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R. G. HARRISON ET AL

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ATTACHMENT FOR FLOOR TREATING APPARATUS

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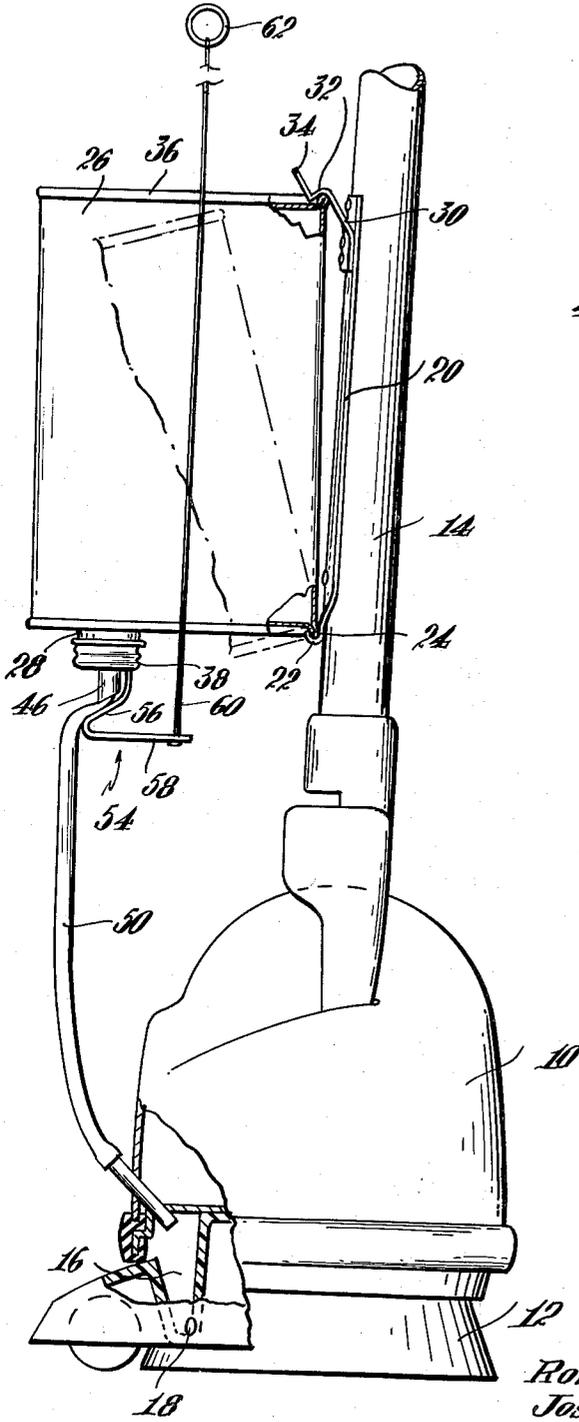


Fig. 1

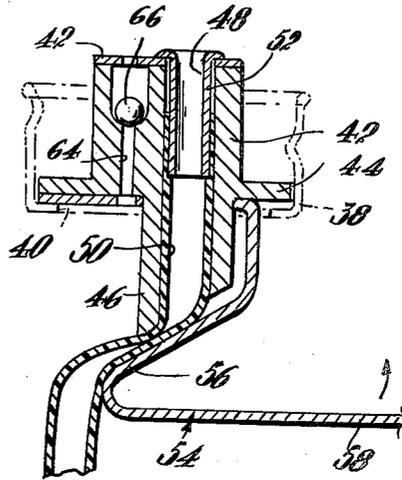


Fig. 2

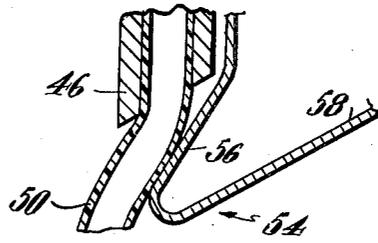


Fig. 3

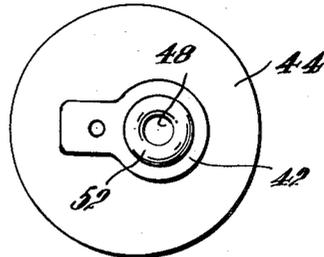


Fig. 4

INVENTORS

Robert Gordon Harrison

Joseph W. Manning

BY Robert Cushman & Grover
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1

