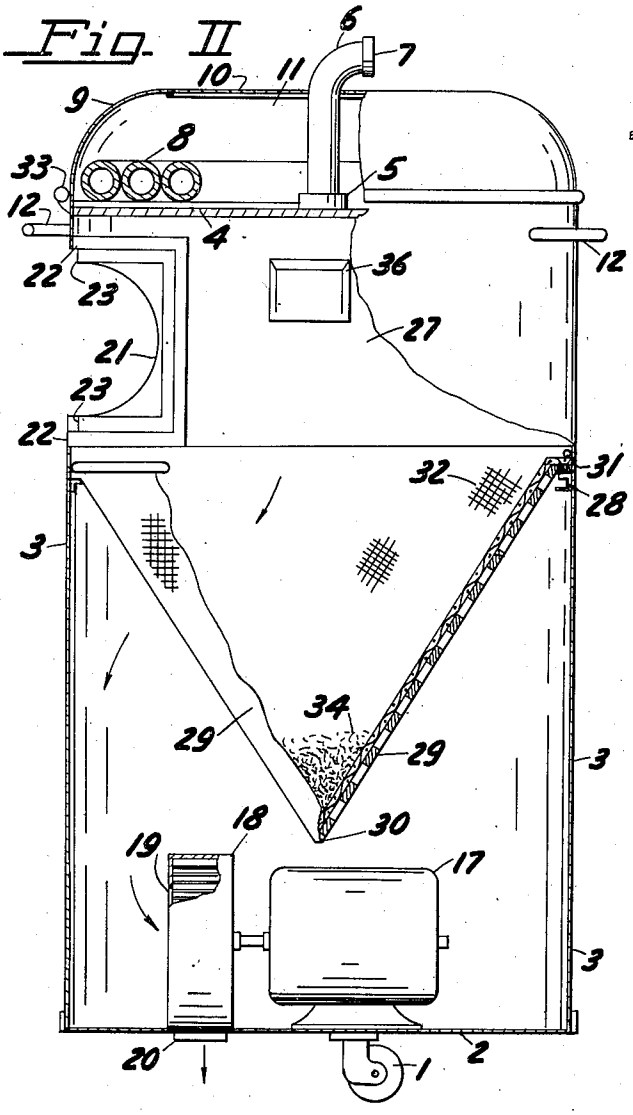
July 12, 1949. G. C. BURD 2,475,815

VACUUM CLEANING DEVICE

Filed March 29, 1946

Fig. II



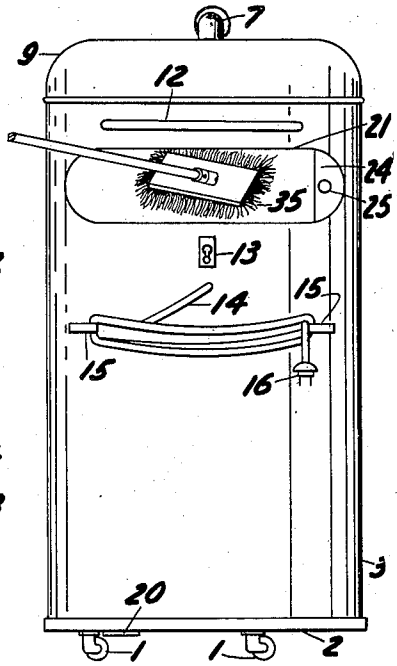


Fig. I

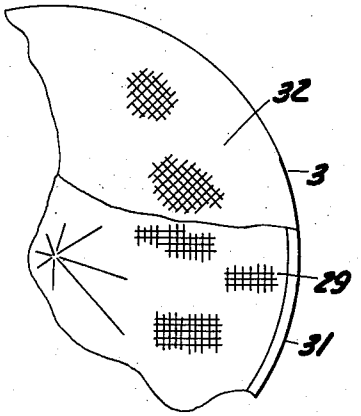


Fig. III

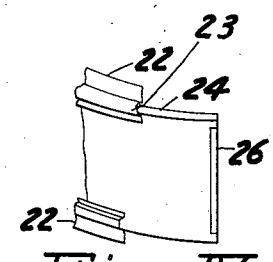


Fig. IV

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VACUUM CLEANING DEVICE

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Application March 29, 1946, Serial No. 658,257

1 Claim. (Cl. 183—37)

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This invention relates to sanitation aids, and more particularly in the gathering of deposits and suspension particles from occupied quarters and thereby to promote health conditions.

This invention has utility when incorporated in air filter equipment, especially as portable for use in hospitals and rooms for ill people, in providing for ready removal of dirt and other matter from mops and wiping equipment, and cleaning—as well as treating contaminated air resulting from various cleaning operation.

Referring to the drawings:

Fig. 1 is a front view of an embodiment of the invention, in open position for receiving a mop, but disconnected from operation;

Fig. 2 is an enlarged view with parts broken away, of the device of Fig. 1, showing the filter and the air flow circuit thereto and therefrom;

Fig. 3 is a fragmentary view in plan, of the filter; and

Fig. 4 is a detail view of an end portion of the slidable door for the mop entrance.

