United States Patent

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[54] COMBINED SPRAYER AND WIPER DEVICE

2 Claims, 5 Drawing Figs.

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[50] Field of Search 401/137–139, 140, 148; 222/192,321

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ABSTRACT: A sprayer and wiper device for windows, furniture and the like, having a tubular handle which pivotally mounts at one end a soft, absorbent wiper pad. The handle carries a cleaning or waxing solution and at its other end a spray device for spraying the solution on window or furniture surfaces. Thus with a single utensil the user can easily spray the desired surface and wipe the same.

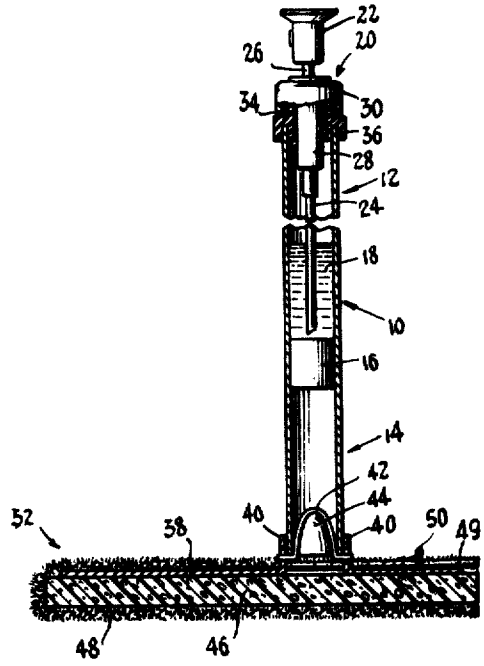


Fig. 1

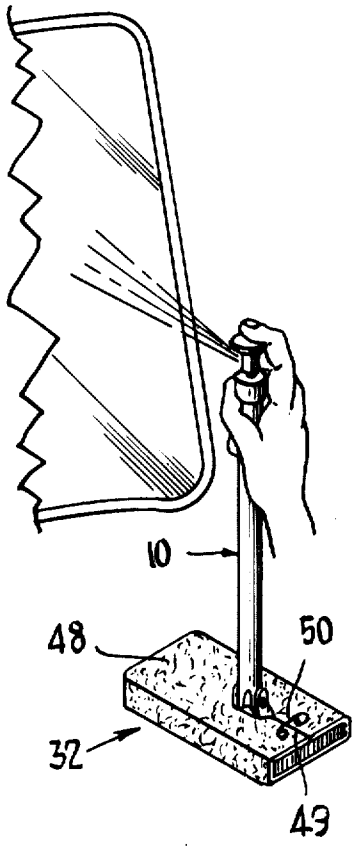


Fig. 2

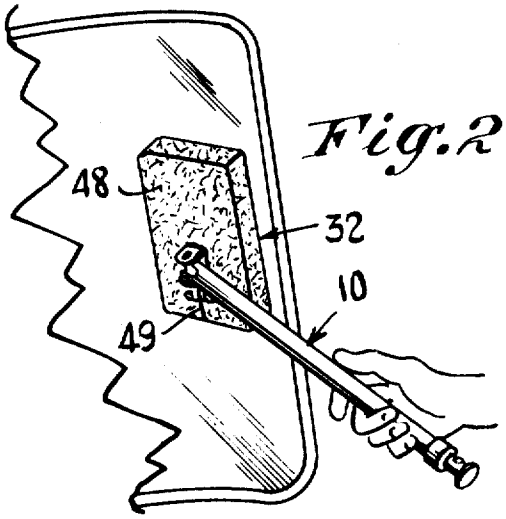


Fig. 3

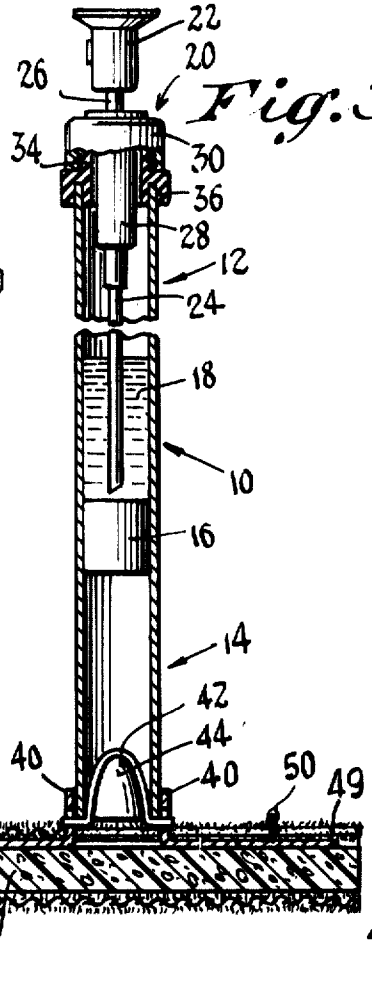


Fig. 4

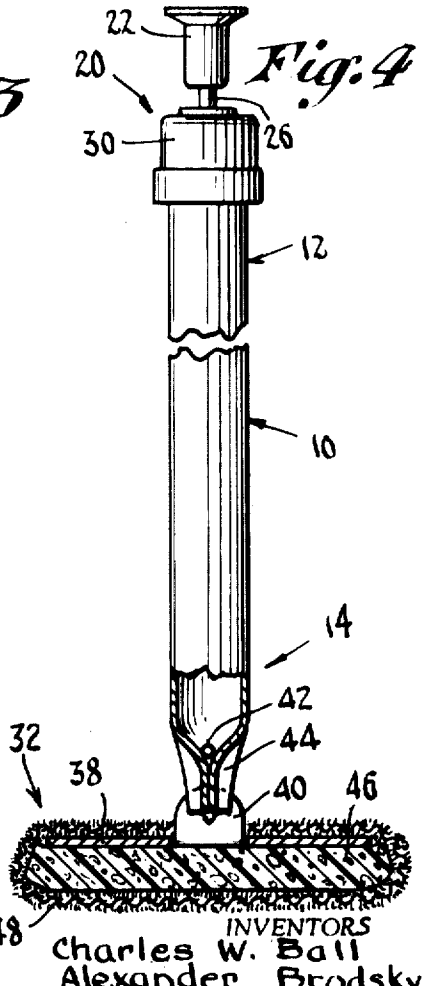
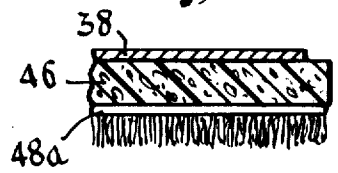


Fig. 5



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COMBINED SPRAYER AND WIPER DEVICE

BACKGROUND

This invention relates to combined spraying and wiping devices for windows, furniture and the like.

Heretofore such devices were too costly in their manufacture to attain wide consumer acceptance, or did not have sufficient utility to enable hard-to-reach surfaces or areas such as inside surfaces of windshields to be easily, thoroughly cleaned or waxed. Further, the angular movement or manipulative capacity of the wiper pad in prior devices was insufficient to enable full, easy contact with the desired surface to be had, so that thorough wiping of the same was not possible.

SUMMARY

The above disadvantages and drawbacks of prior spray and wipe devices are obviated by the present invention, one object being the provision of an improved device of this kind which is especially inexpensive to fabricate and produce and which has as well a large range or capability of angular movement of the wiping pad, all to the end that the low cost and effectiveness will result in wide consumer acceptance. The foregoing is accomplished by the provision of an elongate hollow or tubular handle having a spraying end and a wiping end, the handle itself constituting the container for the cleaning or waxing solution. At the spraying end, the handle has an inexpensive yet effective spray device such as a reciprocable pump, to deliver the solution to the window glass or other surface in a fine spray.

The wiping end of the handle has a pivotally mounted soft, absorbent wiper pad carried by a simple pintle-and-lug mounting means whereby the pad is capable of large angular movement and also limited movement in other directions to enable the glass or other surfaces after being sprayed to be easily wiped clean even though the user's field of action is partially obstructed, or is restricted due to awkward positioning or the like.

