

Sept. 15, 1964

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3,148,400

CARPET BEATING AND CLEANING MACHINE

Filed Dec. 20, 1961

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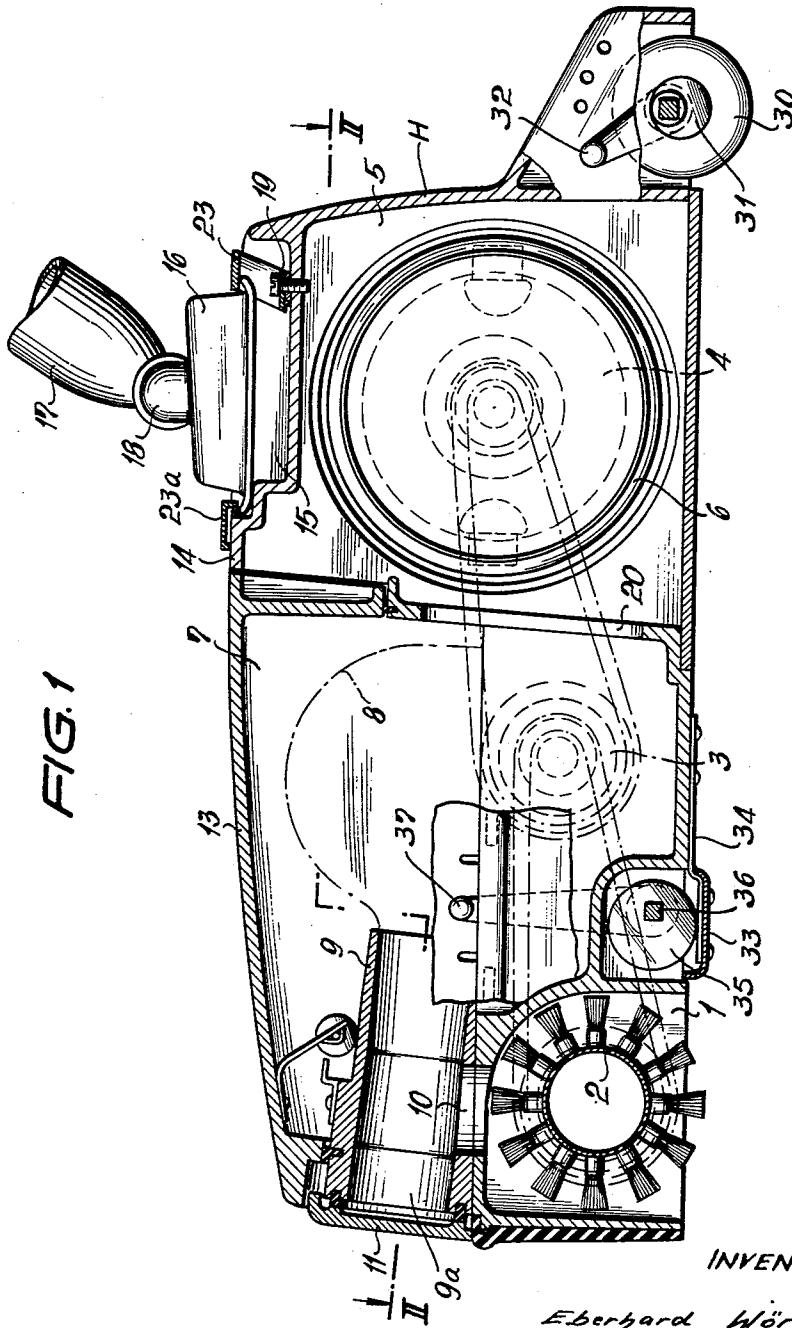


