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REMOVABLE COVER FOR PRESSURE DISPENSING CONTAINERS

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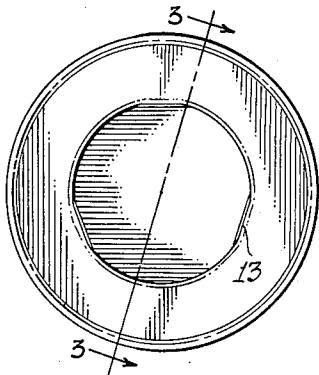


FIG. 4.

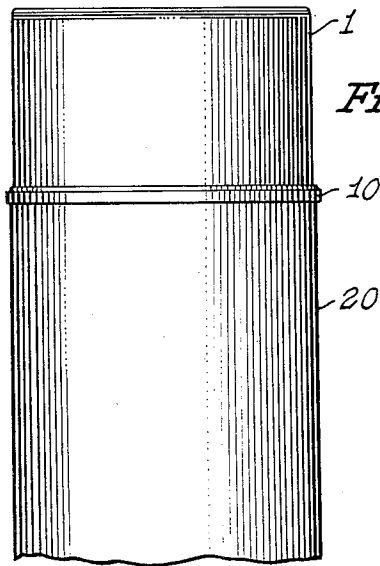


FIG. 1.

FIG. 2.

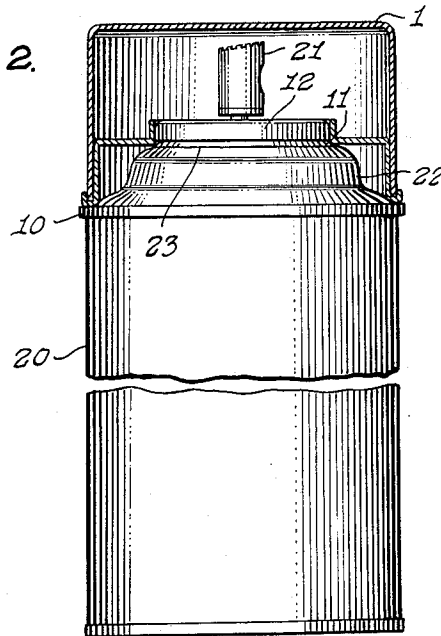


FIG. 5.

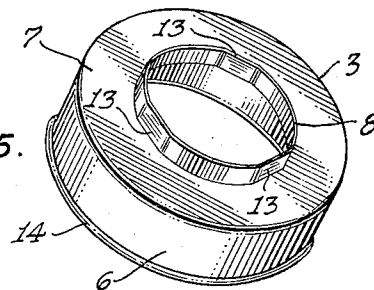


FIG. 3.

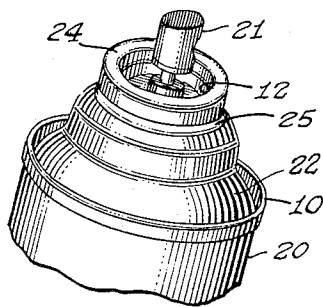
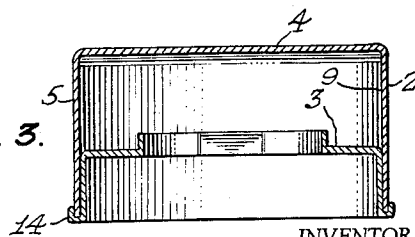


FIG. 6.

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REMOVABLE COVER FOR PRESSURE DISPENSING CONTAINERS

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Spray can assembly of the so-called aerosol type consist of a cylindrical container having at its upper end an inwardly tapered neck that terminates in a valve cup, and a quickly removable cover or cap which protects the spray valve from dust or the like. The present invention relates to a metallic protective cover for an aerosol type container of this general type which cover is provided with a firmly affixed metallic insert forming a part of the cover, which insert is made firm to it near the lower portion of the removable cover, and projecting inwardly in relation to the inside cylindrical surface of the cover, forming the structure which coacts with structure on the upper part of the container to removably hold the cover onto the container; into the chamber which exists between the inside of the top of the cover and the insert the valve unit of the container projects.

It has been proposed in Patent No. 2,775,372 to protect the spray valve of cylindrical containers of the aerosol type by a cap having a flat circular top portion and a pair of downwardly extending spaced apart, concentric cylindrical skirts each integral with the said top portion, which outer skirt of the pair extends downwardly a substantial distance beyond the end of the inner skirt; the two skirts are provided with outwardly flaring bevels at their respective lower ends. Furthermore, the inner skirt is provided with a series of integrally formed lugs, which when the top is pressed downwardly ride over and snap behind the crimped portion of the valve unit on the container itself. Also there is one metal cap on the market of this general type differing from the type just described in that two skirts do not have bevels at their lower ends; this cap has three spaced, horizontal projections on the inner skirt to coact in holding this cap to the container.

