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W. S. STROH
AEROSOL BOMB DISPENSING CAP

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Fig. 1.

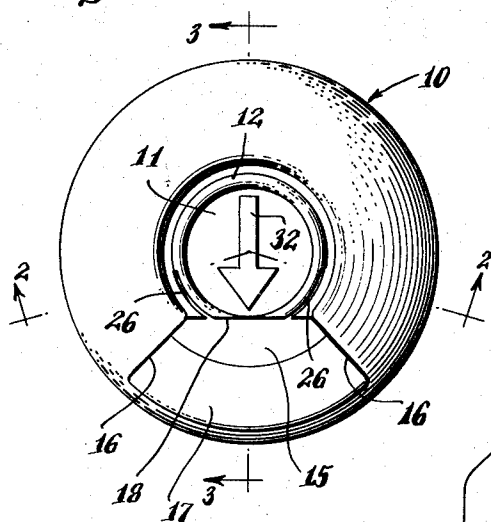


Fig. 3.

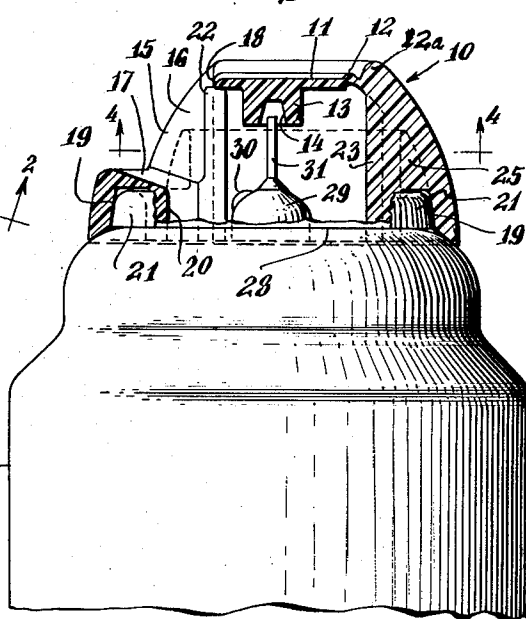


Fig. 2.

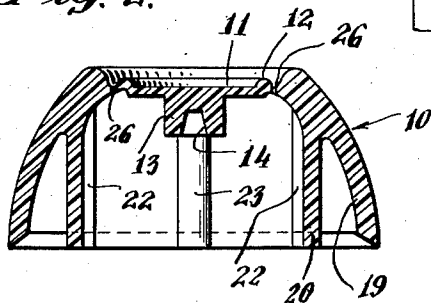
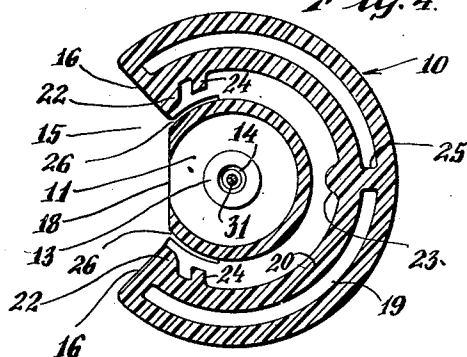


Fig. 4.



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AEROSOL BOMB DISPENSING CAP

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2 Claims. (Cl. 222—394)

The present invention relates to a dispensing cap for an aerosol bomb or the like.

An aerosol bomb is a container provided with a manually operable valve adapted to control the release or discharge in the form of an atomized spray of insecticides, waxes, paints and the like which are held under super-atmospheric pressure in the container. The container is usually provided at its top with a projecting teat having a lateral discharge opening therein and with a valve for controlling the discharge of the contents through said lateral opening, the valve having a pin extending axially through the top of the teat for manual depression to unseat the valve.

The object of the present invention is to provide a dispensing cap for an aerosol bomb which will (a) prevent accidental opening of the valve during shipment of the bombs; (b) which will readily indicate the direction of discharge of the contents from the aerosol bomb; and (c) which will facilitate use of the bomb.

The foregoing and other objects of the invention and the manner in which they are accomplished will be more fully understood from the detailed description which follows when considered in connection with the accompanying drawing which shows a preferred construction and wherein:

Fig. 1 shows a top plan view of a dispensing cap embodying my invention;

Fig. 2 shows a cross-section taken on the broken line 2—2 of Fig. 1;

Fig. 3 shows a cross-section taken substantially along the plane of the line 3—3 of Fig. 1, the dispensing cap being shown as mounted in operative position on an aerosol bomb; and

Fig. 4 shows a section taken substantially along the plane of the line 4—4 of Fig. 3.