FIG. 1

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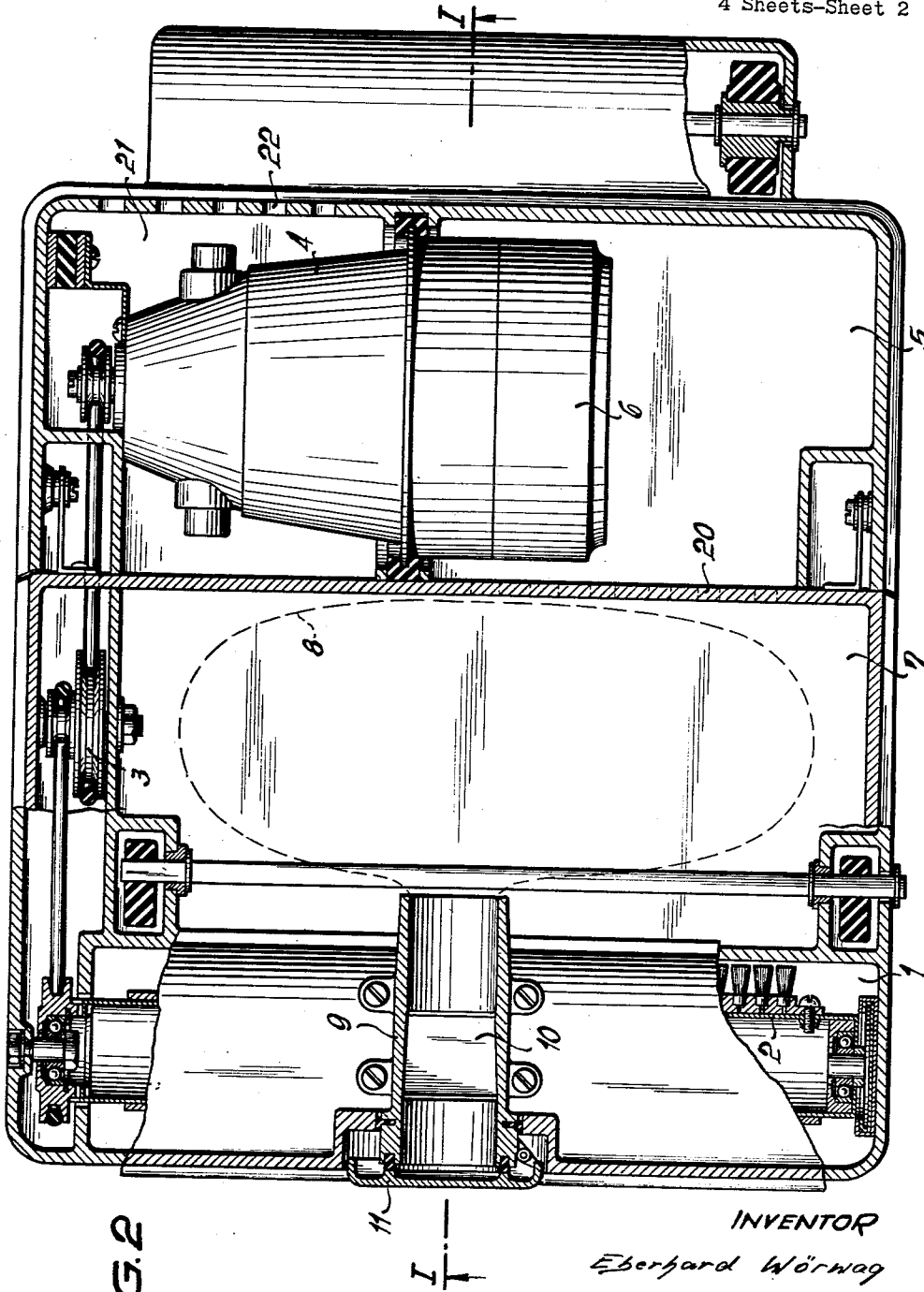
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Filed Dec. 20, 1961

