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(54) TRIGGER SPRAYER DISPENSING SYSTEM

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U.S. Cl. **222/383.3**; 222/383.1;

222/530; 222/538

Field of Search 222/383.3, 530, 222/382, 383.1, 529, 538; D9/337, 347

(56)**References Cited**

U.S. PATENT DOCUMENTS

1,798,708 A	3/1931	Smith
1,869,869 A	8/1932	Smith
1,875,992 A	9/1932	Clifford
3,168,248 A	2/1965	Winslow
3,901,449 A	8/1975	Bochmann
4,621,770 A	11/1986	Sayen

5,154,324 A	10/1992	Stratford
5,400,928 A	* 3/1995	Resnick 206/446
5,469,993 A	11/1995	Hauf et al.
5,553,750 A	9/1996	Foster
D380,148 S	6/1997	Hauf et al.
5,651,908 A	7/1997	Mansfield
6,050,459 A	4/2000	Johnson et al.
6,170,706 B1	* 1/2001	Havlovitz 222/109

^{*} cited by examiner

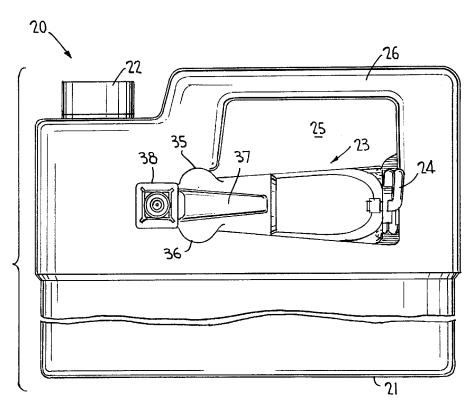
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(57)**ABSTRACT**

The dispensing system for a remote operation includes a trigger sprayer assembly removably mounted to a container of liquid to be sprayed, the assembly being mounted within a cutout section provided at the upper end of the container as part of a through opening forming the carrying handle of the container. The trigger sprayer assembly has a flexible delivery tube which may be coiled and stored within a hollow gripper handle provided on the trigger sprayer, and may extend outwardly from the gripper handle to function as a resilient element for mounting the trigger sprayer in place. A one-piece adaptor is non-removably connected to a distal end of the delivery tube and connects to the container by mounting directly to an external dip tube of the container or by mounting in a closure cap of the container.

