A nozzle construction for a carpet cleaning machine having an inner housing mounted within an outer housing, both of which are mounted on a movable base for movement across a carpet to be cleaned. The inner housing is formed with an upper fluid chamber and a lower spray chamber. The fluid chamber is connected with a source of cleaning solution which is sprayed into the spray chamber from a plurality of nozzles communicating with the fluid chamber and onto the carpet below. The outer housing has a suction chamber connected with a source of suction and includes suction passages formed on either side of the spray chamber. The inner housing has lips the lower edges of which are located spaced slightly above the level of the lower edges of the lips formed on the outer housing to provide communication between the spray chamber and suction passages. The suction passage communication with the spray chamber enables the nozzle to clean the carpet while being moved back and forth across the carpet with one of the suction passages cleaning the carpet in its dry state and the other suction passage removing the used cleaning solution from the carpet when the nozzle is moved in one direction. The reverse action occurs when the nozzle is moved in the other direction of back and forth movement.

5 Claims, 8 Drawing Figures
NOZZLE CONSTRUCTION FOR PORTABLE CARPET CLEANING MACHINE

BACKGROUND OF THE INVENTION

1. Field of the Invention

The invention relates to a carpet cleaning machine and more particularly to a nozzle construction for use in a portable carpet cleaning machine for wet-cleaning rugs and carpets. The improved nozzle construction permits the cleaning machine to move either in a forward or backward direction across the carpet, first dry cleaning and then wet-cleaning the carpet without excessively wetting the carpet backing, or without distorting the carpet pile.

2. Description of the Prior Art

It has been found that in the cleaning of rugs and carpets, such as at a rug cleaning plant, the most effective procedure is to remove all the embedded dirt by first beating, brushing or suction cleaning, and then shampooing or wet-cleaning the carpet, followed by forced air drying.

Carpets are usually nowadays permanently installed in most homes and business establishments, making its removal and transportation to a rug cleaning plant for cleaning extremely difficult and impractical. Various devices have been proposed which attempt to duplicate the cleaning procedure used in a cleaning plant in portable machines or equipment which are capable of being taken into homes for wet-cleaning carpets as installed. Some of the most recent types of carpet cleaning machines are shown and described in U.S. Pat. Nos. 3,189,930, 3,496,592 and Re. 26,950.

If a carpet is wetted first in a wet-cleaning process the dirt becomes adhesive and clings to the rug pile making its removal difficult. This results in a clean appearance but dirt particles remain in the base of the pile. This necessitates separately suction cleaning the entire rug prior to wet-cleaning; resulting in duplication of work, time, and equipment, thereby increasing the cost of the cleaning operation.

Prior devices also have problems in applying sufficient cleaning solution to the carpet. The amount of solution used sometimes results in over-wetting the carpet backing and underlying pads due to difficulties in sufficiently removing the applied solution and drying the carpet while the carpet is in installed condition. Such over-wetting and improper drying causes carpet shrinkage, resulting in separated seams, and in the possible formation of mildew in the carpet.

Prior carpet cleaning machine nozzles of the type having a suction chamber and a cleaning solution spray chamber, as far as I am aware, only wet-clean when moved in one direction across a carpet surface. This requires repeated operation of a cleaning solution flow control valve for stopping the solution flow while repositioning the machine after each unidirectional cleaning stroke. Likewise, considerable time is required to properly position the machine for the unidirectional cleaning stroke. Proper cleaning of the carpet adjacent a wall also is difficult especially where the carpet fibers lay away from the wall.

Currently popular shag rugs have pile threads or fibers up to several inches in length, which heretofore have been difficult to wet-clean with existing cleaning machine nozzles. The fibers become twisted and entwined in the brushes of nozzles which have rotary brushes. The fibers also may seal against the nozzle lips of suction nozzles, preventing easy movement of the nozzles across the carpet.

The nozzle lips of many prior cleaning nozzles are not adjustable. This is desirable in order to clean all types of carpets and rugs having different fiber lengths. Accordingly, there is an existing need for a nozzle construction for a portable carpet cleaning machine for wet-cleaning carpets, rugs and the like which enables the best known and tested methods of wet-cleaning a carpet to be performed by one machine, which nozzle construction performs such steps in a single operation, and which provides the cleaned rug fibers with a pleasing, uniform and attractive appearance.

