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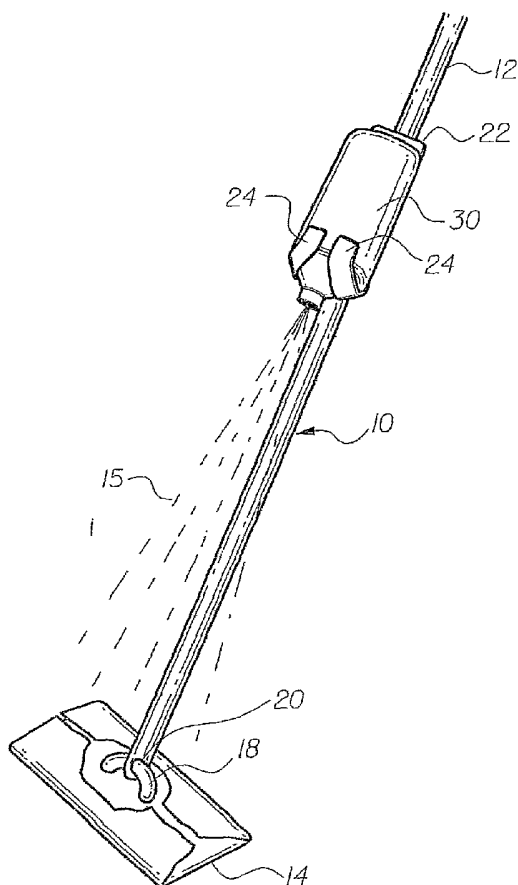
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(54) Title: CLEANING MOP



(57) Abstract: The mop has a mop handle with a mop head at one end and a handle grip at the other end. Intermediate the mop head and the handle grip is a container holder and a container. The container is held in the container holder with the dispensing end of the container facing downward to the floor. Depending on the orientation of the container holder on the mop handle the liquid in the container can be dispensed "for" or "aft" of the mop head. Further, the container can be removed from the mop handle and the liquid dispensed onto the floor. The liquid is dispensed from the container by squeezing the container.



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Cleaning Mop

5

Field of the Invention

This invention relates to a cleaning mop which has integral to said mop handle a removable source of a liquid. More particularly this
10 invention relates to a mop where the removable source of a liquid can be used in conjunction with the mop or separate from the mop.

15

Background of the Invention

There is a long history in the development and use of dispensing mops. These have been used for floor cleaning and for floor polishing. These mops have some common characteristics. These include a mop handle with a mop head at one end and a hand grip at the other end.
20 Mounted on the handle or at the mop head there can be a reservoir for the liquid that is to be dispensed by a mechanism that usually is controlled at the hand grip. Upon activation at the hand grip the liquid is sprayed onto the floor. This can be sprayed by a pump mechanism or under gravity flow. Gravity flow is useful when the reservoir is mounted at
25 a point on the handle intermediate the mop head and the handle grip. However, these mops have limited versatility in use. The mop has to be maneuvered to dispense the liquid, be it a cleaning liquid or a wax. The present invention increases the versatility in the use of mops by making it easier to apply the cleaning liquid to a floor.

30

Brief Summary of the Invention

The present mop comprises a mop handle with a mop head at one
35 end and a handle grip at the other end. Mounted between the mop head and the handle grip is a holder for a liquid reservoir, i.e., a container. The

mount for the liquid reservoir is securely attached to the handle with a dispensing end of the liquid reservoir facing downwards toward the mop head. The liquid reservoir can be mounted to deliver liquid forward or rearward of the mop head. The liquid reservoir will have flexible sidewalls
5 so that upon squeezing the sidewalls the liquid is dispensed. Further the container that comprises the liquid reservoir can be removed from the mount and the liquid dispensed separate from the connection with the mop.

10 The liquid reservoir container will have a valve at the dispensing end that is responsive to an increase in pressure in the bottle. This valve can be of any type, but with a duckbill or a silicone valve being preferred. The container at an end opposite the liquid dispensing end optionally can have a valve to permit air to enter the container to replace the dispensed
15 liquid. This is not necessary when air can enter through the dispensing valve. The liquid reservoir container will be constructed of any of the commonly used resins useful to blowmold containers. These include the polyolefins such as polyethylenes and polypropylenes, polyvinyl chloride and polyesters such as polyethylene terephthalate.

