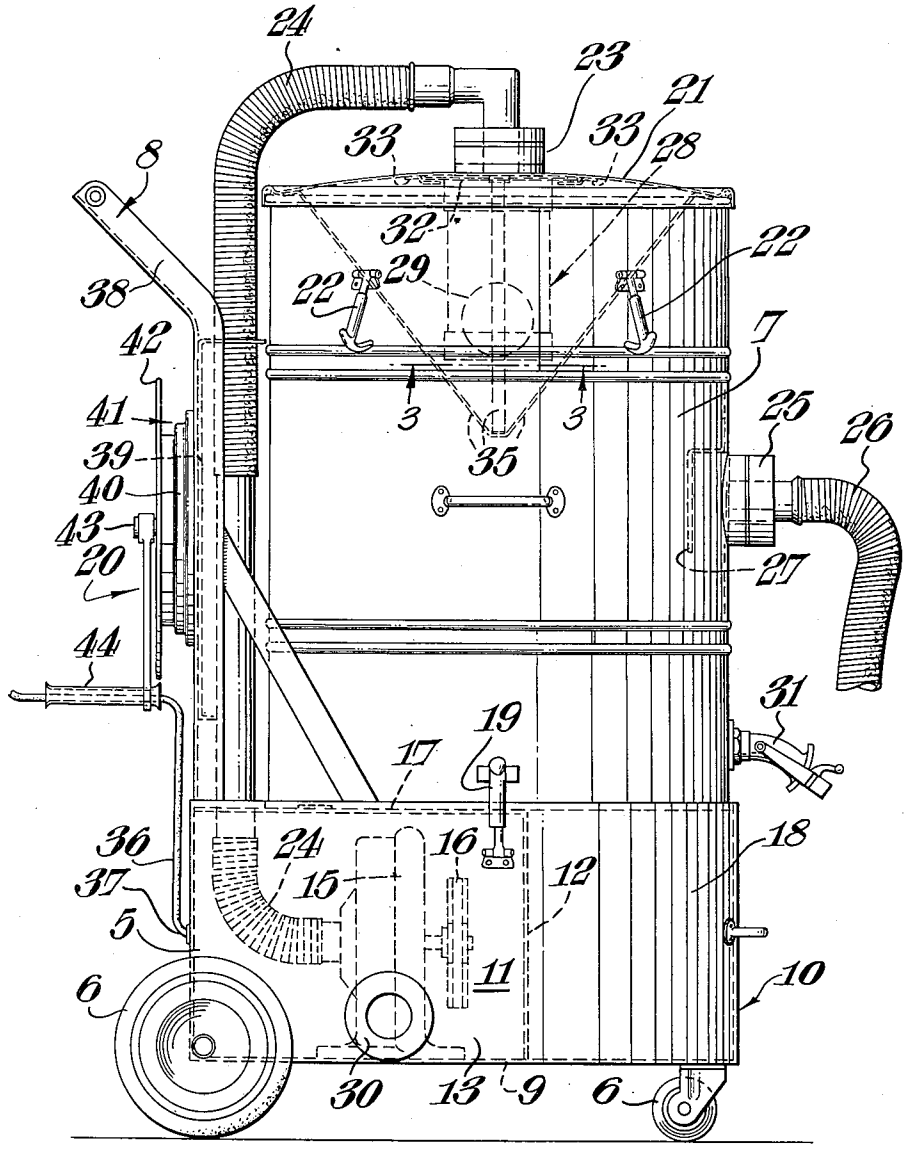
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SUCTION CLEANING MACHINES

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Fig. 1.



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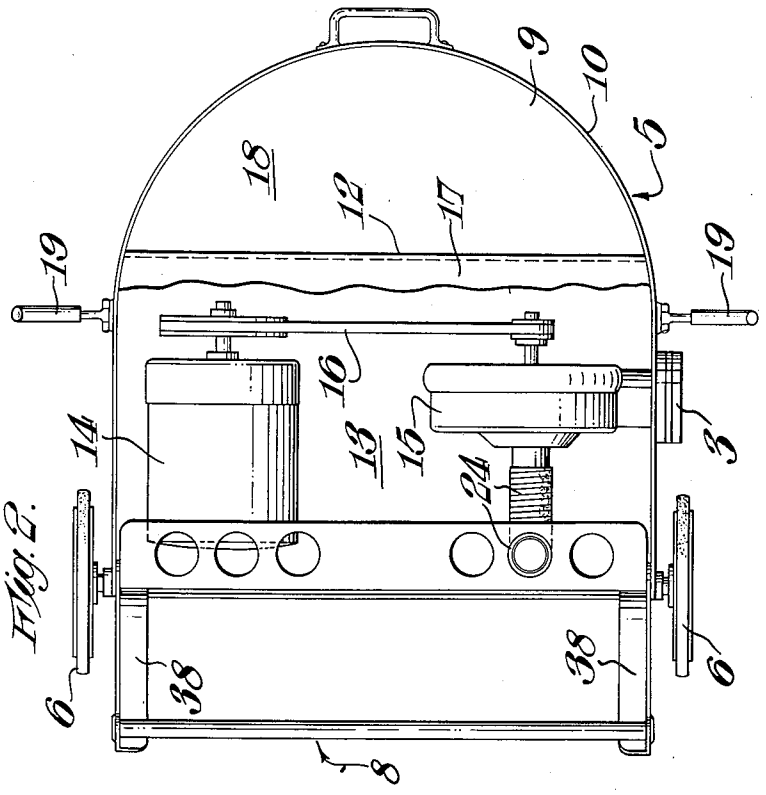


Fig. 2.