SUMMARY OF THE INVENTION

Objectives of the invention include providing a nozzle construction for a portable carpet cleaning machine for wet-cleaning carpets in which the nozzle can move in either a backward or forward direction across the carpet for cleaning and which first suction dry cleans the carpet, then applies a spray of cleaning solution, and then removes the used solution and partially dries the carpet; providing a nozzle construction having a central spray chamber and suction passages on both sides of the spray chamber, and in which the spray chamber is adjustable with respect to the carpet, providing a nozzle construction in which high velocity air may be supplied through the spray chamber and directed against the rug fibers and backing prior to injection of cleaning solution through the spray chamber in order to thoroughly loosen all embedded dirt; providing a nozzle construction which does not injure the rug fibers from excessive brushing or over-wetting; and providing a nozzle construction which is inexpensive to manufacture and sturdy and durable in use, and which eliminates difficulties heretofore encountered, achieves the objectives intended and solves problems and satisfies needs existing in the art.

These objectives and advantages are attained by the nozzle construction for a portable carpet cleaning machine which has a base for movement of the nozzle across a carpet, and sources of suction and fluid cleaning solution supply communicating with the nozzle. The general nature of the nozzle construction may be stated as including an outer housing having at least front and rear wall lips the lower ends of which form an elongated bottom opening; an inner housing having at least front and rear wall lips the lower ends of which form an elongated bottom opening; means including a tubular member for adjustably mounting the inner housing within the outer housing with the lower edges of the inner housing lips located above the lower edges of the outer housing lips; first and second passages formed between the outer and inner housing front and rear walls, respectively, and said first and second passages communicating with the source of suction; partition means dividing the inner housing into an upper fluid chamber and a lower spray chamber; means including said tubular member connecting the fluid chamber with the supply of cleaning solution; a plurality of spray nozzle means mounted in the partition means for spraying the cleaning solution from the fluid chamber through the spray chamber and onto carpet to be cleaned whereby suction air drawn into the nozzle through the first and second passages provides air currents passing through the carpet for removal of the
sprayed cleaning solution through one of said passages and for simultaneous air-cleaning of the carpet through the other of said passages; the outer and inner housings each having openings formed therein; the adjustable mounting means tubular member preferably extending through the outer housing opening and being secured within the inner housing opening; and spring means surrounding the hollow member, biasing said inner housing downwardly from said outer housing.

BRIEF DESCRIPTION OF THE DRAWINGS

Preferred embodiments of the invention—illustrative of the best modes in which applicant has contemplated applying the principles—are set forth in the following description and shown in the drawings and are particularly and distinctly pointed out and set forth in the appended claims.

FIG. 1 is a diagrammatical side elevation of a portable carpet cleaning machine having the improved nozzle construction mounted therein;

FIG. 2 is an enlarged bottom plan view looking in the direction of arrows 2—2, FIG. 1;

FIG. 3 is an enlarged fragmentary sectional view taken on the line 3—3, FIG. 1;

FIG. 4 is a fragmentary sectional view taken on the line 4—4, FIG. 3;

FIG. 5 is a bottom plan view of the improved nozzle construction looking in the direction of arrows 5—5, FIG. 3;

FIG. 6 is a sectional view taken on the line 6—6, FIG. 4;

FIG. 7 is an enlarged fragmentary sectional view taken on the line 7—7, FIG. 3; and

FIG. 8 is a perspective view of another form of portable rug cleaning machine using the improved nozzle construction.

Similar numerals refer to similar parts throughout the drawings.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

First Embodiment

A portable carpet cleaning machine is generally indicated at 1 (FIG. 1) and has the improved cleaning nozzle 2 incorporated therein. Cleaner 1 is shown diagrammatically connected to a water supply faucet 3 and a waste drain 4.

Cleaner 1 preferably includes a base 5 upon which nozzle 2 is mounted and which is movable back and forth across a carpet on front casters 6 and adjustable, double rear casters 7 by manipulating a handle 8.

A vacuum or holding tank 9 is mounted on handle 8 by brackets 10 and draws water and dirt, and used cleaning solvent through a flexible exhaust hose 11 from nozzle 2. A centrifugal vacuum motor is mounted on the top of tank 9 within a housing 12 providing the suction for nozzle 2 and tank 9.

Hose 11 may be detachably connected to tank 9 by a slip-fit connector 13 which engages a sleeve 14 extending outwardly from tank 9. Another slip-fit connector 15 may be connected to the lower end of hose 11 for detachably connecting hose 11 with an elbow 16 which extends outwardly and upwardly from nozzle 2.