20 The mop head will be attached to the mop handle through a universal arrangement for easy maneuvering of the mop head. In addition the mop head will usually have an attached reusable or disposable wipe, cloth or pad.

25

Brief Description of the Drawings

Figure 1 is a perspective view of the mop with the liquid reservoir set to
30 dispense liquid forward of the mop head.

Figure 1A is a perspective view of the mop with the liquid reservoir set to dispense liquid rearward of the mop head.

35 Figure 2 is a view of a liquid being dispensed directly from the liquid reservoir container.

Figure 3 is a view of the mount for the liquid reservoir.

Figure 4 is a perspective view of the liquid reservoir with the dispensing
5 valve.

Figure 5 is a top plan view of the container of Figure 4.

Figure 6 is a bottom plan view of the container of Figure 4.
10

Detailed Description of the Drawings

The present mop will be described in more detail and in preferred
15 embodiments with reference to the drawings.

Figures 1 and 1A show the mop in two configurations for the mounting of container 30. The mop 10 is comprised of a handle 12 with a mop head 14 at one end and a hand grip (not shown) at the other end.
20 The container 30 is mounted intermediate the mop head and the handle grip. The container can be mounted to deliver the contained liquid forward (Figure 1) or rearward (Figure 1A) of the mop head 16. This is determined by the orientation of the container holder 22 on the mop handle 12. The container holder 22 has grips 24 for securing the
25 container 30 onto the container mount 22.

The container 30 in Figures 1A and 1B is shown as mounted on the front or rear of the handle 12. The container, or the container neck, is oriented so that the bottle will deliver a spray or stream of liquid
30 sufficiently ahead of or behind the mop head 14 so as not to wet the mop head. In this regard the container holder can be at an angle to the longitudinal axis of the handle. The angle can be about 5° to 45°, and preferably about 10° to 25°. The angle will be determined to a degree depending on the front or rear mount of the container holder into the
35 handle. If it is not desired to have the container at an angle, the neck of the bottle can be angled at an angle of about 5° to about 45°, and

preferably about 10° to about 25°. This likewise will deliver the contained liquid sufficiently in front of, or rearward of, the mop head 14 so as not to wet the mop head 14.

5 A further alternative is to orient the container holder 22, or the container neck 36, so as to deliver the spray or stream of liquid from the container to the left or right side of the mop head 14. This is a useful embodiment of the mop.

10 The mop head 14 has a replaceable wipe or pad that can be attached adhesively or mechanically. Velcro strips can conveniently be used for attaching the wipes or pad to the mop head. The wipes can be essentially any woven or non-woven material, a foam, or any other commonly used cleaning item. A pad can be a plastic foam or fibers, or layers of cloths bonded together. The handle 12 is attached to the mop head 14 by any convenient arrangement such as the rod 18 on the mop head and aperture 20 on the handle. It is preferred that the connection be non-rigid. Attachment through a common universal joint also can be used. As noted above the container 30 will dispense a liquid 15 onto the floor either forward or rearward of the mop head in the form of a stream or spray.

20 The mop head 14 can be essentially any shape. The mop pad 16 will fit into the mop head 16 using any convenient holding technique, including the use of Velco. The mop pad can be of essentially any shape or structure.

25 Figure 2 shows the container 30 dispensing liquid 15 free of the mop handle. The container also can be used in this way. This way of use gives the user of the mop more control over where the liquid is applied.

30 Figure 3 is a view of the holder 22 attached to handle 12. Attachment can be by means of an adhesive, through the use of fasteners such as screws or by a two prong clip. Essentially any known technique can be used.

