Jan. 20, 1953 R. R. CUDY 2,625,704

CLEANING AND DUST COLLECTING MACHINE FOR DRY MOPS

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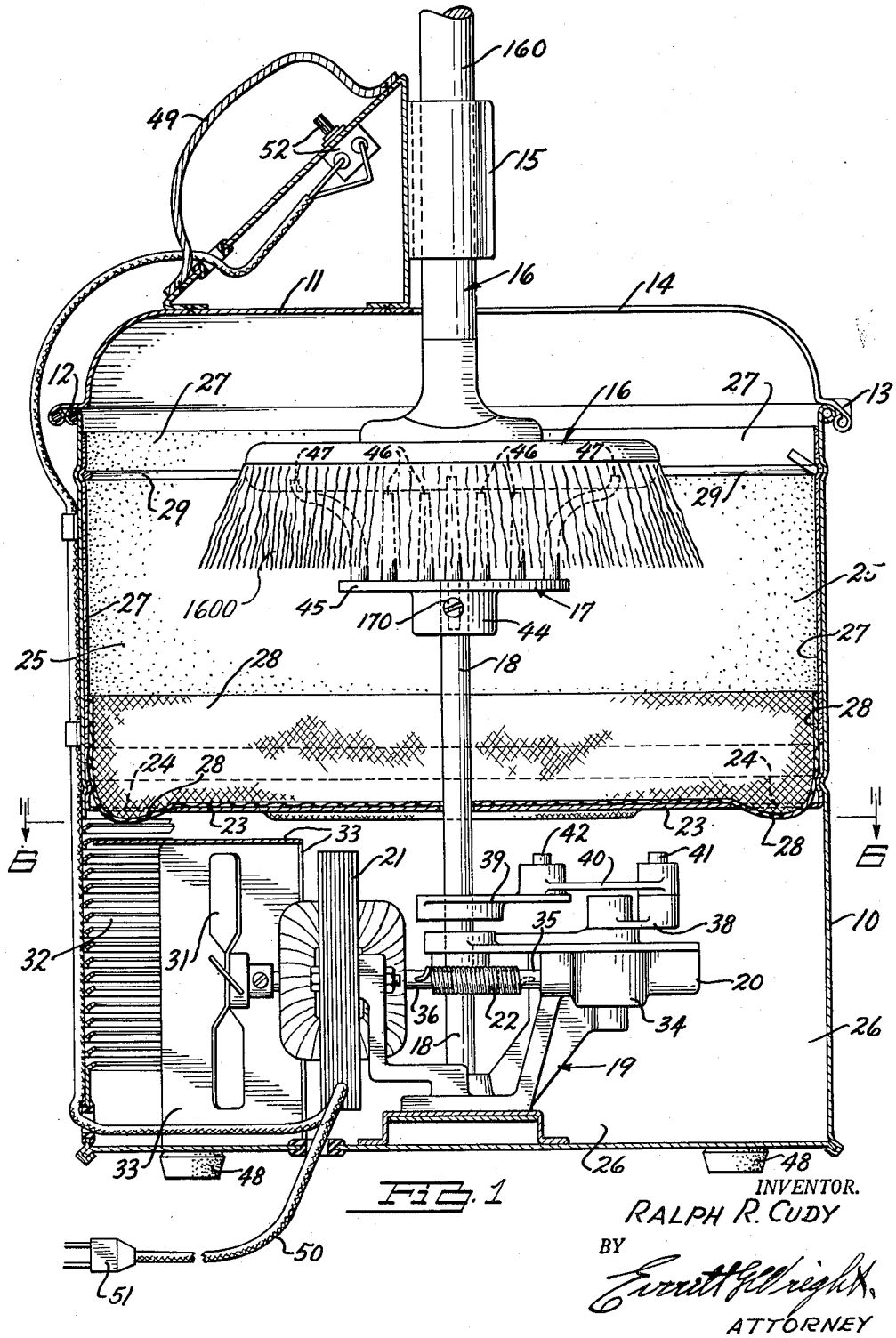


