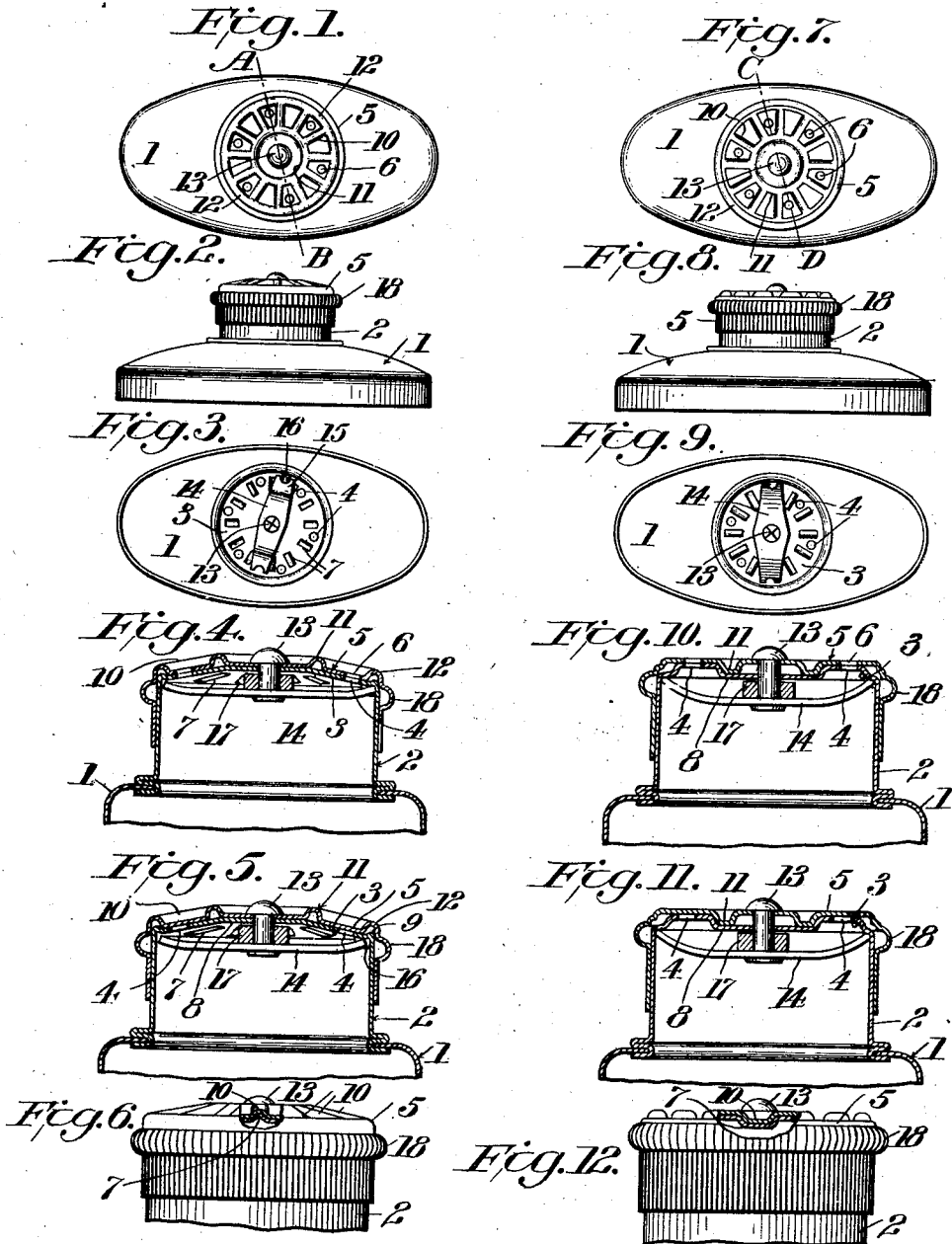


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POWDER CAN TOP.
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POWDER-CAN TOP.

1,021,482.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FREDERICK REUTTER, a citizen of the United States, residing at Waterbury, in the county of New Haven and State of Connecticut, have invented a certain new and useful Improvement in Powder-Can Tops, of which the following is a full, clear, and exact description.

This invention relates to that type of powder can tops in which discharge holes in an immovable part are opened and closed by a rotary cap mounted to turn upon such part and having holes which may be turned into and out of register with the holes in the immovable part, in order respectively to permit of the discharge of the contents of the can and to close the can against escape of its contents.

The object of the invention is to provide a can top for discharging the contents of the can and for closing the can against such discharge, which may be readily turned to open and close the can and yet be so securely applied to the can, without binding, that leakage of the contents of the can is minimized if not entirely prevented, and in which the cap is held in open and closed positions against accidental displacement.

The invention consists of a top of the type specified, adapted for use on powder cans and other receptacles, having a neck closed at its upper end save for holes therein for the discharge of the contents of the receptacle, and also having a series of radially arranged projections alternating with or placed in pairs about the discharge holes, and a cap mounted to rotate upon the neck and having a complementary series of discharge holes and alternating radially arranged hollow projections with which the projections on the neck's end cooperate to form stops for arresting the rotation of the cap when it is turned into the hole opening and hole closing positions; the cap having an axially arranged rivet fixed in a stationary spring within the neck, which spring tends to draw the cap into close relation to the neck's end so as to render the stops effective to prevent accidental turning of the cap without binding, and also to prevent the accidental escape of the contents of the receptacle. The stop elements may be reversed and formed as depressions, or inwardly extending instead of outwardly extending projections. The radial projec-

tions may be connected by concentric circular projections for useful or merely ornamental purposes.

