

Oct. 27, 1964

R. C. MESSMER

3,154,223

SPRAY CAN JET

Filed July 12, 1961

2 Sheets-Sheet 1

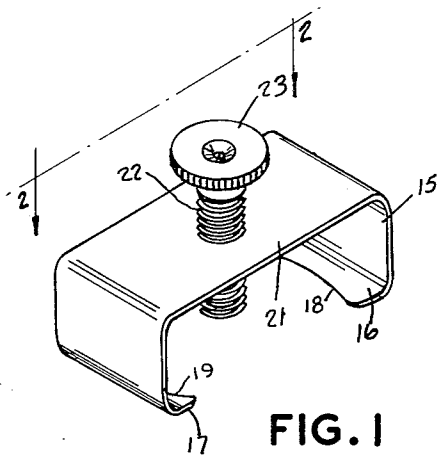


FIG. 1

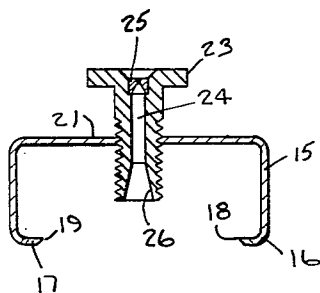


FIG. 2

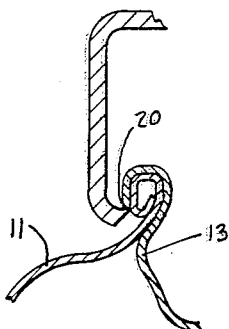


FIG. 4

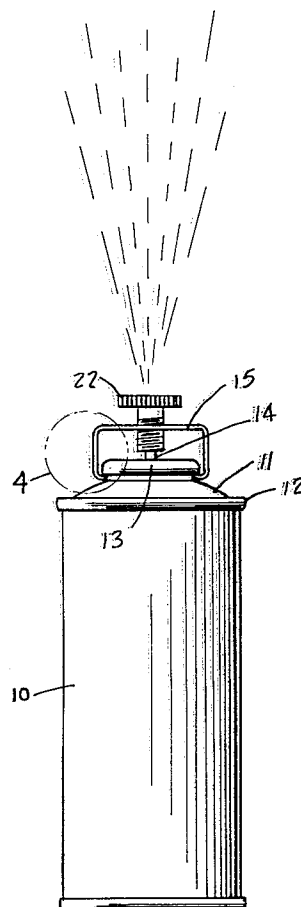


FIG. 3

INVENTOR.
ROBERT C. MESSMER

BY

Ad. W. Ballant

Oct. 27, 1964

R. C. MESSMER

3,154,223

SPRAY CAN JET

Filed July 12, 1961

2 Sheets-Sheet 2

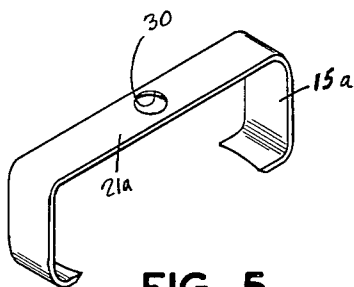


FIG. 5

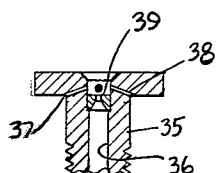


FIG. 7

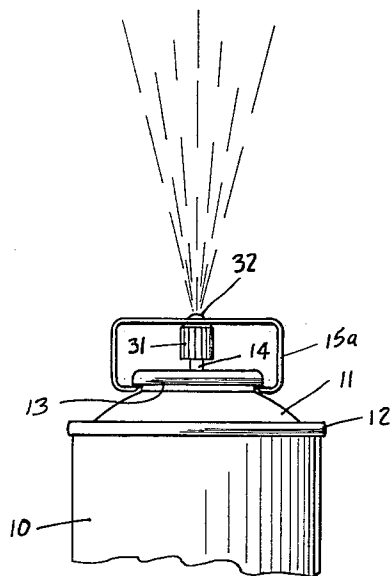


FIG. 6

INVENTOR.

ROBERT C. MESSMER

BY

Hale Co. Ballance

1

3,154,223

SPRAY CAN JET

Robert C. Messmer, 571 N. Prince Frederick St.,
King of Prussia, Pa.Filed July 12, 1961, Ser. No. 123,563
3 Claims. (Cl. 222—394)

My invention relates to pressurized spray cans and more particularly to a clamp for holding the valve of a pressurized spray can in an open position.

On the present market a wide variety of liquids is packaged and sold at retail in small pressurized containers having a valve which must be manually depressed in order to release the liquid contents of the container. In the case of insecticides or other liquids where it may be desired to continuously release the contents it is impossible or highly inconvenient for the operator to hold the valve in a depressed condition until the spray becomes exhausted. If it is desired, for example, to disinfect an entire room of a building or, for that matter, the entire house, it is possible for the owner to place several insecticide spray cans in the proper locations and with the use of my device simply maintain a spray at a desired valve opening until the entire contents becomes exhausted. This gives any personnel the opportunity to vacate the area or the entire premises for a predetermined length of time until the disinfecting operation is completed. Obviously, this cannot be accomplished with the present type of valve used on insecticide cans which require constant application of manual pressure.

The present invention is particularly useful in connection with insecticide pressurized sprays but finds other applications for spray cans in which for one reason or another it is desired to spray the contents of the can without the necessity for manual attendance.

The primary object of the invention, therefore, is to provide an atomizer for a conventional pressurized spray can which may be readily applied to the can and adjusted to hold the valve in an open position.

A further object of the invention is to provide a spring clip which may be snapped over the lip of a can and a threaded depressor for the valve adjustably mounted in said clamp.