2,990,979

ATTACHMENT FOR FLOOR TREATING APPARATUS

Robert Gordon Harrison, Waltham, and Joseph W. Manning, Lynn, Mass., assignors to Signal Manufacturing Co., Lynn, Mass., a corporation of Massachusetts
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This invention relates to an attachment for floor treating apparatus and has for its principal objects to provide means for attaching the container of a "brand" cleaning or polishing compound, as it is purchased, to the handle of the apparatus, and means for controlling the flow of the content of the container therefrom to the applicator of the apparatus. Other objects are to provide clamping means which will permit mounting and dismounting the container on the handle without need for tools or adjustment and yet will not release the container until manually actuated. Further objects are to provide a simple valve assembly which may be substituted for the original screw cap on the container and means for opening the valve, when desired, which is accessible to the operator at the upper end of the handle of the apparatus.

In accordance with the invention the attachment comprises a valve assembly for engagement with the spout of the container, including a flexible conduit extending therefrom to the applicator of the apparatus, means normally holding the conduit collapsed to prevent escape of the content from the container, operator controlled means connected to the last-named means operable to hold the last-named means retracted to permit the content to flow through the conduit to the applicator, and a vent valve permitting inflow of air to the container as the content escapes. The operator controlled means may extend upwardly along the handle to a place conveniently accessible to the operator. The clamping means includes a pair of vertically spaced hook-shaped elements for engagement with the rims at the bottom and top of the container, the latter being yieldable to and from the handle to increase and decrease the spacing between the hooks for engagement and disengagement of the container therefrom.

The invention will now be described in greater detail with reference to the accompanying drawings wherein:

FIG. 1 is an elevation from one side of an applicator, with the latter broken away in part, showing the assembly including a container supported on the handle with a conductor extending from the container to a distributing well adjacent the applicator;

FIG. 2 is a diametrical section of the valve assembly showing the conduit in its collapsed position, preventing escape of the content from the container;

FIG. 3 is a fragmentary section showing the spring finger retracted to permit the content to flow from the container through the open conduit; and

FIG. 4 is a plan view of the valve assembly as seen from the top side of FIG. 2.

Referring to the drawings, there is shown one kind of floor treating apparatus with which the attachment may be used, which comprises a housing 10 containing a motor (not shown), a brush 12 which is rotated by the motor, and a handle 14 for pushing the apparatus over the floor or floor covering which is being treated. In this particular apparatus, as shown at the lower left-hand side which is broken away, the housing has a pocket-like well 16 which skirts a portion of the brush, in the lower part of which there are orifices one of which is shown at 18 for distributing liquid supplied to the well to the peripheral surface of the brush. While the apparatus is here illustrated as having a single brush 12, it may be of the double brush variety. Moreover, the

2

attachment may be employed with any kind of floor treating apparatus whether employing a brush or pad and whether having a motor driven applicator or a fixed applicator.

In accordance with the invention, there is fastened to the handle 14 a flat narrow strip of metal or other suitable material 20, having at its lower end an upwardly facing hook 22 for receiving the rim 24 about the top of a container 26, such as may be purchased in any store dealing in floor cleaning and treating compounds. Usually, the container is a metal can of circular or rectangular cross-section having at its top a pouring spout 28 which is threaded for reception of a screw cap. Vertically above the hook 22, either integral with the strip 20 or fastened thereto, is a latch which includes a resilient shank 30, a hook 32 and a cam finger 34. The hook 32 faces downwardly and is engageable with the rim 36 at the bottom of the container, as shown in FIG. 1. The shank 30 being flexible allows the hook to be moved to and from the handle and it can be readily seen that as the shank is moved toward the handle the distance between the hooks 22 and 32 may be increased and when moved away from the handle the distance decreased. The weight of the container tends to pull the shank 30 away from the handle and hence to draw the hooks toward each other thus to clamp the container firmly in place. To insert the container the rim at its upper end is placed in the hook 22 and then it is tipped inwardly, as shown by the dotted line representation of the container, until the rim at the bottom contacts the cam finger 34. Continued pressure presses the shank toward the handle until the jaw 32 is separated far enough from the jaw 22 to permit the rim 36 to become engaged with it. The container may be released manually by grasping the cam finger 34 and pulling it rearwardly.