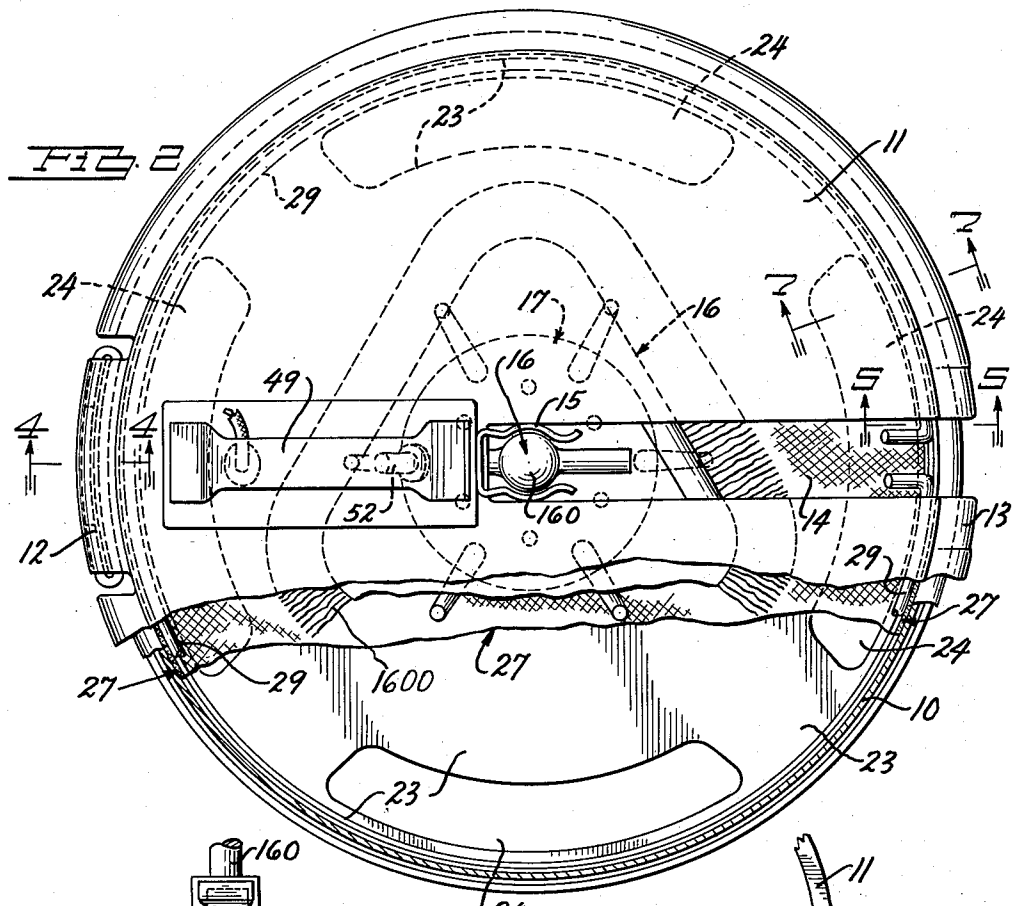
Fig. 1

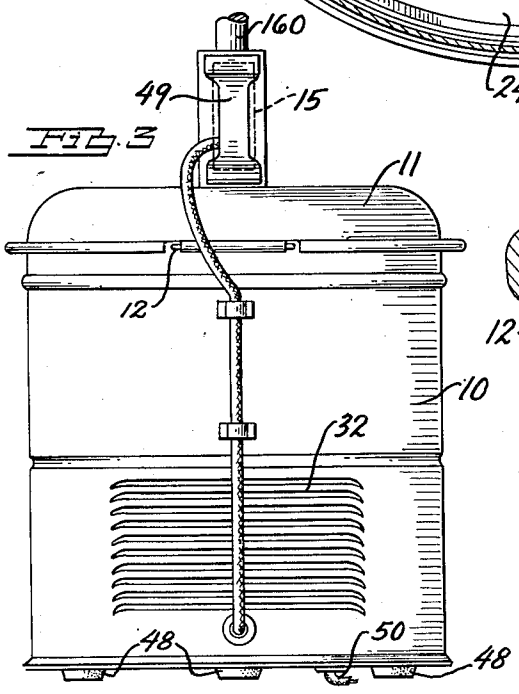
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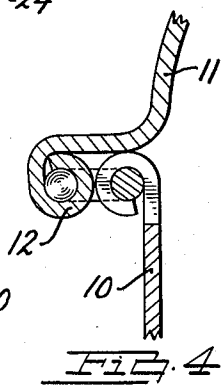
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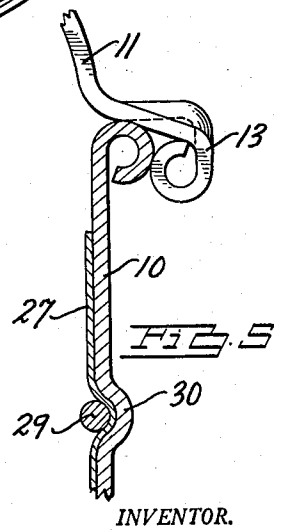
CLEANING AND DUST COLLECTING MACHINE FOR DRY MOPS

