

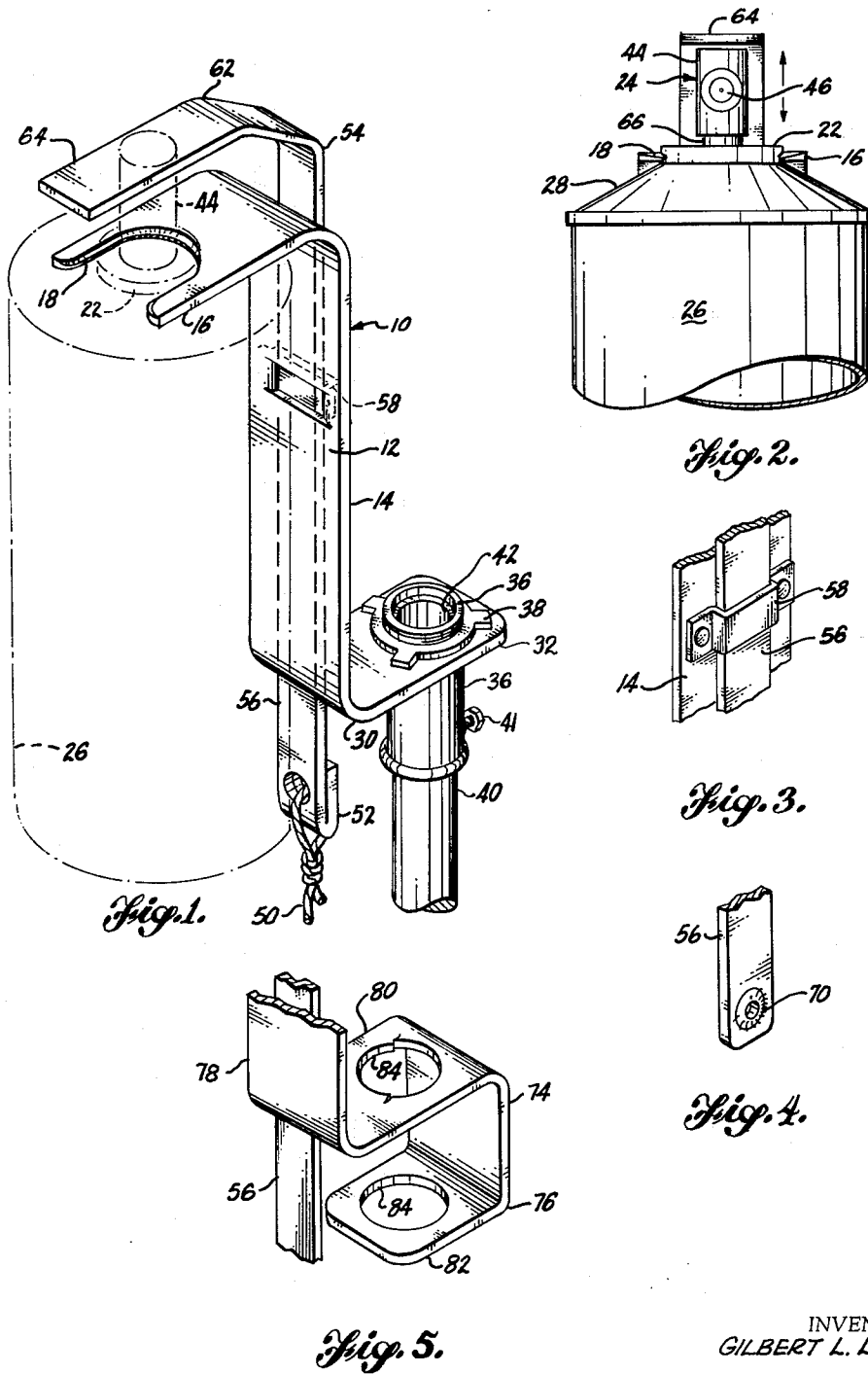
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DEVICE FOR REMOTE OPERATION OF PRESSURIZED SPRAY CAN

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**DEVICE FOR REMOTE OPERATION OF
PRESSURIZED SPRAY CAN**

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3 Claims. (Cl. 222-174)

This invention relates to a device which attaches to a standard hand portable pressurized spray can, making the combination useful to spray insecticides, paints, extinguishers, etc., in areas remote from a user who can position and operate the spraying assembly.