The valve assembly comprises a screw cap coupling 38 which is adapted to be placed on the spout 28, having an opening 40 through its top, and a valve body 42 disposed in the cap. The valve body has a flange 44 corresponding substantially in diameter to the inside of the cap so that when the cap is screwed on the pouring spout the valve will be clamped against the end of the pouring spout between it and the top of the cap. A nipple 46 extends from the valve block through the opening in the cap and is beveled at its outer end to provide an abutment. A discharge passage 48 is formed in the block so as to extend from its inner side through the nipple 46 and one end of a flexible conduit 50 is inserted in the passage 48, being fixed therein, for example, by a sleeve 52. The flexible conduit for example a plastic tube extends from the nipple downwardly, as shown in FIG. 1, to the applicator housing and is inserted through an appropriate opening in the housing into a position such that its discharge end is within the well 16.

A resilient finger 54 is mounted on the cap so that a portion 56 yieldingly bears against the conduit and pinches it against the beveled end of the nipple 46 so as to collapse the conduit and prevent escape of fluid from the container so long as the finger holds the conduit collapsed. An arm 58 extends from the finger and has fastened to it one end of a cord or other flexible element 60, by means of which the finger may be pulled away from the end of the nipple, as shown in FIG. 3, so as to permit the conduit to resume its normal open position, thereby to permit fluid to discharge through the conduit. For convenience the cord is long enough to reach the top of the handle and may be provided with a finger ring 62 to facilitate grasping it for operation.

A vent passage 64 is provided in the valve block to permit air to enter the container as the fluid leaves it and

escape of fluid through the vent passage is prevented by a check valve 66 situated at its inner end.

As previously pointed out, the attachment consisting of the clamping means for holding the container on the handle and the valve assembly including the conduit for discharging the liquid from the container at the desired place may be used in conjunction with substantially any named brand container of cleaning or polishing compound and may be applied to substantially any kind of applicator, thus making it possible to convert floor treating apparatus which is normally not equipped with means for dispensing a liquid cleaning or polishing compound to such use easily and quickly and then removing it when this operation has been completed so that the machine can be again used for its originally intended purpose.

It should be understood that the present disclosure is for the purpose of illustration only and that this invention includes all modifications and equivalents which fall within the scope of the appended claims.

We claim:

1. A valve assembly for controlling flow of fluid from a container of fluid having a discharge spout and closure cap, said valve assembly comprising a valve block having a discharge passage and a cap adapted to secure the valve block to the discharge spout in place of the closure cap, a flexible conduit connected to the valve block discharge passage so as to be in communication with the interior of the container, an abutment carried by and depending from the valve block, and a finger situated at the outer side of the valve block and depending therefrom, said finger and abutment having portions disposed opposite each other between which the tube passes, said portion of the finger opposite the abutment having yielding engagement with the conduit and normally holding the conduit collapsed against the abutment, a pull member connected to the finger for disengaging it from the conduit to permit the content of the container to flow through the tube, and a check valve in the valve block for admitting air into the container as the content flows therefrom through the conduit.

2. A valve assembly for controlling the flow of fluid from a container of fluid having a discharge spout threaded to receive a closure cap, comprising a threaded cap for engagement with the spout of the container, said cap containing a hole through its top, a valve block having a flange disposed in the cap, said block containing a bleeder passage and a check valve therein for admitting

air to the container, but normally checking flow of the content from the container, and containing a discharge passage which extends from the interior to the exterior of the cap, a flexible tube, means fixing one end of the tube in the discharge passage, an abutment formed integrally with and depending from the block through the cap along one side of the tube adjacent the discharge opening exteriorly of the cap, a finger depending from the block and having a portion located opposite the abutment so that the tube passes therebetween, said portion of the finger opposite the abutment yieldingly pressing the tube to hold it collapsed against the abutment, and a pull member connected to the finger operable to pull the finger away from the abutment to release the tube.

3. A valve assembly for controlling the flow of fluid from a container of fluid having a threaded spout adapted to receive a closure cap, comprising a threaded cap for engagement with the spout, said cap containing a hole in its top, a valve block disposed in the cap having a flange corresponding in diameter to the inside diameter of the cap for clamping engagement with the rim of the spout when the cap is screwed onto the spout, a vent passage through the valve block containing a check valve opening in the direction of inflow of air to the container, an abutment formed integrally with and extending from the block through the hole in the cap and having a bearing surface, a discharge passage in the block from the inside to the outside, a flexible tube, means fixing one end of the tube in the discharge passage, the other end extending to and beyond the bearing surface, a resilient finger mounted on the block and having a portion thereof extending downwardly adjacent the bearing surface and yieldingly holding the tube collapsed against the bearing surface, and a flexible cord attached at one end to the finger operable to move the finger away from the abutment to release the tube.

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