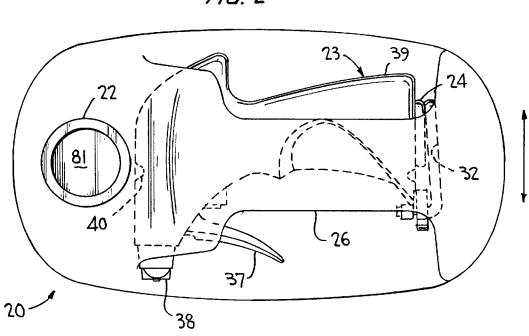
12 Claims, 4 Drawing Sheets

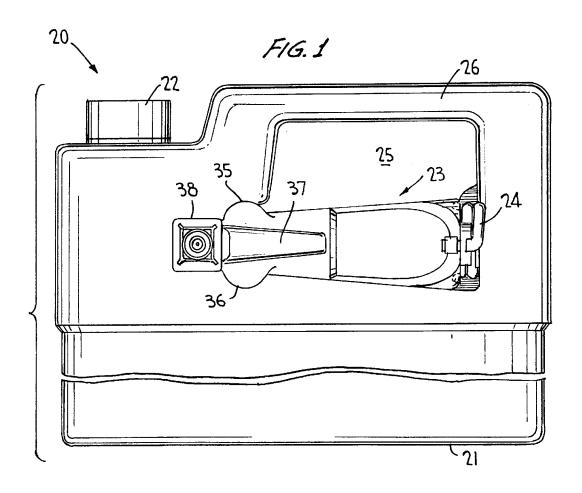




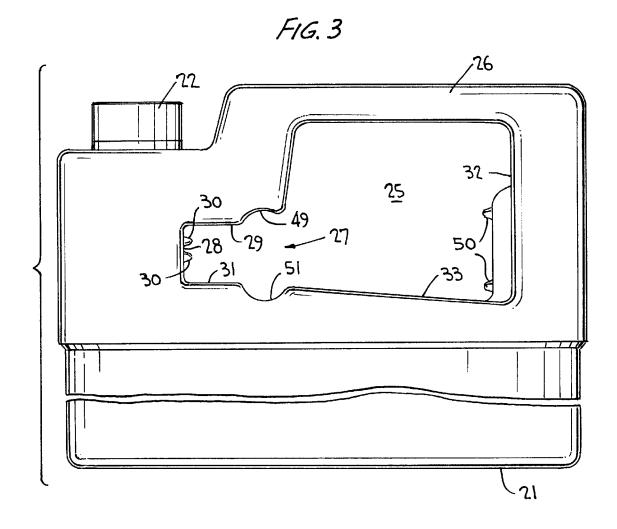


Apr. 9, 2002

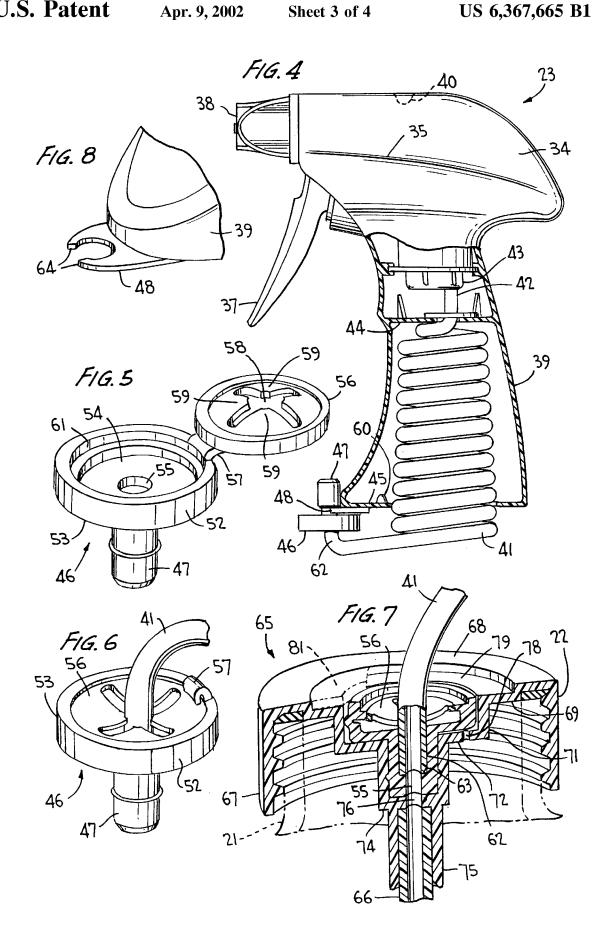


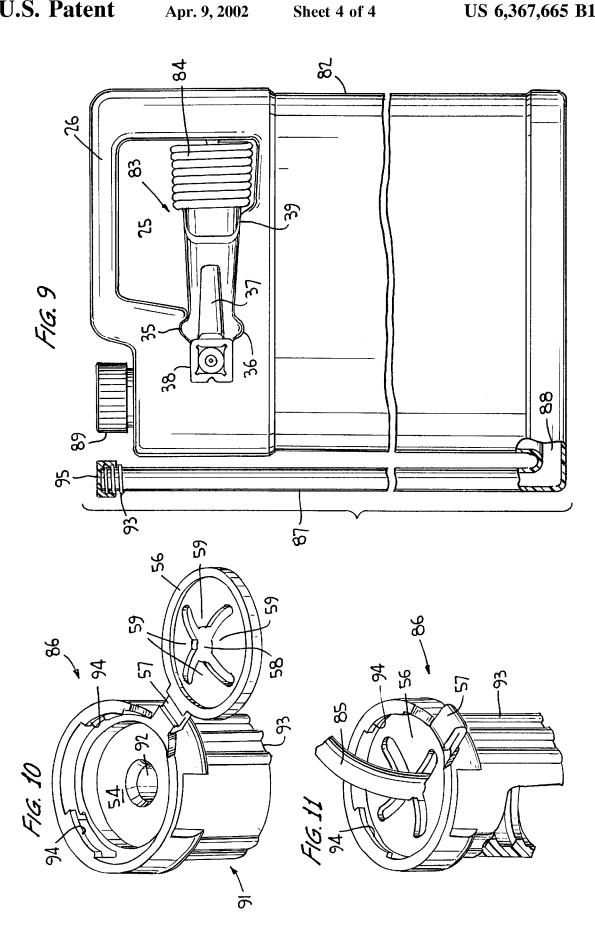












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