Other objects of the invention reside in the provision of an improved sprayer-wiper as above set forth, which is simple and easy to operate, compact and light in weight, strong, durable, capable of repeated, useful service, and which can have a variety of uses and applications.

Other features and advantages will hereinafter appear.

In the drawings:

FIG. 1 is a diagrammatic perspective view of the sprayer-wiper device being used to spray the inside of a windshield;

FIG. 2 is a diagrammatic perspective view of the device being used to wipe clean the previously sprayed inside surface of the windshield;

FIG. 3 is an axial sectional view of the sprayer-wiper device, taken in a plane through the axis of the pivotal mounting for the wiper pad;

FIG. 4 is a view partly in side elevation and partly in section, the latter being in a plane normal to the pivotal axis of the pad mounting means; and

FIG. 5 is a fragmentary section through a polishing pad constituting another embodiment of the invention.

The present improved sprayer-wiper for cleaning windows, waxing furniture and the like has special utility in reaching out-of-the-way or hard-to-get-at surfaces such as the insides of automobile windshields, legs and rungs of chairs, etc. Referring to FIGS. 1 and 2, the sprayer-wiper device is illustrated as respectively applying a thin spray of cleaning solution to the inside surface of a windshield and thereafter wiping the windshield surface clean with the absorbent wiper-portion or pad of the device.

The combined sprayer-wiper device comprises a tubular handle **10** having a sprayer portion **12** which includes one handle end, and having a wiper portion **14** which includes the remaining handle end. Disposed intermediate the ends of the handle **10** is a transverse watertight wall **16** which may, for example, comprise a Neoprene or other suitable press-fit plug. The handle **10** may be constituted of rigid plastic tubing, or it may be formed of metal tubing such as aluminum or the like. The transverse wall **16** separates the bore of the handle **10** into two portions, one of which (indicated at **12**) is intended for holding the cleaning or waxing solution **18**.

Mounted on the sprayer portion **12** of the handle is a spray device **20**, including an exposed spray head **22** and a siphon tube **24** extending into the bore of the handle portion **12**. The spray device **20** may comprise a reciprocating pump, having a plunger shank **26**, a pump body or cylinder **28**, and a screwcap mounting **30**. Further details of the spray device are not given herein since such devices are well known in the sprayer art, and since the pump device per se forms no part of the present invention.

Pivotally carried on the other or remaining end **14** of the handle **10** is a soft, absorbent wiper pad **32**, such pad being capable of pivotal movement through an arc of at least a right angle, and also being capable of limited movement in other directions for the purpose of facilitating its application to hard-to-reach window or other surfaces, such as those before which a user cannot directly stand. To a limited extent, the wiper pad **32** has somewhat of a universal movement, and this constitutes an important feature of the invention, as will be later brought out.

Returning to the spray device, the invention provides a novel annular adapter **34** having exterior screw threads adapted to accommodate the screwcap **30**. Also, the adapter **34** has a relatively deep annular groove **36** in which the sprayer end portion **12** of the handle is snugly received, and in which it may be cemented by the use of a suitable adhesive. The adapter **34** is preferably constituted of a resilient rubber or plastic substance having appreciable hardness whereby the screw threads will not strip past themselves when the screwcap **30** is applied. The screw threads are closely matched and have a tight fit whereby they constitute a leakproof connection between the cap and adapter. Similarly, a tight leakproof connection is established between the adapter **34** and the sprayer end of the handle **10**, by virtue of the snug fit.

In accordance with the invention, the wiper pad **32** is pivotally carried in a simple, low-cost manner at the wiper end portion **14** of the handle. The wiper pad **32** comprises a metal plate **38** having a pair of struck-up apertured mounting ears **40** adapted to accommodate the end, bearing portions of a generally U-shaped pintle piece or wire **42**. The pintle wire **42** is clamped in the wiper end **14** of the handle by flattening the latter and pressing together opposite wall portions **44** thereof so that these meet in the plane of the pivotal axis established by the wire piece **42**. The end portions of the pintle piece **42** are accommodated in the apertured ears **40** of the pad plate, and preferably the apertures of such ears are in the nature of slots whereby loose connections are established, enabling the pad plate to have a limited wobble or movement other than in the plane of the pivotal axis.