A usual motor driven pump 17 is mounted in a recess 18 formed in base 5 and is connected to tank 9 by a drain line 19. Pump 17 draws dirty water from tank 9 after it has passed through filters in tank 9 which remove any large dirt particles, and pumps it thorough a main drain line 20 connected to pump 17, and discharges the dirty water into drain 4.

A cleaning solution supply line 21 extends between the top of nozzle 2 and connects to the outlet side of a control valve 22 which is mounted on handle 8. Another section 23 of supply line extends from the inlet side of control valve 22 and is connected to water faucet 3 through a coupling 24.

Coupling 24 also may serve as a convenient means of supporting the end of drain line 20 when the water supply is from a kitchen sink or the like and the sink drain is used to receive material discharged from drain line 20. There is no fluid connection between drain line 20 and supply line 23, and drain line 20 may be disconnected from coupling 24 and led to another suitable drain for discharge.

Liquid cleaning compound contained in a receptacle 25 is sucked into supply line 23 through a line 26 and mixes with the water flowing through line 23 from faucet 3 to form the cleaning solution. The amount of cleaning compound sucked into line 23 is controlled by a valve 27 located in line 28.

Electric power from a usual source for pump 17 and the vacuum tank motor in housing 12 is supplied through cord 29. An on-off power control switch 30 connected with cord 29 may be mounted on the top of handle 8.

A rubber bumper pad 31 surrounds base 5 and projects slightly outward therefrom and protects walls and furniture from being marked or scratched during cleaner operation.

A nozzle bottom plate 32 is mounted beneath base 5 by screws 33 and includes front and rear lips 34 and 35, and connecting side members 36 (FIGS. 2, 3 and 7) which form an elongated opening 37 in which the lower portion of nozzle 2 is located.

Lips 34 and 35 preferably are rounded or sloped at 38 to enable nozzle 2 to slide easily across a carpet and the carpet fibers.

Rear casters 7 may be adjusted by a lever 39 (FIG. 2) having a raised area 40 which engages flanges 41 extending outwardly from a pivotally mounted, spring biased plate 42 on which casters 7 are mounted.

In accordance with the invention, nozzle 2 is provided with outer and inner housings 43 and 44, respectively. Outer housing 43 preferably is box-like in shape and includes a top wall 45, side walls 48, and parallel front and rear walls 46 and 47, which terminate in lower lip edges 46a and 47a, respectively, and which form, with side walls 48, an elongated bottom opening 49 (FIGS. 4, 5 and 7).

Inner housing 44 includes a top wall 50, parallel front and rear walls 51 and 52, which terminate in lower lip edges 51a and 52a, respectively, and form with outer housing side walls 48 an elongated bottom opening 53. Lip walls 51 and 52 are spaced from and are parallel to outer housing front and rear lip walls 46 and 47 forming front and rear suction passages 54 and 55 therebetween, which communicate with a main suction chamber 56 located between housing top walls 45 and 50. Inner housing lip walls 51 and 52 extend laterally between outer housing side walls 48 and are in sliding contact therewith.

Pairs of spacer rods 57 or other projecting members may be welded at 58 to inner housing walls 51 and 52 to maintain proper spacing between inner and outer
housing walls 46 and 51, and 47 and 52, respectively, and to eliminate relative horizontal movement between the lip walls of inner and outer housings 44 and 43.

Inner housing 44 is divided into an upper fluid chamber 59 and a lower spray chamber 60 by a partition wall 61. Partition wall 61 is spaced below andeparallel to inner housing top wall 50, and extends between front and rear walls 51 and 52, and side walls 62 and 63 which enclose and form fluid chamber 59.

Partition wall 61 is provided with a plurality of openings 64, spaced longitudinally along wall 61, into which spray nozzles 65 are threadably engaged. Spray nozzles 65 have top openings 66 communicating with fluid chamber 59 and smaller jet openings 67 through which the cleaning solution is sprayed in fine drops or mist, indicated by arrow A, from fluid chamber 59 into spray chamber 60 and onto the rug fibers 68 (FIG. 7).

A tubular member 69 extends through aligned openings 70 and 71 formed in housing top walls 45 and 50, respectively, and is welded at 72 to inner housing top wall 50.

A spring 73 surrounds member 69 biasing inner housing 44 downwardly. A nut 74 is threaded on the upper end of member 69 to adjust inner housing 44 vertically within outer housing 43 by movement of nut 74. A washer 75 may be located between outer housing top wall 45 and nut 74.