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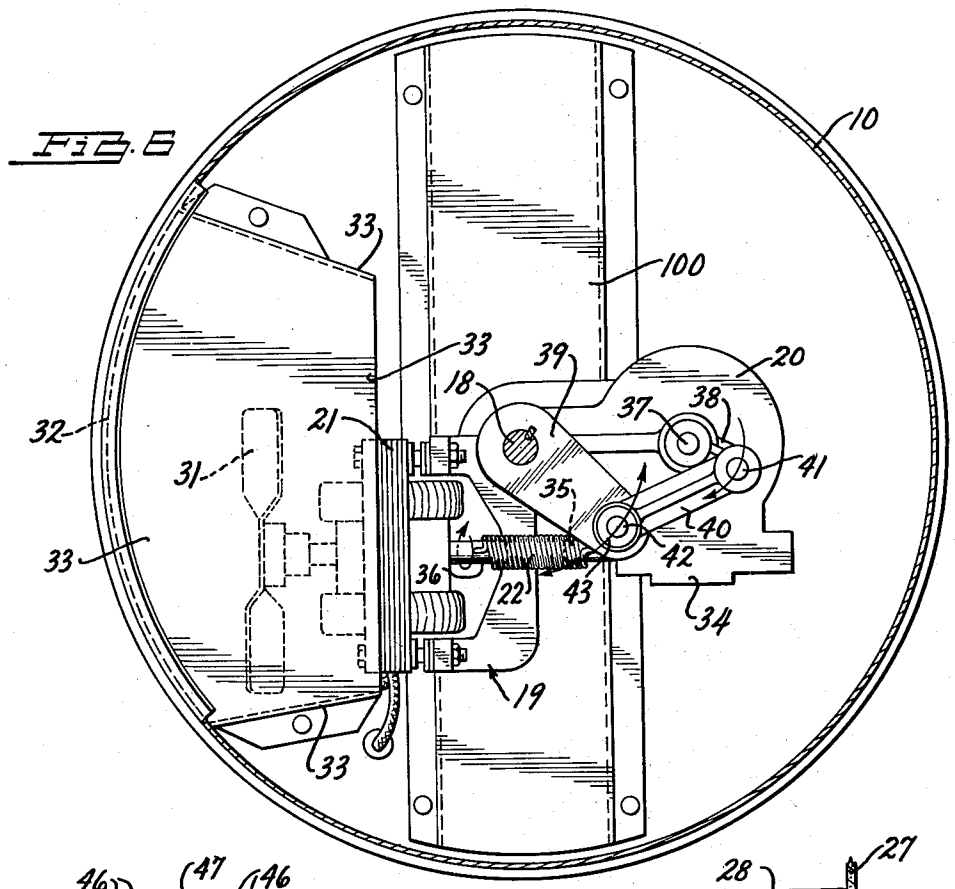
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CLEANING AND DUST COLLECTING MACHINE FOR DRY MOPS