It has also been proposed in Patent No. 2,906,430 to have a removable cap for an aerosol container, which cap has a depending skirt, the lower end of which is formed with a circumferential rib, the rib being formed by curving the lower end of the skirt outwardly then inwardly. When this cap is in position on its container, this last described rib engages the seam wall and underlies the circumferentially spaced mounds on the container itself; the rib snaps past these mounds when either applying or removing the cap.

It is a broad object of the present invention to provide a protective cover or cap that will remain effectively in position when pushed down upon the cylindrical container of the aerosol type, yet is easily removable from it.

A still further object of the present invention is to provide a quickly removable protective cover for a conventional pressure cylindrical type dispensing container, which cover does not depend either partly or completely on the outer seam of the said container adjacent the dome to hold it in place, but is novel in that it depends on coaction between portions of the integral insert of the cover or cap with the vertically depending side wall of the mounting cup or valve on the cylindrical container.

It is a further object of the present invention to provide a quickly removable cover of inverted cup-shape for a cylindrical pressure type dispenser, which cover has an insert pressed into the body of the cover, which insert is affixed at the bottom part of the cover and which insert is provided with a series of circumferentially spaced mounds which coact with the vertically depending side

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wall of the mounting cup or valve on the cylindrical container.

It is a further object of the present invention to provide a novel removable protective cover or cap of inverted cup-shape, which cover has a downwardly extending skirt, the lower edge of which skirt rests upon the top of the circular-shaped seam at the upper part of the pressure type dispensing container, but is held in place by coaction between the vertically depending side wall of the mounting cup or valve on the tapered upper part of the cylindrical container with a series of spaced mounds on the insert of the cover referred to in the preceding paragraph, which mounds are in the same horizontal plane with reference to one another.

Another object of the present invention is to provide a spray can assembly consisting of a cylindrically shaped dispensing container formed at its upper end in an inwardly tapered neck, terminating in a valve unit that has a valve cup with a neck ring with side wall projecting downwardly from said neck ring, and an inverted cup-shaped protective cover for the dispensing container comprising a metallic shell and a metallic insert within the shell, the insert being fitted at its lower portion to the shell, and having a cylindrical skirt portion merging with a horizontal top face, which in turn merges with a neck; on the neck are a series of circumferentially spaced mounds to engage the downwardly projecting side wall of the valve cup on the neck of the container.

With the above and other objects in view the nature of the invention will become apparent from the following detailed description and reference to the accompanying drawing. The six figures in the said drawing illustrate the novel protective cover or cap of this invention associated with a conventional pressure type, cylindrical container for dispensing liquids and powders. It is understood, however, that the invention is not confined to any strict conformity with the showing of the drawings, but may be changed or modified, so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

Referring now to the drawings in detail:

FIG. 1 is a side elevation of a container and the protective cover or cap of this invention in assembled relation.

FIG. 2 is also a side elevation of the container, with a sectional view of the protective cover of this invention fitted upon the container.

FIG. 3 is a side elevation of the protective cover, taken along the line 3-3 of FIG. 4.

FIG. 4 is a view of the protective cover looking down into the said cover from the bottom, i.e. toward the inside of its top.

FIG. 5 is a perspective view of the insert of the protective cover.

FIG. 6 shows the upper portion of a conventional aerosol type container.

With reference to FIGS. 2, 3 and 5 of the drawing, the protective cover or cap 1 consists of the shell designated by the numeral 2 and the insert designated by the numeral 3. The shell 2 has a flat, circular top portion 4 integrally connected to a depending skirt 5. The skirt below the juncture with the flat top is perpendicularly relative to it. Both the shell and the insert are made of metal.