Exhaust hose 11 communicates with suction chamber 56 through elbow 16 which extends through an opening 76 formed in the top portion of rear wall 47 and is secured therein by welds 77.

Cleaning solution is supplied to fluid chamber 59 through supply line 21 which is attached to member 69 by a nut 78 (FIG. 3).

Important features of the concept involves the formation of the suction passages 54 and 55 on either side of spray chamber 60, and the positioning of inner housing lip edges 51a and 52a with respect to outer housing lip edges 46a and 47a.

Inner housing 44 is positioned within outer housing 43 so that inner housing lip edges 51a and 52a are higher than the outer housing lip edges 46a and 47a, respectively (FIGS. 6 and 7) forming communication passages 79 and 80 between spray chamber 60 and suction passages 54 and 55, respectively, which extend throughout the length of nozzle 2, front and rear.

Passages 79 and 80 enable a flow of air to exist between spray chamber 60 and suction chamber 56 through suction passages 54 and 55, as indicated by arrows B FIG. 7. Whenever there is a flow of cleaning fluid from nozzles 65 onto a rug 81 being cleaned, the suction will draw the cleaning fluid and dirt upward through fibers 68 and nozzle 2 as cleaner 1 is being moved back and forth across the carpet, preventing excess moisture from being deposited onto the rug backing 82.

In operation, coupling 24 with supply line 23 and drain line 20 attached, is connected to a convenient faucet 3, preferably a hot water faucet. Receptacle 25 is filled with the selected cleaning compound. Valve 27 is adjusted to admit the desired amount of compound into line 23. Cord 29 is connected with a usual electric outlet, and switch 30 placed in the on position.

Cleaner 1 is moved over a carpet, preferably with forward and backward motion, following a zig-zag pattern across the carpet similar to the cleaning pattern used for the usual suction cleaning of a carpet. Cleaner 1 rolls on casters 6 and 7 with nozzle 2 moving easily along the carpet fibers.

During forward movement of nozzle 2 (arrow C, FIG. 7) across an uncleaned area of carpet, air currents, indicated by arrows D, are drawn largely from beneath outer housing front lip edge 46a through those fibers in an area located under lip 34 of base plate 32 and between lip edges 46a and 51a, and upward through front suction passage 54. Air currents D remove the embedded dirt in the carpet backing and clinging to the carpet fibers like usual vacuum cleaner operation prior to the fibers becoming wet.

Spray chamber 60 next moves over this air-cleaned area and a spray of cleaning solution is applied to the rug fibers. The sprayed solution is immediately drawn upwardly (arrow E) through the fibers into rear suction passage 55 which next passes over the sprayed area, carrying with it the moistened dirt particles and spent cleaning solution. This immediate removal of the sprayed solution prevents the solution from penetrating into carpet backing 82 and saturating carpet fibers 68, and results in reduced carpet drying time.

Thus, the main steps to be performed in wet-cleaning a carpet to achieve good cleaning results, namely, first dry cleaning the carpet, secondly applying a cleaning solution, and thirdly removing the spent solution and drying the carpet as soon as possible are achieved by the movement of improved nozzle 2 across the carpet.

This same cleaning action is obtained when nozzle 2 is moved in a backward direction across the carpet. The carpet first is cleaned by dry air flowing through the fibers from beneath outer housing rear lip edge 47a and through rear suction passage 55. Cleaning solution is applied to the carpet through spray chamber 60 as in the forward cleaning motion, and the spent solution and moistened dirt particles are drawn upwardly into tank 9 through front suction passage 54.

In prior constructions, usual wet-cleaning nozzles usually are moved in only one direction across the carpet and upon reaching a wall the spray control valve had to be shut off while the cleaner is repositioned for the next unidirectional movement.

The correct spacing of inner lip edges 51a and 52a above outer lip edges 46a and 47a for the particular carpet being cleaned may be obtained by adjusting nut 74. A different adjustment is made for usual short pile carpets as shown in FIG. 7 than for the newer developed shag carpets having longer fibers of various lengths.

The spacing of the inner lips above the outer lips in permitting air flow between spray chamber 60 and suction passages 54 and 55, also prevents scaling of the suction passages by longer carpet fibers and at the same time cleans and dries the fibers along their length leaving them with a less flattened, fluffier, and attractive appearance of the cleaned carpet surface.