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Fig. 6



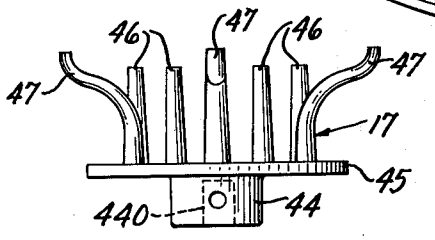


Fig. 8

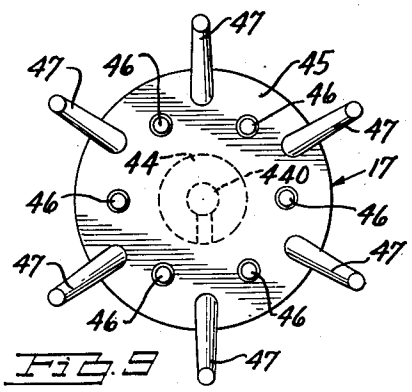


Fig. 9

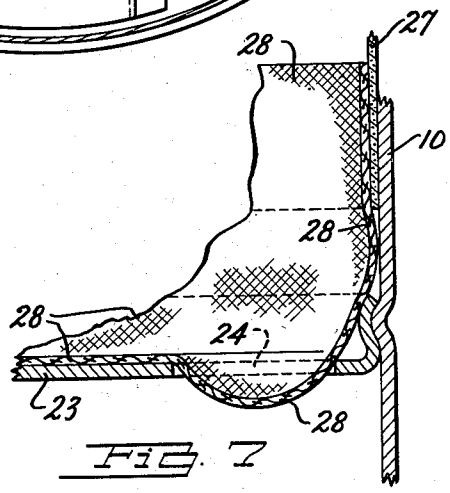


Fig. 7

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CLEANING AND DUST COLLECTING MACHINE FOR DRY MOPS

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6 Claims. (Cl. 15—311)

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This invention relates to mop cleaners and in particular to mechanical means for cleaning dry mops and dusters.

The primary object of the present invention is to provide a mop cleaner for dry mops and dusters that is clean and sanitary in operation, which effectively shakes a mop clean, which employs a removable container for receiving dirt, dust and lint shaken from the mop, and which includes means for settling dirt, dust and lint into the removable container provided therefor.

Another object of the invention is to provide an effective and efficient power driven mop cleaner for indoor use which cleans any type of dry mop thoroughly and retains for later disposal dirt, dust, lint and the like removed from the mop, all without spreading dust and dirt throughout the room in which the mop is cleaned.

A further object of the invention is to provide an inexpensive portable electric driven dry mop cleaner and shaker which cleans all types of dry mops effectively and without spreading dust responsive to the cleaning process employed.

Another object of the invention is to provide, in a dry mop cleaner, an improved mop holding and shaking means which will accommodate substantially all types of dry mops and clean them effectively.

And a still further object of the invention is to provide a mop cleaner for dry mops including means for holding substantially all types of dry mops, means for agitating the mop while engaged on the holding means, a removable container within the mop cleaner for receiving dirt and dust shaken from the mop, and means for settling dirt and dust shaken from the mop into the said removable container.

Other objects of the invention will become apparent by reference to the following detailed description taken in connection with the accompanying drawings, in which:

Fig. 1 is a vertical sectional view of a mop cleaner embodying the invention.

Fig. 2 is a top plan view with portions broken away successively to illustrate the construction.

Fig. 3 is a rear elevational view.

Fig. 4 is an enlarged fragmentary sectional view taken on the line 4—4 of Fig. 2 showing the cover hinge construction.

Fig. 5 is an enlarged fragmentary sectional view taken on the line 5—5 of Fig. 2 showing the cover latch construction and the means preferably employed to suspend the removable dirt and dust container within the mop cleaner.

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Fig. 6 is a horizontal sectional view taken on the line 6—6 of Fig. 1 showing the mop shaker operating mechanism preferably employed.

Fig. 7 is an enlarged fragmentary sectional view showing the construction of the removable dirt and dust container and its supporting structure.

Fig. 8 is a side elevational view of the mop holder construction which is employed to hold effectively substantially all types of dry mops during the mechanical shaking thereof.

Fig. 9 is a top plan view of the mop holder shown in Fig. 8.

