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SUCTION CLEANER

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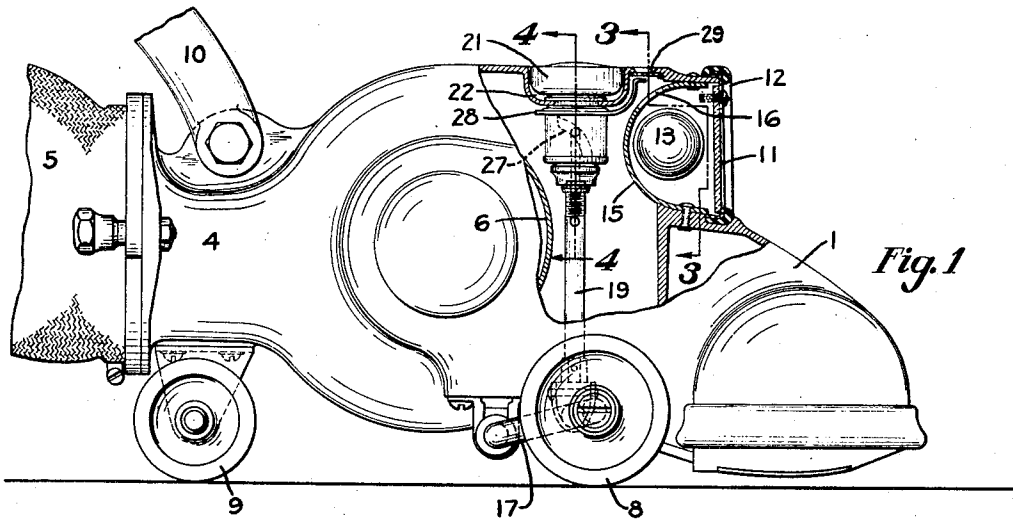
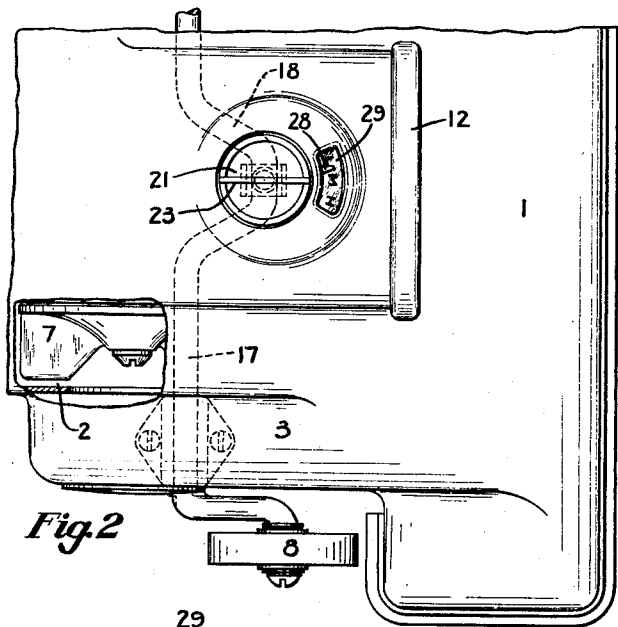
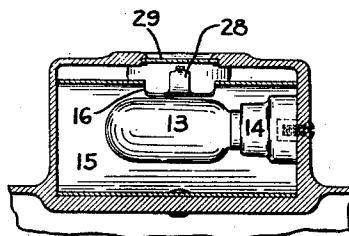


Fig. 3

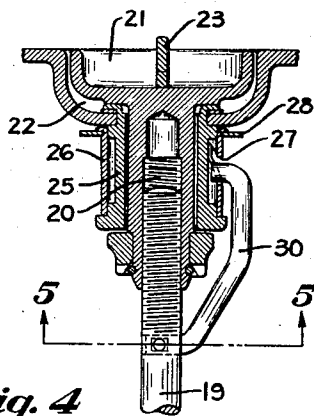


Fig. 4

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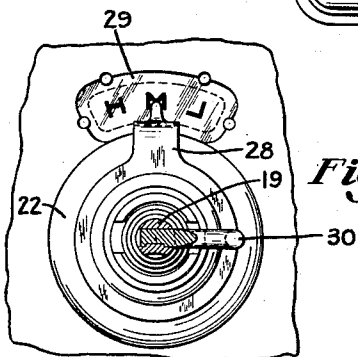


Fig. 5

UNITED STATES PATENT OFFICE

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SUCTION CLEANER

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3 Claims. (Cl. 240-2)

The present invention relates to suction cleaners in general and particularly to new and novel improvements in illuminating means in a suction cleaner. More specifically the invention comprises a suction cleaner in which the height-indicating means include an illuminated dial.

It is an object of the present invention to provide a new and improved suction cleaner. It is another object of the invention to provide new and improved nozzle-height-indicating means in a suction cleaner. A still further object is the provision of nozzle-height-indicating means in a suction cleaner which include an illuminated dial. A still further object is the provision in a suction cleaner of illuminating means which function to illuminate the floor covering forward of the suction nozzle and also to illuminate the height-indicating means. These and other more specific objects will appear upon reading the following specification and claims, and upon considering in connection therewith the attached drawing.

Referring now to the drawing in which a preferred embodiment of the present invention is disclosed:

Figure 1 is a side elevation of a modern suction cleaner embodying the present invention, certain parts being broken away and shown in section;

Figure 2 is a partial top view of the cleaner shown in Figure 1;

Figure 3 is a section upon the line 3-3 of Figure 1;

Figure 4 is a section upon the line 4-4 of Figure 1; and

Figure 5 is a section upon the line 5-5 of Figure 4.