Referring to the drawing, the dispensing cap is shown in the form of a hollow, dome-shaped member 10 which is formed of suitable form elastic material such as polyethylene or the like. The dome-shaped member 10 is closed at its top by a substantially flat, relatively thin diaphragm 11 formed with an outwardly directed, annularly extending rib 12, a thickened peripheral bead 12a extending axially beyond the rib, and a central, inwardly extending button 13 having an internal axial socket 14. The peripheral wall of the dome-shaped member is formed with an opening 15 provided by a pair of radially converging reentrant walls 16 and a reentrant base wall 17 which leads to the hollow interior of the dome. The opening extends approximately 90° circumferentially of the cap and the top of the opening is defined by a free edge 18 on the diaphragm 11. At its base the dome-shaped member is formed with an annular groove 19 provided by the peripheral wall of the dome-shaped member and an inwardly spaced concentric wall 20. The radial dimension of the annular groove 19 is such as to engage over an axially extending bead 21 on an aerosol bomb container to frictionally hold the dispensing cap on said container. To reinforce

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the cap against compressive stresses in an axial direction it is formed with circumferentially spaced, axially extending ribs 22, 23 and 24 and with a reinforcing rib 25 between the concentric wall 20 and the outer wall of the dome-shaped member. Preferably the reentrant base wall 17 slopes downwardly from the peripheral wall of the cap toward the base of the dome-shaped member and provides a top closure for that portion of the annular groove 19 which lies between the reentrant side walls 16. To increase the flexibility of the diaphragm top 11, slots 26 are formed therein which extend circumferentially inwardly from adjacent the ends of the free edge of the diaphragm, as best shown in Figs. 1 and 2.

The dispensing cap is designed and intended for use on an aerosol bomb which usually comprises a cylindrical container 27 having a top wall 28 formed with the axially extending bead 21 above referred to and with a centrally projecting hollow teat or dispensing head 29 having a discharge opening 30 in the lateral wall thereof and with a slidable valve pin extending axially outwardly through said teat, movement of said valve pin inwardly serving to unseat the control valve (not shown) to permit discharge of the bomb contents through the opening 30.

The aerosol bomb without the dispensing cap mounted thereon is capable of use by depressing the valve pin 31. However, in order to control the direction of the discharge spray, care must be exercised by a user to see that the discharge opening 30 is pointed in the proper direction. Moreover, without the dispensing cap on the aerosol bomb there is ever-present the danger that the valve pin may encounter some obstruction during shipment and thus accidentally discharge the contents of the bomb.

The dispensing cap is applied to the bomb by being pressed over the axially extending bead 21 so that said bead engages within the annular groove 19, whereupon the outer end of the valve pin 31 will extend into the axial socket 14 in the button 13 on the inner side of the diaphragm 11. The cap is then forcibly rotated until the opening 15 confronts the discharge opening 30 in the bomb. When in this position the combined bomb and dispensing cap are ready for operation and, upon pressing inwardly upon the diaphragm 11, the valve pin 31 will be depressed to open the valve and discharge a spray of the bomb contents through the opening 15, which latter, being much larger than the opening 15, readily locates the direction in which the spray will be discharged. If desired, an arrow 32 may be molded or imprinted on the outer face of the diaphragm 11 pointing in the direction of the opening 15 and thereby further facilitate directional control of the discharge spray. The peripheral bead 12a, plus the reinforcing ribs 22 to 25 and the reentrant walls 16 serve to prevent accidental engagement of the diaphragm 11 during packaging and shipment of the complete aerosol bombs.

While I have shown and described a preferred embodiment of my invention, it is to be understood that structural details in the dispensing cap may be resorted to within the range of mechanical skill without departing from the spirit of the invention as hereinafter defined.

What I claim is:

1. A protective dispensing cap for an aerosol bomb of the type which includes an axially projecting dispensing head having a laterally directed discharge opening therein controlled by a depressible valve, said cap comprising an integral, hollow, dome-shaped member formed of relatively firm elastic material having an opening in its lateral wall adapted for registry with the discharge opening in the dispensing head, the top of said dome-shaped member being formed as a central, deformable

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diaphragm adapted to be depressed to open the valve in the dispensing head, said diaphragm being substantially surrounded by a protective bead extending axially outwardly beyond the diaphragm to permit vertical stacking of aerosol bombs fitted with dispensing caps without depressing the valve of the bomb, said diaphragm having a free edge portion defining the top of the opening in the lateral wall and also having slots therein extending circumferentially inwardly from adjacent the ends of said free edge portion to increase the flexibility of the diaphragm.

2. A protective dispensing cap for an aerosol bomb of the type which includes an axially projecting dispensing head having a laterally directed discharge opening therein controlled by a depressible valve, said cap comprising an integral, hollow, dome-shaped member formed of relatively firm elastic material having an opening in its lateral wall adapted for registry with the discharge opening in the dispensing head, the top of said dome-shaped member being formed as a central, deformable diaphragm adapted to be depressed to open the valve in the dispensing head, said diaphragm being substantially surrounded by a protective bead extending axially out-

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wardly beyond the diaphragm to permit vertical stacking of aerosol bombs fitted with dispensing caps without depressing the valve of the bomb, the peripheral wall of the dome-shaped member at its base being formed with radially spaced peripheral walls providing an annular channel therebetween adapted to engage an axially extending bead on the container of an aerosol bomb, said peripheral wall between the base and the top of the dome-shaped member being reinforced with axially extending ribs to resist compression stress in an axial direction when aerosol bombs to which such dispensing caps are applied are stacked vertically one upon another.

References Cited in the file of this patent

UNITED STATES PATENTS

549,678	Miller	Nov. 12, 1895
1,992,067	Gunn	Feb. 19, 1935
2,521,882	Swift et al.	Sept. 12, 1950
2,543,850	Henricson	Mar. 6, 1951
2,573,624	Svendsen	Oct. 30, 1951
2,574,036	Henchert	Nov. 6, 1951