Oct. 3, 1961 W. S. McKINSTRY 3,002,209

CLEANING APPARATUS

Filed June 26, 1959

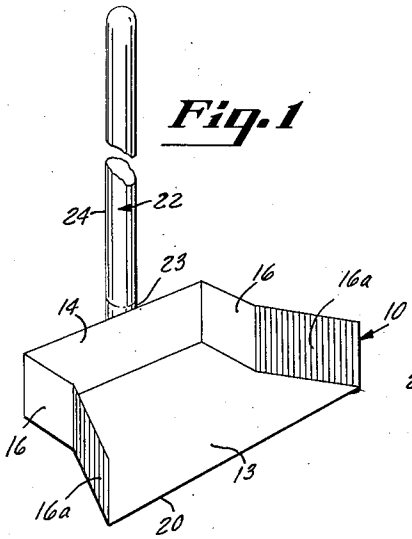


Fig. 1

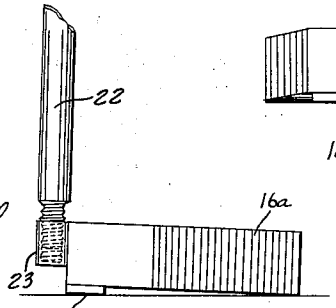


Fig. 2

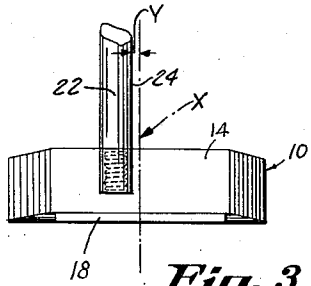


Fig. 3

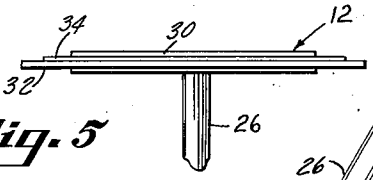


Fig. 5

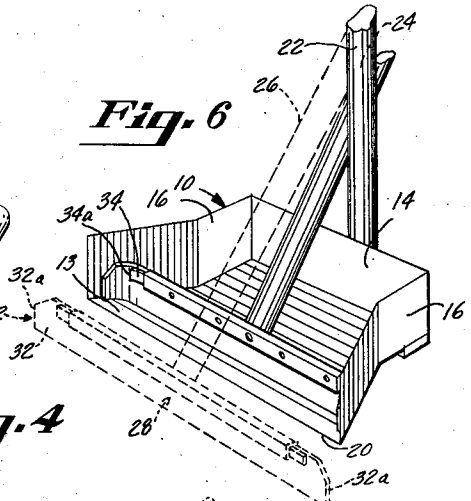


Fig. 6

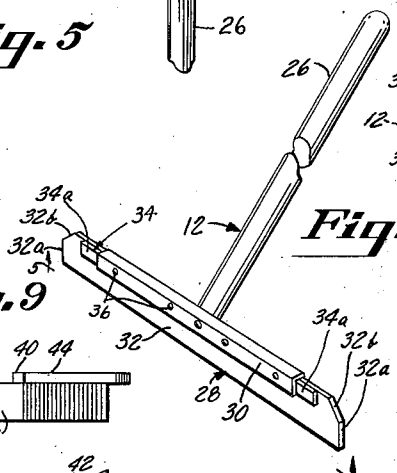


Fig. 4

Fig. 9

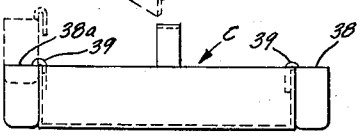


Fig. 7

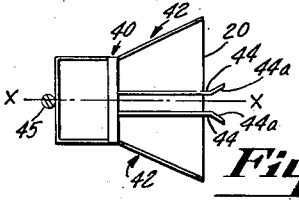


Fig. 11

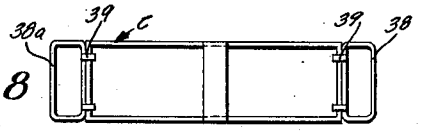


Fig. 8

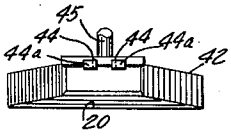


Fig. 10

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United States Patent Office

3,002,209
Patented Oct. 3, 1961

3,002,209

CLEANING APPARATUS

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Filed June 26, 1959, Ser. No. 823,087
3 Claims. (Cl. 15—1)

This invention relates in general to cleaning apparatus and more particularly to an improved receptacle and associated squeegee-type cleaner device, for removing waste cleaning water from a floor, staircase or the like.

