

[54] **DUAL COMPARTMENT SPRAY CONTAINER**

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[58] **Field of Search**.....128/272; 222/80, 222/541, 83, 81; 239/309; 206/47

[56] **References Cited**

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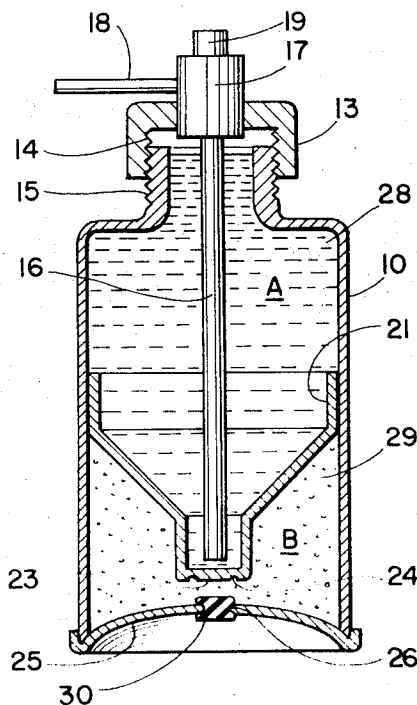
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[57] **ABSTRACT**

A portable spray can for resin paints incorporates a partition means dividing the interior into first and second chambers for containing catalyst and resin materials respectively. A spray means is threadedly received on one end of the can and includes an elongated rigid tube extending into one of the chambers. The arrangement is such that complete threading of the spray means onto the can urges the tube further into the one chamber to engage the partition means and punch out a portion of this partition means thereby placing the interior chambers in communication with each other. Mixing of the ingredients in the chambers can thus take place prior to a spraying operation, the mixture passing up through the tube and out the spray means when the spray valve is opened.