The purpose of the invention is to increase the usefulness of pressurized spray cans extending their use into areas not otherwise readily accessible to the user, such as upper levels of buildings and trees, interiors of conduits, and potentially oxygen-starved atmospheres.

The invention, briefly described, comprises: an assembly of a pressurized spray can holder, its valve actuator and its handle receiver adapted for or combined with an extensive length handle and pull-line to selectively control the amount and direction of a spray discharged at a place remote from the user.

This invention is illustrated in an accompanying drawing of embodiments directed to reliable operating units manufactured at low cost.

FIGURE 1 is a perspective view of a preferred embodiment, the continuation of an extensive length handle and an operating line not being shown and a pressurized spray can being shown in dotted lines;

FIGURE 2 is a partial front view of a pressurized spray can indicating also how can-holding and spray-actuating components of the device are positioned about the spray can;

FIGURE 3 is a partial perspective view of the vertical body of the device indicating its guide to control the valve actuator which is also partially shown;

FIGURE 4 is a partial perspective view of another embodiment of an end of a valve actuator prepared with an embossment to receive an operating line; and

FIGURE 5 is a partial perspective view of another embodiment of the handle receiver formed with a gripping support and a lower alignment support.

The preferred embodiment of the invention centers on the illustrated device 10 shown in FIGURE 1. A body 12 has a straight portion 14 which generally assumes a vertical position during use. At the upper end of this straight portion 14, a bend occurs positioning, at approximately ninety degrees, a spray can top holder 16. This holder 16 presents a U-shaped gripping flange 18 which interfits with the grooved flange 22 of a valve mechanism 24 of spray can 26. The can 26 is then positioned upright alongside the straight portion 14 of the body 12.

The lower end 30 of body 12 is bent in an opposite direction to holder 16, and also at approximately ninety degrees to position a handle receiver 32. This receiver 32 has a circular cutout to receive a tubular fitting 36 secured in place by screw washer 38. Fitting 36 receives a handle 40 which is held in place relative to fitting 36 either by internal threads (not shown) or by a set screw 41 threaded through the side of fitting 36.

As noted, handle 40 may not be threaded and held in place vertically only by the engagement of set screw 41. However, handle 40 may have threads on its end 42 matching interior threads provided in a fitting like fitting 36. A threaded end handle 40 may be identical to or similar to handles available for many items such as floor mops and window washers. By combining lengths of such handles 40 (not shown), an overall resulting assembly may be useful where spraying is to be done at very remote locations.

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The remaining components of the device 10 are directed to operating the valve mechanism 24 positioned at the top 28 of spray can 26. Under axial depression of a valve cap 44, an orifice 46 is aligned presenting a spray exit for the pressurized contents of can 26 which may be alternatively formulated for many purposes such as painting and killing insects.

The downward movement of a line 50, both secured to the lower eye end 52 of a trigger 54 and extended down along handle 40 within reach of the user, causes downward movement of the trigger's guiding body 56 immediately adjacent to straight portion 14 of device 10. Such adjacent movement is assured by a confining guide 58, located on straight body portion 14, which slidably controls the trigger body 56. The trigger 54 movement is parallel to both body portion 14 and handle 40 and occurs readily as the user pulls on line 50.

The top 62 of trigger 54 is bent to form a depressor 64 over valve mechanism 24. This depressor 64 is moved into contact with valve cap 44 and beyond to align orifice 46 for spraying when line 50 is pulled by a user. Orifice 46, upon lowering of valve cap 44, is aligned with an opening (not shown) through hollow valve stem 66. Through these aligned openings the pressurized can contents eject as a spray. Other valve mechanisms (not shown), operable upon reducing the clearance between members such as the depressor 64 and holder 16, likewise are actuated conveniently and reliably.