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FIG. 3

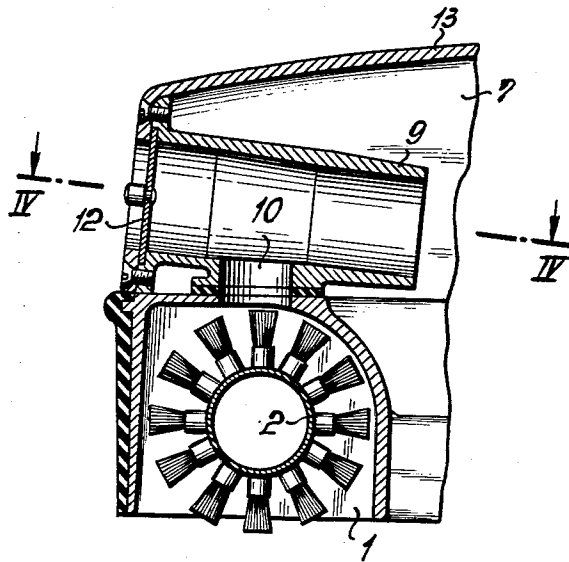
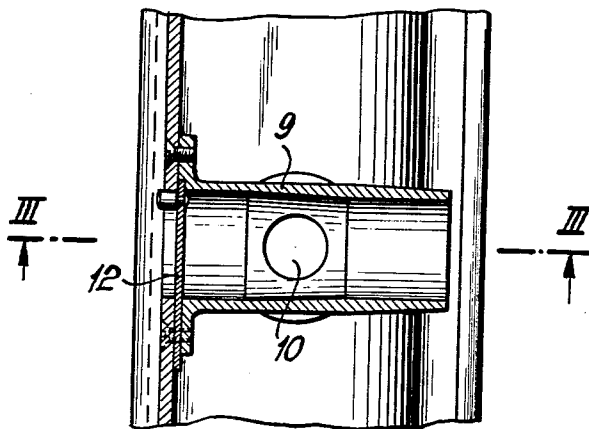


FIG. 4



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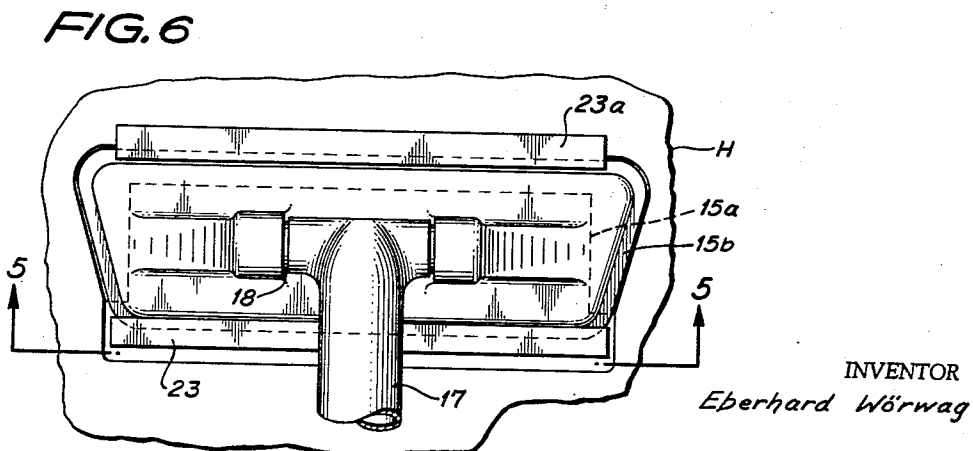
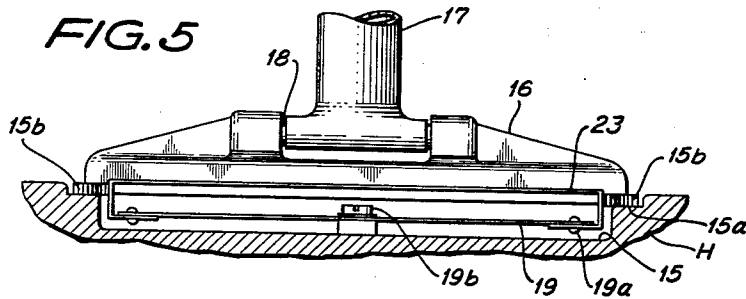
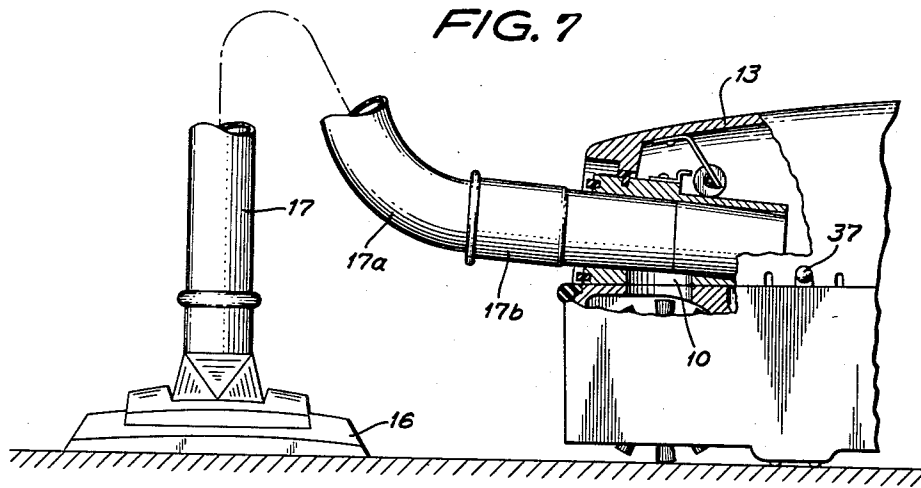
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CARPET BEATING AND CLEANING MACHINE