2 Claims, 2 Drawing Figures



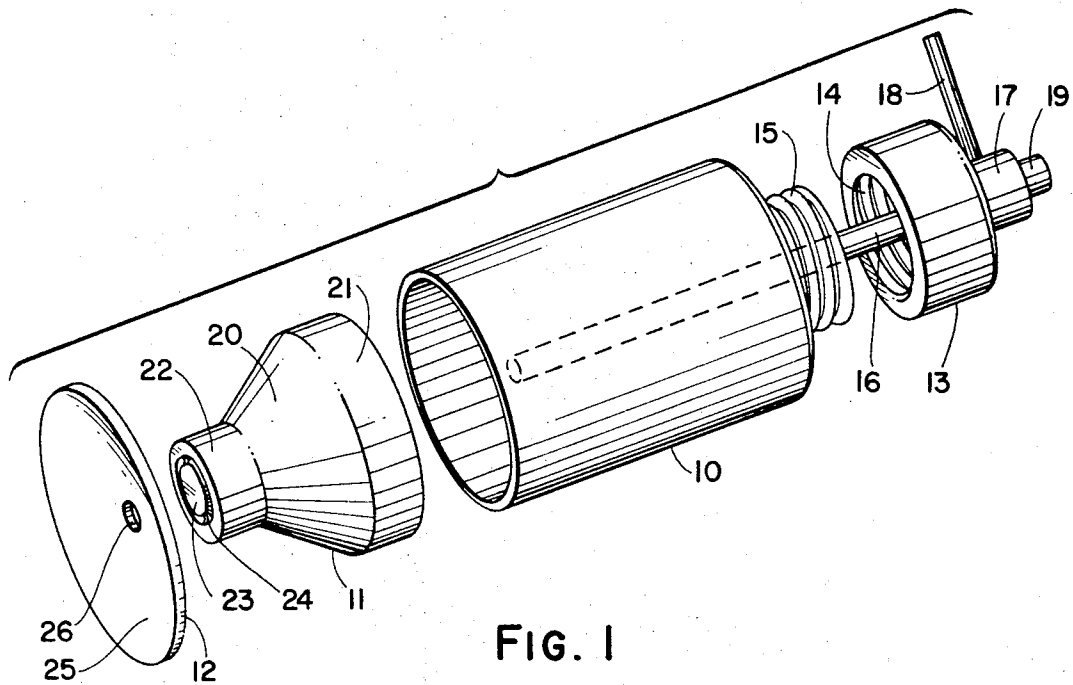


FIG. 1

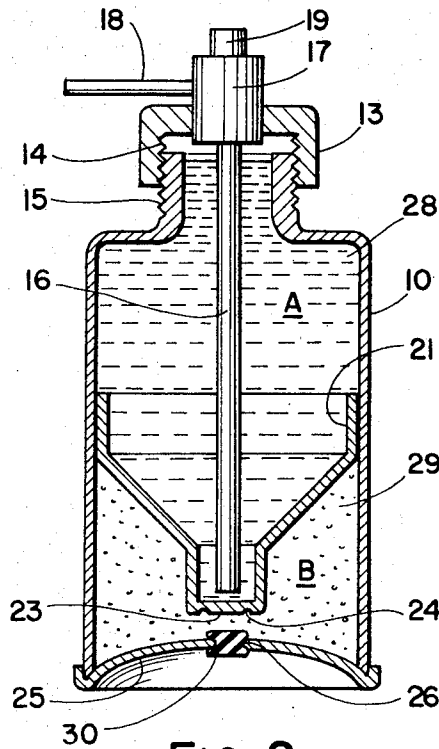


FIG. 2

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DUAL COMPARTMENT SPRAY CONTAINER

This invention relates generally to containers and more particularly, to an improved dual compartmented container for holding chemicals which must normally be maintained in a separated condition until immediately prior to use.

BACKGROUND OF THE INVENTION

In spraying resin type paints or other chemicals onto work surfaces to provide a hard resinous surface, the materials making up the spray must normally be kept in separate containers. One container might hold a resinous paint and the other container a catalyst. When the resin and catalyst are mixed together, they chemically interact to result in a hardened finished coating. Normally, the chemicals are corrosive and it is very important that they be maintained in hermetically separated states until just prior to use.

In an actual spraying operation, suitable outlets from the separate containers pass into a common chamber in a spray nozzle and the mixture is then caused to be sprayed from the nozzle under a high pressure source such as might be provided by a spray pump.

In recent years there has been introduced on the market paint straying devices which take the form of only a single container including a paint under pressure to be sprayed. This portable type sprayer eliminates the need for auxiliary spray pumps and the like. However, such containers including a paint under pressure are not suitable for resinous type paints or plastic coatings wherein two chemical ingredients must be mixed together immediately prior to spraying. Attempts to solve this problem have taken the form of a can containing at least two compartments which are sealed from each other. The catalyst and resinous materials are placed in the compartments respectively and caused to be mixed immediately prior to use. Such devices as have been provided heretofore, however, are relatively expensive to manufacture in large quantities primarily because of difficulties in forming the dual compartment container itself. As a consequence, spraying objects with resinous paint requiring a catalyst has had to be carried out in the known manner of providing separate containers in cooperation with a spray pump and special nozzle.

BRIEF DESCRIPTION OF THE PRESENT INVENTION

The present invention provides a portable paint spray device which overcomes the foregoing problems in that it enables the spraying of resinous type paint from a single container incorporating dual chambers but designed in such a manner that the same may be relatively economically manufactured.

More particularly, the invention contemplates the provision of a container having partition means dividing the interior into first and second chambers. Spray means including a rigid elongated tube extending into one of the chambers from one end of the container is provided. Cooperating means on the container and spray means enable urging of the tube further into the chamber at the time it is desired to effect a spraying operation, this further urging of the tube into the chamber causing the end of the tube to engage and rupture a portion of the partition. As a consequence, the

chemicals in the first and second chamber may then be mixed together and both pass out through the tube to effect the desired spraying operation.

In the foregoing construction, the chamber containing the catalyst chemical includes an expanding agent such as Freon gas so that pressure is automatically provided for expelling the mixture after the partition has been ruptured.

BRIEF DESCRIPTION OF THE DRAWINGS

A better understanding of the invention will be had by now referring to a preferred embodiment thereof as illustrated in the accompanying drawings, in which:

FIG. 1 is an exploded perspective view illustrating the various components making up the dual compartment spray container of the invention; and,

FIG. 2 is an elevational view partly in cross section showing the various components of FIG. 1 in assembled relationship.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to FIG. 1 there is shown a cylindrical can 10 dimensioned to receive a partition means 11 within its interior and thereafter be closed by a concave bottom member 12.

The other end of the can 10 is arranged to receive a spray means 13 including threads 14 for cooperation with external threads 15 on the can itself. As shown, the spray means 13 includes an elongated rigid tube 16 extending into the can. Tube 16 at its outer end connects to a spray control valve in a housing 17 from which a nozzle 18 extends. A push button means may be employed to actuate the spray valve in the housing 17 to thereby place the tube 16 in communication with the nozzle 18. Any conventional type of push button valve may be utilized. Since the valve structure itself constitutes no part of the present invention, it is not herein described in further detail.

The partition means 11 preferably takes the form of a funnel shaped member 20 terminating at its larger end in a cylindrical collar 21 dimensioned to be received within the can 10 with the exterior surface of the collar 21 in full surface engagement with a portion of the interior cylindrical wall of the can. The other smaller end of the funnel shape member 20 terminates in a cylindrical collar 22 closed by a disc element 23. The disc element 23 includes an annular thinned wall portion 24 such that the disc element 23 may be punched out from the collar 22.