Referring now to the drawings wherein like numerals refer to like and corresponding parts throughout the several views, the particular embodiment of a mop cleaner disclosed for the purpose of illustrating the invention comprises, in general, a preferably cylindrical housing 10 including a cover 11 hinged thereto by a suitable hinge 12 and maintained closed by a spring latch 13, the said cover 11 having a slot 14 therein and a spring clip 15 thereon to receive and retain in vertical oscillatory relationship the handle 16a of a dry mop 16, a mop holder 17 onto which the dry mop 16 is positioned, a vertically disposed oscillating shaft 18 onto which the mop holder 17 is keyed, a power unit 19 composed of an oscillating mechanism 20 supporting the said oscillating shaft and imparting oscillatory movement thereto, an electric motor 21 driving the said oscillating mechanism 20 through a flexible coupling 22, the said oscillating mechanism 20 being mounted in the bottom of the said cylindrical housing 10 on a suitable base 100, a horizontally disposed partition 23 having a series of arcuately disposed apertures 24 around the outer portion thereof adjacent the wall of the cylindrical housing 10 dividing the said cylindrical housing 10 into an upper mop cleaning compartment 25 and lower eduction compartment 26, a removable dirt and dust container 27 having a reticulated base 28 disposed in the said upper mop cleaning compartment 25, a spring retainer ring 29 holding the upper portion of the said dirt and dust container 27 against the wall of the cylindrical housing 10 at a groove 30 provided around the inner periphery thereof, the said reticulated base 28 of the dirt and dust container 27 extending over the arcuately disposed apertures 24 in the bottom of the horizontally disposed partition 23, an eduction fan 31 driven by the said electric motor 21, the wall of the said housing 10 having louvres 32 therein through which the eduction fan 31 discharges air from the said eduction compartment 26 drawing air from the mop clean-

ing compartment 25 through the reticulated base 28 of the dirt and dust container 27 whereby to settle the dirt and dust shaken from the mop 16 into the said dirt and dust container 27, and a baffle 33 directing the eduction of air by the fan 31 from the eduction compartment to and through the louvres 32, the eduction compartment 26 also serving as a compartment to house the oscillating mechanism 20 and the electric motor 21.

The power unit 19 which oscillates the vertically disposed shaft 18 onto which the mop holder 17 is keyed by a set screw 170 is composed of suitable worm and pinion gearing disposed in a gear housing 34 connected to the electric motor 20 through a coil spring type flexible coupling 22 connecting the worm shaft 35 of the worm and pinion gearing to the motor shaft 36. The pinion shaft 37 has keyed thereon a crank arm 38 which rotates in a clockwise direction as indicated in Fig. 6. The vertically disposed shaft 18 onto which the mop holder 17 is keyed has an oscillating lever 39 keyed thereto. The outer end of the clockwise rotating crank arm 38 and the outer end of the oscillating lever 39 are linked together by a suitable link 40 pivoted to the rotating crank arm 38 and to the oscillating lever 39 by suitable pivots 41 and 42 respectively. With such construction or its equivalent, the vertically disposed shaft 18 is oscillated as indicated by the arrow 43 in Fig. 6.

The particular construction of the mop holder 17 is quite important inasmuch as it serves not only to receive and hold a mop for cleaning by its rapid oscillation, but the mop holder 17 accommodates substantially all types of dry mops in such a manner as to hold them loosely to permit dirt and dust to be shaken therefrom and at the same time the said mop holder 17 holds the mop 16 with sufficient security to assure its oscillation with the oscillation of the said mop holder 17. The preferred embodiment of the mop holder 17 comprises a hub 44 which is bored at 440 to fit over the top of the vertically disposed oscillating shaft 18 and is keyed thereto by a set screw 170. A circular horizontally disposed base plate 45 preferably formed integral with the hub 44 supports a plurality of vertically disposed mop engaging fingers 46 arranged in a circle concentric with the hub 44. Between each of the said vertically disposed mop engaging fingers 46 and arranged in substantially the same circle is an upwardly disposed outwardly goose-necked mop engaging finger 47. Although it is preferable, it is not necessary that alternate mop engaging fingers be vertical and goose-necked, however, a pattern of mop engaging fingers 46 and 47 like and similar to those disclosed in Figs. 8 and 9 have been found to engage and securely hold a dry mop 16 so as to oscillate it vigorously by the oscillating mechanism 20 and at the same time permit the dirt and dust pick-up portion of the mop 16 to shake with a whip-like action to cause dirt, dust and the like accumulated thereon to become removed therefrom.

