Aug. 8, 1967 W. G. GORMAN 3,334,627

PIVOTAL MOUTHPIECE AND ACTUATOR FOR AN AEROSOL UNIT

Filed Nov. 12, 1964

Fig. 1

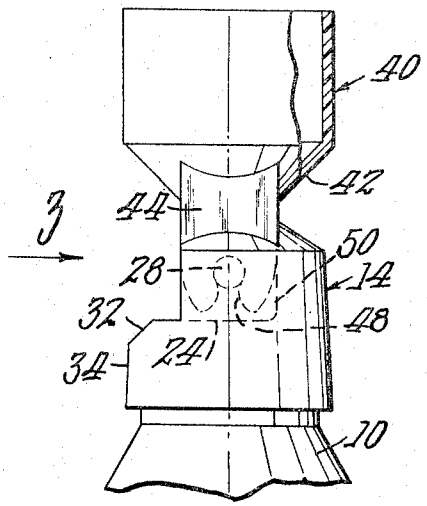


Fig. 2

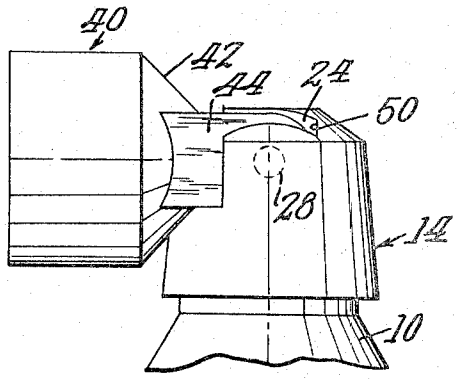


Fig. 3

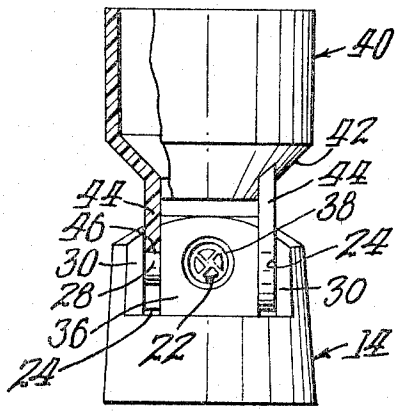


Fig. 4

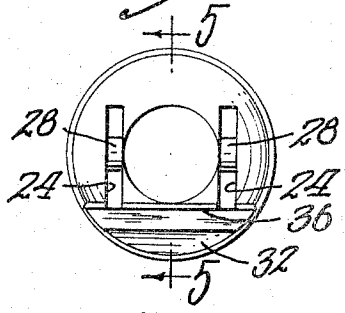


Fig. 5

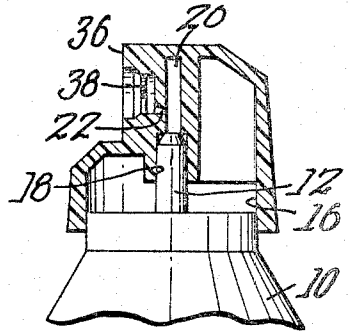
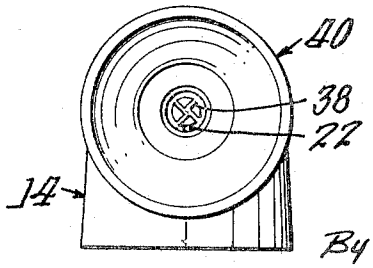


Fig. 6



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PIVOTAL MOUTHPIECE AND ACTUATOR FOR AN AEROSOL UNIT

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3 Claims. (Cl. 128—208)

This invention relates to an aerosol actuator in the nature of a cap which fits over the stem of an aerosol container and which is provided with passages therein for the reception of the product from the aerosol and to emit the same preferably into a mouthpiece particularly suitable for inhalation. The invention resides principally in the mouthpiece and the combination thereof with respect to the actuator, the mouthpiece being pivotally mounted on the actuator so that it can be quickly and easily manually aligned with the actuator and the aerosol container for transportation and storage, but can be just as easily moved down to a position at ninety degrees with respect thereto, while still attached to the actuator, for use thereof.

Other objects of the invention reside in the provision of an actuator and inhalator device for aerosols in which there is a mouthpiece pivotally mounted with respect to a cap, the cap being mounted on the aerosol container and positioned to receive the stem thereof so that the stem is capable of being actuated only by an inward push on the cap, the mouthpiece being pivotally mounted directly on the cap and having a position in axial alignment therewith for transportation and storage, and a position at right angles with respect thereto for use, whereby the actuator device, although usable with inhalation aerosols, nevertheless takes up only so much lateral space, i.e., for storage and transportation, as does the aerosol container itself, with no projecting parts except when the device is in position ready for use.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings in which:

FIG. 1 is a view in elevation showing the device as it appears for transportation and storage, part being in section;

FIG. 2 is a similar view showing the device as it appears in the position of use thereof;

FIG. 3 is a view in elevation looking in the direction of arrow 3 in FIG. 1, part being in section;

FIG. 4 is a top plan view of the actuator per se;

FIG. 5 is a sectional view on line 5—5 of FIG. 4, and

FIG. 6 is a similar view to FIG. 3 but showing the mouthpiece in position for use.

