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FLOOR CLEANING AND POLISHING DEVICE

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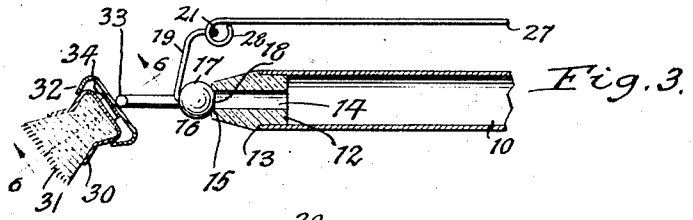


Fig. 3.

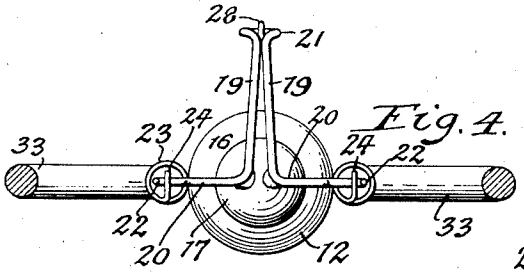


Fig. 4.

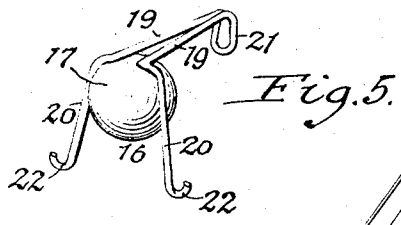


Fig. 5.

Fig. 1.

Fig. 6.

Fig. 2.

INVENTOR.

Stanley William Jilbert

BY

Popp & Popp

Attorneys.

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FLOOR CLEANING AND POLISHING DEVICE

Stanley William Jilbert, Blasdell, N. Y.

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4 Claims. (Cl. 222—505)

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This invention relates to a floor cleaning and polishing device of the general character shown in Letters Patent of the United States No. 2,304,257 granted December 8, 1942 in which the handle of the device forms a tank or reservoir for holding a quantity of the treating liquid, and a hand operated valve mechanism is employed whereby this liquid may be discharged in desired quantities to an applicator whereby the liquid is distributed over the floor for cleaning or polishing the same.

It is the object of this invention to provide improved means in a device of this character whereby the discharge of the liquid from the supply tank or storage reservoir is controlled and improved means whereby the applicator is removably and adjustably mounted on the handle of the apparatus so as to permit of conveniently using the same on the floor under different conditions.

In the accompanying drawings Fig. 1 is a side elevation of this floor cleaning and polishing device showing the parts in the position in which they are used. Fig. 2 is a front elevation, on an enlarged scale, of the lower part of the liquid tank, the valve mechanism whereby the discharge of liquid from the tank is controlled and the means for mounting the applicator on the tank.

Fig. 3 is a fragmentary longitudinal section of the apparatus taken on line 3—3, Fig. 2. Fig. 4 is a fragmentary transverse section, on a still larger scale, taken on line 4—4, Fig. 2. Fig. 5 is a perspective view of the ball valve and associated parts of the mechanism which control the lischarge of liquid from the tank. Fig. 6 is a fragmentary cross section, on an enlarged scale, taken on line 6—6, Fig. 3.

In the following description the same reference characters indicate like parts in the several views of the drawings.

The cleaning and polishing liquid in this device is stored in the handle whereby this device is manipulated which tank comprises a long tubular body 10 the upper end of which is provided with an inlet through which the treating liquid may be introduced from time to time when replenishing of the same becomes necessary and at its lower end this body is provided with a valve mechanism whereby the discharge of the liquid from the tank is controlled.

The inlet end of this liquid storing tank is normally closed by means of a removable closure or stopper 11 which may be of any suitable or approved construction.

The valve mechanism whereby the discharge of

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liquid from the outlet of the storage tank is controlled includes a plug 12 of plastic material which is preferably held frictionally in the lower end of the tubular body 10 and provided on its exterior with an annular shoulder 13 which faces upwardly and engages with the lower end of the tubular body 10 for the purpose of limiting the upper movement of this plug in this body and forming a smooth and finished joint therewith. This plug has the general shape of a ferrule and is provided centrally with a longitudinal port 14 which extends from the inner or rear end of this plug to the outer or front end thereof and at its outer end this plug is provided with an annular valve seat 15 around the port.