The concave surface portion of the closure member 12 is shown at 25. This member includes a central opening 26 the purpose for which will become clearer as the description proceeds.

Referring now to FIG. 2, the various elements of FIG. 1 are shown in assembled relationship. An important feature of this invention resides in the design of the partition means wherein the cylindrical collar 21 effects full surface engagement with an interior cylindrical wall portion of the can 10. As indicated at FIG. 2, this cylindrical collar 21 is sealed as at 27 to the interior wall of the can 10 to divide the interior of the can into first and second chambers. These chambers are designated by the letters A and B. The actual hermetic sealing of the collar to the can may readily be effected

during manufacture by first positioning the partition means within the can in a desired longitudinal position to provide a given ratio of the volumes of the respective chambers. Thereafter, heat may be applied about the exterior circumference of the can in such a manner as to weld the entire collar to the interior of the can. This heat may be effected by electric welding or other suitable means.

In the positioning of the parts of FIG. 2, it will be noted that the lower end of the rigid tube 16 is spaced slightly above the disc element 23 closing the end of the lower collar of the partition means. It will also be noted that the spray means is not completely threaded on the external threads 15. The arrangement is such that when the spray means is completely threaded onto the external threads, the tube 16 will be further urged into the first chamber A until it engages the disc element 23 and still further movement of the rigid tube 16 will then punch out the disc element 23 by rupturing the same at the thinned wall portion 24. The chambers A and B are then placed in communication with each other.

The chambers A and B are shown in FIG. 2 as being filled with suitable chemicals 28 and 29 respectively. The chemical 28 may constitute a resin paint and the chemical 29 a fluid under pressure incorporating a suitable catalyst. This fluid is passed through the opening 26 in the central portion of the bottom member 25 under pressure and thereafter this opening is plugged as by a suitable rubber plug 30. The resin paint chemical 28 in turn may simply be filled through the top of the can by unthreading completely the spray means 13 and then partially threading the spray means 13 onto the external threads 15 to a position in which the rigid tube 16 is spaced slightly above the disc element 23 as described heretofore.

OPERATION

The dual compartment container described in FIG. 2 is provided with suitable chemicals filling the container, the chemical 29 being under pressure as described heretofore. A customer may then simply purchase the can in the condition illustrated and when he desires to effect a painting or other type of coating operation, it is only necessary to completely thread the spray means 13 onto the external thread 15 thereby causing the rigid tube 16 to punch out the disc element 23.

After the disc element 23 has been punched out, the chambers A and B are placed in communication with each other and the user may shake the can to help mix the chemical ingredients. Thereafter, the user will then depress the button 19 to open the valve in the housing 17 and the mixture will pass out the spray nozzle 18

under pressure existing as a consequence of the pressure provided in the chamber B. Sufficient pressure may be maintained by incorporating an expanding agent in the fluid 29 in the chamber B such as Freon or an equivalent liquid with a low boiling point.

Normally, the operator will use up the entire contents during a single painting or spraying operation, the can then simply being thrown away.

From the foregoing description it will be evident that the present invention has provided a greatly improved spray device particularly well suited for resin type sprays wherein two different chemicals must be maintained in a separated condition until just prior to use. A very economical and efficient spraying means is thus provided with the advantage of not having to utilize spray pumps or separated containers.

What is claimed is:

1. A dual compartment spray container comprising, in combination: a cylindrical can; a partition means defining first and second chambers in said can, said partition means being in the form of a funnel shaped member terminating in a cylindrical collar at its larger end dimensioned to be in full surface engagement with a portion of the cylindrical interior wall of said can and in a reduced diameter cylindrical collar at its smaller end; a disc element closing the end of said reduced diameter cylindrical collar and including an annular thinned wall portion such that the same may be punched free of said collar; external screw threads on the end of said can closest to said larger end of said funnel shaped member; a concave bottom member closing the other end of said can; and spray means threadedly receivable on said external threads and including an elongated rigid tube passing into said can to terminate within said funnel shaped member at a point spaced slightly above said disc element when said spray means is only partially threaded onto said external threads, whereby complete threading of said spray means causes said tube to punch out said disc element and place said first and second chambers into communication with each other.

2. A container according to claim 1, in which said concave bottom member includes a central opening communicating with one of said chambers for receiving fluid under pressure; and a plug in said opening holding said fluid under pressure in said one chamber, the other of said chambers containing a liquid material to be mixed with said fluid when said disc element is punched prior to a spraying operation, said cylindrical collar being sealed to said portion of said interior wall to hermetically seal said chambers from each other prior to punching of said disc element.

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