Under normal conditions, the shaking of the mop 16 by vigorously oscillating it in the mop cleaning compartment 25 would create a cloud of dust therein while the heavier particles of dirt shaken from the mop 16 would settle in the removable dirt and dust container 27 which is telescoped over the vertically disposed oscillating shaft 18 and is fixed within the mop cleaning compartment 25 by the spring retainer ring 29 expanded into the groove 30 provided around the

inner periphery of the wall of the cylindrical housing 10. However, the removable dirt and dust container 27, which may be of reticulated material at its bottom, not only receives the dirt and dust shaken from the mop 16 but is provided with a sufficient down current of air therein by the suction of air through the reticulated bottom or base 28 thereof at the arcuate apertures 24 in the horizontally disposed partition 23 to settle the dirt and dust in the bottom of the said removable dirt and dust container 27. The suction of air through the reticulated base 28 of the removable dirt and dust container 27 is accomplished by the eduction fan 31 creating a slight vacuum in the eduction compartment 26. The removable dirt and dust container 27 is preferably constructed of sufficiently serviceable material as will permit its repeated emptying and re-use. However, a light paper dirt and dust container 27 which may be disposed of along with the dirt and dust shaken from the mop 16 may be used provided the bottom thereof is finely perforated to permit the settling of dirt and dust therein responsive to a slight vacuum created in the eduction compartment 26.

For convenience in handling the mop cleaner, suitable supporting feet 48 are fixed on the bottom of the cylindrical housing 10 and a suitable handle 49 is fixed on the cover 11. An electric cord 50 having a suitable plug 51 thereon for connection to an electric outlet is provided. An "on" and "off" switch 52 preferably located at the handle 49 is connected into the electric circuit between the electric cord 50 and the electric motor 21.

Improved power actuated mop cleaners of the type herein disclosed are particularly advantageous in that substantially all types of household dry mops may be readily and thoroughly cleaner indoors thereby without the respreading of the dirt and dust picked up by the mop when in use and shaken therefrom during the cleaning thereof. The mop cleaner is easy to operate and may be readily stored when not in use, and the dirt and dust collected therein may be readily disposed of.

Although but a single embodiment of the invention has been disclosed and described in detail, it is obvious that many changes may be made in the size, shape, arrangement and detail of the various elements of the invention without departing from the spirit and scope thereof as defined by the appended claims.

I claim:

1. A mop cleaner for dry mops comprising a housing including therein an upper mop cleaning compartment, a lower eduction compartment and a partition therebetween, an oscillating mechanism in the lower eduction compartment, an oscillating shaft actuated by the said oscillating mechanism extending upwardly from the said oscillating mechanism into the said mop cleaning compartment, a mop holder mounted on the upper end of the said oscillating shaft, the said partition between the said upper mop cleaning compartment and the lower eduction compartment having apertures therein, a removable dirt and dust container having a centrally apertured reticulated base positioned over the said upwardly extending oscillating shaft and disposed within the said upper mop cleaning compartment over the said apertures in the said partition between the said upper mop cleaning compartment and the said lower eduction compartment, the said housing having louvres therein communicating

with the said eduction compartment, an eduction fan disposed in the said eduction compartment withdrawing air therefrom whereby to cause dirt and dust shaken from a dry mop disposed on the said mop holder during the oscillation thereof to settle in the said removable dirt and dust container, and means driving the said oscillating mechanism and the said eduction fan.

2. A mop cleaner for dry mops comprising a housing including therein an upper mop cleaning compartment, a lower eduction compartment and a partition therebetween, a hinged cover for the said housing having a mop handle slot therein, a spring clip on the said hinged cover formed to receive and hold a mop handle vertically simultaneously permitting oscillatory movement about its vertical axis, an oscillating mechanism in the lower eduction compartment, an oscillating shaft actuated by the said oscillating mechanism extending upwardly from the said oscillating mechanism into the said mop cleaning compartment, a mop holder adapted to engage a dry mop mounted on the upper end of the said oscillating shaft, the said partition between the said upper mop cleaning compartment and the lower eduction compartment having apertures therein, a removable dirt and dust container having a centrally apertured reticulated base positioned over the said upwardly extending oscillating shaft and disposed within the said upper mop cleaning compartment over the said apertures in the said partition between the said upper mop cleaning compartment and the said lower eduction compartment, the said housing having louvres therein communicating with the said eduction compartment, an eduction fan disposed in the said eduction compartment withdrawing air therefrom whereby to cause dirt and dust shaken from a dry mop disposed on the said mop holder during the oscillation thereof to settle in the said removable dirt and dust container, and means driving the said oscillating mechanism and the said eduction fan.