A further object of the invention is to provide a spray nozzle for a pressurized can having a fixed but adjustable spray control.

Further objects will be apparent from the specification and drawings in which:

FIG. 1 is a perspective showing a preferred form of the present invention.

FIG. 2 is a section on a reduced scale as seen at 2—2 of FIG. 1.

FIG. 3 is a side view of a pressurized spray can showing the adjustable nozzle of the present invention in operation.

FIG. 4 is an enlarged sectional detail of one side of the clip secured to the rolled lip of the pressurized can.

FIG. 5 is a perspective of a modified form of a clip.

FIG. 6 is a fragmentary detail showing the application of the modified form of FIG. 5 to a pressurized spray can and,

FIG. 7 is a section of a modified nozzle of the type shown in FIG. 2.

The primary object of the invention is to provide a U-shaped clamp or clip which may be sprung over the rolled lip on the cap of a pressurized spray can. The spring clip is provided with an auxiliary nozzle which may be turned down by means of threads in the clip to hold the valve stem of the pressurized can in a fully or partially open position. The preferred form of the auxiliary nozzle is provided with a bore directing the spray

2

axially through the nozzle. A modified form provides a venturi action for more completely atomizing the spray.

Referring now more particularly to the drawings, a conventional pressurized can or container 10 is provided with a top 11 which is sealed to the can body at 12. A cap 13 is likewise sealed to the top 11 by means of a rolled joint as seen in FIG. 4. Spray cans of the present type are customarily provided with a valve (not shown) in the cap 13 but which has a hollow stem 14 extending above the cap. Depression of the valve stem 14 opens the valve and permits the liquid contents to spray from or through the valve stem under substantial pressure. When it is desired to maintain the valve stem 14 in a depressed or open condition for extended periods of time I provide a resilient clip 15 having lower inturned flanges 16 and 17 with arcuately concave beveled edges 18 and 19, respectively. The curve of edges 18 and 19 corresponds to the standard curvature of the lower lip 20 of cap 13 and the beveled edges assist in permitting the clamp to be snapped downwardly over the lip or edge 20 for positive engagement as shown in FIGS. 3 and 4. The web 21 of the clip carries a threaded jet or orifice element 22 having a head 23 of larger diameter and a bore 24 extending axially therethrough. The upper terminus of the bore 24 may have a restriction 25 to provide the desired atomizing effect. The opposite end of bore 24 flares outwardly at 26 to insure a tight sealing fit on the upper end of the valve stem 14 and also to accommodate slight variations in the outside diameter of the valve stem 14.

In operation, the jet element 22 is retracted by turning it in web 21 of the clip a sufficient amount to permit the clip to be sprung into position on the cap 13. By turning the jet element 22 the threads effect tight sealing engagement between the bore 26 and the valve stem 14 thus permitting the liquid to be sprayed upwardly through the bore 24 and orifice 25. Proper adjustment of the jet element may be used to control the amount of valve opening and, therefore, the rapidity with which the liquid contents of the container are exhausted.

For some pressure cans I may utilize the modified form shown in FIGS. 5 and 6. This form employs a resilient spray clip 15a of substantially the same design as the clip 15 of FIG. 1 except that it may be somewhat narrower. The web 21a of clip 15a is provided with a hole 30 which may or may not be threaded. The modified jet member 31 (FIG. 6) is provided with a knob 32 which extends through the hole 30 and acts as an automatic depressor for the valve stem 14.

A further modified form of valve element 35 is shown in FIG. 7 which introduces auxiliary air to achieve improved atomization. This element is provided with a central bore 36 and auxiliary air inlets 37 and 38. The liquid under pressure passing upwardly through bore 36 is restricted at 39 at high velocity thus creating a venturi action or low pressure area adjacent to inner termini of bores 37 and 38. The auxiliary air thus drawn in provides in some cases more effective atomization particularly in the case of a full valve opening.

The valve control attachment of the present invention may be made of metal or synthetic plastic and is simple to manufacture, easy to install on the conventional pressure can, and permits a wider range of uses of these cans where constant or continuous spray is indicated.

Having thus described my invention, I claim:

1. A fixed valve opening accessory for a pressurized spray can comprising a spring clip having a generally transverse body, a pair of downwardly turned legs on said body, each of said legs terminating in an inwardly turned flange adapted to engage the lid of the pressurized can, and a nozzle element retained in the clip in alignment

3

and in mating communication with a valve stem extending upwardly through the lid of the can.

2. In a pressurized spray can having a can body, a cap with a rolled over edge and a hollow valve stem extending upwardly through said cap, the improvement which comprises a clip anchored under the lip of said cap, and a threaded hollow nozzle adapted to mate and provide communication with said hollow valve stem and maintain said valve stem depressed.

3. In combination, a container having fluid under pressure therein, a depressible valve in said container for releasing pressurized fluid contents of the container, a lip on the container, adjacent said valve, a clamp positioned on the container and having inwardly directed hooks adapted to engage the lip, and means mounted in the clamp in alignment and in mating communication with

4

the valve for opening the valve and maintaining the valve in an open condition to release the contents of the container.

References Cited in the file of this patent

UNITED STATES PATENTS

2,207,176	Phillips	July 9, 1940
2,261,834	Morgan	Nov. 4, 1941
2,591,514	Courtot	Apr. 1, 1952
2,690,895	Barcus	Oct. 5, 1954
2,757,964	Both et al.	Aug. 7, 1956
2,941,728	Paldanius	June 21, 1960
2,975,943	Miles et al.	Mar. 21, 1961
3,057,349	Ismach	Oct. 9, 1962