

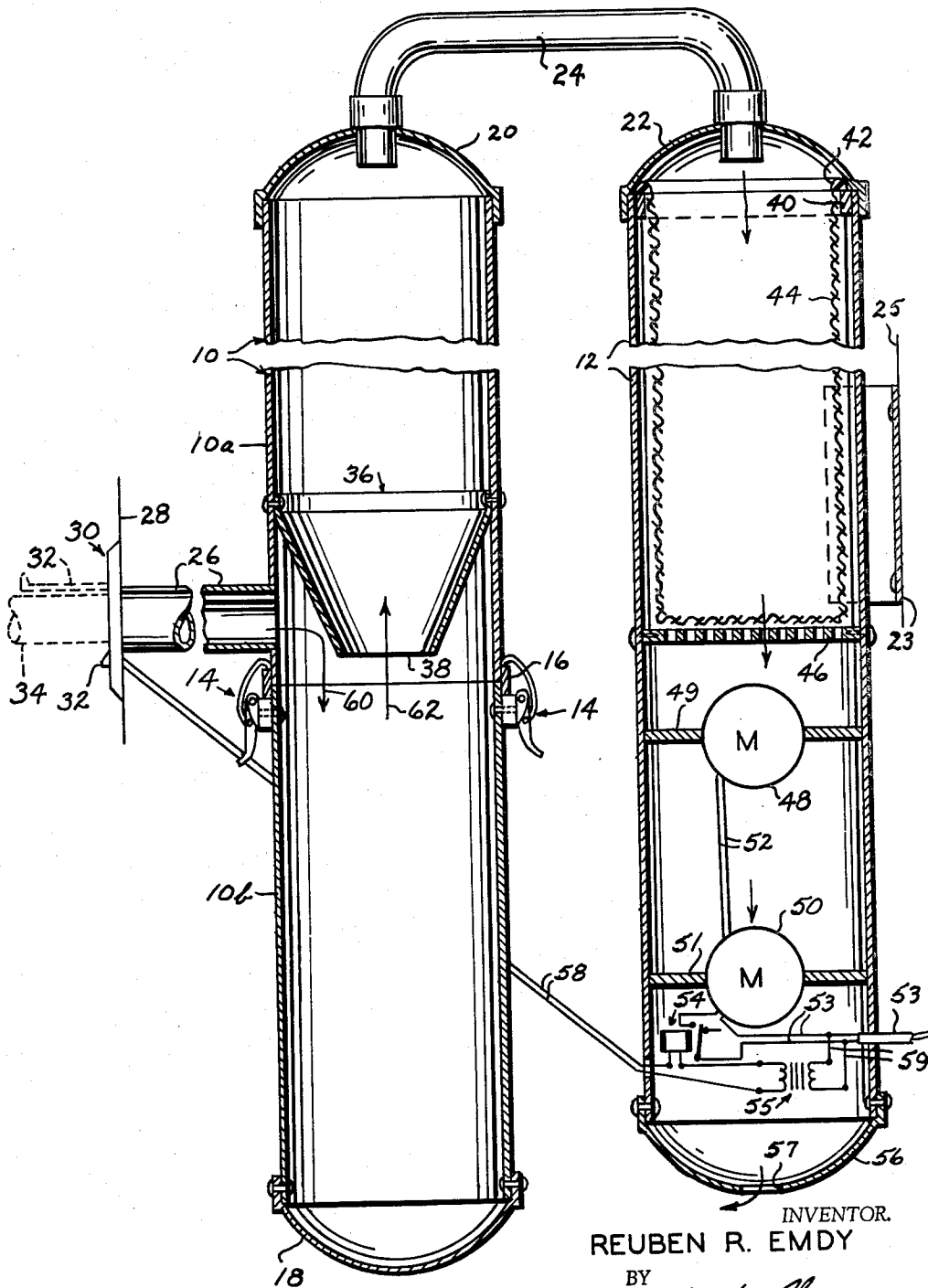
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R. R. EMDY

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CENTRAL VACUUM CLEANING UNIT

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INVENTOR.  
REUBEN R. EMDY

BY  
*Robert K. Shea*  
AGENT

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## CENTRAL VACUUM CLEANING UNIT

Reuben R. Emdy, Duncan, Okla., assignor to Wanda Manufacturing Co., Inc., Comanche, Okla.

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1 Claim. (Cl. 55—315)

The present invention relates to air filtering means and more particularly to a centrally located vacuum cleaning unit.

The principal object of the instant invention is to provide a central vacuum cleaning unit which incorporates a pair of motors to provide a substantial increase in the vacuum pull and may be used to pick up liquids as well as dirt.

Another object is to provide a central vacuum cleaning device which incorporates a pair of air receiving chambers interconnected so that large particles of dirt or other foreign matter will be collected within one tank while dust and lint carried by the air is filtered within the second tank.

Another object is to provide a device of this class in which the air entering the first of two tanks makes a substantially 90° turn before moving upwardly and into the adjoining tank.

Still another object is to provide a cleaning unit of such capacity that it need not be cleaned except for infrequent intervals.

A further object is to provide a vacuum cleaning device which may be located remote from its source of pick-up and thereby eliminate the noise and vibration usually associated with vacuum cleaners.

The present invention accomplishes these and other objects by providing a pair of cylindrical tanks or housings each having an inlet and an outlet. One of the tanks includes an air deflector means and the other tank including dust filtering means within its upper end portion and being provided with a pair of motor driven air impelling means mounted within its lower end portion.

Other objects will be apparent from the following description when taken in conjunction with the accompanying single sheet of drawings, wherein the single figure is a fragmentary vertical cross-sectional view of the device, partly in elevation.