3. A mop cleaner for dry mops comprising a housing including therein an upper mop cleaning compartment, a lower eduction compartment and partition therebetween, an oscillating mechanism in the lower eduction compartment, an oscillating shaft actuated by the said oscillating mechanism extending upwardly from the said oscillating mechanism into the said mop cleaning compartment, a mop holder mounted on the upper end of the said oscillating shaft, the said mop holder comprising a base plate and a plurality of suitably spaced upwardly disposed mop engaging fingers extending therefrom, the said partition between the said upper mop cleaning compartment and the lower eduction compartment having apertures therein, a removable dirt and dust container having a centrally apertured reticulated base telescoped over the said upwardly extending oscillating shaft and disposed within the said upper mop cleaning compartment over the said apertures in the said partition between the said upper mop cleaning compartment and the said lower eduction compartment, the said housing having louvres therein communicating with the said eduction compartment, an eduction fan disposed in the said eduction compartment withdrawing air therefrom whereby to cause dirt and dust shaken from a dry mop disposed on the said mop holder during the oscillation thereof to settle in the said removable dirt and dust container, and means driving the said oscillating mechanism and the said eduction fan.

4. A mop cleaner for dry mops comprising a housing including therein an upper mop cleaning compartment, a lower eduction compartment and a partition therebetween, a hinged cover for the said housing having a mop handle slot therein, a spring clip on the said hinged cover formed to receive and hold a mop handle vertically simultaneously permitting oscillatory movement about its vertical axis, an oscillating mechanism in the lower eduction compartment, an oscillating shaft actuated by the said oscillating mechanism extending upwardly from the said oscillating mechanism into the said mop cleaning compartment, a mop holder adapted to engage a dry mop mounted on the upper end of the said oscillating shaft, the said mop holder comprising a base plate and a plurality of suitably spaced upwardly disposed mop engaging fingers extending therefrom, the said partition between the said upper mop cleaning compartment and the lower eduction compartment having apertures therein, a removable dirt and dust container having a centrally apertured reticulated base positioned over the said upwardly extending oscillating shaft and disposed within the said upper mop cleaning compartment over the said apertures in the said partition between the said upper mop cleaning compartment and the said lower eduction compartment, the said housing having louvres therein communicating with the said eduction compartment, an eduction fan disposed in the said eduction compartment withdrawing air therefrom whereby to cause dirt and dust shaken from a dry mop disposed on the said mop holder during the oscillation thereof to settle in the said removable dirt and dust container, and means driving the said oscillating mechanism and the said eduction fan.

5. In a dry mop cleaner for dry mops, the combination of a housing including a slotted cover and upper and lower compartments with an apertured partition therebetween, a spring clip centrally located on the said mop cover for loosely holding the handle of a dry mop therein, a mop holder in the upper compartment onto which a mop to be cleaned is positioned with its dirt and dust pick-up portion in depending relationship, a removable dirt and dust container having a reticulated base disposed in the said upper compartment, motor driven mechanical means for oscillating the said mop holder, and fan means driven by the same motor that drives the said mechanical oscillating means creating a partial vacuum in the lower compartment whereby to withdraw air from the said removable dirt and dust container within the upper compartment and simultaneously settle in the said dirt and dust container dirt and dust shaken from a dry mop disposed on the said oscillating mop holder.

6. In a dry mop cleaner for dry mops, the combination of a housing including a slotted cover and upper and lower compartments with an apertured partition therebetween, a spring clip centrally located on the said cover for loosely holding the handle of a dry mop therein, a mop holder in the upper compartment including a plurality of mop engaging fingers extending upwardly therefrom onto which a mop to be cleaned is positioned with its dirt and dust pick-up portion in depending relationship, a removable dirt and dust container having a reticulated base disposed in the said upper compartment, motor driven mechanical means for oscillating the said mop holder, and fan means driven by the same motor that drives the said mechanical oscillating means creating a

partial vacuum in the lower compartment whereby to withdraw air from the said removable dirt and dust container within the upper compartment and simultaneously settle in the said dirt and dust container dirt and dust shaken from a dry mop disposed on the said oscillating mop holder.

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