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ILLUMINATING MEANS FOR TANK TYPE SUCTION CLEANERS

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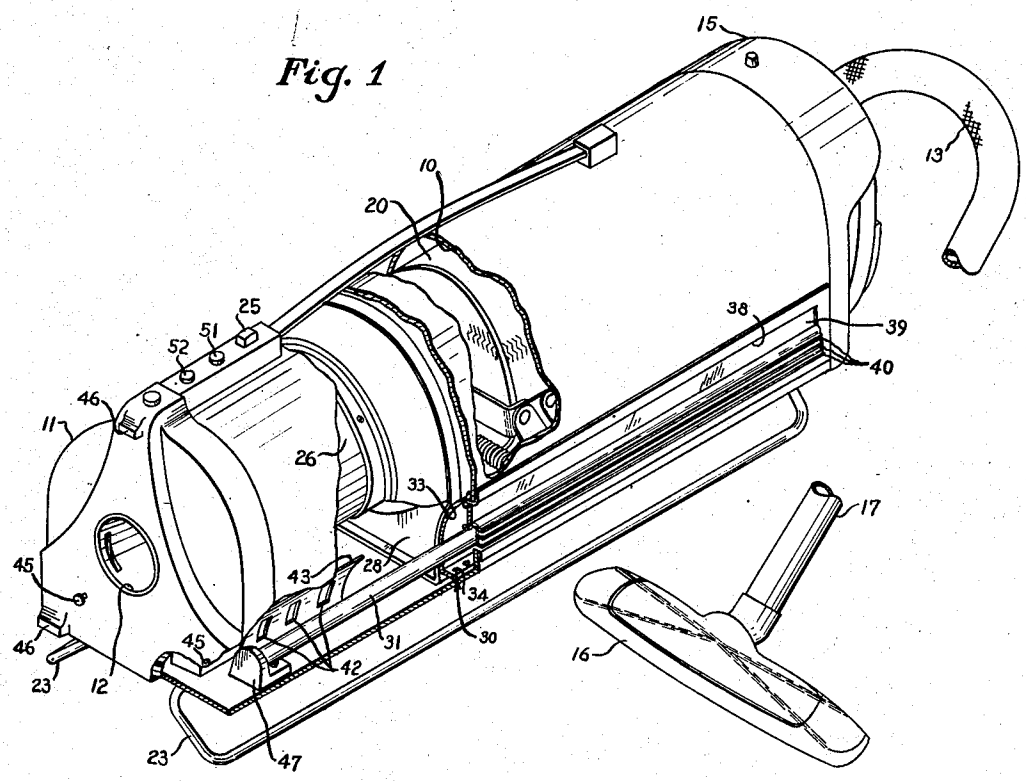
Fig. 1