The insert 3, as can be seen from FIGS. 3 and 5, is made of one piece of sheet metal. The insert has a skirt 6, a horizontal top face 7, and a neck 8, the said skirt depending vertically from and integral with the said top face; the neck is also integral with and extends upwardly from the flat horizontal top face. These designated parts, which constitute the body of the insert are made of one

piece of metal, just as the shell is made of one piece of metal. The depending skirt 6 of this insert snugly contacts the inner wall 9 of the inverted cup-shaped shell in the lower region of the wall 9. The height of the skirt is dependent upon the vertical dimension between the ridge, numbered 10, of seam of the cylindrical container and the bottom 11 of the valve cup 12. The dimension of the horizontal top face 7 of the body of the insert depends upon the inside diameter of the shell 2 and the outside diameter of the peripheral edge of valve cup 12. The neck 8 of the insert 3 extends almost vertically a sufficient distance to engage or coact with the valve cup 12 on the container 20. The neck of the insert has the same height throughout. The circular opening provided by the upwardly extending neck and horizontal top face of the insert must afford sufficient space for clearance of the valve cup attached to the domed portion of the container. On the neck 8 there are formed a plurality of spaced mounds or indents, shown in the drawing bearing the numeral 13, usually three in number as shown in FIGS. 4 and 5. From the embodiment in the drawing it can be perceived that these indents 13 are formed out of the neck itself and are circumferentially equally spaced from one another. This simplifies the manufacture of the insert. Also from the drawing it can be perceived that each indent possesses a substantially flat surface, which flat surface projects forward a slight angle from the vertical.

In manufacturing the protective cover or cap 1, the insert 3 is press fitted to the inside wall 9 of the shell 2, i.e. the inside of the depending skirt 5 of the shell 2. The curl 14 on the lower edge of the skirt 6 of the insert 3 is left sufficiently open to receive the bottom edge of the skirt 5 of the shell 2 when assembled in a unit. This unit is the inverted, cup-shaped protective cover which is shown in FIG. 3, and in assembly with the container 20 in FIGS. 1 and 2. The insert 3 is held to the shell 2 by the press fit. For the press fit, the depending skirt 6 of the insert must be of sufficient overall diameter and circumference measurement that there is a snug fit of the insert with the shell 2.

It will be noted that a distinctive feature of the present invention is that attributable to the manner in which the insert positioned inside the shell is affixed to the shell.

The container 20 is formed at its upper end in an inwardly tapered neck 22, which terminates in a valve cup unit 12 which fits into the reduced neck of said container. The valve cup has a mouth-defining neck ring 24, which merges with a downwardly projecting side wall 25. The entire dispensing valve unit associated with the dispensing container 20 is given the number 21 in the drawing. There is a space, bearing numeral 23, below the edge of the downwardly projecting side wall 25 as seen in FIG. 2.

In positioning the protective cover of the present invention on the cylindrical, aerosol type container, it is simply pushed down by applying force of one's hand to the top of the said cover 1, which cover has previously been centrally positioned above container 20. The mounds 13 on the neck 8 of the insert ride over and snap behind the bead or rolled edge, embracing the side wall 25 of the valve cup 12 positioned on the dome of the container. This coaction between the mounds or indents 13 on the neck of the insert and the side wall 25 of the valve cup removably holds the protective cover 1 firmly in place upon the container 20. The cover is easily and quickly detached from the container by firmly holding the container with one hand while pulling the cover 1 away from it with the other hand.

The protective cover of the present invention, unlike many removable covers or caps for aerosol containers, does not depend either partly or completely upon the outer seam of the container adjacent the dome to hold the cover in place. The lower edge of the cover of the present invention rests on top of the outer seam of the con-

tainer and does not fit down in the recess surrounding the dome.

An advantage of the cap or cover of this invention, as compared with those on the market at the present time, is that the process of its manufacture eliminates several difficult curling and clinching operations. Also, there is no need for having a beveled lower edge on the skirt of the cover to assist in holding the cover in place. The coaction of the indents or mounds on the neck of the insert of the cover, by engaging the depending side wall of the valve unit, positioned on the upper tapered part of the container, accomplishes this, i.e. holding the cover in place on the container without one or more of the adjuncts just mentioned.

Since the insert 3 is not fastened to the shell at the top of the latter, there is no need to have an indentation or irregular surface in the top 4 of the cover. The top can be flat or dome-shape or of any other form. It can, less desirably, be indented even. A flat or dome-shape top with no indentations for the protective cover is advantageous, because it lends itself to decorative purposes.

The cover of the present invention is intended for use with the conventional pressure type containers, i.e. those having a reduced neck portion terminating in a valve cup which has a rolled edge with downwardly projecting side wall, for dispensing liquids and powders by a gas maintained under pressure. No specially constructed container other than a container with the features just mentioned is necessary. Its use involves further economies in that no changes have to be made in the container itself in the way of curling or clinching operations of the edges to bring about mating of parts on the cover with parts on the container itself to detachably secure the cover to the container.

