off plate in a star-like form, as shown, less material is necessary and an ornamental effect is given the closure.

In Figs. 6 to 8, inclusive, of the drawings the numeral 25 denotes the cap, which is formed with a centrally-disposed recess or seat 26 upon its under side or face and with a horizontally-disposed slot 27 in its annular flange or rim. Depending from the center of the recess or seat 26 is a pivot-stud 28, which is formed with a head 29. Pivoted mounted upon said stud is the rotary cut-off plate or disk 30, which has its edge scalloped or notched, as shown at 31, to form projections 32 and which is provided with an opening 33 in an enlarged portion 34 in order to permit said disk or plate to cover and uncover the discharging-openings in the top of the cap. Said portion 34 of the plate is formed with an extension 35, which projects through the slot 27 in the cap to provide a thumb or finger piece for operating said plate, and with an angularly-bent depending portion 36 upon each side of the extension 35 for the purpose of closing said slot 27 upon each side of said extension and preventing the contents of the container from falling out of the same. In order to permit the parts to be easily cleaned, the cut-off plate is removably mounted upon its pivot-stud and is cut away, as shown at 37, to expose the recess or seat 26 beneath the same. This mounting of the cut-off plate is preferably effected by forming the same with a V-shaped or segmental-shaped opening 38, the angle of which is disposed at the center of the plate and engages the pivot-stud 28 beneath its head 29, so that the plate is retained upon the latter, as shown in full lines in Fig. 8 of the drawings. After this is done the finger-piece 35 may be readily slipped out of the slot 27. In order to hold the cut-off plate upon the pivot-stud and also to hold the same normally in its closed position, a spring 39 is mounted in the seat or recess 26. Said spring is in the form of a loop or coil and has one of its ends removably engaged with an opening 40, formed in the cut-off plate, and the other end similarly engaged with an opening 41, formed in the cap.

In the above-described construction it will be noticed that the parts are all open or exposed, so that the contents of the container will not clog beneath or between them, and that they are readily removable to permit them to be easily cleaned.

The advantage of the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation. Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is:

1. A closure for bottles or other containers, comprising a cap stamped from a single piece of sheet metal and formed with a central seat or depression, a stop adjacent to its edge, and a radially-disposed series of discharge-openings, a cut-off disk pivotally mounted upon said cap over its central depression or seat and formed with a series of radially-disposed points or projections adapted to cover and uncover said discharge-openings in said cap, two of said projections coacting with said stop to limit the movement of said cut-off plate, and a spring located in said depression or seat and connected to said cap and said cut-off plate whereby the latter will be held normally in its closed position, substantially as described.

2. A closure for bottles or other containers, comprising a perforated cap stamped from a single piece of sheet metal, a cut-off disk pivoted centrally to said cap, a U-shaped spring
having terminal ends, one connected to the cap and one to the cut-off disk to normally hold the cut-off disk in position to cover the perforations in the cap, an extension on the cut-off disk for moving the same to uncover the perforations and a stop to limit the movements of the cut-off disk, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN BAKER WILLIAMSON.

Witnesses:

A. V. OLDHAM,
J. P. SHELLEY.