April 23, 1940. J. J. KRAMER 2,197,869

MOP CLEANING DEVICE

Filed Oct. 13, 1938

Fig. 1

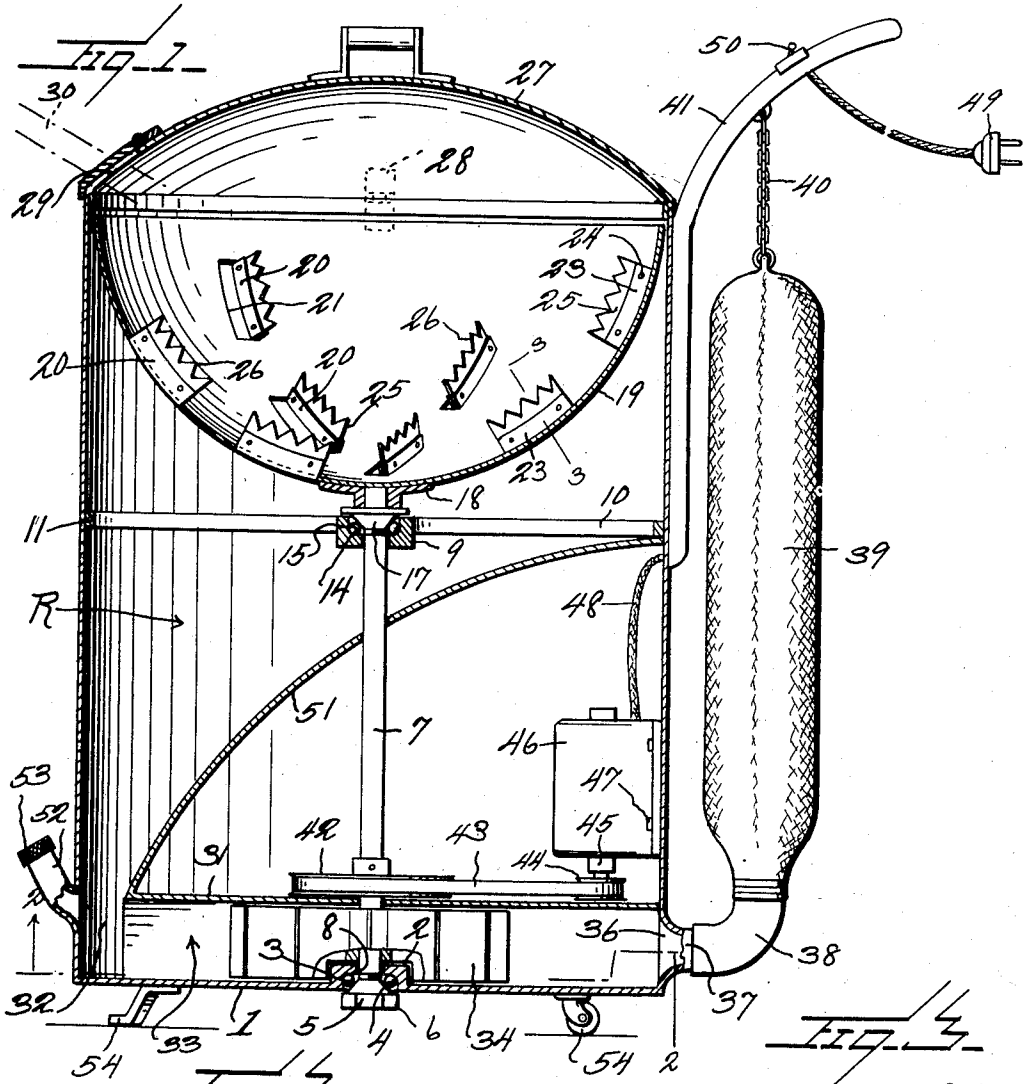


Fig. 2

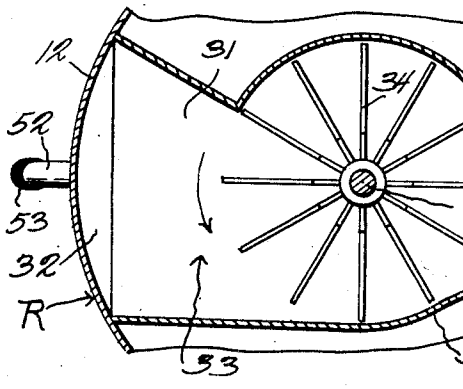
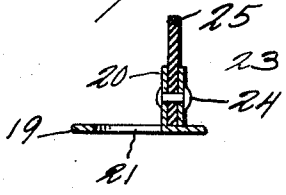


Fig. 4



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MOP CLEANING DEVICE

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2 Claims. (Cl. 15—12)

This invention relates to a mop cleaning device or deduster, and it is an object of the invention to provide a device or apparatus of this kind particularly designed and adapted for use for cleaning or removing the dust and dirt from dry mops, dusters and the like.

