

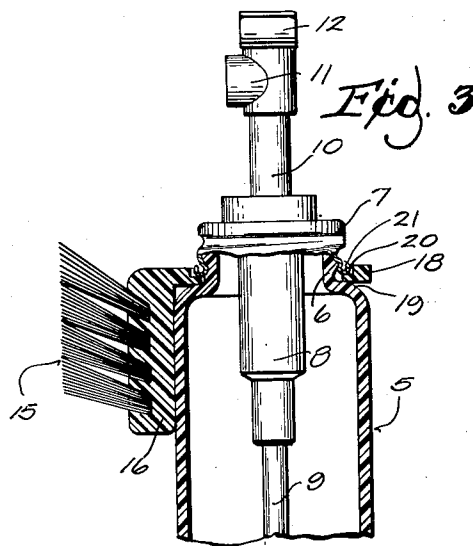
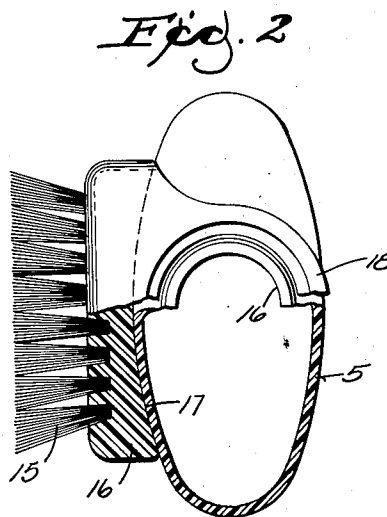
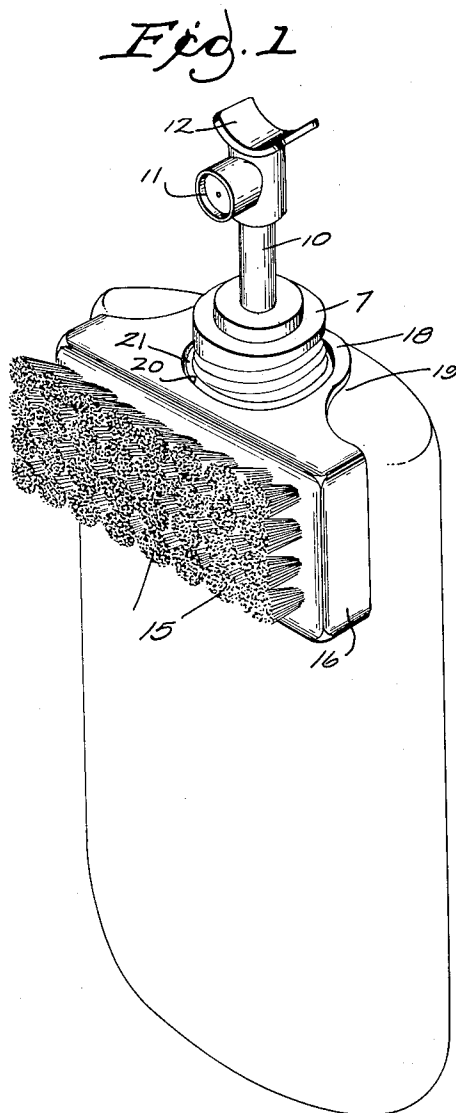
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BOTTLE-MOUNTED SPRAY AND MECHANICAL CLEANER FOR WINDSHIELDS

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BOTTLE-MOUNTED SPRAY AND MECHANICAL CLEANER FOR WINDSHIELDS

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2 Claims. (Cl. 15—105)

This invention relates to a bottle-mounted spray and mechanical cleaner for windshields. While the device is specifically designed for vehicle windshield use, it may also be used in other cleaning operations.