The parallel arrangement between inner and outer housing walls 51 and 52 and 46 and 47, enable the size of suction passages 54 and 55 to remain constant throughout the vertical adjustment of inner housing 44 within outer housing 43, as can be seen by reference to FIG. 7. Thus, the effectiveness of the suction force remains constant for various positions of adjustment.

Improved nozzle 2 provides greater flexibility and control in wet-cleaning carpets than can be achieved by known prior nozzles. When a heavily soiled area of carpet is encountered during cleaning, the operator can
shut off supply line control valve 22 and dry clean the area thoroughly by moving nozzle 2 back and forth over the soiled area with the inner and outer nozzle lips agitating the carpet fibers to loosen the embedded dirt.

After completely dry cleaning the soiled area, control valve 22 may be opened and the needed amount of solution, applied by continued movement in back and forth directions across the area with suction passages 54 and 55 removing the spent solution regardless of the direction of nozzle motion.

A particular shape for outer nozzle lip edges 51a and 52a and their location within nozzle base plate 32 has been shown and described. However, the shape of the outer nozzle lips and their edges may be varied so as to have a flared portion extending outwardly similarly to lips 34 and 35 of plate 32 to eliminate the use of a separate base plate 32.

Second Embodiment

Another form of a portable rug cleaning machine is shown in FIG. 8 in which the improved nozzle 2 is mounted at the end of a wand 83 and is connected to an air compressor-vacuum tank unit 84.

Wand 83 preferably includes a handle 85 connected to a base consisting of two sled-like runners 86. Nozzle 2 is connected between the front portion of runners 86 by screws 87 engaged with outer housing side walls 48 and by retaining rods 88 extending between runners 86.

A roller 89 is rotatably mounted between the rear portion of runners 86 to facilitate the movement of wand 83 across the carpet being cleaned.

A supply line 90 and an exhaust hose 91 communicate with nozzle 2 in the same manner as line 21 and hose 11 in cleaner 1. Supply line 90 is connected to the output side of a usual mixing control valve 92 which is mounted on a handle reinforcing member 93.

Unit 84 includes a usual air compressor 94 having a pressure tank 95, a motor 96, and a pump 97. A vacuum or holding tank 98, similar to tank 9 and having a centrifugal motor mounted within top housing 99, is mounted on pressure tank 95. A drain pump 100 for holding tank 98 also is mounted on pressure tank 95 and may be driven by motor 96 and is connected to a drain line 101.

A high pressure air line 102 is connected between pressure tank 95 and the inlet side of valve 92 and is controlled by lever 103. A cleaning solution supply line 104 is connected between a hot water faucet and valve 92 and is controlled by lever 105.

A receptacle 106 is filled with a supply of cleaning liquid and is connected to supply line 104. The cleaning liquid is drawn into line 104 by the pressure of the water flowing through line 104 in a manner similar to receptacle 25 of cleaner 1. Receptacle 106 may be mounted on unit 84 or may be located adjacent the water supply faucet.

In operation, high pressure air may be fed through spray nozzles 65 between the carpet fibers and against the carpet backing, by controlling lever 105, which loosens the embedded dirt. The loosened dirt is then sucked up through suction passages 54 or 55 depending upon the direction of motion of wand 83.

Control lever 103 may be opened admitting cleaning solution into line 90 which fills fluid chamber 59 and is forced under the pressure from tank 95 through nozzles 65 into the rug thoroughly cleaning the fibers and backing.

The spent solution and moistened dirt particles, as in cleaner 1, are sucked up through suction passages 54 or 55, into suction chamber 56 where they are drawn through exhaust hose 91 into vacuum tank 98. The collected waste air after passing through filters in tank 98 is pumped from tank 98 by drain pump 100 and through drain line 101 to a suitable outlet drain.

In a badly soiled area the high pressure air from tank 95 may be blown into the cleaned wet fibers hastening their drying, thereby enabling more cleaning solution to be applied than heretofore possible without overwetting the carpet backing or fibers.

Accordingly, the improved nozzle construction provides a cleaning nozzle for a portable carpet cleaning machine for wet-cleaning carpets which enables the cleaning machine to be moved in either a forward or backward direction across the carpet during cleaning; which provides a spray chamber having a plurality of nozzles for applying a cleaning solution to the carpet; which provides suction chambers at the front and rear of the spray chamber for suction cleaning the carpet in a dry state before applying the cleaning solution and for immediate removal of the spent cleaning solution and moistened dirt particles before the carpet backing and fibers become saturated, thereby hastening the carpet drying; which provides for adjustment of the spray chamber to facilitate cleaning carpets having various length fibers, such as shag carpets; which provides for connecting a high pressure air source to the nozzle for increased cleaning ability; and which incorporates the new and advantageous features herein described, overcomes the prior art difficulties indicated and solves problems and obtains the described new results in the art.