Filed Dec. 20, 1961

4 Sheets-Sheet 4



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**CARPET BEATING AND CLEANING MACHINE**  
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 Filed Dec. 20, 1961, Ser. No. 160,734  
 Claims priority, application Germany Dec. 22, 1960  
 3 Claims. (Cl. 15—327)

*Structural Arrangement*

The present invention relates to carpet beating and cleaning machines. Machines of this type are known which are arranged for beating a carpet while applying suction thereto and which may also selectively be employed in the manner of pure vacuum cleaners without beating.

It is an object of the present invention to provide a machine of the above mentioned type, which will improve heretofore known carpet beating and cleaning machines while simplifying the structure thereof.

It is another object of this invention to provide carpet beating and cleaning machines as set forth in the preceding paragraph, which will permit the machines to be used for an increased number of purposes.

These and other objects and advantages of the invention will appear more clearly from the following specification in connection with the accompanying drawings, in which:

FIG. 1 is a section taken along the line I—I of FIG. 2, but on a smaller scale than the latter, through a cleaning machine according to the invention.

FIG. 2 is a horizontal section taken along the line II—II of FIG. 1, but on a larger scale than the latter.

FIG. 3 is a section taken along the line III—III of FIG. 4 and shows a modified type of closure for the suction part of the machine;

FIG. 4 is a section taken along the line IV—IV of FIG. 3;

FIG. 5 is a section through the rear end of the housing of the cleaning machine, illustrating on a larger scale than that of FIG. 1 the recess for receiving the nozzle forming part of a wand and the clamp for holding the same in place;

FIG. 6 is a plan view of the arrangement shown in FIG. 5;

FIG. 7 is a diagrammatic showing of the left-hand portion of FIG. 1 with the wand connected to a flexible hose, which latter has its fitting inserted into the front portion of the machine of FIG. 1.

*General Arrangement*

The carpet beating and cleaning machine according to the present invention which, in customary manner is provided with an agitator, is characterized primarily in that it comprises a wand with a nozzle pivotally connected thereto, which nozzle is adapted to be releasably connected to the housing of the machine so that the said wand may serve as a guiding handle for the machine to move the same over the surface to be cleaned. When it is intended to use the wand as a mere suction member, as is customary with pure vacuum cleaners, it is, in connection with the present invention, merely necessary to disconnect the nozzle of the wand from the housing and to connect the wand to a customary flexible tube with a fitting and to insert the fitting in the front end of the machine. In this way, the machine can be used as a pure vacuum cleaner.

In view of the fact that in this way, it is selectively possible to use the wand as guiding handle for the machine and also for drawing air into the machine independently of the agitator, the possibilities of employment of the machine are greatly increased without having to resort to additional devices.

The machine according to the present invention comprises a housing H having a downwardly opening agitator chamber 1 arranged in the front end thereof. Disposed in said agitator chamber 1 and journaled in the housing is a cleaning and beating agitator 2 adapted through a transmission 3 to be driven by a motor 4, preferably an electric motor, which is located in the rear portion of the housing H. The agitator 2 may be of any standard design.