In carrying out the invention, it is to be understood that the device is to be applied to an aerosol container **10** having a stem **12** which when depressed opens a valve in the aerosol and allows the emission of the contents thereof.

In this case the actuator is a member more or less in the form of a block. It is generally indicated by the reference numeral **14** and it has a bottom recess at **16** to slidingly fit onto the cap of the aerosol container. Intersecting the recess **16** there is a passage **18** for the reception of the step **12** of the aerosol and a reduced passage **20** providing for the passage of the contents of the aerosol to a lateral communicating passage at **22** in a side face of the block for the exit of the contents of the aerosol container. The stem of the aerosol container is stopped at the reduced portion between the passages **18** and **20**, so that when the actuator is pushed downwardly toward the container **10**, the valve is actuated as will be clear to those skilled in the art.

There are a pair of slots in the block as at **24**, the slots being spaced and parallel, and there is one slot at each side of the portion of the block that is above the recess **16**. Across each slot at the top portion thereof there is a fixed pin **28** which is preferably cylindrical, these pins forming trunnions for mounting the mouthpiece which is to be described. The reference numeral **30** indicates the portions of the block of the actuator at the extreme side edges thereof which form a wall for slots **24** and the block is provided with a stop at **32** in a projecting portion **34** which is the result of the fact that the face **36** of the actuator is set back or reduced to provide a flat surface for the exit end of passage **22**. Passage **22** leads into a circular groove communicating with dispersion grooves **38**, which normally are concealed by the usual button, not here shown.

The mouthpiece itself comprises a generally cylindrical member indicated by the reference numeral **40**. It is preferably in the shape of a funnel having a cylindrical open portion that narrows down to a lower generally conical portion at **42**. It is open at both ends, and at the narrower end it is provided with a pair of ears or the like **44**, these being flat, parallel, and spaced and having apertures at **46** together with the narrow open-end passages at **48**. This construction allows the ears to be inserted in slots **24** and snap over the pins **28** so as to pivotally hold the mouthpiece with respect to the actuator on an axis through the pins **28, 28**. These pins of course are aligned and at opposite sides of the central portion of the actuator which contains the passages for the emission of the material from the aerosol.

The fit between the openings **48** and the pins **28** is preferably such as to cause the mouthpiece to be frictionally held in either the FIG. 1 or the FIG. 2 position, depending upon which position it is placed manually. It is to be noted that the motion of the mouthpiece is limited to about ninety degrees, being stopped and positioned as in FIG. 2 by the stop **32**. At the other limit of motion, see FIG. 1, the end portions **50** of the slots **24** form stops.

It will be seen therefore that the objects of the invention are carried out in a simple manner by a two-part device that is inexpensively manufactured and easily assembled by snapping the ears **44** onto the pins **28**. Also, the actuator is easily applied to the aerosol, and the mouthpiece easily placed for storage or for use in an instant.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. A mouthpiece actuator for aerosol containers including actuating stems wherein said mouthpiece and actuator unit includes a block-like member having a passage therein for reception of a stem of an aerosol container and adapted to be movably mounted with respect to the aerosol container to actuate the stem to cause the product of the aerosol to be emitted, said member having another passage in communication with the first-named passage and leading to the surface thereof to provide for the passage of the aerosol product therethrough to an exterior position, said member having a pair of generally parallel spaced slots therein, one at either side of said passages, and a transverse pin in each slot, said pins being axially aligned,

said unit also including a generally cylindrical mouthpiece open from end-to-end thereof and including a pair of spaced, parallel flat ears extending outwardly therefrom at one open end thereof, said ears having apertures therein, said apertures being aligned and

receiving the pins, said mouthpiece being of self-sustaining resilient material so that the apertures snap over the pins to be held thereto in pivotal relation with respect to said block-like member, the passage for the product of the aerosol leading directly into said mouthpiece only when it is in a position at right angles to the block-like member, the other pivoted position of the mouthpiece being in extension of said block-like member and aligned with the aerosol container.

2. The device of claim 1 wherein said apertures are provided with restricted passages leading to the end edge portions of said ears so as to receive and be displaced by said pins, the pins snapping into the openings behind said restricted passages.

3. The device of claim 1 including means stopping and positioning said cylindrical member in its position generally at right angles to said block-like member.

References Cited

UNITED STATES PATENTS

2,444,995	7/1948	Laing	222—498
3,107,670	10/1963	Silson et al.	
3,191,867	6/1965	Helms.	
3,209,751	10/1965	Wakeman.	

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