It is an object of the invention to provide novel cleaning apparatus of the portable receptacle and associated squeegee scraper type, for removing scrub or cleaning water from a floor or the like.

Another object of the invention is to provide a cleaning apparatus of the latter type wherein the receptacle is provided with means for guiding the movement of the squeegee toward the receptacle during scraping of the waste cleaning water into the receptacle by the squeegee, to remove the water from the floor, thereby providing for ready alignment of the head portion of the squeegee with respect to the receptacle, and resulting in an effective and efficient cleaning operation.

A still further object of the invention is to provide cleaning apparatus of the latter mentioned type wherein the receptacle is provided with a flared forward end for facilitating the movement thereinto of the squeegee, and wherein the latter has flexible, lateral extensions adapted for sealing coaction with the defining walls of the flared end of the receptacle, to insure effective and efficient movement of the waste water into the receptacle.

A further object of the invention is to provide an improved waste cleaning water receptacle and associated squeegee device of the above type, which is more effective and efficient as compared to heretofore known apparatus of generally similar types and which may be economically manufactured, and which may be provided and utilized in the form of a kit for ready and effective use by cleaning personnel.

Other objects and advantages of the invention will be apparent from the following description taken in conjunction with the accompanying drawings, wherein:

FIG. 1 is a perspective view of an improved waste cleaning water receptacle embodying the instant invention.

FIG. 2 is a side elevational view of the receptacle illustrated in FIG. 1.

FIG. 3 is a rear end elevation of the receptacle of FIG. 1, and illustrates in particular the offset of the operating handle of the receptacle with respect to the longitudinal vertical center plane of the receptacle.

FIG. 4 is a perspective view of the improved squeegee scraper device of the invention adapted for use with the receptacle of FIG. 1 to remove waste cleaning water from a floor or the like.

FIG. 5 is a bottom plan view of the head portion of the squeegee, taken substantially along the plane of line 5—5 of FIG. 4, looking in the direction of the arrows.

FIG. 6 is a perspective view of the receptacle of FIG. 1 being used with the squeegee device of FIG. 4, and illustrates in dot-dash lines the position of the squeegee as it is being moved inwardly toward the receptacle to scrape cleaning water off the floor, and showing the guiding coaction between the handle of the squeegee and the offset handle of the receptacle to facilitate alignment of the head of the squeegee with respect to the front open end of the receptacle; and in full lines, the squeegee head is shown having entered the flared open front end of the receptacle to propel or move the waste cleaning water thereinto, and with the flexible, lateral extensions on the squeegee head having been bent rearwardly by engagement with the flared defining side walls of the receptacle, thereby insuring a tight water retaining or sealing fit between the ends of the squeegee head and the side, water retaining walls of the receptacle, while still providing for some adjustment and movement of the squeegee head with respect to such side walls.

FIG. 7 is a reduced size, side elevational view of a tray or carrier into which the receptacle and squeegee apparatus of the invention is adapted to be received for conveniently transporting the apparatus from place-to-place and for storing the same when not in use, with the carrier including containers on opposite ends thereof for providing floor cleaning water for use with the squeegee and receptacle of the invention.

FIG. 8 is a top plan view of the FIG. 7 illustration.

FIG. 9 is a reduced size, side elevational view of a waste cleaning water receptacle illustrating a modification of the invention.

FIG. 10 is a front elevational view of the FIG. 9 receptacle.

FIG. 11 is a top plan view of the FIG. 9 receptacle.

Referring to the drawings and particularly to FIGS. 1 to 6 thereof, there is shown a receptacle 10 for use with a cleaner or scraper 12 of the squeegee type, for removing waste cleaning water from a floor and the like.

The receptacle comprises a bottom wall 13, back end wall 14, and side walls 16. A bottom buffer plate 18 or some similar element, may be attached to the rear end of the underside of the receptacle to decrease the wear on the bottom wall thereof, and also urge the front edge 20 of the receptacle into tight engagement with the floor, to increase the effectiveness of the cleaner device 12 when moving waste water from the floor into the receptacle. Element 18 also provides for ready tipping of the receptacle rearwardly, to retain waste water therein. The forward end portions 16*a* of walls 16 diverge outwardly with respect to one another, in the manner best shown in FIG. 1 of the drawings, to provide a flared opening for the front water receiving end of the receptacle, for a purpose to be hereinafter described in detail.