Some changes in design may be in order, depending on manufacturing preferences and related costs. In the embodiment of FIGURE 4, an open embossment 70 is relied upon to support line 50 rather than a doubled back lower eye end structure 52 of trigger 54 illustrated in FIGURE 1. In both structures the operating objective is similar. Sufficient smooth contact surface is necessary to avoid damage to the line 50 upon repeated pulls.

Where reliance on the availability of prethreaded formed handles 40 is to be avoided and/or where less expensive production methods are sought, handle receiving structure 74 may be used as illustrated in FIGURE 6. By making three bends, lower end 76 of another body 78 is formed in which aligned, spaced, recessed, handle holders 80, 82 are provided. One recess, such as the upper one, is formed with offsets to provide stamped threads 84 which will accommodate threads 42 of a handle 40 or which will form threads in another handle (not shown), made of any wood or material capable of being fastened to the body 78, as threads are formed in its oversized, inserted and rotated end.

The guide 58 may be, in part, stamped out of the body 12, completely formed from the body, or it may be formed by adding a strip secured, for example, by soldering, spot welding, riveting or otherwise.

In various embodiments of the invention, as illustrated or reasonably contemplated, the materials used or to be used are several in number. Generally, the body 12 and trigger 54 are made of metal but some stronger plastic materials could be used. There must be a certain rigidity to control the relative guided movement of trigger 54 adjacent to body 12 or 78. The line 50 can be string, cord and/or wire. The handle 40 can be metal, plastic or wood. Where inadvertent contact with electrical wiring is possible, wood and non conducting plastic formulations are essential as non-conducting handle materials.

Whatever materials may be used or specific embodiments may be chosen, the overall purpose of the invention is to increase the usefulness of pressurized spray cans extending their use into areas not otherwise readily accessible to the user. By his selection of various length handles and corresponding length pull lines to be used

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with the device he obtains a resulting assembly giving himself an ability to spray in remote locations upon a pull of the line.

I claim:

1. An assembly adapted to receive a pressurized spray can and to operate its spray valve mechanism from a remote location, comprising: a body extendable to partially surround a top flange of a pressurized spray can, thereafter partially extendable parallel to a side of a pressurized spray can to form a trigger retainer and control surface, and then outwardly extendable from a pressurized spray can to be a handle receiver; a trigger extendable over a valve mechanism located at a top flange of a pressurized spray can, thereafter partially extendable parallel to a side of a pressurized spray can to restrictively move along the trigger control surface of the body, and then to terminate in a receiver adaptable to hold a pull line; a handle for attachment to the handle receiver of the body; and a pull line for attachment to the receiver on the trigger and placement along the handle.

2. A device adapted to receive a pressurized spray can, comprising: a body extendable to partially surround an upper flange of a pressurized spray can; thereafter extendable parallel to a side of a pressurized spray can to form a trigger restrictive guide, and then outwardly extendable from a pressurized spray can to be a handle receiver; a trigger extendable over a valve mechanism located at an upper flange of a pressurized spray can, there-

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after partially extendable parallel to a side of a pressurized spray can to restrictively move along the trigger restrictive guide of the body and then to terminate in a pull line receiver.

3. A device adapted for connection to a handle and a pressurized spray can, comprising: a body having a straight portion to extend alongside a pressurized spray can; a holder secured to the body adapted to grip a top of a pressurized spray can sub-adjacent the sprayer thereof; a holder secured to the body adapted to receive a handle and having a handle received therein, said handle being elongated to position the pressurized spray can a distance from the user; a trigger slidably juxtaposed to the body; a depressor, arranged on the trigger adapted to contact a sprayer mechanism on the pressurized spray can; and a line receiver secured on the trigger and receiving a pull-line of a length to extend therefrom to approximately the end of the handle received by said body.

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