By constructing this valve seat on a tubular plug of plastic material the cost of the same is materially reduced compared with the cost of machining the same out of metal, the weight of the same is also considerably less than metal so that it is less tiresome for the operator to use the device and this ferrule is also less liable to mar any furniture with which it is liable to come into contact. The port of this tubular ferrule is adapted to be opened and closed by means of a ball shaped valve of metal the face of which is mainly of spherical shape, as shown at 17 and one part of this face is flattened, as indicated at 18. This ball valve is adapted to be rotated while in contact with the valve seat 15 of the ferrule and when all parts of the valve seat are engaged by the spherical face 17 of the ball valve then the port in the ferrule is closed and no liquid can escape from the liquid supply tank to the exterior thereof, but when this ball valve is turned so that a part of its flattened face 18 is opposite of this valve seat, then an aperture is formed between the valve seat and the ball valve through which a liquid can escape from the storage tank to the exterior of the device preparatory to being delivered to the applicator which spreads this liquid over the floor.

The operation of this ball valve is the same as that shown and described in the Letters Patent above referred to and reference thereto may be had if further information is required.

Means are provided whereby this ball valve 16 is yieldingly held in engagement with the seat at the outer end of the discharge port in the ferrule 12, and whereby this ball valve may also be actuated manually from the exterior of the device for opening and closing this port. In their preferred form the means whereby this is accomplished are constructed as follows:

To its front side the ball valve are attached

a vertical operating arm and horizontal tension arms which project laterally in opposite directions from the inner end of the operating arm. These arms are preferably constructed from a single piece of wire by bending the latter so as to form a central loop having two vertical members 19, 19 which are arranged side by side and constitute the operating arm, and two single horizontal members 20 which have their inner ends connected respectively with the lower ends of the loop members 19 and constitute the tension arms. The upper ends of the loop members 19 are bent rearwardly to form an attaching eye 21 and the outer ends of the horizontal members 20, 20 are provided with hook shaped terminals 22. This piece of wire from which these several arms are formed integrally may be fastened to the front side of the ball valve in any suitable manner, but preferably by welding or brazing the same to the ball valve at the angle or junction between the inner ends of these several arms.

The means whereby the ball valve is yieldingly held in engagement with the seat around the port 14 preferably comprises two tension members which are arranged on opposite sides of the lower part of the liquid storage tank, each of these tension members having a coil spring 23 arranged lengthwise on the respective side of the liquid tank and provided at its front end with a hook or eye 24 which engages with the hook 22 on the adjacent horizontal arm 20 and a hook 25 arranged at the rear end of this coil spring and engaging with an undercut shoulder 26 formed on the adjacent part of the exterior of the tubular body of the liquid supply tank, as shown in Figs. 1 and 2.

By these means the ball valve is yieldingly held against the seat 15 so that the port 14 is closed when only the spherical part of this valve engages this seat and still permits this ball to be turned freely for opening and closing this port.

The pull of the springs 23 is so determined that the same operate constantly to turn the ball valve into its closed position in which the upper operating arm is arranged vertically or at right angles to the axis of the supply tank. Upon pulling backwardly on this vertical arm of the valve shifting device the ball valve is turned into a position in which part of its flat face 18 is opposite the valve seat and thereby permits some of the liquid in the tank to escape therefrom. This pulling action on the operating arm of the valve shifting mechanism is preferably accomplished by an actuating rod 27 arranged lengthwise in front of the lower part of the liquid tank and provided at its lower end with an eye 28 which is attached to the eye 21 of the valve operating arm 19, 19 and a hand operated lever 29 preferably of elbow-shape pivoted on the front side of the liquid tank and having a longitudinal arm connected with the upper end of the actuating rod while its upper arm projects laterally therefrom and forms a thumb piece which may be manipulated conveniently by a hand of the operator. After a quantity of cleaning or polishing liquid has been deposited upon the floor from the supply tank 10 the same is distributed by an applicator which is mounted on the lower or front end of the tubular handle and which is preferably constructed as follows:

The numeral 30 represents the back or stock of the applicator which in the present case is made of sheet metal and of substantially U-shape in cross section, and a brush or swab 31 of any suitable form is secured in the hollow or channel side of this back.

Below the valve mechanism of the liquid storage tank a holder is mounted on the tank which forms part of the means whereby the applicator is detachably and adjustably mounted on this tank. In its preferred form this holder is made of sheet metal in the form of a downwardly opening channel 32 which is arranged horizontally and has its channel or open side facing downwardly. This holder may be connected with the liquid tank in various ways but, as shown in the drawings, this is effected by means of a bracket which comprises two metal supporting rods 33, 33 arranged on opposite sides of the lower part of the liquid tank and having their front ends connected with the holder by spot welding or otherwise while the rear ends of the same are connected by spot welding or any other approved manner with diametrically opposite sides of the liquid tank. The rear ends of these rods are provided with the undercut shoulders 26 which receive the rear hooks 25 of the springs and thereby not only simplify these parts of the construction of the cleaning device, but also improve the appearance of the same and reduce the liability of the apparatus catching clothing or other parts while operating the cleaning device.