An operating handle 22 is provided on the receptacle and secured thereto by any suitable means. The handle 22 is preferably detachable from the receptacle proper, as by means of the threaded coupling, generally referred to at 23, for convenience in storing and handling of the apparatus when not in use. In accordance with the invention the handle 22 is offset from the vertical longitudinal center plane X of the receptacle a predetermined distance, so that the distance Y between the lateral extremity 24 (FIG. 3) of the handle 22 and the vertical center plane X, is approximately one-half the width of the handle 26 of the cleaner or squeegee device 12. It will be seen therefore that the operating handle 22 of the receptacle serves as a guide for effectively and efficiently aligning the head portion 28 of the squeegee scraper with the flared open front end of the receptacle thereby insuring efficient and positive movement of waste cleaning water from the floor into the receptacle. As best shown in dot-dash lines in FIG. 5 of the drawings, the squeegee cleaner 12 and the offset side surface 24 of the adjacent handle 22 of the receptacle, provides for ready alignment of the head portion 28 of the squeegee with respect to the open end of the container.

The head portion 28 of the squeegee may comprise an elongated generally rigid clamping or blade mounting portion 30, and an elongated, flexible, scraper blade portion 32 which includes in accordance with the invention lateral, flexible, end portions 32*a* extending a substantial amount beyond the respective ends of the relatively rigid mounting portion 30. The upper edges of the end portions 32*a* are preferably sloped or cut on a bias at at 32*b*,

to facilitate the sealing characteristics between the flexible blade and engaging side walls of the receptacle as the squeegee moves into the receptacle. An effective arrangement for the amount of extension of each of the end portions 32*a* has been found to be a lengthwise dimension of approximately 1/10 the lengthwise dimension of the clamping portion 30, with the clamping portion being of such lengthwise dimension so as to be able to move well into the flared mouth of the receptacle, as shown in FIG. 6, to effectively move the waste water from the floor into the receptacle. The flexible blade portion 32 is adapted to engage a generally planar surface, such as a floor and the like, and propel waste cleaning water therefrom into the receptacle. Blade portion 32 is made from some flexible, resilient-like material, such as rubber. A separate, elongated auxiliary resilient strip of material 34 may also be provided in a position forwardly of the floor engaging blade 32. The terminal ends of the auxiliary strip 34 are preferably disposed inwardly of the respective terminal ends of the blade 32. Any suitable means such as fasteners 36 may be provided for maintaining the rigid head portion 30 and flexible elements 32 and 34 in assembled relation, as shown in FIG. 4 of the drawings. It will be seen that the blade element 32 is reinforced by the rigid mounting portion 30 only at the upper portion of the blade, thereby providing a blade of extreme flexibility to increase the effectiveness thereof in cleaning operations. In operation, the handle of the squeegee scraper preferably extends downwardly and forwardly from the operator at approximately a 45 degree angle with respect to the surface being cleaned, with the blade portion 32 being substantially vertical with respect to the surface of the floor.

Referring now to FIG. 6 it will be seen that the lateral extremities 32*a* of the squeegee blade portion 32 insure positive and effective movement of waste water from the floor into the receptacle, with such end extensions 32*a* engaging the water retaining side wall portions 16*a* of the receptacle in tight-fitting relation, and being bent outwardly as shown to propel the waste water well into the receptacle, in an efficient and positive manner. The length of the rigid portion 30 of the head of the squeegee mop is such that it will readily pass into the flared open end of the receptacle, but which will prevent movement of the squeegee into nonflared portion of the receptacle, by abutting, engagement between the flexible outer ends 32*a* of the squeegee blade and the confronting divergent side wall portions 16*a* of the receptacle. The auxiliary resilient strip 34 with its shorter extended ends 34*a* as compared to the extended ends 32*a* of the blade portion 32, helps to return the flexible extensions 32*a* into coplanar relation with the remainder of the blade portion, after movement of the squeegee out from the widened mouth of the receptacle, and therefore acts in the manner of auxiliary spring means for aiding the "elastic memory" of the scraper blade portion 32 to return to nondeformed condition.

Referring now to FIGS. 7 and 8, a carrier C is illustrated for readily storing the receptacle and squeegee cleaner of the invention, and transporting the latter from place to place by cleaning personnel. Such a carrier may include a removable container 38, 38*a*, on opposite ends of the carrier, with such container being supported on the respective end wall of the carrier C by hook portions 39, thereby providing for quick removal of the container 38 or 38*a* from the respective end wall of the carrier. The containers 38, 38*a* may contain cleaning water (for instance one could contain soapy cleaning water and the other could contain clear cleaning water) for efficient use with the receptacle and squeegee mop of the invention. The carrier C may be used as a receiver of the waste cleaning water removed from a floor by the cleaning apparatus of the invention.

