

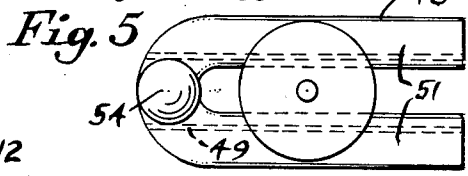
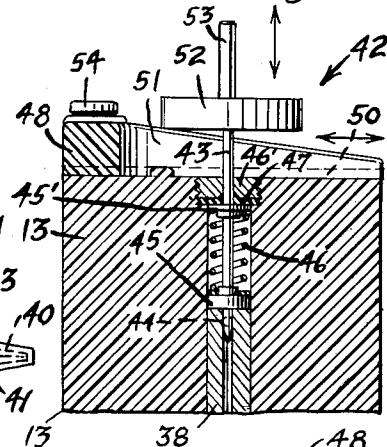
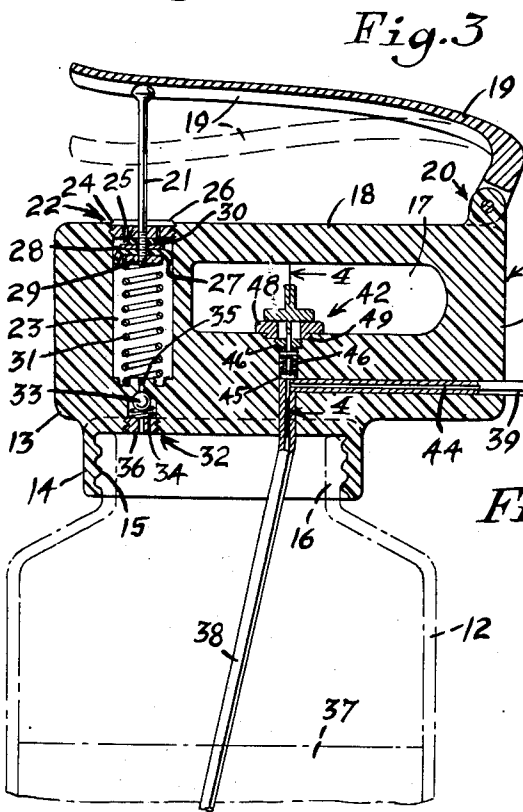
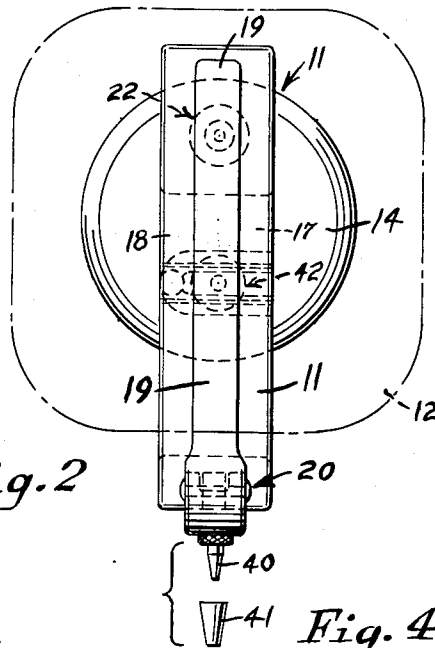
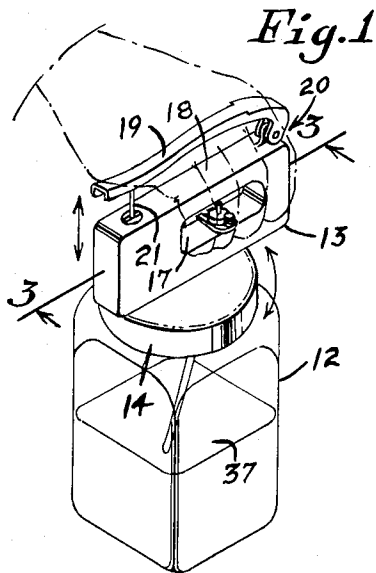
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SPRAY GUN WITH DISCHARGE CONTROLLER

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3,127,070

SPRAY GUN WITH A DISCHARGE CONTROLLER

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2 Claims. (Cl. 222-310)

This invention relates to a spray gun and it consists in the combinations, constructions and arrangements of parts hereinafter described and claimed.

Generally there is provided a horizontally elongated body molded of a suitable alloy or plastic material and having integrally formed on its lower surface a threaded cap for screwing onto a standard Mason jar or a like container. The molded body has a transverse central opening to receive therethrough the fingers of an operator. A vertically swingable lever overlies the top of the molded body and serves as a grip operated means for a container-pressurizing air pump built into the molded body. A finger and/or thumb operated valve controls the flow of liquid from the bottom of the container to and from a nozzle attached to the front end of the molded body.

It is an object of the invention to provide a spray gun having a grip operated pump whereby the spray gun can be simultaneously pointed and pressurized by the gun holding hand of the user, thus freeing his other hand for correlated activities.

It is another object of the invention to provide such a one-hand spray gun with a threaded standard cap base whereby the same can be screwed onto a standard Mason jar, or like container, serving as a readily available and easily replaceable reservoir for the spraying liquids.

It is a further object of the invention to provide a device of the character described having a palm-engageable pump lever and a spray control position for finger and/or thumb operation by the hand embracing the grip portion thereof.