The rear portion of the housing H furthermore comprises a suction chamber 5 housing suction means in the form of a suction blower 6 which is likewise driven by motor 4. Interposed between suction chamber 5 and agitator chamber 1 there is provided a perforated partition 20 partially confining a suction chamber 7 and separating the same from the chamber 5. Easily detachably mounted in chamber 7 is an air-permeable dust collecting bag 8, the interior of which communicates with passage means comprising a first section 9 in the form of a tubular member and also comprising a second section 10 branching off from section 9 and leading into the interior of the agitator chamber 1. The said first section or tubular member 9 has a port 9a adapted to be closed or opened by closure means such as a tiltable lid 11 (FIGS. 1 and 2) or a slide 12 (FIGS. 3 and 4). The entire front portion of housing H in front of the suction means 6 is accessible through a lid 13 which may selectively be opened especially for removing and replacing the dust collecting bag 8. The rear portion 14 of housing H has a depression or recess 15 adapted to receive the nozzle 16 forming part of and being pivotally connected to a wand 17. As will be evident from the drawing, the nozzle 16 only of the wand structure is connected to the housing H, and this is done by a yoke 23 having a twistable spring 19.

More specifically, with reference to FIGS. 5 and 6, the nozzle 16 rests on a ledge 15a at the sides and front of recess 15 and has a peripheral edge part 15b that serves as a shoe when the nozzle is moved over a carpet. The said peripheral edge part 15b also serves to engage clip 23a and yoke 23 when the nozzle is in recess 15. The ledge 15a prevents the nozzle from being pulled into the recess by yoke 23 which is biased inwardly of the recess by leaf spring 19 to which the yoke is connected by rivets 19a. Spring 19 is connected to the housing by a screw 19b.

It will thus be seen from the above that since, with the wand 17 occupying the position as shown in FIG. 1, the nozzle only is engaged and releasably connected to the top wall portion of the housing, the wand 17 is free to tilt at its joint 18 so that the wand 17 can be used as a handle to push the machine back and forth over a surface to be cleaned by means of the agitator 2 and suction prevailing in chamber 1 and passage means 10 and 9.

If wand 17 is not to be employed as a guiding rod but as a suction wand proper, it is merely necessary to detach the nozzle 16 from the housing by releasing yoke 23 from the nozzle. The wand is then merely to be connected to a suction hose 17a (see FIG. 7) having a connector or hose-fitting 17b which is receivable in the suction passage 9 after the closure means 11 or 12 has been opened. Thereupon, the machine may be employed as a pure vacuum cleaner in the customary manner. It will be appreciated that in this instance, the dust drawn in through nozzle 16 of wand 17 and hose 17a as well as the fitting 17b of the latter will be conveyed from passage 9 into the dust bag 8, while at the same time the connection of bag 8 with the agitator chamber 1 is interrupted because passage 10 has been closed by fitting 17b of hose 17a. Consequently, the full suction effect produced by the suction means 6 will be available in the suction passage

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9 and thus in the fitting 17b of hose 17a. The air drawn in passes through the dust collecting bag 8 and after having passed a filter (not shown) located ahead of the perforated partition 20 flows through the latter into the chamber 5 and then through the suction blower means 6 and motor 4 into chamber 21 from where it passes through the openings 22 to the outside. The dust collecting bag is, of course, air-permeable.

In order that the agitator 2 will not engage the surface below the machine when the machine is used as a pure vacuum cleaner only, the machine, in addition to resting on rollers 30 at the rear end thereof, which are vertically adjustable relative to the housing by means of an eccentric shaft 31 operable by handle 32, has its front portion supported by an adjustable skid or sliding shoe means 33. Shoe 33 is riveted to a holding member 34 the outermost right-hand end portion (with regard to FIG. 1) of which is riveted to housing H so that the front portion carrying the shoe 33 can yield somewhat. Shoe means 33 may be adjusted by eccentric means 35 to raise and lower the front end of the housing. Such adjustment is, of course, also desired to adapt the machine to the surface being cleaned by the agitator 35 when the machine is used as a carpet beating and cleaning machine. As will be evident from the drawing, the eccentric means 35 is carried by the housing above the shoe means 33 and is adjustable by rotation of a supporting shaft 36 therefor which rotation can be effected by handle means 37 at the side of the housing of the machine.