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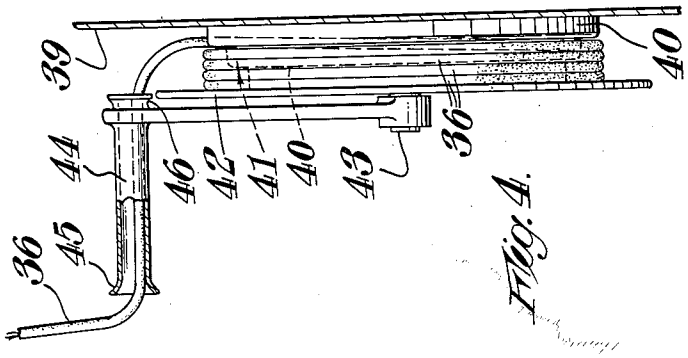


Fig. 4.

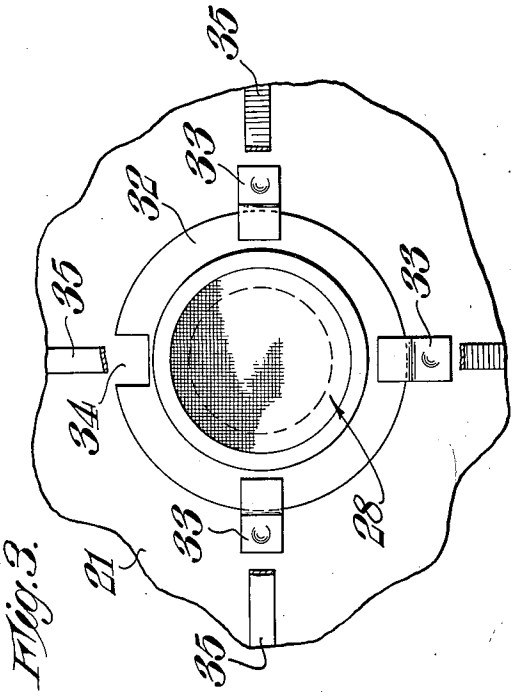


Fig. 3.

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3,006,020

SUCTION CLEANING MACHINES

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1 Claim. (Cl. 15—323)

This invention concerns suction cleaning machines for collecting liquids, sludges, swarf, dry dirt, dust or the like.

The main object of the invention is to provide a transportable machine for industrial use adapted for a variety of wet and dry suction cleaning operations.

Thus a single machine can be used for such operations as drying floors after washing by sucking up dirt-laden water, cleaning hard or carpeted floors of dust, collecting sludge and swarf from the sumps of the machine tools, and cleaning of grease traps.

According to this invention the machine comprises a wheeled carriage, a compartment within the carriage to house an electric motor and a suction fan driven by the motor, a collecting bin upon the carriage, a suction hose extending from the fan casing and removably secured to the bin, a connector for a dirt pick-up hose carried by the bin, and a winding device carried by the carriage for coiling a length of electric cable from the electric motor for connection to a power point.

Another feature of the invention resides in a cable winding device for the machine comprising a non-rotatable spool and a hollow handle mounted for rotation coaxially of the spool and lying radially outside the peripheral edge of a side of the spool, the handle being so arranged in relation to an anchorage for one end of the cable that on rotation of the handle the cable is wrapped around the spool centre, passing through the hollow handle as the cable is wound on the spool.

A practical application of the invention now follows, by way of example, the embodiment being described with reference to the accompanying drawings whereof:

FIG. 1 is a side view of a sludge-collecting machine according to the invention,

FIG. 2 is a plan view of the carriage of the machine of FIG. 1 with a platform cover thereof removed,

FIG. 3 is a view in the direction of the arrows 3—3 of FIG. 1, and

FIG. 4 is a side view of the cable winder on a larger size.

The machine comprises a carriage 5 mounted on wheels 6, a collecting bin 7 upon the carriage and an upstanding rigid handle 8 for moving the carriage. The carriage 5 has a bottom 9 and sides 10 which define a compartment 11 that is divided by partition 12 into a housing 13 for an electric motor 14 and a fan 15 driven therefrom by belt 16. The housing 13 is closed by a platform 17. The compartment 11 also comprises a container 18 for collecting nozzles and other auxiliary equipment.