The back 30 of the applicator is capable of sliding horizontally in a direction crosswise of the device as a whole so as to permit positioning the applicator in any manner desired in order to enable one end or the other of the applicator to reach underneath any obstruction which may be on the floor, such as radiators and other fixtures, whereby the entire floor may be cleaned and polished thoroughly.

If desired the applicator may be held in engagement with the holder solely by direct frictional contact between these parts, but for greater security additional means are provided consisting of a leaf spring 34 which has its central part connected by spot welding or the like with the inner side of the channel of the holder 32 while its two opposite ends are bowed and engaged frictionally with the back 30 of the applicator and thereby not only hold the latter against rattling on the holder but also permitting the applicator to be readily adjusted in a direction crosswise of the liquid tank to whatever extent is necessary for permitting the applicator to reach places which are difficult of access.

As a whole this cleaning and polishing device is very compact in construction, the same has no delicate parts which are liable to get out of order and the same can be readily manipulated for performing the various operations which are required for cleaning and polishing a floor with water, liquid wax or any other suitable preparation with which the floor is to be treated.

I claim:

1. A floor cleaning device, comprising a tank adapted to hold a fluid and provided at its lower end with a port and an annular valve seat around said port, a rockable ball valve controlling said port and having a surface engaging said seat which is partly spherical and partly flat, and means for rocking said ball valve and holding the same against said seat including a vertical arm secured at its lower end to said ball valve and two horizontal arms projecting laterally in opposite directions from the lower end of said vertical arm, springs connecting said horizontal arms with said tank, and a shifting rod connected with said ver-

tical arm, said vertical and horizontal arms being constructed from a single piece of wire which is bent to form a double member loop which constitutes said vertical arm, and two single member arms which project laterally from the double members of said loop.

2. A floor cleaning device, comprising a tank adapted to hold a fluid and provided at its lower end with a port and an annular valve seat around said port, a rockable ball valve controlling said port and having a surface engaging said seat which is partly spherical and partly flat, and means for rocking said ball valve and holding the same against said seat including a vertical arm secured at its lower end to said ball valve and two horizontal arms projecting laterally in opposite directions from the lower end of said vertical arm, springs connecting said horizontal arms with said tank, and a shifting rod connected with said vertical arm, said arms being constructed from a single piece of wire which is bent to form a loop which includes said vertical arm and two horizontal arms which terminate in hooks, and said loop terminating in an eye which receives said shifting rod.

3. A floor cleaning device, comprising a tank adapted to hold a fluid and provided at its lower end with a port and an annular valve seat around said port, a rockable ball valve controlling said port and having a surface engaging said seat which is partly spherical and partly flat, and means for rocking said ball valve and holding the same against said seat including a vertical arm secured at its lower end to said ball valve and two horizontal arms projecting laterally in opposite directions from the lower end of said vertical arm, undercut shoulders formed on opposite sides of said tank, springs for yieldingly holding said valve in engagement with said seat and each spring having a coil and hooks at opposite ends

of said coil and engaging respectively with one of said horizontal arms and one of said undercut shoulders, and a shifting rod connected with said vertical arm.

4. A floor cleaning device, comprising a tank adapted to hold a fluid and provided at its lower end with a port and an annular valve seat around said port, a rockable ball valve controlling said port and having a surface engaging said seat which is partly spherical and partly flat, and means for rocking said ball valve and holding the same against said seat including a vertical arm secured at its lower end to said ball valve and two horizontal arms projecting laterally in opposite directions from the lower end of said vertical arm, spring means connecting said horizontal arms with said tank, a shifting rod connected at its lower end with said vertical arm, and a lever pivoted on said tank and connected with the upper end of said rod.

STANLEY WILLIAM JILBERT.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
548,236	Stevenson	Oct. 22, 1895
668,874	Donnelly	Feb. 26, 1901
1,236,215	Schade	Aug. 7, 1917
1,283,906	Riebel	Nov. 5, 1918
1,557,127	Wilkin	Oct. 13, 1925
1,630,222	Simpson	May 24, 1927
1,852,198	Bemis	Apr. 5, 1932
2,105,709	Violette	Jan. 18, 1938
2,284,720	Binon	June 2, 1942
2,304,257	Jilbert	Dec. 8, 1942