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J. A. LOEWINSOHN

1,871,624

VACUUM CLEANER

Filed Feb. 20, 1931

2 Sheets-Sheet 2

Fig. 3.

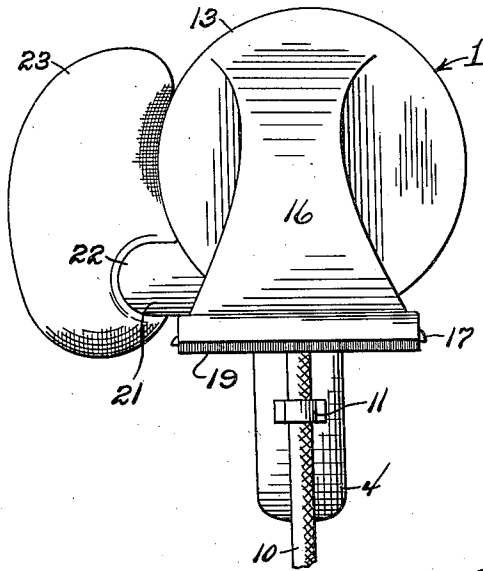


Fig. 4.

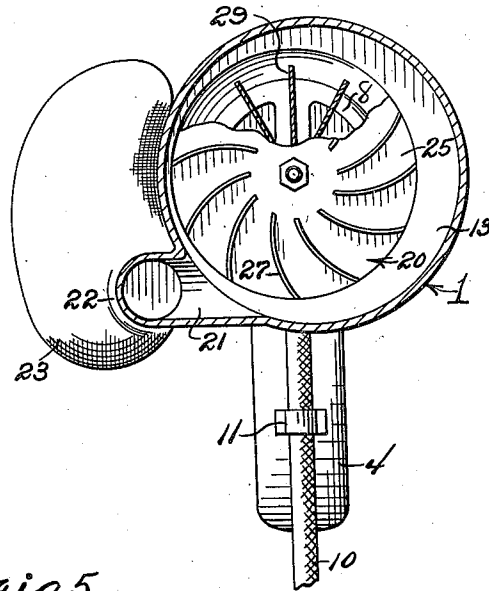
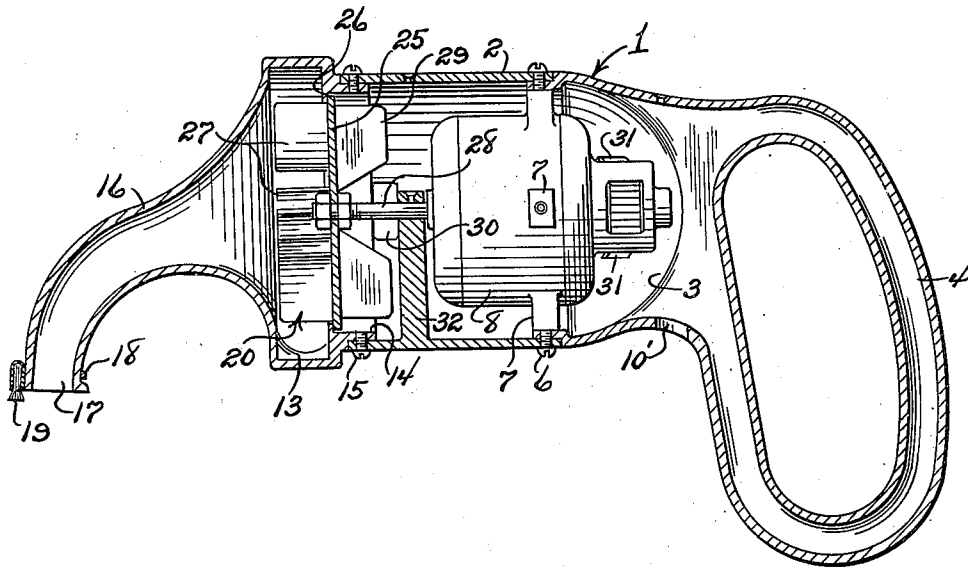


Fig. 5.



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VACUUM CLEANER

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This invention relates to vacuum cleaners and has for the primary object, the provision of a device of the above stated character which will be compact and light in weight, 5 that the device may be held by and operated with one hand without tiring the operator, whereby cleaning of many kinds of articles or objects may be easily and quickly accomplished and provides a device especially 10 adaptable for use by merchants for removing dirt, dust and other foreign matter from hats, clothing, and the like kept in stock and further may be employed in household cleaning, such as, removing dirt from furniture, 15 draperies and the like and may be employed in cleaning the interior of motor vehicles or whenever a portable cleaner may be desired.

Another object of this invention is the provision of a vacuum cleaner of the above stated 20 character which will be simple, durable and efficient and which may be manufactured and sold at a comparatively low cost.

With these and other objects in view, as will become more apparent as the description 25 proceeds, this invention consists in certain novel features of construction, combination and arrangement of parts to be hereinafter more fully described and claimed.

For a complete understanding of my invention, reference is to be had to the following 30 description and accompanying drawings, in which:

Figure 1 is a side elevation illustrating a vacuum cleaner constructed in accordance 35 with my invention.