The bin 7 rests in part upon the platform 17 and covers the container 18 so that when the bin is removed access is obtained to the container.

The bin is held in position upon carriage 5 by releasable spring hooks 19.

A cable winder, generally indicated at 20, and described in detail later, is carried by the handle 8.

The lid 21 of bin 7 is held down by releasable spring hooks 22 so that it is fluid tight on the bin. A connector 23 on the lid 21 removably receives a suction hose 24 leading to the inlet side of the fan 15 so that the bin, in use, is at sub-atmospheric pressure.

A connector 25 at the side of bin 7 receives a dirt or sludge pick-up hose 26 which is used for collecting swarf, sludge, liquids and dirt.

The bin 7 carries a baffle 27 behind connector 25 so that dirt entering the bin is directed towards the bottom of the bin.

A cage 28 depends from lid 21 and within the cage is a float ball 29 which rises when the bin is filled with liquid thereby to close the connector opening and prevent the liquid being drawn through fan 15 and discharged through connector 30.

A drain cock 31 is provided near the bottom of the bin 7.

The cage 28 comprises a flanged ring 32 (see FIG. 3) which is supported by fingers 33 secured to the lid, a cut out 34 in ring 32 enabling the flange to be secured in position upon rotation.

A pyramid frame 35 is suspended from the lid 21 to support a filter fabric (e.g. paper, cloth or the like) which prevents the escape of dry dirt and dust from the bin through hose 24.

The electric motor 14 is connected by a cable 36 to a convenient power point, the cable being anchored, at 37, to the back of the platform 5.

Two handle uprights 38 one at each side of the machine, are rigidly connected together by a plate 39 which is pressed out to form an integral and non-rotatable spool centre 40. The plate 39 forms one side of the spool (which is generally indicated at 41) and the other side is formed by a circular disc 42 which is slightly flared outwardly and attached to the spool centre 40 e.g. by welding.

The diameter of the spool centre 40 increases from side 42 to side plate 39, and this is done, in this particular construction, in a plurality of steps.

An axle 43 projects, centrally of spool 41, from side 42 thereof, and carries a handle 44. The handle is rotatable about side 42.

The handle 44 is tubular and the ends 45, 46 thereof are outwardly flared as shown. The end 46 is in the plane of the side 42 of the spool. Consequently the cable, when completely unwound from the spool, extends from the handle 44 to the anchorage 37 across the spool centre 40 so that when the handle is rotated the cable is wrapped around the spool. The stepped centre ensures that the maximum amount of cable is wound on to the spool in a uniform manner. As the cable goes through the handle it is not touched by hand and any dirt on it does not dirty the hands of the operator. Because the cable is bent from the handle towards the spool the frictional drag on the cable in passing through the handle provides that the cable is wound tightly upon the spool.

The cable winder is of simple and robust construction with the minimum of moving parts.

The machine described may be used for drying floors of warehouses, factories, offices and shops; collecting sludge, swarf, grindings and cutting oils from machine sumps; cleaning grease traps; sweeping ceilings, roofings and pipes; cleaning boilers or flues; and also as a blower for dispersing dust by coupling the hose to the exhaust connection of the blower.

I claim:

A suction cleaning machine comprising a wheel carriage, a closed compartment within the carriage, an electric motor and a suction fan driven by the motor both within the compartment, a removable bin upon the wheel carriage and overlying the motor fan compartment, a suction hose extending from the fan, a connector at the top of the bin for removably coupling the suction hose to the bin, a connector at the side of the bin for a dirt pick-up hose, a cable winding device carried by the carriage for coiling a length of electric cable from the electric motor for connection to a power point, said cable winding device comprising a non-rotatable spool, a tubular guide for said cable having a hand-grip portion,

and means mounting said guide for rotation about the axis of said spool with one end of the guide positioned radially beyond the periphery of the spool and in the plane of one side of the spool, a frame suspended within the top part of the bin to carry a filter material for preventing escape of dirt through the suction connector, a float within the filter frame and means for guiding the float to close the connector at the top of the bin.

References Cited in the file of this patent

UNITED STATES PATENTS

963,139 Griffiths ---------- July 5, 1910
1,846,524 Lindsay ---------- Feb. 23, 1932
2,233,167 Holm-Hansen ---------- Feb. 25, 1941
2,280,495 Martinet ---------- Apr. 21, 1942
2,533,268 Lanter ---------- Dec. 12, 1950
2,534,808 Bevington et al. ---------- Dec. 19, 1950
2,549,181 Durham ---------- Apr. 17, 1951
2,814,358 Beede et al. ---------- Nov. 26, 1957
2,893,045 Dalbec ---------- July 7, 1959

FOREIGN PATENTS

278,603 Great Britain ---------- Oct. 13, 1927
350,772 Great Britain ---------- June 18, 1931
637,490 France ---------- Jan. 20, 1928