

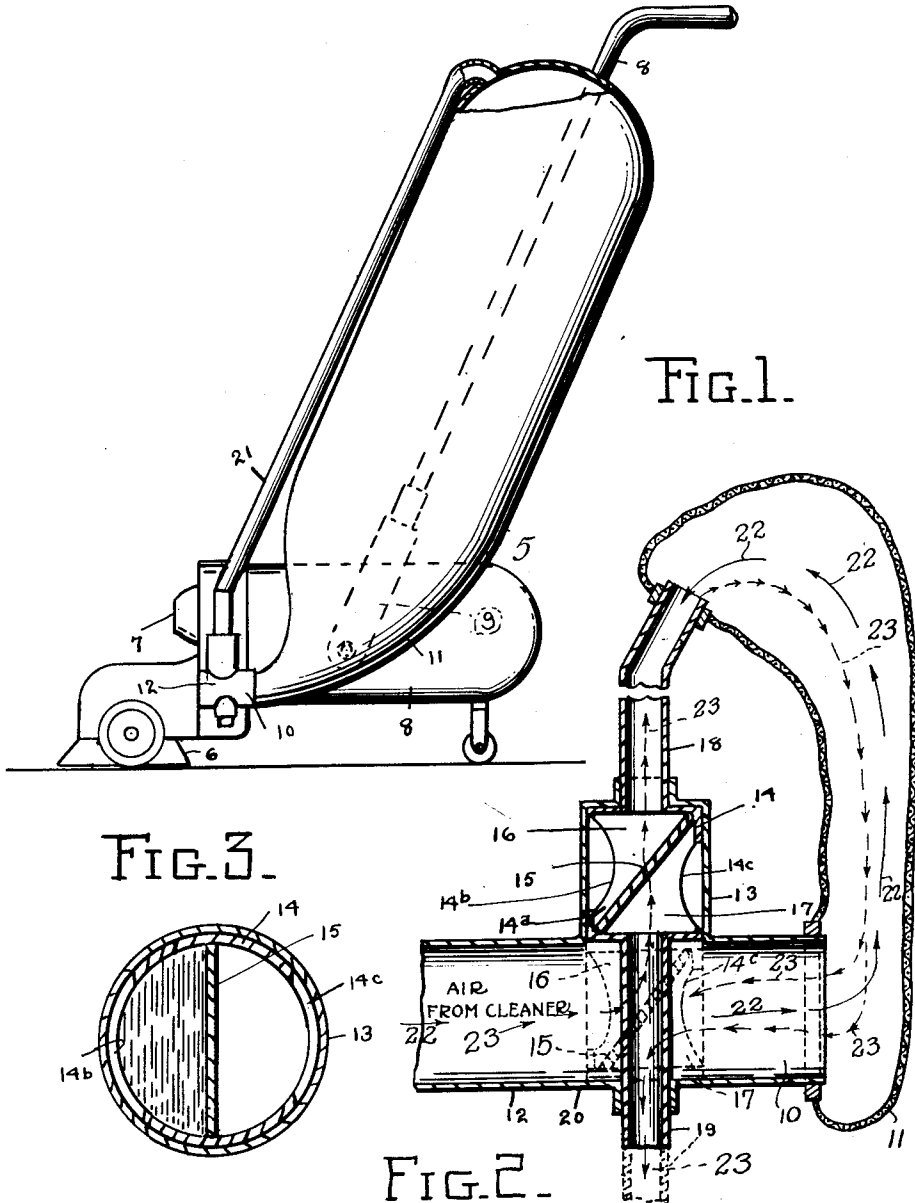
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DIRT EJECTING VACUUM CLEANER

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DIRT-EJECTING VACUUM CLEANER.

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This invention relates to improvements in vacuum cleaning machines, and its leading object is to provide a vacuum cleaner with means for directing the air stream to eject the dirt accumulated in the bag or holder.

Another object of the invention is the provision of an attachment which may be applied, with minor structural changes, to any standard electric operated vacuum cleaner, and which will enable the housewife or other operator of the cleaner to discharge the accumulated dirt, without detaching the bag from the suction mechanism.

With the above and other objects in view the invention consists in certain new and useful constructions and arrangements of parts, clearly described in the following specification and fully illustrated in the accompanying drawings, in which:—

Fig. 1 is a side elevation of the device attached to an electrically driven vacuum cleaner, the dirt bag being shown partly in section.

Fig. 2 is a vertical sectional view through the ejector controlling valve, and

Fig. 3 is a transverse sectional view of the ejector controlling valve on a horizontal plane considered near the upper end of the valve and its enclosing tubular extension.