As will be evident from the above, the carpet beating and cleaning machine according to the present invention has, over heretofore machines of the type involved, the advantage of a greatly increased possibility of employment inasmuch as it can be used additionally also as a pure vacuum cleaner, without the necessity of requiring any equipment in addition to a wand and a flexible hose with fitting, which is used anyhow with every vacuum cleaner.

It is, of course, to be understood that the present invention is, by no means limited to the particular constructions shown in the drawings, but also comprises any modifications within the scope of the appended claims.

What I claim is:

1. In a carpet beating and cleaning machine; a housing, supporting means supporting said housing and permitting movement of said machine over a surface to be cleaned, downwardly opening agitator chamber means provided in the bottom portion of said housing, a carpet beating and brushing agitator rotatably mounted in said chamber means, suction means mounted in said housing in spaced relationship to said chamber means, passage means communicating with said suction means and comprising a first section with a port opening exteriorly of said housing and also comprising a second section branching off from said first section and leading into said agitator chamber means, communication of said second section with said first section being interruptable by insertion of a hose-fitting into said first section, closure means for selectively closing and opening said port, tubular means including a wand with a suction nozzle pivotally connected thereto, and means provided on the top wall portion of said housing releasably engaging said nozzle only and detachably securing the same to said top wall portion while leaving said wand free to tilt relative to said nozzle whereby said wand may be used as a handle for guiding said machine as a carpet beating and cleaning machine over a surface to be cleaned when said port is closed by said closure means, said means comprising a recess formed in said top wall portion and generally of the contour of said nozzle, said nozzle having a peripheral outwardly extending rim, resilient means arranged at one side of said recess for detachable engagement with said rim on one side of the nozzle, and means carried by the housing and overhanging the recess at the other side and detachably engaging said rim on the side of said nozzle opposite said resilient means, said wand when said nozzle is disconnected

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from said upper wall portion being connectable with a flexible hose having a fitting receivable by said first section of said passage means so as to interrupt communication between said first and second sections, whereby said machine may be used as a pure vacuum cleaner with the full suction of said suction means acting on said first section of said passage means only.

2. In a carpet beating and cleaning machine: a housing, supporting means supporting said housing and permitting movement of said machine over a surface to be cleaned, downwardly opening agitator chamber means provided in the bottom portion of said housing, a carpet beating and brushing agitator rotatably mounted in said chamber means, suction means mounted in said housing in spaced relationship to said chamber means, passage means communicating with said suction means and comprising a first section with a port opening exteriorly of said housing and also comprising a second section branching off from said first section and leading into said agitator chamber means, communication of said second section with said first section being interruptable by insertion of a hose-fitting into said first section, closure means for selectively closing and opening said port, tubular means including a wand with a suction nozzle pivotally connected thereto, and means provided on the top wall portion of said housing releasably engaging said nozzle only and detachably securing the same to said top wall portion while leaving said wand free to tilt relative to said nozzle whereby said wand may be used as a handle for guiding said machine as a carpet beating and cleaning machine over a surface to be cleaned when said port is closed by said closure means, said means comprising a recess formed in said top wall portion and generally of the contour of said nozzle, said nozzle having a peripheral rim part extending outwardly therefrom on the bottom of said nozzle, resilient means arranged in the recess on one side of said nozzle and detachably engaging the top of said rim, and means overhanging the edge of the recess on the opposite side of said nozzle and engaging the top of said rim, said recess including a portion along at least that side thereof which is opposite said resilient means for detachably engaging the bottom of said nozzle, said wand when said nozzle is disconnected from said upper wall portion being connectable with a flexible hose having a fitting receivable by said first section of said passage means so as to interrupt communication between said first and second sections, whereby said machine may be used as a pure vacuum cleaner with the full suction of said suction means acting on said first section of said passage means only.

3. A machine according to claim 1, in which the pivotal connection of said nozzle with said wand when said nozzle is releasably connected to said top wall portion of said housing is on an axis extending transversely to the longitudinal axis of said machine.

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