In the drawing:

The reference numerals 10 and 12 indicate a pair of upright cylindrical tanks or casings. The tank 10 is horizontally divided intermediate its ends to form an upper section 10a and a lower dirt collecting section 10b. The section 10b is connected to the upper section 10a by a pair of clamp members 14 secured to the upper end portion of the section 10b and which removably grips a ring or collar 16 secured to the depending end portion of the upper section. The dirt collecting section 10b is closed at its depending end by a cap 18. A pair of caps 20 and 22, each provided with a central opening, closes the upper end of the section 10a and the upper end of the tank 12, respectively. Flexible tubing 24 is inserted at its respective ends into the opening of the respective cap 20 and 22 to interconnect the latter for communication between the tanks 10 and 12. Diametrically the ratio of the tubing 24 to the tanks is one and one-half to eight. Brackets 23, only one being shown, are secured to the tanks 10 and 12 for mounting the latter in a conventional manner on a vertical wall 25.

The section 10a is provided with a lateral opening into which one end of a section of air inlet tubing 26 is connected. Branches of this tubing are extended throughout the building served by the vacuum unit and terminate at selected locations on the walls of the building, indicated by the line 28. These remote ends of the tubing 26 are each connected to a conventional switch equipped vacuum

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hose connecting unit or outlet 30 mounted on the respective wall. Each outlet 30 includes a closure lid 32 which, when lifted to its dotted line position, permits insertion of a flexible suction hose, indicated by the dotted lines 34, into the outlet for communication through the tube 26 with the tank 10. Opening of the lid 32 closes a built-in electrical switch, not shown, for the purposes more fully described hereinbelow.

An inverted truncated conical shaped air deflector 36, having open ends, is secured to the inner wall surface of the tank section 10a so that the depending end 38 of the deflector is positioned below the lowermost edge of the tube 26.

The inner surface of the upper end portion of the tank 12 has secured thereto a ring 40, which removably supports a ring member 42. A dust and air filtering bag 44 is connected by its upper end portion to the ring 42 and extends downwardly a substantial distance into the tank 12.

Intermediate its ends the tank 12 is horizontally divided by a perforated plate 46. The depending end of the filter bag 44 contacts and is supported by the upper surface of the plate 46.

A pair of conventional motor fan units 48 and 50 are mounted on suitable horizontal supports 49 and 51 in superposed relation within the lower end portion of the tank 12. The depending end of the tank 12 is covered by a cap or bottom member 56 having a central air outlet opening 57 similar to the caps 20 and 22. Wiring 52 and 53 interconnects the motor fan units 48 and 50, through a relay 54, to a source of electrical energy, not shown. The relay 54 is connected to a transformer 55 through the switch of the hose connecting unit 30 by wires 58 so that when the suction hose 34 is inserted into the unit 30, after lifting the outlet lid 32, the switch is closed to energize the relay 54 which in turn energizes the motor fan units 48 and 50 to draw air and dirt from the source of pick-up, not shown, into the tank 10 through the tube 26. The transformer 55 is connected to the wires 53 by wires 59. Air entering the tank 10 is deflected downwardly by the wall of the deflector 36 before being drawn upwardly through the tank section 10a, as shown by the arrows 60 and 62. Heavy particles of dirt or other debris, not shown, drawn into the tank 10, thus falls by gravity down into the dirt receiving tank section or receptacle 10b while the dust and lint laden air is drawn through the upper end portion of the tank 10 through the tube 24 and into the bag 44. The filter bag 44 removes the dust and lint from the air as it is drawn out through the sides and bottom of the bag. The filtered air passes downwardly through the tank 12, through the plate 46, through the motor fan units 48 and 50 and is exhausted through the opening 57 in the tank bottom 56. Removal of the tube 34 from the wall unit 30 and the closure of the plate 32 opens the circuit over the wires 58 to restore the relay 54 thus stopping the motor fan units.

Obviously the invention is susceptible to some change or alteration without defeating its practicability, and I therefore do not wish to be confined to the preferred embodiment shown in the drawings and described herein, further than I am limited by the scope of the appended claim.

I claim:

A vacuum cleaner, comprising: a first upright cylindrical casing having an air inlet intermediate its ends, said first casing being transversely divided below the air inlet to form an upper section and a lower removable dirt collecting receptacle; clamp means removably connecting said dirt collecting receptacle to the depending end portion of the upper section of said first casing; air deflecting means secured to the inner wall of said first casing, in-

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intermediate its ends, adjacent the air inlet, said air deflect-  
 ing means comprising a hollow inverted truncated conical  
 member having a downwardly disposed open end portion  
 positioned below the lowermost limit of the air inlet in  
 said first casing; a second upright juxtaposed cylindrical  
 casing having an air outlet at its lower end; an air inlet  
 tube connected at one end to the air inlet in said first cas-  
 ing; a switch equipped plate normally closing the other  
 end of said air inlet tube; tubing interconnecting the upper  
 ends of said casings for communication therebetween; 5  
 motor driven air impelling fans mounted in superposed re-  
 lation within the lower end portion of said second cas-  
 ing for producing a flow of air therethrough; filter means  
 in said second casing situated between its upper end and  
 the air impelling means for filtering dust laden air, said  
 filter means comprising a cylindrical shaped bag of per-  
 vious material having a closed bottom and an upper open  
 end, a ring secured to the upper end of said bag, a ledge  
 formed on the inner periphery of the upper end portion 10

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of said second casing for removably supporting said ring,  
 and a foraminated plate horizontally dividing said second  
 casing intermediate its ends and supporting the bottom end  
 portion of said bag; a transformer; a relay connected to  
 the secondary of the transformer; wiring connecting a  
 source of electrical energy to the primary of said trans-  
 former and to said motor driven fans through the contacts  
 of said relay; and other wiring connecting said switch  
 equipped plate to the secondary of said transformer  
 through said relay.

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