The invention also has for an object to provide a device of this kind including a receptacle having suction means for drawing off the dust and dirt from the mop or the like after being released by an agitating medium within the receptacle.

Another object of the invention is to provide a device or apparatus of this kind including a receptacle having therein a bowl-like agitating member supported for rotation and which is adapted to receive the head of a mop or the like for liberating from said head the dirt and dust therein.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved mop cleaning device whereby certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth.

The novel features of my invention will hereinafter be definitely claimed.

In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawing, wherein—

Figure 1 is a view partly in vertical section and partly in elevation illustrating a cleaning device or deduster constructed in accordance with an embodiment of my invention, a portion of a handle for a mop or the like being diagrammatically indicated by broken lines;

Figure 2 is a fragmentary sectional view taken substantially on the line 2—2 of Figure 1;

Figure 3 is a fragmentary detailed sectional view taken substantially on the line 3—3 of Figure 1;

As disclosed in the accompanying drawing, R denotes a receptacle of desired dimensions and design which, as illustrated, is cylindrical in form. The bottom wall 1 of the receptacle at the axial center thereof is raised, as at 2, to provide a downwardly facing raceway 3 for the ball bearings 4. These bearings 4 coact with the cone portion 5 of the nut 6 operatively engaged with the lower end portion of the shaft 7. This shaft 7 is freely disposed through the opening 8 at the axial center of the bottom wall 1. This shaft 7 extends upwardly of the receptacle R and is directed through the upwardly facing cup-bearing 9 also at the axial center of the receptacle R. This bearing 9 is maintained in position by the arms 10 radiating therefrom and which arms are also suitably fixed to the annular member 11 welded or otherwise fixedly secured to the inner face of the peripheral wall 12 of the receptacle R.

The cup-bearing 9 is formed to provide a raceway 14 for the ball bearings 15 which also coact with the cone bearing 17 carried by the shaft 7.

Fixed for rotation to the shaft 7 above the cone bearing 17 is a head 18 welded or otherwise securely fastened to the axial center of a bowl-like agitating member 19. The top or open face of this member 19 is of a diameter substantially equal to the internal diameter of the top portion of the receptacle R and said top or open face is positioned closely adjacent to the upper or top open face of the receptacle.

The member 19 has struck upwardly or inwardly thereof at various points thereon the desired number of elongated flanges 20 resulting in the discharge openings 21 immediately adjacent thereto. Clamped or held to the flanges 20 by the plates 23 and the rivets 24 are the flexible agitating elements 25 preferably of rubber, and which normally maintain a substantially flat formation. The outer longitudinal marginal portions of these elements 25 are preferably serrated or toothed, as at 26, to facilitate the action thereof upon the head of a mop or the like placed within the member 19.

The top or upper open end of the receptacle R has associated therewith a closure member or lid 27 having a marginal portion thereof hingedly connected, as indicated by broken lines at 28, with the peripheral wall 12 of the receptacle R at the top or open end thereof. The marginal portion of this lid 27 is provided, as at 29, with a recess or notch to receive the handle 30 of a mop or the like when the closure member or lid 27 is in closed position so that during the agitation of the head of the mop or the like the closure member or lid 27 may be closed to prevent the resultant dust or dirt flying out from within the member 19.

The lower portion of the receptacle R in relatively close proximity to the bottom 1 thereof is intersected by a plate 31, said plate 31 adjacent to the peripheral wall 12 of the receptacle being cut away, as at 32, to provide an entrance to the chamber 33 for the suction fan 34 mounted upon and rotating with the shaft 7. This chamber 33, as herein disclosed, is formed by interposing be-

tween the bottom wall 1 of the receptacle and the plate 31 the suitably spaced and formed walls 35. These walls extend from the ends of the entrance 32 to the opposite sides of the restricted opening 36 provided in the peripheral wall 12 of the receptacle R at a point remote from the entrance 32. This opening 36 is defined by an outstanding collar or sleeve 37 to which is suitably coupled, as at 38, the receiving end portion or mouth of a vacuum bag 39 of desired capacity. As disclosed in the accompanying drawing, this bag 39 is also suspended, as at 40, by a chain or other flexible member from the outstanding handle 41 suitably secured to the upper portion of the wall 12 of the receptacle.