Held against the pad plate **38** is a sponge or foam pad **46**, this being secured in place by a wiper boot **48** of Terrycloth, absorbent (Turkish) toweling or the like. The Terrycloth boot **48** is in the form of a flat, closed-end tube having a slit **49** extending halfway into one side and communicating with the open end. The boot is held in place by a small safety pin **50**, being drawn up tightly so as to partially compress the sponge pad **46**.

The sponge pad **46** is slightly larger than the metal pad plate **38** whereby the end portions are partially wrapped or folded over the plate edges, as clearly seen in FIG. 4. Also, the struck-up apertured ears **40** are not disposed centrally of the ends of the pad plate **38** but instead are offset so that the handle **10** is nearer to one end of the wiper pad **32** than it is to the other end.

The foregoing constructions constitute important features of the invention whereby there is no likelihood of sharp edges of the pad plate **38** scratching or marking the windshield or other surfaces, and whereby the application and use of the

wiper pad **32** is made more flexible, enabling the user to reach more readily corner or hard-to-get-at portions of the work surfaces.

Together with the limited universal movement of the wiper pad **32**, these features facilitate the effective wiping of the glass or furniture surfaces. The pivotal mounting comprising the pintle piece **42** and apertured ears **40** is seen to be especially simple and low in cost, while at the same time being sturdy and reliable in use. The Terrycloth boot **48** may be easily removed and reversed, and also may be readily washed clean whenever desired, this being also true of the sponge pad **46**.

The present sprayer-wiper device has important uses in connection with the waxing of furniture. Referring to FIG. **5**, the pad plate **38** and sponge pad **46** may have applied to them a lambswool polisher-type boot **48***a* which is especially adapted for polishing furniture that has been spray-waxed. In place of the cleaning solution, the handle **10** may contain a sprayable furniture polish or wax, in this connection.

It will now be seen from the foregoing that we have provided a novel and improved sprayer-wiper device which is especially simple in its construction, utilizing a hollow or tubular handle in a unique manner as the container for the cleaning or waxing solution. The sprayer-wiper device employs an especially inexpensive spraying unit comprising the reciprocable pump **20**, and has a low cost wiper pad and pivotal mounting means therefor, whereby the overall cost of the unit is held to a low figure.

Variations and modifications are possible.

We claim:

1. A combined sprayer and wiper device, comprising in combination:

a. a tubular handle having a sprayer portion including one end, and a wiper portion including the remaining end,

b. said tubular handle being adapted to hold a liquid solution,

c. a liquid spray device mounted on the sprayer portion of the handle and including an exposed spray head and a siphon tube extending into the bore of the handle,

d. a soft, absorbent wiper pad,

e. means pivotally mounting the wiper pad on said wiper portion of the handle, for pivotal movement through an arc of at least a right angle,

f. an annular adapter having exterior screw threads,

g. said pump including a screw cap threaded on the adapter,

h. said adapter having an annular groove in which the sprayer end of the handle is snugly received.

2. A combined sprayer and wiper device, comprising in combination:

a. a tubular handle having a sprayer portion including one end, and a wiper portion including the remaining end,

b. said tubular handle being adapted to hold a liquid solution,

c. a liquid spray device mounted on the sprayer portion of the handle and including an exposed spray head and a siphon tube extending into the bore of the handle,

d. a soft, absorbent wiper pad,

e. means pivotally mounting the wiper pad on said wiper portion of the handle, for pivotal movement through an arc of at least a right angle,

f. said pivotal mounting means for the wiper pad comprising an apertured hinge member and a pintle passing through the aperture thereof,

g. the aperture of said hinge member comprising a slot to enable the wiper pad to have limited universal movement.