Referring to the accompanying drawings illustrating the practical embodiment of my invention 5 designates the housing of a vacuum cleaner, 6 the suction nozzle formed on said housing, and 7 the electrical motor, which is suitably attached to the housing 5.

A controlling handle 8 is connected by the inverted U-shaped member 9 to the housing of the motor in the usual manner. The above described parts are all old and well known.

The housing 5 is provided with a discharge nipple 10 to which the dirt holding bag 11 is detachably connected. This bag is sufficiently porous to permit the air stream from the suction fan to pass through the wall of the bag, but to resist the passage of the dirt carried by the air stream.

In the usual practice of housewives and users of electrical vacuum cleaners of the portable type, the dirt bag is detached and the accumulated dirt is emptied upon a paper or other article. This method of handling the dirt accumulated in the holding bag naturally exposes the operator to

the effects of the dirt with which he or she comes in contact, in the effort to dispose of it. Should any wind strike the paper holder the dirt would be distributed.

To eliminate the difficulties arising from the disposal of the dirt accumulated in the holding bag, I arranged a union connection 12 between the bag 11 and the nipple 10. This union is provided with a lateral tubular extension 13 in which the drum valve 14 is normally retained. This drum valve is provided with a partition 15 which divides the interior of the valve into an air passage 16 and a dirt passage 17. A nipple 18 is in normal open communication with the air passage 16, and a nipple 19 is in normal open communication with the dirt passage 17.

The side wall 14^a of the drum valve is provided with an air opening 14^b, which is normally closed by the wall of the tubular extension 13, and the opposite side wall is provided with a dirt opening 14^c which is also normally closed by the wall of the tubular extension 13. The air nipple 18 extends above the tubular extension and the dirt nipple 19 extends downwardly through the bottom wall 20 of the union 12.

In its normal position the valve is elevated above the normal flow of the air stream as shown in Fig. 2, and dirt is discharged in the usual manner directly into the dirt bag.

By pushing the drum valve downwardly against the bottom wall 20 by the operator grasping the nipple 19 the air opening 14^b will be moved into direct communication with the discharge nipple 10, and the dirt opening 14^c will be moved into communication with the bag 11.

The air nipple is connected to an air conduit 21, which extends, exteriorly, to the upper end of the dirt bag 11, and when the valve is pushed downwardly against the wall 20, the air propelled by the suction fan will be blown into the bag from the upper end downwardly, and the dirt which has settled in the bottom of the bag will be blown outwardly through the ejector dirt nipple. By placing this nipple over a suitable receptacle; while operating the suction producing electrical motor, the bag may be quickly emptied, without being detached from the housing.

Referring to Fig. 2. The drum valve 14 is understood to be in the elevated full line

position. The full line arrows 22 indicate the path of the air into the bag 11 when operating as a suction cleaner. The air cannot escape since the wall 13 and partition 15 will prevent it. When the drum valve 14 is moved downward into the dotted line position, air will be driven by the fan as indicated by the dotted line arrows 23. It will pass through the opening 14^b nipple 18 into the upper end of the bag 11 through the bag, opening 14^c and through the exit tube 19, thus ejecting the accumulated dirt from the bag 11. The partition 15 serves to direct the flow of air into the bag at the bottom, or, at the top of the bag, it is only necessary to raise or lower the drum valve 14. When the drum shaped valve 14 is lowered into the dotted line position the normal flow of dirt laden air into the lower end of the receptacle is cut off.

Having described my invention I claim:—

1. In a vacuum cleaner an elongated dirt receptacle, means for attaching the dirt receptacle to the body of the vacuum cleaner comprising a pipe connection to which an end of the said receptacle is attached, the pipe connection having an upper hollow extension, a pipe leading from the extension and communicating with the interior of the extension, a valve body which is slidably located in the extension and formed with

oppositely disposed ports, an inclined partition plate in the said body located between the ports, the said pipe leading from the extension on one side of the said partition plate and communicating with one port of said valve and one end of the receptacle, the said valve having a downwardly extending tubular extension on the other side of the partition plate and communicating with the other port and passing downwardly across and through the said pipe connection.

2. In a vacuum cleaner, a dirt receptacle, a pipe connection member to which the lower end of the receptacle is connected, an extension on the upper side of said connection, and to which the upper end of the said receptacle is connected, a valve slidable in the extension and which is formed with oppositely disposed ports, a partition plate in the valve for separating the ports, said extension of the pipe connection and one side of the partition plate having communication with the interior of the receptacle at its upper end, a discharging tubular member having communication with the extension of the pipe connection and located on the other side of the partition in the slidable valve.

In testimony whereof I affix my signature.

THOMAS DREW.