This invention comprises a novel and useful vacuum cleaner hose attachment and more particularly relates to a device adapted for attachment to a conventional vacuum cleaner hose at the end thereto to which vacuum cleaner attachments are customarily secured, and which shall be effective for effecting a pulsating flow of air into the vacuum cleaner hose, together with the provision of means for straining the air entering the vacuum cleaner hose and giving a visual indication of the operation of the attachment.

The principal object of this invention is to provide an attachment adapted for use with conventional household vacuum cleaners and which may be readily applied thereto intermediate the vacuum cleaner hose and any desired form of suction nozzle customarily attached to the end of a hose, and which will enable the vacuum cleaner user to employ the vacuum cleaner more efficiently by being able to see the pulsator rotor of the attachment, the operation of the filtering element in the attachment, and the like.

A further object of the invention is to provide an attachment in accordance with the preceding objects wherein the flow of air through the device into the vacuum cleaner hose shall be effective to operate a pulsator element for imparting pulsations to the air and thus render the cleaning action more effective.

A further object of the invention is to provide an attachment in accordance with the preceding objects which shall have provision for a strainer or filtering element in the attachment to thereby cleanse the air of foreign matter which might damage the blower of the conventional vacuum cleaner, and wherein the operation of the filter or strainer element may be at all times visually observed.

And a final important purpose of the invention is to provide an attachment in accordance with the foregoing objects which while being compact and capable of ready insertion into the end of a vacuum cleaner hose, between the latter and the conventional nozzle assemblies for a vacuum cleaner hose, shall offer substantially no resistance or restriction to the flow of the air through the vacuum cleaner hose.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawing forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view showing a portion of a vacuum cleaner hose to enable the vacuum cleaner suction nozzle applied thereto and with the attachment of this invention operatively associated therewith;

Figure 2 is a vertical central longitudinal sectional view taken upon an enlarged scale substantially upon the plane indicated by the section line 2—2 of Figure 1 and showing the construction of the vacuum cleaner hose attachment in accordance with this invention;

Figures 3 and 4 are vertical transverse sectional views taken substantially upon the planes indicated by the section lines 3—3 and 4—4 respectively of Figure 2 and showing respectively the mounting of a nozzle in the end of the attachment and of a filter or strainer element thereon; and the pulsator element of this attachment; and

Figure 5 is a perspective view of a rotor comprising a part of the pulsator element.

The novel vacuum cleaner hose attachment designated generally by the numeral 10 in the drawings is shown in Figure 1 as applied to the metallic terminal portion 12 with which a conventional vacuum cleaner hose 14 is customarily provided, this terminal portion being adapted to ordinarily receive various types of nozzle assemblies anerose, as for example, the nozzle assembly 16. As illustrated in Figure 1, however, attachment 10 is interposed between and connected to the terminal portion 12 of the hose 14 and to the neck portion of the nozzle assembly 16.

Referring next to Figure 2, it will be seen that the attachment 10 comprising a cylindrical casing 18 of any suitable transparent plastic, having at its rearward end a diametrically reduced neck 20 of sufficient size to be snugly received with a frictional fit in the end of the terminal portion 12. At this point it should be noted that the casing 18 is of considerably greater diameter than that of the nozzle 20 in order to increase the cross-sectional area through which the air drawn into the hose 14 may flow and thus offer substantially no resistance to flow of the air therethrough.

At its other end, the casing 18 is open, and receives therein a nozzle 22 in the form of a sleeve having a rather enlarged flange 24 intermediate its ends and a further lateral enlargement 26 comprising a rim or flange. As shown in Figure 2, the flange 24 is seated and secured in any desired manner in the open end of the casing 18, while the rim or flange 26 is disposed within the casing and has a seating engagement upon the inside wall of the same. The two flanges 24 and 26 thus firmly secure the sleeve of the nozzle 22 in place. This sleeve 22 in turn is adapted to be engaged in the neck of the nozzle assembly 16 in place of the engagement of the terminal portion 12 of the hose therein as is the present practice.

Within the casing 18 adjacent the neck 20 there is provided a partition or plate 30 having a plurality of openings 34 therefor through the flow of air through this partition. The partition is secured in any desired manner in the casing and preferably in a position which is closely adjacent to the neck 20 as shown in Figure 2.

Journalled on the partition as by a bolt 36 is a rotor 38, having a hub portion 40 and a plurality of radially extending helical blades 42. The hub is journaled upon the plate or partition by the bolt 36 for rotation thereon, with the blades disposed at close proximity to the plate and overlying the openings 34.

The arrangement is such that as air flows from the nozzle assembly 16 to the casing 18 and into the hose terminal 12, it will impinge upon the blades 42 and thus cause rotation of the rotor 38. The close disposition of the blades 42 adjacent the openings 34 will intimately interrupt the flow of air through these openings and thus produce a pulsating effect or air flow into the hose 14 and thus through the suction head assembly 16 producing a much more effective and efficient cleaning action by the vacuum cleaner.

As shown in Figure 2, there is provided a filter or strainer 44 which may readily comprise a conical body of a reticulated or foarninous material, having a closed extremity 46 closely adjacent the rotor 38, and having its larger open end secured in any desired manner to the flange or rim 26 for support thereon. Thus, the filter or cleaning is operatively interposed intermediate the nozzle 22 and the partition 30 and will be effective for removing
foreign matter which might damage the vacuum cleaner motor, such as lint, small pieces of metal or rock and the like.

It will be apparent that the attachment may be readily applied to or removed from a vacuum cleaner hose and will permit the operator to at all times detect effective operation of the strainer or filter 44; operation of the pulsator element consisting of the rotor 38 and the flow of air through the device as evidenced by rotation of the rotor.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A vacuum cleaner base attachment comprising a cylindrical casing of a transparent material having a diametrically reduced neck for engagement in the end of a vacuum cleaner base, said casing having an inlet opening for its end opposite said neck, said opposite end being diametrically reduced for engagement in the end of a vacuum cleaner nozzle, a partition in said casing between said inlet opening and said neck and having air flow openings therethrough, a rotor journaled in said casing and having blades disposed for causing rotation thereof by flow of air through said casing, said blades being rotatable across said partition openings in close proximity thereto whereby to create pulsations in the air flowing through said neck.

2. The attachment of claim 1 wherein said opposite end of said casing comprises a nozzle consisting of a sleeve extending into said casing through said inlet opening and mounted therein.

3. The attachment of claim 1 including a strainer mounted in said casing and interposed between said inlet opening and said rotor.

4. The attachment of claim 1 wherein said rotor is mounted upon said partition.

5. The combination of claim 1 wherein said opposite end of said casing comprises a nozzle consisting of a sleeve extending into said casing through said inlet opening, a flange on said sleeve engaged in said inlet opening of said casing for mounting said nozzle, said sleeve having an end portion extending into said casing and a rim on said end portion engaging said casing.

6. The combination of claim 5 including a strainer, mounted in said casing intermediate said inlet opening and neck and carried by said rim.

7. The combination of claim 1 wherein said opposite end of said casing comprises a nozzle consisting of a sleeve extending into said casing through said inlet opening, a flange on said sleeve engaged in said inlet opening of said casing for mounting said nozzle, a strainer mounted in said casing intermediate said inlet opening and said partition and carried by said sleeve.

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