United States Patent

[11] 3,628,733

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[21] Appl. No. **821,051**
[22] Filed **May 1, 1969**
[45] Patented **Dec. 21, 1971**
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[54] **TWO-HOLE AEROSOL BUTTON**
4 Claims, 5 Drawing Figs.

[52] **U.S. Cl.** **239/337,** 239/543
[51] **Int. Cl.** **B05b 7/32**
[50] **Field of Search** 239/296, 337, 347, 372, 414, 543, 565, 566, 527, 573, 579, 306; 222/145, 402.1

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ABSTRACT: A spray head for aerosol containers provided with dual-parallel, discharge orifices connected to a common inlet passageway. Provision of the dual orifices produces a better spray pattern and lessens the tendency of the spray to diffuse into the atmosphere.

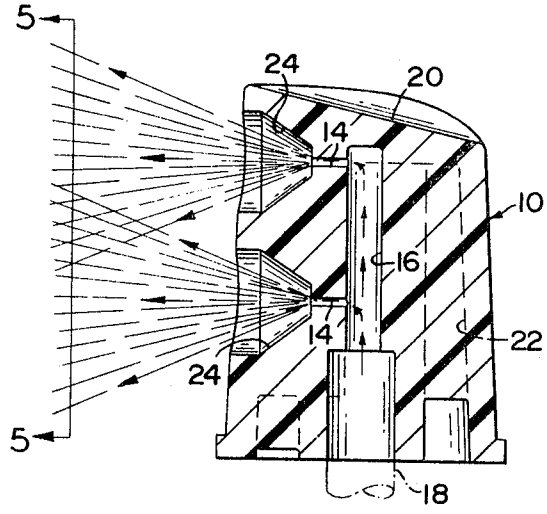


FIG. 1

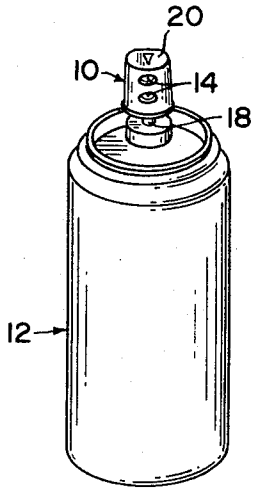


FIG. 2

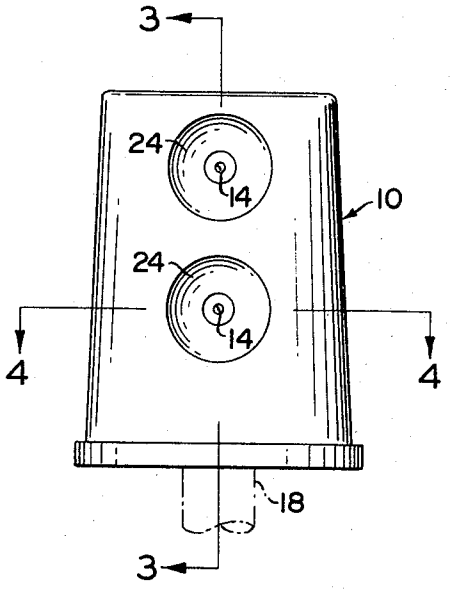


FIG. 3

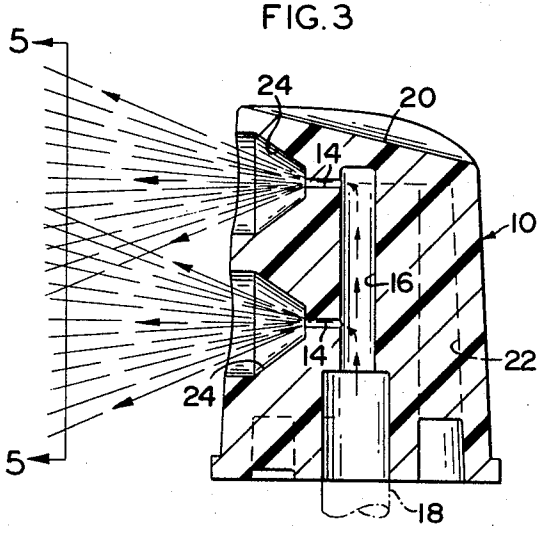


FIG. 4

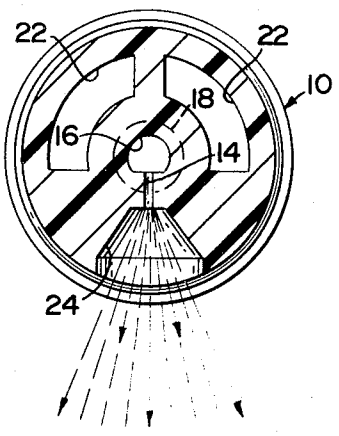
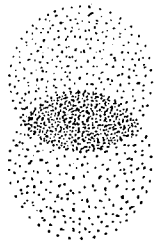


FIG. 5



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TWO-HOLE AEROSOL BUTTON

The present invention relates to a spray head for aerosol containers. More particularly, this invention relates to a spray head for spraying aerosol products which are objectionable when diffused in the atmosphere.