35 Figure 4 is a view of the container showing the exit valve 38 and the use of silicone valve available from Liquid Molding Systems, Inc. of Midland, Michigan and its licenses produce silicone valves. Such

dispensing valves are disclosed in U.S. Patents 5; 213,236; 5,339,995; 5,377,877; 5,409,144; and 5,439,143 which are incorporated herein by reference. A common duckbill type of valve also can be used. The container 30 is comprised of the container body 32, shoulder 34 and neck 36. The container body 32 will be flexible as also can be shoulder 34. The valve is seen in more detail in Figure 5. This is in the shape of a cross but it can be in essentially any other shape. In Figure 6, the base 40 of the bottle, is shown with an air check valve 42. This air check valve allows air to enter the container 30 after a dispensing to replace the dispensed liquid. Any known check valve can be used.

The container can be made from any commonly used bottle making resins such as polyethylenes, polypropylenes, polyesters such as polyethylene terephthalate and polyvinyl chloride. The mop handle can be plastic, metal or wood. The mop head usually will be a plastic.

In use the liquid 15 can be applied to the floor "fore" or "aft" of the mop head by squeezing the container. In addition the container can be removed from the mop holder 22 and the liquid 15 directly applied to parts of the floor by squeezing the container. This is applied as a spray or stream depending on the structure of the valve 38. The floor then is wiped clean. After moping the wipe 16 can be removed from mop head 14 and replaced with a new wipe.

This mop construction provides for versatility in use and for more control over the dispensing of the liquid onto the floor. There is more control over where the liquid is dispensed and the amount dispensed.