Tin plate of the thickness known as 85-100 pounds is economical to use in the fabrication of this cover, but other thicknesses can be used. It is of course obvious that this cover can be made in an assortment of sizes, such being dependent upon the pressure dispensing container to which it is mated. It is not as satisfactory to use only two circumferentially spaced indents on the neck of the insert, because this number does not hold the removable cover as firmly to the cylindrical container as three or more spaced indents. While it is not as desirable from an economic standpoint, mounds of other types on the neck, which mounds will ride over and snap back of the rolled edge engaging the side wall of the valve cup unit positioned on the dome of the container, can be employed.

What is claimed is:

1. In a cylindrical article, a cylindrically shaped dispensing container formed at its upper end in an inwardly tapered neck terminating in a valve cup, which latter has a neck ring merging into a downwardly projecting side wall, an inverted cup-shaped protective cover for the container comprising a metallic shell and metallic insert within the shell, the said shell having a circular top and an integral cylindrically shaped annular skirt extending downwardly from the outer edge of said top, said insert being characterized by a cylindrical open-end skirt which extends downwardly from the outer edge of the horizontal top face of the insert, and which skirt of the insert fits tightly against the lower inside portion of the shell's skirt, a neck extending upwardly from the said top face of the insert, the said skirt, top face and neck of the insert being integral, the said skirt of the insert also having a curl at its bottom edge sufficiently open to receive the bottom edge of the skirt of the shell, the neck of the insert having circumferentially spaced mounds exceeding two in number to engage the said side wall of the valve cup, whereby the protective cover is held in place.

2. In a cylindrical article, a cylindrically shaped dispensing container formed at its upper end in an inwardly tapered neck terminating in a valve cup, which latter has a neck ring merging into a downwardly projecting side wall, an inverted cup-shaped protective cover for

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the container comprising a metallic shell and metallic insert within the shell, the said shell having a circular top and an integral cylindrically shaped annular skirt extending downwardly from the outer edge of said top, the insert being characterized by a cylindrical open-end skirt which extends downwardly from the outer edge of the horizontal top face of the insert, and which skirt of the insert fits tightly against the lower inside portion of the shell's skirt, a neck extending upwardly from the said top face of the insert, the said skirt, top face and neck of the insert being integral, the said skirt of the insert also having a curl at its bottom edge sufficiently open to receive the bottom edge of the skirt of the shell, the neck of the insert having circumferentially spaced mounds exceeding two in number, and being in the same horizontal plane with reference to one another, to engage the said side wall of the valve cup, whereby the protective cover is held in place.

3. An inverted cup-shaped protective cover for a cylindrically shaped dispensing container formed at its upper end in an inwardly tapered neck terminating in a valve cup, which latter has a neck ring merging into a downwardly projecting side wall, the said protective cover comprising a metallic shell and metallic insert within the shell, the said shell having a circular top and an integral cylindrically shaped annular skirt extending downwardly from the outer edge of the top, the insert being characterized by a cylindrical open-end skirt which extends downwardly from the outer edge of the horizontal top face of the insert, and which skirt of the insert fits tightly against the lower inside portion of the shell's skirt, the neck extending upwardly from the said top face of the insert, the said skirt, top face and neck of the insert being integral, the said skirt of the insert also having a curl at its bottom edge sufficiently open to receive the bottom edge of the skirt of the shell, the neck of the insert having circumferentially spaced mounds exceeding two in number to engage the said side wall of the valve cup whereby the protective cover is held in place, the said mounds being formed out of the neck itself.

4. An inverted cup-shaped protective cover for a cylindrically shaped dispensing container formed at its upper end in an inwardly tapered neck terminating in a valve cup, which latter has a neck ring merging into a downwardly projecting side wall, the said protective cover comprising a metallic shell and metallic insert within the shell, the said shell having a circular top and an integral cylindrically shaped skirt extending downwardly from the outer edge of the said top, the insert being characterized by a cylindrical open-end skirt which extends downwardly from the outer edge of the top face of the insert, and which skirt of the insert fits tightly against the lower inside portion of the shell's skirt, a neck extending upwardly from the said horizontal top face of the insert, the said skirt, top face and neck of the insert being integral, the said skirt of the insert also having a curl at its bottom edge sufficiently open to receive the bottom edge of the skirt of the shell, the neck of the insert having circumferentially spaced mounds formed out of the neck itself and exceeding two in number to engage the said side wall of the valve cup, whereby the protective cover is held in place, the said mounds being in the same horizontal plane in reference to each other.

5. A protective cover for a cylindrical dispensing container as set out in claim 3, wherein the circular top of the shell is smooth and flat.

6. A protective cover for a cylindrical dispensing container as set out in claim 4, wherein the top of the shell is smooth and flat.

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