To all whom it may concern:

Be it known that I, William G. Kendall, citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Tops for Receptacles, of which the following is a specification.

My present invention relates to new and useful improvements in safety caps for cans or other receptacles, particularly for containers for talcum powder, and the object of my invention is the provision of an improved and efficient form of sifter cap adapted for detachable application to the can or other receptacle, the entire sifter being independent of the container structure.

A further object of my invention is the provision of a sifter cap which will be neat and ornamental in appearance, capable of being easily operated, and durable in use.

A still further object of my invention is to provide a sifter cap of the type in which the top of the cap proper is provided with a plurality of perforations and in which a closure plate having perforations movable into and out of alignment with the perforations of the cap is mounted for turning movement upon the cap, being normally held with its perforations out of alignment with the cap perforations by a spring. In this connection, I provide an improved form of structure in which the spring and operating mechanism of the closure plate or member is so disposed as to be out of sight and also so disposed that the powder or other contents of the receptacle upon which the cap is employed will never come in contact with it. And a still further object of my invention consists in the provision of a can cap of the above described character which may be closely sealed by a stopper of cork or rubber to prevent any possibility of leakage of the contents of the receptacle during storage or shipment, the stopper being removed from the can cap only when the contents are to be used.

With these and other objects in view, my invention will be more fully described, illustrated in the accompanying drawings, and then specifically pointed out in the claims which are attached to and form a part of this specification.

In the drawings: Figure 1 is a perspective view of my improved cap applied to a talcum powder can of conventional type; Fig. 2 is a similar view, showing the cap applied to a bottle or jar; Fig. 3 is a central, vertical sectional view of the structure shown in Fig. 2, the cap being shown in open position and the removed stopper being also shown; Fig. 4 is a transverse sectional view taken on the line 4—4 of Fig. 3, looking in the direction of the arrows; Fig. 5 is a perspective view of the can cap and sifter plate separated from each other, this figure also showing the sifter plate controlling spring in position in the cap.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The preferred embodiment of my invention, as clearly illustrated in the drawings, includes the cap, indicated as a whole by the numeral 10, and having a collar or flange 11 adapted for engagement with the discharge neck 12 of a container 13. The container shown in Fig. 1, as previously pointed out, is in the form of a conventional talcum powder can, while the container shown in Fig. 2 is made of glass in the shape of a bottle or jar. When the cap is constructed for use with a can, the inner face of the cap collar 11 is preferably plane surfaced for close frictional engagement by the plane surfaced neck of the can, while when constructed for a bottle or jar it is preferably internally threaded as shown at 14 in Fig. 2 for threaded connection with the threads of the bottle neck. If applied to a bottle, a packing ring or washer 15 of rubber or other suitable material is preferably positioned about the neck of the bottle to be clamped between the lower edge of the cap and bottle top to insure against leakage, while with a can, this packing ring is unnecessary.

Referring more specifically to Figs. 3 to 5 of the drawings, it will be noted that the cap is provided with an upstanding peripheral flange 16 formed at its upper edge with an inturned circumferential shoulder or extension 17 providing in effect a centrally located, peripherally undercut recess 18.

That portion of the can cap defined within this recess or inclosed within the upstanding flange 16 is provided with sprinkler perforations 19 through which the contents of the container may be discharged and with a central opening or perforation 20, the purpose of which will be later explained.
Co-acting with the cap structure, above described, is a closure or cut-off plate or member 21. This member includes a circular body portion, preferably formed of metal and provided with a peripheral upstanding flange 22 which, when the closure member is in place in the recess of the can cap, engages at its upper edge against the inner edge of the annular shoulder 17, whereby a completely closed annular chamber is formed between the body of the cap, its shoulder 17 and the closure member shoulder 22. This plate, with its annular shoulder, is proportioned to fit as closely as possible in the recess formed by the flange 16 and its shoulder 17 and at the same time permit its application to the cap, as will be later explained. This closure plate is provided with a plurality of sprinkler perforations 28, corresponding in number and arrangement to the perforations 19 of the can cap, and consequently movable into or out of alignment with such perforations. The closure member or plate 21 is provided at one side with a radially extending finger or arm 24, the free end of which passes through a slot 25 formed tangentially in the shoulder 17 of the cap, such finger or arm, consequently, extending across the annular chamber, above described. This slot 25 is of such length as to permit swinging of the closure member to either open or close the perforations 19 of the can cap. In order to prevent disengagement of the closure member from the cap proper, a rivet or other suitable pivotal fastening device 26 is passed through an opening formed centrally of the body of the closure and through the opening 20 in the center of the cap, being headed or otherwise used to secure it in place.