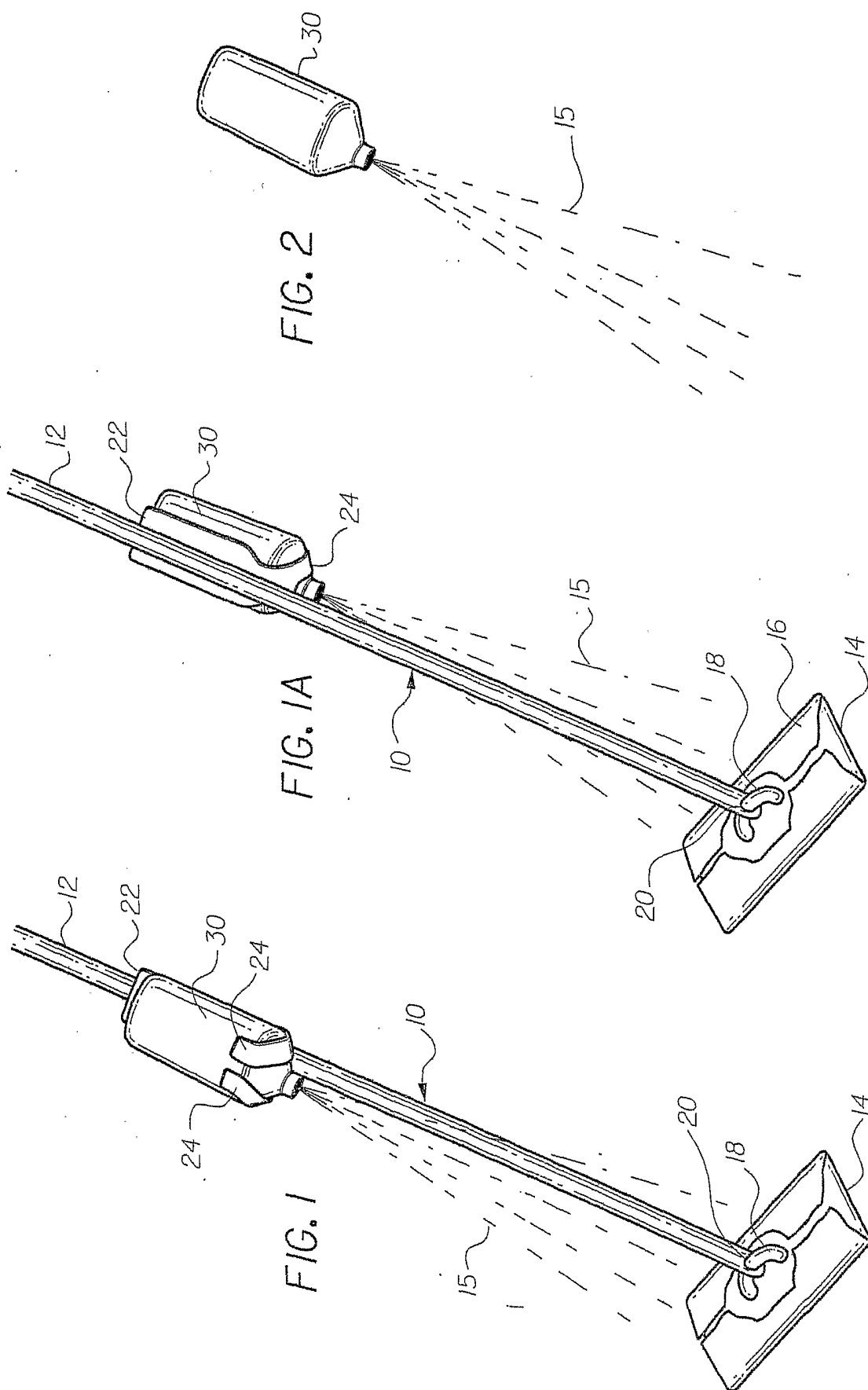
Claims

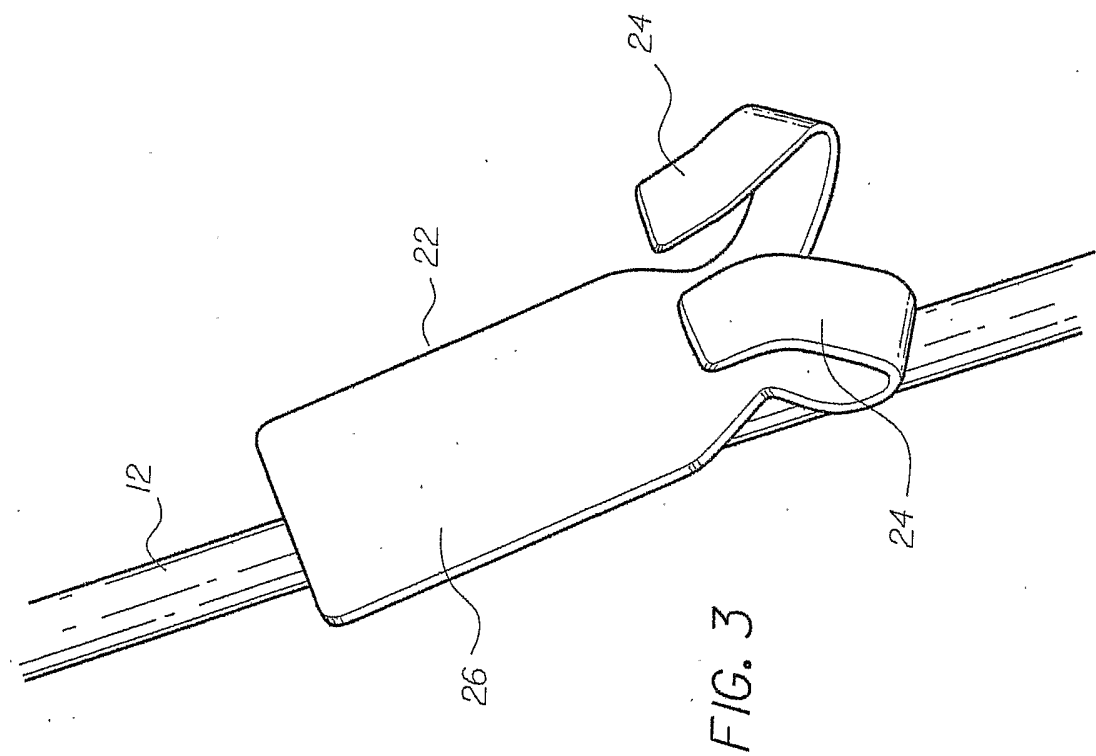
5 *What is claimed is:*

1. A mop comprising a mop handle, a mop head at one end of said mop handle, a mount for a container attached to said mop handle a distance from said mop head, and a container held by said mount.
10
2. A mop as in claim 1 wherein said mop head has a cleaning wipe attached thereto.
3. A mop as in claim 2 wherein said mop handle is attached to said mop head by a means which allows the mop head to move with respect to
15 said mop handle.
4. A mop as in claim 1 wherein said mount is located on said mop handle in an orientation such that a dispensing bottle in said mount will
20 dispense a liquid forward of said mop head.
5. A mop as in claim 1 wherein said mount is located on said mop handle in an orientation such that a dispensing bottle in said mount will dispense a liquid rearward of said mop head.