Referring again to the drawing, a modern suction cleaner is illustrated in which the nozzle is indicated by the reference character 1, the fan chamber by the reference character 2, the interconnecting air passageway therebetween by the reference character 3, the exhaust outlet by the reference character 4, and the dust bag attached to the latter by the reference character 5. Within the cleaner casing which forms the nozzle, the fan chamber and the air passageway together with the exhaust outlet is positioned a motor 6 which drives a suction-creating fan 7 within the fan chamber 2. The cleaner is movably supported upon front wheels 8 and upon rear wheels 9, only one of each being shown, and as in the usual cleaner a pivoted handle 10 is provided by which the operator can propel the machine.

To aid and assist the operator in directing the cleaner over a supporting surface covering the casing is provided immediately above the nozzle 1 with a forwardly facing opening which is closed by a transparent plate or window 11 which is surrounded and seated by a resilient guard member 12 adapted to contact articles of furniture, etc., and to protect the window 11 therefrom. Immediately in the rear of window 11 is mounted an electric light 13 in a suitable socket 14 which is connected to a source of electric current in any suitable manner. A reflector 15 encircles the inner side of the lamp 13 and directs the light rays therefrom forwardly through the opening or window 11. Reflector 15 is provided with a slot or aperture 16 in its rear face near the top for a purpose which will be hereinafter disclosed.

The nozzle 1 of the machine must be adjusted to various heights above a supporting surface covering dependent upon the thickness and stiffness of that covering. To make this adjustment possible the front wheels 8, 8 are mounted upon the offset outer crank arms of a shaft 17 which is also provided with a central crank portion 18. From this central crank portion 18 a vertical shaft 19 extends upwardly into screw threaded relationship with an internally threaded bore 20 of a manually adjustable knob 21. Knob 21 is seated within a recess 22 in the top surface of the cleaner casing substantially flush with the surface thereof, being provided with a central web 23 to enable an operator to manipulate the knob with his fingers. The manual rotation of knob 21 results in the raising or lowering of vertical shaft 19 by the cooperation of the threaded bore 20 with its threaded upper end. This vertical movement of the shaft causes the wheel shaft 17 to be pivoted and the wheels 8 to be raised or lowered.

It is desirable that the operator be able to determine the height of his nozzle without the necessity for turning the machine over or actually examining the relationship of the nozzle to the covering. According to the present invention, height-indicating means are provided to indicate the nozzle adjustment. Seated in the central opening of the recess 22 and extending downwardly therefrom, in spaced telescopic relationship to the internally threaded portion of knob 21, is a sleeve 25 formed with a flange at its lower end. Rotatably seated upon sleeve 25 and carried by the flange at its lower end is an annular indicator sleeve 26 which is formed with a cam slot 27 and carries a projecting indicating

arm 28 which extends at the side of recess 22 and above the reflector 15. Immediately above the end of indicator 28, and also above the opening 16 in light reflector 15, is a translucent dial 29 upon which are positioned the letters "L", "M", and "H", indicating low, medium, high. Indicator 28 is visible through dial 29 and light rays from the lamp 13 passing through aperture 16 in reflector 15 throw the reflection of the indicating arm 28 upon the dial to indicate its position relative to the letters "L", "M", and "H". In the manual adjustment of the height-indicating means the indicator is moved relative to the dial 29 by the action of a rigid finger 30 which is carried by the vertical shaft 19 and which extends upwardly and into the cam slot 27 in indicator sleeve 26. As finger 30 moves up and down with shaft 19, and so relative to indicator sleeve 26, it causes that sleeve to rotate as it slides in the slot 27.

In the operation of the cleaner the electric light 13 is connected to a source of current and light rays pass through the transparent window 11 and downwardly across the nozzle and on through the surface covering undergoing cleaning to enable the operator to determine more accurately the presence or absence of foreign material. Light rays also pass from the lamp 13 upwardly through aperture 16 and past indicator 28 and on into translucent dial 29, casting a shadow of the indicator 28 thereon. The operator is enabled to glance at the indicator and dial, which lie in a horizontal plane, and to determine at once the height of his nozzle relative to the surface covering undergoing cleaning. If the indicator 28 indicates the nozzle is low the operator need only turn the knob 21 causing the reflection of indicator 28 to move towards the letter "M" or "H" which indicate medium or high adjustment.

I claim:

1. In a suction cleaner, a casing, means movably supporting said casing, means to adjust said supporting means to raise and lower said casing

relative to a surface covering undergoing cleaning, height-indicating means to indicate the position of said casing including a relatively movable transparent dial and pointer, said casing being provided with a forwardly facing aperture, an electric light within said casing adjacent said aperture, a reflector partially enclosing said light to direct rays through said aperture, said reflector being formed with an aperture, said casing being formed with a second aperture toward which rays through said reflector aperture are directed, said dial being mounted in said second aperture and illuminated.

2. In a suction cleaner, the combination of a wheeled casing, having a nozzle, means for vertically adjusting said casing to vary the height of said nozzle above the floor surface, a visual indicator associated with said height adjusting means and comprising a dial of translucent material bearing opaque height indicating symbols thereon and a movable pointer, an electric lamp mounted on said casing, an enclosure for said lamp having a window for directing the light therefrom on to a prescribed area of the floor surface in front of said nozzle and an aperture directed toward said dial through which light from said lamp is thrown onto said dial from beneath to illuminate the same.

3. In a suction cleaner, the combination of a casing having a nozzle, means for adjusting the height of said nozzle relative to the floor surface and including an indicator comprising a dial of transparent material fitting into an aperture in the top wall of said casing with opaque symbols thereon, and a pointer adapted to coact with said indicating symbols, said casing being provided with a lamp housing below said indicator dial and having a forwardly directed light opening and an aperture substantially in vertical alignment with said indicator dial, and a lamp mounted in said housing.

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