Casters 1 as swivelled to a base 2 provide a readily portable mounting for the cleaning equipment unit herein disclosed. A drum 3 rises from the base 2. The drum 3 has a top partition 4 opposing the base 2. A swivel 5 mounts an angle pipe connection 6 adapted to have its closure cap 7 removed and hose 8 attached to carry a desired type of nozzle in suction cleaning operations. Upwardly from the partition 4, is an extension 9 curving inwardly to provide a central opening 10 surrounding the fitting 6 to provide a storage chamber 11 for the hose 8.

Exteriorly, the drum 3 has, near its top, handles 12. A switch 13 permits cutting in of power. Electric current supply lines extend from the drum in a conduit 14, which, at out-of-use intervals, may be wrapped upon hooks 15, also outside of the drum 3. Upon occasion for connecting up for operation, a terminal fitting 16 may be properly attached to an electric current supply. Then, with the switch 13 on, a motor 17 on the base 2 causes suction action from a direct-connected multiblade fan 18 having an axial intake 19 and a discharge 20 thru the base 2.

Below the top partition 4, is an opening 21 in the drum 3. Upon the inside of the drum 3 about three sides of the opening 21, is a flange 22 which is Z-shaped in cross-section and has its horizontally extending parallel leg portions open on one side to provide about the opening 21 a slide channel 23 for a closure door 24 having a handle 25. The end portion of the door

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24, remote from the handle 25, has a slight offset 26 to promote a complete sealing of an upper chamber portion 27 in the drum 3 when the door 24 be closed. The suction operation of the fan 18 may then be effective thru the fitting 6 and the hose 8.

Just below the opening 21, on the inside of the drum 3, is a ledge 28 fixed to the drum, as by spot welding. Extending concentrically downward from the ledge 28 is a foraminous conical partition 29, say of expanded metal, inwardly tapering to an apex 30 just above the motor 17. A ring 31 resting on the ledge 28 there anchors the open top of a porous bag 32 to hang therefrom as a readily removable lining for the downwardly tapering cone 29. There is thus provided a filter area of considerably greater extent than the direct cross-section of the drum 3. Desirably the readily removable filter sheet material may be of a single service paper thru which the fan 18 draws air toward the fan intake 19. The air, thus cleaned, is discharged from the fan 18 thru the bottom outlet or port 20.

The partition 4, with the upwardly extending dome portion 9 is a unit having a self sealing joint seat 33, so that it may serve as an effective closure for the top of the chamber 27 in the drum 3. The operator, by grasping under the rim of the opening 10, may lift the closure clear of its seat 33, thus to expose the bag 32. Dust and air-carried particles enter the chamber 27 and the air escapes thru the filter bag 32, while the particles and entrained matter are left as a coating on the inside of the cone and may even accumulate into a dust debris mass 34 on the inner side of the cone toward the apex 30. With the closure taken off, the lining bag 32 may be taken out and shaken to be freed, or even brushed or wiped, in the removal of the accumulations therefrom. In the instance of the bag 32 being single service, as paper, the undesirable foreign matter may be wrapped and disposed of, as by burning. New bag replacement may have its open throat anchored at the flange 28. With the cover reset, the opening 21 closed, and the cap 7 in place, a throwing of the switch 13 in to start the motor 17 is effective for at once drawing the new bag 32 into snugly fitting assembly with the expanded metal supporting cone 29, there to be held against rupture of the filter paper, even at build up of air pressure. The steep downward pitch of the inner wall of the cone has a tendency to cause the entrained particles accumulating on

the side walls, to roll down into the pile 34, thereby maintaining automatically a normal clear filter area of efficient extent over a period of extended use.

For cleaning use, the hose 8 may replace the cap 7, and the door 24 be closed. For use in cleaning mops or the like the hose with its terminal nozzle may be disconnected, the cap 7 replaced, and the door 24 opened to allow projection into the chamber 27 of a mop 35. Whether or not the mop 35 be then shaken, there is efficient removal of loose matter therefrom.

A pocket 36 on the inside of the drum 3 at the chamber 27 and convenient for access from the door 21, may have therein an appropriate disinfectant, deodorant, or even fumigant.

The freely turning or swivel mounting for the three casters 1 on the bottom partition or base 2, permit ready shifting of the unit across a floor to any desired location.

What is claimed and it is desired to secure by Letters Patent is:

In sanitation equipment; a vertical axis drum, upper and lower transverse end walls for the drum, a downwardly pointed section forming a filter pocket in the drum spaced from the end walls, said pocket comprising an inverted cone-shaped foraminous wall, an anchoring support on the drum interior at the major diameter portion of the pocket providing suspension mounting for the cone-shaped wall, a porous bag lining for the cone-shaped wall, hoop means fixing the upper portion of the lining to the support, said filter pocket forming in the drum upward therefrom an intake chamber and below said pocket a take-off chamber, there being two openings into the intake chamber, a hose-connection cut-off for closing one of the openings, and a slide door closure for the other opening, a motor and a suction fan supported on the lower wall, said fan being connected to the motor to be driven thereby and positioned in the take-off chamber below the pocket, said fan having a discharge opening therefrom thru said lower end wall.

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