Other and further objects of the invention will become apparent from a reading of the following specification taken in conjunction with the drawing, in which:

FIGURE 1 is a perspective view of a preferred embodiment of the invention,

FIGURE 2 is an enlarged plan view of the spray gun of FIGURE 1,

FIGURE 3 is a side elevational view, in section, taken on line 3-3 of FIGURE 1,

FIGURE 4 is a further enlarged fragmentary elevational view, in section, taken on line 4-4 of FIGURE 3, and

FIGURE 5 is a plan view of the showing of FIGURE 4.

With reference now to the drawing, the numeral 11 generally designates the spray gun unit, while the numeral 12 indicates a standard Mason jar or similar container serving as a reservoir for the spray liquid. The unit 11 is disclosed in the drawing as being molded from a hard plastic material as a rectangular block body 13 having an integrally joined cap portion 14, internally threaded at 15 for screwing onto an externally threaded neck 16 of the jar 12.

The body 13 has a transversely and longitudinally extending opening 17 of a size to receive therethrough the fingers of the operator's hand (FIG. 1). A bridge portion 18 of the body 13 constitutes the lower half of a hand grip, the upper half of which is formed by a palm-engageable lever 19 pivotally connected at 20 to the upper front portion of the body 13. The lever 19 engages the rounded upper end of a piston rod 21 of a piston-type air pump generally designated 22 and next to be described.

The air pump 22 comprises a cylinder formed by a

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vertical bore 23 in the body 13, threaded at its upper open end to receive a metallic cylinder head 24, which is axially bored to guide the piston rod 21 and is apertured at 25 to admit air into the upper end of the cylinder chamber 23. The pump piston comprises a downwardly concave cup or flanged disc 27 of rubber, leather, etc., clamped between two centrally apertured and threaded metallic discs 28 and 29 screwed onto the lower threaded end of the piston rod 21. A cushioning washer 30 of rubber or equivalent material rests on the top of the disc 28. A compression coil spring 31 yieldably urges and holds the piston in its elevated position shown in FIGURE 3.

A ball-type check valve, generally designated 32, comprises a ball 33 urged by a compression coil spring 34 upwardly to normally close an outlet port 35. The spring 34 is compressed between the ball 33 and a centrally apertured threaded disc 36 which removably closes the check valve chamber. Air compressed by grip operation of the pump 22 passes through the aperture in the disc 36 to pressurize the air space in the top of the jar or reservoir 12. The compressed air in the top of the jar 12 forces spray liquid 37 upwardly through a metallic tube 38 for issuance through its horizontal extension 39 embedded in the lower portion of the body 13. The tube extension 39 terminates externally of the front end of the body 13 in a conical spray nozzle 40. A removable conical cap 41 is provided for adjusting the nature of the spray emanating from the nozzle 40 when the gun is in use.

A needle valve, generally designated 42 (FIG. 4), selectively controls the rate of flow of the spray liquid from "off" to a maximum flow rate determined by the viscosity of the liquid and the amount of pressure applied to the reservoir by operation of the pump 22. The needle valve 42 comprises a metering pin or rod 43 the lower end of which is tapered to vary the amount of liquid that can flow around said end as it is raised from its position of FIG. 4, in which position it fully closes off a bore 44 in the tube extension 39. An abutment disc 45 is fixed to the metering pin 43 and is engaged by a compression coil spring 46 which thus acts to urge the metering pin 43 toward its "off" position shown. The upper end of the coil spring 46 bears against another abutment disc 45' slidably mounted on the pin 43 and retained in the valve-housing bore in the body by a peripherally threaded disc 46' screwed in the upper open end of said bore. A packing gland or washer 47 prevents leakage of the spray liquid from the upper end of the valve bore.

The valve 42 is manually operated by a U-shaped element 48 of molded plastic or cast metal. The element 48 has a pair of parallel undercut guide ribs 49 which cooperate with a mating transverse channel 50 cut into the surface of the bottom wall of the finger aperture 17. Thus, the valve operator is slidably guided in the directions of the horizontal arrow of FIG. 4 to raise and lower the metering pin 43 by action of wedge-shaped legs 51 of the operator 48 on a disc 52 fixed to the metering pin 43. A hub 53, which could be omitted if desired, is axially bored to receive the upper end of the metering pin 43. A finger or thumb engageable knob 54 is fixed to the bight portion of the U-shaped member 48 to facilitate its movement transversely of the finger aperture 17 while the spray gun is in use and by the fingers and/or thumb of the hand manipulating the same.

While but one form of the invention has been shown and described herein, it will be readily apparent to those skilled in the art that many minor modifications may be made without departing from the spirit of the invention or the scope of the appended claims.

What is claimed is:

1. A spray gun unit comprising: an elongated body having an integral grip portion and an integral cap portion adapted for quick detachable connection with an open topped portable reservoir, an air pump housed in said body and having an outlet discharging through said cap for filling the upper portion of said reservoir with compressed air, means for operating said air pump including a lever member movably attached to said body, a nozzle mounted on the front end of said body, a liquid conduit extending from said nozzle through said cap and downwardly therefrom so as to approach the bottom of said reservoir, and an adjustable valve in said liquid conduit having control means positioned for operation by the hand holding and manipulating said spray gun and

pump, said adjustable valve comprising a metering pin movable in a bore in said body and said operating means for said valve including a wedge-shaped member mounted in said finger-receiving aperture and a cooperating disc fixed to said metering pin.

2. Structure according to claim 1, said wedge-shaped member being U-shaped so as to straddle said metering pin for balancing the forces exerted against said disc by said member.

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