

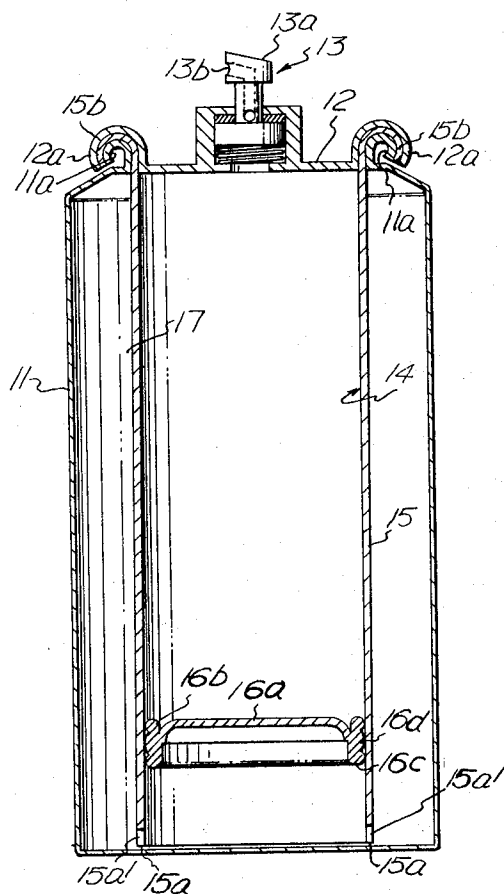
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AEROSOL DISPENSER WITH INNER CONTAINER

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AEROSOL DISPENSER WITH INNER CONTAINER
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24,007/64

1 Claim. (Cl. 222—389)

The invention relates to containers for dispensing substances in the form of liquids, creams or pastes by means of a propellant consisting usually of a gas which is inert with respect to the substance to be dispensed.

In our co-pending application for British Patent No. 18,818/62 (Serial No. 982,929) we have described and claimed a device for dispensing a material by means of a propellant which comprises an outer container adapted to contain a propellant, a spring-closed valve on and extending outwardly from one end of the container, a receptacle for the material to be dispensed, arranged co-axially within said container and having one of its ends sealing on to the said outlet valve, the receptacle communicating with the interior of the outer container at its other end, and a freely movable piston in said receptacle, exposed at one side to the pressure in the outer container and adapted when said valve is opened to displace the material to be dispensed through the open valve.

It has been found that in certain arrangements there can be a tendency for the propellant fluid to escape back into the container holding the material to be dispensed and if these two substances are incompatible this may lead to damage or even danger.

It is the primary object of the present invention to provide a means whereby the risk of leakage of the type described is reduced or, at best, removed entirely.

A dispenser according to this invention comprises inner and outer containers with an annular space between them to contain the materials of the type described and is characterised in that the wall of the inner container is flanged outwardly over and sealed to the wall of the outer container so that any leakage of propellant must be to the outer atmosphere, there being a piston within the inner container as a thrust member for the material to be expelled, with access between the said annular space and the underside of said piston, and there being also valve means associated with the inner container to allow of the exit of the said material from the inner container when required.

The outer container may be of the type normally used as aerosol containers, with a valve cap crimped in the position at its upper end.

Valve caps of the former type required the insertion of a rubber sealing ring between the cap and the rim of the container but the present construction removes the necessity for a separate seal.

It is a secondary object of the invention to provide an improved piston for use in conjunction with the packs of the kind described.

According to a further preferred feature of the invention, the said piston is provided with a circular recess in the top thereof, spaced slightly from the peripheral wall and extending about half the depth of the piston thereby forming a central portion within the recess and a resilient upper peripheral wall portion thin enough to

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be urged against the wall of the receptacle or casing by the pressure of the substance to be dispensed.

The piston is bounded by an upperbeaded edge and a lower beaded edge the peripheral wall between the beads being somewhat convex.

The invention will now be described further, by way of example only, with reference to the accompanying drawing illustrating one embodiment thereof in longitudinal section.

Thus referring now to the drawing a dispenser pack comprises an outer metal container 11 closed at the top by a valve cap 12 having an outlet valve 13 which is operated in the usual way by pressure on a button 13a having a side opening 13b through which the substance is dispensed. The valve is of a known kind and thus no detailed description is thought necessary. The open end of the outer container 11 is swaged first inwardly and then turned over outwardly to form a beaded rim 11a. In the container there is an inner container 14 comprising a polythene tube 15 having a diameter slightly smaller than that of the mouth of the outer container. The bottom end of the tube, which tube rests on the floor of the outer container, is open and has slots 15a in its lower edge 15a, while the edge of the top end is shaped to form a flange 15b of complementary profile to the rim 11a of the outer container 11.

The valve cap 12 is crimped over both the flange 15b and the beaded rim 11a (as at 12a) so that the said flange 15b acts as a gasket between the valve cap and the container. In the tube 15 is a slidable piston 16, the piston 16 comprises a dome-shaped part 16a extending transversely across the inner container and upper and lower beaded edges 16b, 16c, the peripheral wall 16d between the edges being outwardly convex. The upper beaded edge 16b lies in spaced apart disposition relative to the central part 16a of the piston, the material to be propelled filling the space between the edge 16b and part 16a and serving, upon upward movement of the piston, to urge the edge 16b against the wall of the container.

The substance to be dispensed, for example a pharmaceutical preparation, is placed in the inner container 14 above the piston 16 and the propellant placed in the annular space 17 between the inner and outer containers. The underside of the piston 16 is exposed to the pressure of the propellant by reason of the slots 15a' and when the button is depressed the valve 13 provides an uninterrupted passage between the inner container 14 and the atmosphere, whereafter the piston 16 rises and forces the substance out through the valve 13.

What we claim is:

A dispenser comprising inner and outer containers with an annular space having therebetween, a propellant in said annular space, the wall of the inner container being flanged outwardly over the wall of the outer container, and including a cover having a rim which fits over the flanged portion of the inner container to seal the inner and outer containers so that any leakage of propellant must be to the outer atmosphere, a piston within the inner container, material to be expelled located in the inner container above said piston, said piston serving as a thrust member for the material to be expelled, means providing access between said annular space and the underside of said piston, and valve means in the cover and associated with the inner container to allow the exit of said material from the inner container when required,

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said piston being provided with a circular recess in the top thereof spaced slightly from the peripheral wall and extending about half the depth of the piston thereby forming a central portion within the recess, a resilient upper beaded edge thin enough to be urged against the wall of the inner container by the pressure of the material to be dispensed a lower beaded edge and the surface of the peripheral wall between said upper and lower beaded edges being outwardly convex.

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