The shaft 7 above but preferably in close proximity to the plate 31 has fixed thereto the pulley 42 in driven connection by the belt 43 with the pulley 44 carried by the drive shaft 45 of an electric motor 46. As herein disclosed, this motor 46 is anchored, as at 47, to the side wall 12 of the receptacle R and is positioned within said receptacle in relatively close proximity to the plate 31.

Leading from the motor 46 is a conventional electric cord 48 which passes out through the handle 41 and is provided at its outer extremity with a plug 49 whereby the motor may be connected with a suitable source of electric supply. Associated with the conductor within the cord 48 and carried by the handle 41 is a switch 50 of any desired type. This switch 50 is so positioned as to be conveniently manipulated by the operator as desired.

Also positioned within the lower portion of the receptacle R is a shield plate 51 which serves to protect the motor 46 and the driven connection therewith of the shaft 7 against dust and dirt as liberated by the member 19 from the mop head or the like and which is drawn out through the openings 21 and delivered within the bag 39 by the air suction and blast created by the fan 34. As is clearly illustrated in the drawing this plate 1 substantially intersects the receptacle R and is inclined upwardly from the entrance 32.

The lower portion of the wall 12 of the receptacle R at a point preferably below the plate 5 and immediately adjacent to the entrance 32 is provided with an outstanding vent pipe 52 in communication with the fan chamber 33. This vent pipe 52 is normally closed by a cap 53 or the like. This vent pipe 52 provides means whereby the desired suction and carrying off of the dust or dirt liberated from a mop head or the like may be drawn off through a suction hose.

The bottom wall 1 of the receptacle R is provided with the depending supporting members 54 certain of which constitute legs and the remainder the conventional type of caster.

From the foregoing description it is thought to be obvious that a mop cleaning device constructed in accordance with my invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated, and it will also be obvious that my invention is susceptible of some change and modification without departing from the principles and spirit thereof and for this reason I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice except as hereinafter claimed.

I claim:

1. A device for cleaning the head of a mop or the like comprising a receptacle having its top open, a plate within the receptacle providing a fan chamber in the lower portion of the receptacle, said plate having an end portion spaced from the side wall of the receptacle to provide an opening, a vertically disposed shaft supported within the receptacle, said shaft extending within the fan chamber and within the portion of the receptacle thereabove, means for rotating said shaft, a fan within the chamber fixed to the shaft for rotation therewith, a bowl-like member mounted upon the upper end portion of the shaft and fixed thereto for rotation therewith, the wall of said member having elongated openings, flexible elements within the bowl-like member, said members being secured to the bowl along a longitudinal margin of each of the openings and extending inwardly of the bowl-like member, said bowl-like member extending substantially entirely across the receptacle with its open face in close proximity to the open top of the receptacle, the side wall of the receptacle having an opening in communication with the fan chamber and through which discharges the air blast created by the fan.

2. A device for cleaning the head of a mop or the like comprising a receptacle having its top open, a plate within the receptacle providing a fan chamber in the lower portion of the receptacle, said plate having an end portion spaced from the side wall of the receptacle to provide an opening, a vertically disposed shaft supported within the receptacle, said shaft extending within the fan chamber and within the portion of the receptacle thereabove, means for rotating said shaft, a fan within the chamber fixed to the shaft for rotation therewith, a bowl-like member mounted upon the upper end portion of the shaft and fixed thereto for rotation therewith, the wall of said member having elongated openings, flexible elements within the bowl-like member, said members being secured to the bowl along a longitudinal margin of each of the openings and extending inwardly of the bowl-like member, said bowl-like member extending substantially entirely across the receptacle with its open face in close proximity to the open top of the receptacle, the side wall of the receptacle having an opening in communication with the fan chamber and through which discharges the air blast created by the fan, and a shield plate within the lower portion of the receptacle and substantially intersecting the receptacle, said plate being disposed upwardly from the opening provided by the spaced portion of the plate.

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