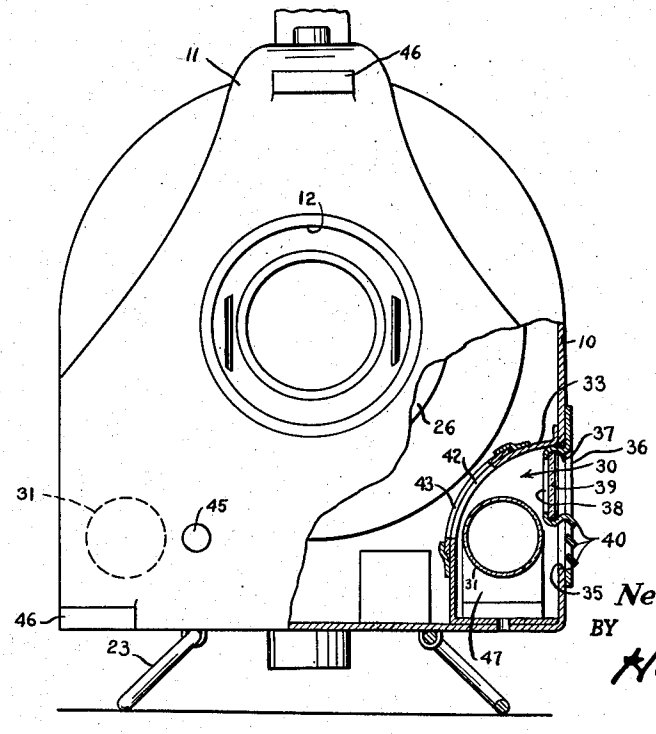


Fig. 2

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ILLUMINATING MEANS FOR TANK TYPE SUCTION CLEANERS

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This invention relates to suction cleaners and more particularly to the type of cleaner usually referred to as the tank or canister type in which the motor-fan-filter unit is housed within a casing and a cleaning tool such as a suction nozzle is connected to the motor-fan-filter unit by means of a flexible hose.

Heretofore, it has been the practice to apply a light directly to the cleaner nozzle so that only the area extending a few inches in front of the nozzle is illuminated. In using the tank type cleaner it is desirable that the entire general area to be cleaned be illuminated so that the cleaning tool can be applied to only that area which needs cleaning. That is especially significant when the cleaner is used for cleaning under beds or other dark and inaccessible places.

According to the present invention a light is applied to the body of the cleaner unit in such a position relative to the suction hose connection that the entire area on either or both sides of the unit is illuminated as the unit is moved from place to place. The light is of sufficient intensity and is so positioned relative to the surface being cleaned that the light will cause particles of dirt and litter to cast exaggerated shadows so that the user will be immediately informed as to where the suction nozzle should be applied.

Tank cleaners of the cylinder type usually have skids or runners which support the cleaner in a horizontal position on the floor as the cleaning tool or nozzle is manipulated to perform its cleaning function. The suction hose is connected to the front end cap and the rear end cap may be provided with supports whereby the cleaner may be supported on its rear end.

In operating the tank or canister type cleaner the entire unit is usually carried into the room to be cleaned and the casing positioned on the floor on its skids or runners. It has been found convenient to then move the nozzle or hand tool about over the floor or floor covering being cleaned at one or both sides of the cleaner. When that area is cleaned the cleaner may then be moved to another position by pulling on the hose to move the casing to a new position. In moving the casing from place to place to a new area it is essential that the operator should know when the cleaner has been moved to a position which has not yet been cleaned.

Accordingly, the present invention contemplates the mounting of lights on either or both sides of the cleaner immediately above the skids or runners of sufficient intensity that the light rays will be directed downwardly and outwardly

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relative to the cleaner so as to illuminate the entire area accessible to the hand tool on either or both sides of the cleaner body.

Thus, when the cleaner is at rest the light beams will cause dirt or litter to cast exaggerated shadows and inform the user as to the exact spot to apply the suction nozzle. As the cleaner casing is being drawn across the floor in moving it from one general area to another, the area on either side of the cleaner will be illuminated so that the operator will know at once where the cleaner casing should be placed.

More specifically, according to this invention, lamps are positioned in depressions on either or both sides of the cleaner casing immediately above the skids or runners. The lamps preferably extend along the entire length of the cleaner body and are preferably of the fluorescent type, although other types such as incandescent lamps can also be used.

The tank cleaner of this invention may also be upended on its rear end with the flexible hose extending from the upper end thereof and with its bottom facing a curtain, chair, or other vertical surface to be cleaned so that the light rays from the lamps in the lower side walls of the cleaner body will be directed forwardly and laterally toward the vertical surface to be cleaned.

It is preferable to use fluorescent lamps because certain well known germ killing lamps commonly known as "sterilamps" can be substituted bodily for fluorescent lamps. That is, the same ballast, starting circuit, etc. will operate with certain sizes of germicidal lamps as well as with fluorescent lamps. Thus, if the user uses the light on only one side of the cleaner a germicidal lamp may be used in the other side without modification.

Specifically, an object of this invention is to provide a receptacle in each side of a horizontal type cleaner for receiving a lamp, the construction being such that either an illuminating lamp or a germicidal lamp can be received in either receptacle whereby the user may use an illuminating lamp on both sides or use an illuminating lamp on one side and a germicidal lamp on the other. Preferably, the receptacles are so formed that air circulating through the cleaner may be circulated directly through the receptacle containing the germicidal lamp.