In the foregoing description, certain terms have been used for brevity, clarity and understanding; but no unnecessary limitations are to be implied therefrom beyond the requirements of the prior art, because such terms are used for descriptive purposes and are intended to be broadly construed.

Moreover, the description and illustration of the invention is by way of example, and the scope of the invention is not limited to the exact details shown or described.

Having now described the features, discoveries, and principles of the invention, the manner in which the nozzle construction for a portable carpet cleaning machine is constructed and used, the characteristics of the construction, and the advantageous, new and useful results obtained; the new and useful structures, devices, elements, arrangements, parts and combinations, are set forth in the appended claims.

I claim:

1. Nozzle construction for a carpet cleaning machine including an outer housing having at least parallel front and rear lip walls, the lower edges of the lip walls forming an elongated nozzle opening; an inner housing having at least parallel front and rear lip walls, the lower edges of the lip walls forming an elongated spray chamber opening; said inner housing front and rear lip walls being parallel to said outer housing front and rear lip walls; means connected between the inner and outer housings to adjustably mounting the inner housing within the outer housing with the inner housing lower lip edges located above the outer housing lower lip edges, and with the inner housing front and rear walls spaced from the outer housing front and rear walls; the parallel
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spaced housing walls forming first and second passages between the outer and inner housings; means connected with the outer housing and communicating with said first and second passages and a source of air suction; partition means connected with the inner housing front and rear walls dividing the inner housing into an upper fluid chamber and a lower spray chamber; means connected with the inner housing communicating with the fluid chamber and communicating with a source of cleaning solution; and spray nozzle means mounted on the partition means communicating between the fluid and spray chambers for spraying cleaning solution from the fluid chamber through the spray chamber and spray chamber opening onto a carpet to be cleaned; whereby suction air currents passing along the carpet remove from the carpet cleaning solution sprayed from the spray chamber and are drawn through one of said passages and to the source of air suction, whereby simultaneously suction air currents pass along the carpet and are drawn through the other of said passages and to the source of air suction to air clean the carpet, and whereby the size of said passages remains constant throughout adjustment of the inner housing within the outer housing.

2. The construction defined in claim 1 in which the spacer means is provided between the front and rear housing lip walls within the passages; in which said spacer means includes a plurality of projecting members; in which said projecting members extend upwardly from the lip wall edges between said inner and outer housing lip walls; and in which said projecting members are connected to a lip wall of one of said housings preventing relative lateral movement between the inner and outer housing lip walls.

3. The construction defined in claim 1 in which the inner and outer housing front and rear lip walls are vertical.

4. Nozzle construction for a carpet cleaning machine including an outer housing having at least front and rear lip walls, the lower edges of the lip walls forming an elongated nozzle opening; an inner housing having at least front and rear lip walls, the lower edges of the lip walls forming an elongated spray chamber opening; means connected between the inner and outer housings adjustable mounting the inner housing within the outer housing with the inner housing lower lip edges located above the outer housing lower lip edges, and with the inner housing front and rear walls spaced from the outer housing front and rear walls; the adjusting means including a tubular member extending through openings formed in the outer and inner housings, said tubular member being secured to the inner housing and adjustably slidable in the outer housing opening, and spring means biasing said inner housing downwardly within the outer housing; the spaced housing walls forming first and second passages between the outer and inner housings; means connected with the outer housing and communicating with said first and second passages and a source of air suction; partition means connected with the inner housing front and rear walls dividing the inner housing into an upper fluid chamber and a lower spray chamber; means connected with the inner housing communicating with the fluid chamber and communicating with a source of cleaning solution; and spray nozzle means mounted on the partition means communicating between the fluid and spray chambers for spraying cleaning solution from the fluid chamber through the spray chamber and spray chamber opening onto a carpet to be cleaned; whereby suction air currents passing along the carpet remove from the carpet cleaning solution sprayed from the spray chamber and are drawn through one of said passages and to the source of air suction, whereby simultaneously suction air currents pass along the carpet and are drawn through the other of said passages and to the source of air suction to air clean the carpet.

5. The construction defined in claim 4 in which the tubular member forms part of the means connecting the fluid chamber with a source of cleaning fluid.

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