25
6. A mop as in claim 4 wherein said mount will permit a liquid to be dispensed while attached to said mount.
7. A mop as in claim 5 wherein said mount will permit a liquid to be
30 dispensed while attached to said mount.
8. A mop as in claim 1 wherein said container has flexible walls.
9. A mop as in claim 1 wherein said container has a self-closing
35 silicone valve at an exit thereof whereby upon the application of a given

force the silicone valve is activated to dispense a liquid from said container.

10. A mop as in claim 9 wherein on a surface of said container remote
5 from a dispensing end there is a pressure relief valve.





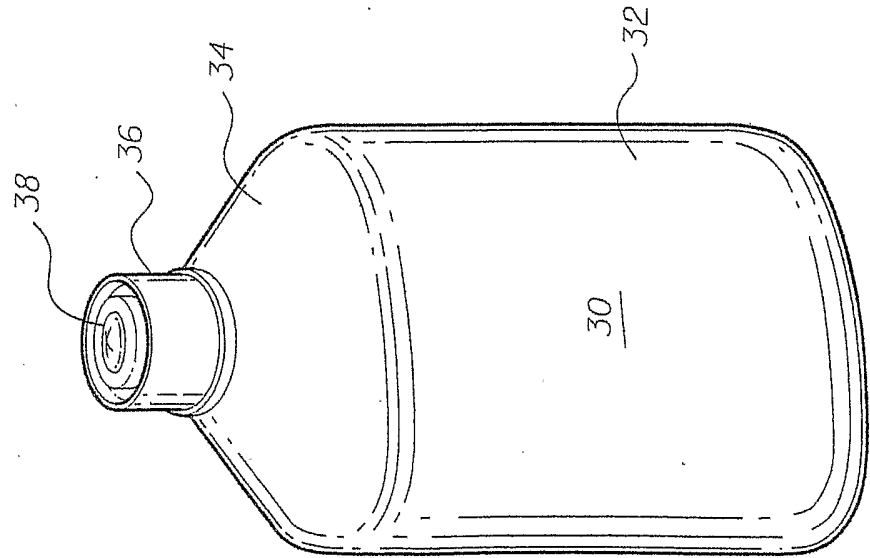


FIG. 4

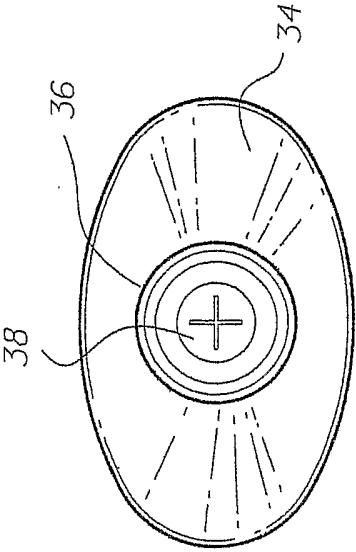


FIG. 5

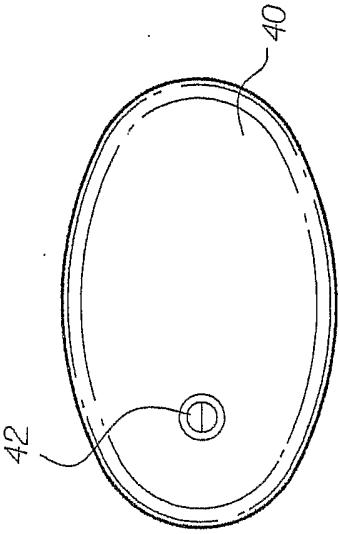


FIG. 6