Other objects and advantages of this invention will become apparent as the description proceeds when taken in connection with the accompanying drawing in which:

Figure 1 is a perspective view of a horizontal

type tank cleaner with this invention applied thereto; and

Figure 2 is an end view of the cleaner of Fig. 1 with a portion of the walls broken away to show one of the receptacles for receiving a lamp.

Referring to the drawings, the reference numeral 10 represents the casing of a cylinder type cleaner normally supported in a horizontal position, as shown, by skids or runners 23 secured to the base of the casing 10 in any suitable manner.

The ends of the casing 10 are closed by a rear end cap 11 and a front end cap 15 which may be attached to the casing 10 in any suitable manner. The rear end cap is provided with feet or protuberances 46 which may be used to support the casing 10 on its rear end as will be explained hereinafter.

A flexible hose 13 may be applied to either the rear end cap 11 or the front end cap 15 depending upon whether the cleaner is to be used for blowing or for suction cleaning. The opening 12 in the rear end cap 11 represents the female part of a detachable connection for receiving a cooperating male part attached to the hose 13 when the cleaner is used for blowing. A similar opening is provided in the front end cap 15 for attaching the hose 13 thereto when the cleaner is used for suction cleaning. The hose 13 is attached to a manually manipulatable wand 17 which in turn is swiveled to a floor tool or nozzle 16 as is well known in the art.

The interior of the casing 10 is divided into a suction chamber and a pressure chamber by a bulkhead 28. A filter bag 20 is positioned in the suction chamber and a motor fan unit 26 extends into the pressure chamber. The construction and operation of the foregoing is well known in the art and need not be further explained.

Within the casing 10, in each lower side corner thereof, and extending over substantially the entire length of the casing are a pair of receptacles or recesses 30 formed by the side walls of the casing 10 and by arcuate shaped reflectors 33. The recesses or receptacles 30 receive tubular lamps 31 which are supported from the base of the casing 10 by the brackets 47. Openings 35 are formed in the walls of the casing 10 opposite the recesses 30, which openings are closed by closures 37 which may be removably attached to the casing walls in any suitable manner.

While the details of only one of the receptacles 30 is shown in the drawings it is to be understood that there are to be receptacles provided in each lower side corner of the casing 10.

The closures 37 include a plurality of downwardly directed longitudinally extending louvres 40 immediately opposite the tubular lights 31 and a longitudinally extending opening 38 above the louvres 40. The openings 38 are adapted to be closed by a transparent pane 39 which may be of glass or other suitable material. The pane 39 is preferably of a material which will pass light rays but will not pass ultra violet rays.

The receptacles 30 and the reflectors 33 extend along the entire length of the casing 10 including the suction chamber and the pressure chamber. However, opposite the pressure chamber the reflectors are provided with a plurality of openings 42 adapted to be closed by a slidable plate 43 having openings complementary to the openings 42 and adapted to be aligned therewith when in one position. The inner surface of the plates 43 is made reflective so that when the openings 42 are closed by the plate 43 it will complete the reflective surface of the reflectors 33. Knobs 45 extending through the rear end cap 11 are connected to the plate 43 so that the openings 42 may be readily opened and closed.

The lamps 31 are preferably of the fluorescent type which of course will require the well known starting equipment which may be housed within the pressure chamber of the housing 10. The starting circuits, including the ballast and thermostatic switches, being well known need not be described in detail except that either light 31 may be started by push button switches 51 and 52 on the top of the casing 10. A switch 25 adjacent to the switches 51 and 52 is of any well known type and is for energizing the motor fan unit 26.

In use, the user pulls the cleaner body over a surface to be cleaned by pulling on the hose 13. If the user is right handed the right hand will probably be used to pull the cleaner. It will then be natural for the user to turn to the left and manipulate the floor tool 16 on the left hand side of the cleaner body. A left handed user would probably pull the cleaner with the left hand and turn to the right and manipulate the hand tool 16 on the right hand side of the cleaner body.