As exemplifying the mechanical means for removing insect debris and other soil from windshields, I have chosen to illustrate a brush rather than a scraper, but the bristles of the brush are desirably set at an angle to project obliquely from the mounting toward the path on which solvent is sprayed from the bottle which serves as a handle for the assembly. Specifically, a solvent bottle is equipped with a cap in which a plunger-type spray pump is mounted and the cap serves to clamp to the bottle a mounting device which, in its preferred form, comprises a ring encircling the neck of a bottle and engaged by the bead of the cap. From this ring depends a backing member which is concavely formed to fit the exterior surface of the bottle and which carries the bristles which mechanically dislodge windshield soil which is softened by the solvent spray. The bottle serves as a handle for manipulating the entire device. It may readily be grasped in one hand while the operator's finger is engaged with a saddle-type element at the top of the spray plunger.

In the drawings:

Fig. 1 is a view in perspective of a device embodying the invention.

Fig. 2 is a view partially in plan and partially in horizontal section showing the mounting device applied to the bottle, portions of the mounting device and bottle being broken away.

Fig. 3 is a view in vertical axial section through the mounting device and a fragment of the bottle, the bottle cap being shown partially in section and partially in side elevation.

The bottle 5 represents any appropriate type of container which is not only adapted to hold and dispense solvent, but is adapted to provide a handle convenient for the operator's grasp. The bottle has a screw-threaded neck portion 6 equipped with a cap 7 on which is mounted a sprayer including a cylinder 8, suction pipe 9 and a plunger 10. The plunger is provided with a laterally directed spray orifice at 11 and a finger-engageable saddle 12 for convenience of manipulation. The sprayer per se is of a well-known type and construction and forms no part of the present invention.

Means is provided for mechanically dislodging soil immediately after application of the solvent spray. This means is exemplified by the brush bristles 15 which are mounted in a backing and mounting member 16 and desirably are inclined upwardly at quite a sharp angle as best shown in Fig. 3. The backing and mounting member 16 may be made of plastic. It has a body portion

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which is fitted closely to the wall of the bottle, being concave at 17 to engage the convex surface of the type of bottle illustrated. Integral with the mounting and backing member 16 is a ring 18 which has an opening of such diameter to pass readily over the neck 6 of the bottle to seat against the shoulder 19 of the bottle. The ring 18 may be counterbored at 20 to receive the bead 21 at the lower margin of bottle cap 7. Tightening the bottle cap clamps the ring securely to the bottle and it is prevented from twisting by the intimate engagement of the concave surface 17 against the front wall of the bottle.

In use, the operator grasps the bottle and, using it as a handle, employs a finger of the hand which grasps the bottle to manipulate the plunger 10 for spraying solvent from the bottle on to the surface to be cleaned. The upward inclination of the bristles 15 is such that these operate in immediate proximity to the point at which the solvent strikes the said surface. Thus, it is possible to use solvents which are highly volatile without risking the drying of the solvent before the mechanical cleansing device can go into action. Any of the well-known windshield cleaning solvents may be used in the bottle, including plain water, fine hydrocarbon oils, alcohol, ammonia solutions, etc.

In practice, the bottle is a flexible walled plastic and pressure developed therein by squeezing the bottle may be relied upon either to supplement pump action or to make it unnecessary. The present invention is not concerned with the particular means by which the solvent is sprayed.

I claim:

1. The combination with a handle consisting of a bottle having a threaded neck, said bottle having a long axis through its neck, a side wall below the neck generally parallel to said axis and offset laterally from the neck, and a threaded cap provided with a finger-operated spray pump having a nozzle directed laterally of said axis, of brush means for mechanically dislodging soil loosened by spray from said nozzle and including a mounting having a bottle-neck-encircling ring clamped between the cap and the bottle, said brush means extending longitudinally of the bottle below the mounting ring in engagement with said wall to be positioned thereby.

2. The device of claim 1 in which the brush means comprises brush bristles on said mounting projecting outwardly from the bottle at an acute angle convergent with the path of spray discharge from said laterally directed nozzle, but not intersecting said path.

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