Spraying a target with an aerosol product with known spray heads results in a substantial portion of the product being diffused into the atmosphere. This diffusion results because of two reasons. The first reason is that the product tends to remain in suspension after being atomized instead of being transmitted to the intended target. The second reason is that present spray heads do not adequately direct the majority of the product into the center of the spray pattern. As a result, it is exceedingly difficult with present spray heads to direct the product on a small target without excessive overspray which contributes to the diffusion of the product into the atmosphere. This is particularly noticeable when directing a hair spray onto the head. Some products, i.e. hair sprays, when diffused are objectionable since they cause annoyance to the consumer. Unfortunately, there is no present spray head which will spray these objectionable products without this excessive diffusion.

Accordingly, it is an object of this invention to provide a spray head for spraying an aerosol product onto a target without excessive diffusion of the product into the ambient atmosphere.

Another object is to provide an aerosol spray head which will provide a better spray pattern by concentrating the majority of the product into the center of the target.

Another object is to provide an aerosol spray head which effectively intermixes the product as it is being sprayed to produce a better spray pattern.

A further object is to provide an aerosol spray head which is practical and economically feasible to manufacture by plastic molding techniques.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

In accordance with these objects, the invention comprises an aerosol spray head having dual-parallel discharge orifices connected to a common product inlet. The product simultaneously flows through both orifices while being discharged. The provision of the two orifices reduces the diffusion of the product into the atmosphere by lessening the tendency of the product to remain suspended, and provides a better spray pattern by both concentrating the product into the center of the spray pattern and by more effective intermixing of the spray product.

The invention accordingly comprises the features of construction, combination of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the invention will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in connection with the accompanying drawings:

FIG. 1 is a perspective view of the spray head, as mounted on a typical aerosol container.

FIG. 2 is a front elevation view of the spray head.

FIG. 3 is a cross-sectional vie taken along lines 3—3 of FIG. 2.

FIG. 4 is a cross-sectional view taken along lines 4—4 of FIG. 2.

FIG. 5 is an illustration of a typical spray pattern of the spray head taken along lines 5—5 of FIG. 3.

Similar reference characters refer to similar parts throughout the several views of the drawings.

Referring now to the drawings in detail, there is illustrated in FIGS. 1 through 4, a spray head 10 comprising the invention. The spray head 10 comprising an integral casing made of plastic and is preferably utilized in combination with an aerosol container 12 as shown in FIG. 1. However, it is to be understood that it could be utilized with a pump-type dispenser as well. The spray head 10 includes a pair of identical, parallel discharge orifices 14 in communication with a product inlet passageway 16 centrally located along the vertical axis of the spray head. The lower portion of passageway 16 is enlarged to receive the end of a liquid-supply pipe or tube 18 from a suitable source of liquid product under pressure. Such a tube may constitute a reciprocal element of a liquid pump, or preferably, the tubular valve stem of an aerosol-type container adapted to be actuated by downward pressure. In either event, the necessary downward pressure may be applied manually through the suitably shaped finger rest or cradle 20 on top of the spray head.

To reduce the weight of the spray head and to reduce the amount of plastic required for its manufacture, cavities 22 are formed in the spray head. Advantageously, they are disposed so as not to adversely affect the structural strength of the spray head.

Discharge orifices 14 have a small opening to suitably effectuate the atomization of the product. They terminate at their outward end in a cone frustum 24 which assists in directing the spray product.

In operation, the spray head is depressed to release the product in the aerosol container. The product first flows upwardly through tube 18 and then into passageway 16. From passageway 16, the product is simultaneously discharged through discharge orifices 14 whereupon it is atomized and sprayed toward a target.

It is important to note that the distance between the two orifices is such that as the product is sprayed, the spray product from each orifice is intermixed along the center of the valve head spray pattern as shown in FIGS. 3 and 5. As a result, the majority of the product is directed toward the center of the spray pattern. Because of this the amount of overspray is considerably lessened. When the spray is directed at a target the fringe areas of the pattern where the overspray generally occurs has the minimum product density.

In addition, for reasons which are not completely understood, the provision of the dual orifices reduces the tendency of the product to remain suspended and disperse into the atmosphere. One plausible reason is that as the product is sprayed from each orifice, a Bernoulli effect is created; that is, the product sprayed from each orifice tends to create a low-pressure area which assists in carrying the product sprayed from the other orifice to the target. With this additional carrying force, the tendency for the product to remain in suspension or wander from the spray path is considerably reduced.

With these advantages, the spray head is particularly suitable to be utilized in spraying hair sprays, underarm deodorants or similar products which cause irritation to the consumer when diffused into the atmosphere.

It will thus be seen that the objects set forth above, among those made apparent from the preceding description, are efficiently attained and, since certain changes may be made in the above construction without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which as a matter of language might be said to fall therebetween.

Now that the invention has been described:

What is claimed is:

1. A spray head to be used on a container, said spray head comprising a casing of integral construction having an axial passageway, said passageway positioned in axial alignment with the longitudinal axis of said container, at least two parallel, vertically spaced discharge orifices arranged transversely to and in communication with said axial passageway, said orifices disposed in close proximity with each other to define an overlapping spray pattern as sprayed whereby the product is directed to the target without excessive diffusion into the atmosphere.

2. The spray head of claim 1 for an aerosol container wherein said axial passageway has a blind end and an opposite end formed to receive a product conduit from the aerosol container and said discharge orifices extending substantially perpendicular from said passageway.

3. The spray head of claim 2 wherein each of said discharge orifices extend into a cone frustum at their outlet.

4. The spray head of claim 1 further comprising at least one cavity formed in said spray head and extending substantially the length of said axial passageway, whereby the weight of said spray head is reduced.

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