In the accompanying drawings illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is a top plan view; Fig. 2 is a side elevation; Fig. 3 is a plan view of the top inverted; Fig. 4 is a vertical cross-section, on a larger scale, taken in the plane of line A B, Fig. 1, the spring being in elevation and the discharge holes open; Fig. 5 is a view similar to Fig. 4 with the holes closed, and Fig. 6 is a side elevation with parts of the cap and neck broken out to show the stops, these several views showing the stops as outwardly extending or raised projections. Fig. 7 is a top plan view; Fig. 8 is a side elevation; Fig. 9 is a plan view of the top inverted; Fig. 10 is a vertical cross-section, on a larger scale, taken in the plane of line C D, Fig. 7, the spring being in elevation and the discharge holes open; Fig. 11 is a view similar to Fig. 10 with the holes closed, and Fig. 12 is a side elevation with parts of the cap and neck broken out to show the stops, these several views, Figs. 7 to 12, showing the stops as inwardly extending or depressed projections.

1 is the breast, 2 is the neck having its end 3 closed save for the series of discharge holes 4, and 5 is a cap mounted to turn upon the neck and having a series of discharge holes 6 adapted to be turned into and out of register with the discharge holes 4 in the neck, all these parts being substantially as usual, excepting as modified by the addition of the features constituting the present invention, and which I will now proceed to explain.

The neck and the cap shown in the two forms differ essentially in the direction of projection of the stop members; the stop members projecting outwardly being shown in Figs. 1 to 6, and the stop members projecting inwardly being shown in Figs. 7 to 12. The neck 2 has in its closed end 3 a series of radially arranged outwardly extending projections 7 arranged in pairs and flanking the discharge holes. These radial projections may extend from a central circular projection 8 to a concentric outer circular projection 9, although these circular projections may be omitted at pleasure. The cap likewise has the series of outwardly ex-

tending radial projections 10 which may start from the central circular projection 11 and end in a concentric circular projection 12, although these circular projections may be omitted, if desired. There are twice as many radial projections as there are holes, and the result is that there is a solid portion of the neck and of the cap between each pair of radial projections flanking a hole, so that when the cap is turned these solid portions will cover up the discharge holes respectively in the neck and the cap.

13 is an axially arranged rivet extending through the cap and neck and fixed to a spring 14 which in turn has one or both of its ends notched at 15 to engage a projection or projections 16 on the inside of the neck, and thereby be held stationarily within the neck. The spring is separated from the neck's end by means of a washer 17, and enough play is left between the washer and the neck's end to permit of sufficient vertical or endwise movement of the cap to allow its stop members to ride over the complementary stop members in the neck's end when the cap is rotated respectively to open and close the discharge holes.

As shown in Figs. 1 to 6, the several outwardly extending projections fit into one another and these projections serve as stop members to arrest the further movement and the accidental movement of the cap when it is set in either the open or closed positions by positive action, and the spring is strong enough to hold the cap with the said stop members interlocked in these several positions, and not only so, but to hold the cap in such closed relation to the neck as to make the top waste-proof, or in other words, prevent the loss of contents of the receptacle to which the top is applied.

The only difference between the construction shown in Figs. 1 to 6 and that shown in Figs. 7 to 12, aside from mere configuration, is that the radial projections on cap and neck extend inwardly, or in other words are depressed. Their operation is essentially the same. These radial projections not only perform a specific function, but they also add materially to the distinctiveness and ornamental character of the top.

The spring 14 is shown as a flat bowed spring extending across the neck on the inside.

The rim of the cap may be milled, knurled, or otherwise roughened as at 18, Figs. 2 and 8.

What I claim is:—

1. A top for receptacles, comprising a neck having an end closed save for discharge holes and provided with a series of radial projections arranged in pairs which flank said discharge holes, intervening solid parts between the projections, a cap rotatively mounted upon the neck and having complementary discharge holes, radial projections and solid parts, an axial rivet passed through the cap and neck, a spring within the neck in which the rivet is fixed, and means to hold said spring stationarily in the neck, whereby as the cap is turned the spring permits it to rise and fall under tension so that its projections may ride over those in the neck to bring the holes into alinement with one another or to cover them with the solid parts and in each instance to draw the projections into cap-locking engagement.

2. A top for receptacles, comprising a neck having an end closed save for discharge holes and provided with a series of radial projections arranged in pairs which flank the holes, a cap mounted upon the neck and having complementary holes and radial projections, there being twice as many radial projections as there are holes so as to leave unperforated spaces between holes, an axial rivet passed through the cap and neck, and a spring within the neck in which the rivet is fixed, and means to hold said spring stationarily in the neck.

3. A top for receptacles, comprising a neck having an end closed save for discharge holes therein, a cap mounted upon said neck and having complementary discharge holes, a spring-held axial rivet connecting the neck and cap, a series of radially arranged complementary stop members on the neck and cap alternating with the discharge holes, and complementary concentric circular projections arranged substantially about the center and rim of the neck and cap.

In testimony whereof I have hereunto set my hand this 13th day of April A. D. 1911.

FREDERICK REUTTER.

Witnesses:

G. F. HODGES,
L. H. BASSETT.