As clearly shown in Fig. 4 of the drawings, I provide a relatively light helical spring 27 for normally holding the closure member in such a position that its perforations are out of alignment with the perforations of the cap proper. This helical spring is disposed in the annular chamber formed between the shoulders of the cap proper and of the closure plate, one end of the spring bearing against that portion of the finger or arm 24 extending across such chamber, while its other end bears against an inwardly directed pin 28 seated in or otherwise secured to the flange 16 of the cap and extending transversely partway across the annular chamber. At this point it should be noted that the pin 28 is so disposed with respect to the slot 25 that the spring 27 constantly exerts force or pressure against the arm 24 of the closure member to tend to turn the latter in a counterclockwise direction. For this reason, pressure exerted against the finger or arm 24 to swing the closure member against the action of the spring and thereby bring its perforations into alignment with the perforations of the cap will, when the cap is attached to its container, by means of screw threads, as shown in Fig. 3, tend to tighten the cap upon the container instead of loosening it.

In manufacturing and assembling my improved sifter cap for containers, the cap proper and closure member are completed separately and the spring 27 is positioned in the annular chamber of the cap proper with one end bearing against the pin or stud 28. The closure member is then tilted to pass the free end of its arm 24 into the chamber to engage the free end of the spring 26 and then swing until the free end of the arm is brought into alignment with the slot 25. Pressure is then exerted simultaneously force the said arm through the slot and the closure member into the recess in the can cap. When so seated, the closure member and cap are secured by fastening the rivet 26.

In order to absolutely prevent leakage of the contents of the container, during storage or shipment, a stopper 29, of cork or rubber, is preferably positioned against the outer face of the plate portion of the closure member 21, being proportioned to fit snugly within the annular flange 22 of such member. This stopper will prevent all leakage of powder or other contents from the can, even though a portion of such contents escapes through the perforations of the cap and closure.

From the foregoing description, taken in connection with the drawings, the manner of employing my improved can or bottle top or cap will be readily understood. The cork or stopper 29 is, of course, first removed by the purchaser, after which the cap is ready for use in the customary manner, it only being necessary to partially turn the closure member 21 by pressure against the finger or arm of such member to bring the perforations of the cap and closure in alignment. The slot 25 is, of course, so proportioned that the cap closure can be turned in a counterclockwise direction only a sufficient distance to bring the cap and closure perforations in alignment with each other.

Although I have illustrated and described my improved can or bottle cap, together with its discharge controlling closure, in all its details of construction, it will of course be understood that such details may be varied, if deemed advisable, without in the slightest degree departing from the spirit of my invention, as set forth in the appended claims.

Having thus described the invention, what is claimed as new is:

1. A sifter cap for receptacles including a cap proper formed with a central, undercut recess providing an annular chamber and
with perforations in the space encircled by the chamber, a pin extending inwardly across the chamber, a closure plate secured for turning movement within the recess and provided with perforations movable into alinement with the perforations of the cap, an upstanding annular flange formed upon said plate and engaging against the free edge of the flange of the cap, an operating arm extending radially from the plate through a slot formed in the cap in spaced relation to the pin, and a helical spring seated between the flanges of the cap and plate and engaging by one end against the arm and by the other against the pin.

2. A sifter cap for receptacles including a body adapted for attachment to the neck of a receptacle and provided in its outer face with a circular recess having a perforated bottom wall, the peripheral wall of said recess being cut-away to provide an annular undercut chamber surrounding the recess, and a closure member including a circular body portion seating upon the bottom wall of the recess and having an upstanding peripheral flange forming a wall for the chamber, said closure member being provided with perforations movable into alinement with those of the bottom wall of the recess, means for rotating the closure member, and means within the chamber for normally holding the closure member in closed position.

3. A sifter cap for receptacles including a cap proper having an upstanding peripheral flange provided at its free edge with an inturned annular shoulder, the cap within the line of the shoulder being perforated, and the cap proper, together with its flange and shoulder, forming an inwardly open annular chamber, a closure member seated within the flange and upon the cap proper with perforations movable into alinement with those of the cap proper, said closure member being provided with an upstanding peripheral flange extending at its upper end against the annular shoulder to close the chamber, and means located within the chamber for normally holding the closure member with its perforations out of alinement with the perforations of the cap proper.

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

WILLIAM G. KENDALL. [L. s.]

Witnesses:

JOHN J. IRISH,
LOUIS E. KAPPLER.