Thus, it may be found in use that in normal operation only the light on the right or left hand side is used. In such a case a germicidal lamp may be substituted for the fluorescent lamp there being certain sizes of germicidal lamps which are usable with the same ballast, switching circuit, etc. as fluorescent lamps.

In case a germicidal lamp is substituted for one of the fluorescent lamps the knob 45 on that side is actuated to open the openings 42 which will permit the air being circulated through the pressure chamber to flow directly through the chamber 30 on that side so that the irradiating effect of the germicidal lamp on the air will be increased. It is also to be noted that rays from the germicidal lamp will also be directed downwardly onto the floor covering adjacent the cleaner body through the louvres 40. The pane 39 will prevent ultra violet rays from being projected outwardly toward the operator.

It is also possible that a user might wish to have the floor illuminated on both sides of the cleaner such as when cleaning under twin beds with the cleaner positioned between them. In such a case the fluorescent lamps are left in both receptacles 30.

With illuminating lights in the receptacles 30 light rays will be radiated outwardly and downwardly directly onto the floor adjacent the cleaner body through the louvres 40 and also will be reflected outwardly through the pane 39 by means of the reflectors 33 whereby the entire area on that side of the cleaner which is accessible to the nozzle will be illuminated.

The casing 10 may be upended onto the feet 46 with the receptacle 30 containing the illuminating light directed toward a curtain, chair, or other vertical surface to be cleaned.

While I have shown but a single embodiment of my invention it is to be understood that this embodiment is to be taken as illustrative only and not in a limiting sense. I do not wish to be limited to the specific structure shown and described but to include all equivalent variations thereof except as limited by the scope of the claims.

I claim:

1. A suction cleaner comprising, an elongated casing, supporting means carried by said casing for supporting it in a horizontal position for

movement over a surface to be cleaned, a fan in said casing, end caps for closing the ends of said casing, at least one of said end caps being formed with an opening adapted to receive one end of a flexible hose, the other end of which is attached to a manipulatable air tool, means forming a receptacle in each side of said casing between said end caps, and a lamp in each of said receptacles, the outer walls of said receptacles being formed to project light rays from said lamps downwardly and outwardly onto said surface at the sides of said casing over an area accessible to said air tool.

2. A suction cleaner according to claim 1 in which one of said lamps is an illuminating lamp and the other a germicidal lamp.

3. A suction cleaner according to claim 2 in which the inner and outer walls of the receptacle which houses said germicidal lamp are apertured to permit air moved by said fan to flow into said receptacle and over said germicidal lamp.

4. A suction cleaner comprising, an elongated casing, a pair of elongated runners secured to said casing for supporting it in a horizontal position for movement over a surface, a fan in said casing, means for dividing the interior of said casing into a suction chamber and a pressure chamber at opposite ends thereof, an opening formed in at least one end of said casing adapted to receive one end of a flexible hose, the other end of which is connected to a manipulated air tool, means forming a receptacle in said casing immediately above each of said runners and extending in juxtaposition to both of said chambers and an elongated lamp in each of said receptacles, the outer walls of said receptacles being formed to direct rays from said lamps outwardly and downwardly onto said surface.

5. A suction cleaner according to claim 4 in which one of said lamps is a germicidal lamp and the inner and outer walls of the receptacle containing said germicidal lamp are apertured to communicate with said pressure chamber and with the outside atmosphere.

6. A suction cleaner according to claim 5 including valve means for opening and closing the aperture in the inner wall of the receptacle containing said germicidal lamp.

7. A suction cleaner comprising, an elongated casing, a pair of runners attached to the base of said casing and extending along the bottom edges of said casing for supporting it for movement over a surface, an arcuate reflector secured interiorly of said casing above each of said runners, said reflectors facing outwardly and extending along the length of said casing, an elongated lamp positioned in front of each of said reflectors, an opening in the walls of said casing in front of said reflectors and lamps, a closure for each of said openings, louvres in said closures located downwardly and outwardly of said lamps and a paned opening above said louvres positioned to pass light reflected from said lamps laterally of said casing.

8. A suction cleaner according to claim 7 in which said panes are constructed to pass visible light rays but not ultra violet rays.

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