Referring now to FIGS. 9 to 11, there is shown a modification of the invention. In this embodiment, a strip or mounting member 40 is provided on the top portion of the waste water receiving receptacle 42, and a pair of generally resilient guide arms 44 project forwardly from such carrier member and in equally spaced relation on opposite sides of the longitudinal vertical center plane X of the receptacle. The arms are adapted to receive therebetween in engaged sliding relation the elongated handle of the squeegee cleaner element 12, and provide for ready and effective alignment of the head portion of the squeegee with widened open mouth portion of the receptacle. It will be seen that the resilient arm portions 44 extend generally beyond the forward edge 20 of the receptacle, thereby insuring alignment of the head portion of the squeegee mop prior to its movement into the widened open end portion of the receptacle. The outer free ends of arms 44 are preferably directed or turned outwardly as at 44*a*, to provide for ready receipt of the handle of the squeegee between arms 44, without difficulty in alignment thereof. The operating handle 45 of the receptacle of the modification is preferably sloped rearwardly as shown to prevent interference with the handle of the squeegee; or the handle 45 could be off-set in a similar manner as the first described embodiment of the invention. In all other respects, the arrangement of the modification may be generally similar to the first described embodiment of the invention.

From the foregoing description and accompanying drawings it will be seen that the invention provides an improved and novel cleaning apparatus of the portable receptacle and associated squeegee cleaner type, for efficiently removing waste cleaning water and the like from a surface, such as a floor, and wherein such an apparatus comprises means for readily and effectively aligning the head of the squeegee cleaner with respect to the open water receiving end of the receptacle, and means for insuring a tight sealing coaction between the head portion of the squeegee scraper and the defining side walls of the receptacle, during operating movement of the squeegee into the receptacle to propel waste cleaning water from the floor into the receptacle. It will also be seen that such apparatus may be used by cleaning personnel from a standing position, and constitutes an efficient time and effort saver for such cleaning personnel.

The terms and expressions which have been used are terms of description and not of limitation, and there is no intention in the use of such terms and expressions of excluding any equivalent of any of the features shown or described, or portions thereof, but it is recognized that various modifications are possible within the scope of the invention claimed.

I claim:

1. A waste cleaning water collection device comprising a receptacle having an open front end for receiving therein waste cleaning water urged thereinto by an associated handle operated squeegee device, said receptacle comprising side walls, a rear end wall and a bottom wall, said side walls diverging with respect to one another in a forward direction to provide a flared open front end on said receptacle, said flared end being adapted to receive the associated squeegee device therein for effective removal of waste cleaning water from the surface being cleaned, said divergent portions of said side walls providing abutments adapted for engagement with the outer end portions of the squeegee device upon movement of the latter into the flared opened end of the receptacle, to limit inward movement of the squeegee device with respect to the receptacle, said receptacle having an operating handle extending upwardly therefrom, said operating handle being off-set a predetermined amount laterally of the vertical longitudinal center plane of said receptacle and adapted for guiding coaction on its innermost side surface with the handle of the squeegee device, for ready alignment of the squeegee device with respect to the open front end of the receptacle, prior to movement of the squeegee device into the receptacle.

2. In combination, a waste cleaning water collection receptacle having an open front end for receiving therein waste cleaning water, said receptacle comprising a bottom wall, side walls and a rear end wall, said side walls at the forward ends thereof diverging outwardly with respect to one another to provide a flared open front end for the receptacle, an elongated handle on said receptacle for moving the same about by an operator in a standing position, a squeegee cleaning device comprising a generally forwardly and downwardly extending elongated handle portion and a transversely extending head portion and said head portion including a mounting portion and a flexible blade element extending downwardly for engagement with a surface to be cleaned, the outer ends of said blade element extending laterally beyond the corresponding ends of said mounting portion for providing flexible end extensions on said blade element, said squeegee device being adapted to scrape waste cleaning water from the surface to be cleaned and urge it toward and into said receptacle, said head portion of said squeegee being adapted to be received in the flared front end portion of said receptacle and with said flexible extensions of said blade member engaging the defining outwardly divergent side walls of the receptacle and being bent outwardly by said side walls during said movement of said squeegee into said receptacle, to insure a tight sealing relation between the outer ends of the blade element and the defining side walls of the receptacle, and means on said receptacle coacting in engaged sliding relation with said handle of said squeegee device to guide said squeegee into alignment with said open end of said receptacle prior to movement of said squeegee into said receptacle.

3. The combination in accordance with claim 2, wherein the squeegee device includes an elongated resilient strip element disposed forwardly of said blade member and being secured to said mounting portion, the outer ends of said strip element being disposed outwardly of the corresponding ends of said mounting member but inwardly of the corresponding ends of said blade member.

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