Figure 2 is a top plan view illustrating the same.

Figure 3 is an end view illustrating the nozzle and dust collecting bag associated with 40 the casing of the vacuum cleaner.

Figure 4 is a transverse sectional view taken on the line 4-4 of Figure 1.

Figure 5 is a sectional view taken on the 45 line 5-5 of Figure 1.

Referring in detail to the drawings, the numeral 1 indicates in its entirety a casing including a cylindrical body portion 2 having one end closed by a removable end wall 3 of substantially semi-spherical shape and has 50 formed integral therewith a handle or hand

grip 4 of looped formation whereby a person may easily grip the handle with the thumb disposed against a rest 5 formed on the end wall 3. The wall 3 is attached to the body 2 by screws or like fasteners 6 which also thread into supporting lugs 7 formed on an electric motor 8 of a conventional type for supporting the latter within the body 2 and the end wall 3. The motor 8 is preferably of 60 the universal type, that is, capable of operation from either direct or alternating currents and is controlled by a suitable switch 9 mounted on the end wall 3 adjacent the thumb rest 5. The motor 8 has the usual conductor cable 10 electrically connected thereto and 65 extending through the casing by way of the opening 10' and hand grip or handle 4 by a clamp 11. The usual brush holders of the electric motor 8 extend through opposite sides of the end wall 3 as shown at 12 to permit 70 adjustment of the brushes relative to the usual commutator without disassembling the casing 1. The motor 8 by the lugs 7 is supported in spaced relation to the walls of the casing as clearly shown in Figure 5 to permit 75 the free circulation of air about the motor for the purpose of cooling the same which will be hereinafter more fully described.

A suction chamber 13 of annular formation is provided with a flanged portion 14 at one 80 side thereof which fits in the other end of the body portion 2 of the casing 1 and is removably secured thereto by screws or like fasteners 15. The opposite side of the suction chamber 13 from the flanged portion 15 is 85 flared and curved to form a neck 16, the free end of which is flared to form a suction nozzle 17 of substantially rectangular shape and on which is mounted by a clamp 18 and agitating brush 19 that projects slightly beyond 90 the nozzle 17 so that when the device is moved over an object, the brush 19 will agitate the dust and dirt that the same may be easily drawn into the suction chamber 13 by the suction fan 20 driven by the electric motor 8. 95 The suction chamber at one side thereof has formed thereon a discharge neck 21 of substantially L-shape with the free end of the neck directed toward the rear end of the device or toward the hand grip 4 and has the 100

mouth 22 of a dust collecting bag 23 secured thereto. The bag 23 is of a shape to hug and conform to the contour of one side of the casing 1 and has the end opposite the mouth 22 opened and secured in a closed position by a removable clip 24 whereby the contents of the bag may easily be emptied by removing the clip.

The suction fan 20 includes a circular plate 25, the periphery of which is received in an annular groove 26 of the flanged portion 14 of the suction chamber 13 to prevent the passage of dirt and other foreign matter from the suction chamber into the body portion 2 of the casing 1 and has formed on one face the arcuate shaped blades 27 which when rotated will create a suction in the chamber 13 through the nozzle 17 and exhaust through the L-shaped neck 21 into the bag 23. The plate 25 is secured to the shaft 28 of the electric motor 8 and the opposite face of the plate 25 from the face carrying the blades 27 has formed integral therewith blades 29 forming a cooling fan adapted to draw air into the casing 1 by the intake port 30 forcing the air about the motor and out of the casing 1 by the exhaust port 31, thus maintaining the motor in a cooled condition. The shaft 28 is rotatably supported in a standard 32 located in the body portion 2 of the casing 1 and which cooperates with the arms 7 in supporting the motor 8 rigidly within the casing.

The casing 1, nozzle 17, and hand grip 4 are preferably constructed from aluminum or any other material capable of withstanding severe use and still be of extremely light weight that the device may be conveniently handled and operated by one hand of a person and which will not tire the person while using the device over a long period of time. It will also be noted that this device is of such a design, that hats, clothing and like articles may be easily cleaned and that the device will remove dust, dirt and other foreign matter from extremely inaccessible places.

While I have shown and described the preferred embodiment of my invention, it will be understood that minor changes in construction, combination and arrangement of parts may be made without departing from the spirit and scope as claimed.

Having thus described my invention, what I claim is:

A portable vacuum cleaner comprising a casing having each end open and provided in one side with an air exhaust opening, a hollow handle communicating with one end of the casing and having an opening to admit air, a motor located in the casing and extending into the handle, fasteners detachably securing the handle to the casing and detachably securing the motor to said casing and handle, a suction chamber connected with the other end of the casing, a nozzle for said chamber, an annular flange in the chamber, a disk se-

cured to a shaft of the motor and engaging the flange to close the chamber from the casing, and blades on opposite sides of the disk for sucking air into said chamber and for exhausting said air therefrom and to suck air into said casing and exhaust air therefrom for cooling the motor.

In testimony whereof I affix my signature.
JOSEPH A. LOEWINSOHN.

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