Disclosed is a vacuum attachment assembly for use with a vacuum system. A device can include a pass-through in a wide main body for passage of an object to be cleaned, such as a duster, a drape, a piece of clothing, or the like. A device can also include attachments, such as a vacuum control attachment, a brush, and so forth.
VACUUM ATTACHMENT ASSEMBLY
CROSS REFERENCE TO RELATED APPLICATION

[0001] This application claims filing benefit of U.S. Provisional Application Ser. No. 61/368,825 having a filing date of Jul. 29, 2010, which is incorporated herein in its entirety by reference.

BACKGROUND

[0002] Vacuum cleaners have been developed that can efficiently clean multiple floor surfaces, from high pile carpets to bare concrete surfaces. Unfortunately, while vacuum cleaners can clean large, flat surfaces, such as floors, they are less useful when one is desirous of cleaning objects that define a three dimensional shape and/or do not have a hard surface against which a vacuum cleaner head can be pressed. For instance, standard vacuum cleaners and vacuum cleaner attachments have proven less than desirably effective at cleaning dusters, curtains, furniture, and other objects that present a flexible surface.

[0003] What is needed in the art is a vacuum cleaner attachment capable of cleaning surfaces and objects having a pliant surface, particularly objects that are inefficiently cleaned by standard vacuum cleaners.

SUMMARY

[0004] According to one embodiment, disclosed is a vacuum attachment assembly. For instance, the vacuum attachment assembly can include a main body including an upper section and a lower section. An opening can be defined in each of the upper section and the lower section, and the two openings can be aligned with one another, such that an object, such as a drape or a duster can be passed through the openings. In addition, the width of the main body can be greater than a cross sectional dimension of the first and second openings;

[0005] An assembly can also include shaft extending from the main body, the shaft including a first end and a second end, the first end intersecting the main body and the second end being distal to the main body.

[0006] In another embodiment, the assembly may also include various features such as a shaft insert that is either removably attachable at or fixed at the second end of the shaft, a suction control attachment that is removably attachable the upper globe opening, the suction control attachment defining at least one opening with variable orientations, and a brush that is removably attachable at the lower globe opening.

BRIEF DESCRIPTION OF THE FIGURES

[0007] A full and enabling description of the presently disclosed subject matter, one or more examples of which are set forth below. Each embodiment is provided by way of explanation of the subject matter, not limitation thereof. It will be apparent to those skilled in the art that various modifications and variations may be made to the disclosed subject matter without departing from the scope or spirit of the disclosure. For instance, features illustrated or described as part of one embodiment, may be used with another embodiment to yield a still further embodiment.

[0008] FIG. 1 illustrates several views of an assembly 10. In general, an assembly 10 can include a generally globe shaped main body 12 that can conveniently be referenced by an upper section 14 and a lower section 16 which form a hollow body. The assembly can also include a shaft 18 extending from the main body 12. An assembly can also include a shaft insert 20 that can be located at the distal end of the shaft 18 from the section 12.

[0009] FIG. 2 illustrates an assembly 10 during use, for instance as may be used to clean a duster. As can be seen, the main body 12 of the assembly of FIG. 2 has a generally toroid shape, allowing passage of an object, e.g., a duster, through the assembly 10 as shown. During use, the suction provided by an attached vacuum device can cause air to be pulled through the duster and circulated around and through the
main body 12, thereby removing dirt, dust, etc. from the surface of the dust. While not wishing to be bound to any particular theory, it is believed that the toroidal shape of the attachment main body 12 in the depicted embodiment encourages a circulating air flow to be established within the main body 12 during use. Thus, the attachment can provide improved airflow as compared to previously known attachments that are merely extensions of a vacuum hose, with no expansion across the attachment dimensions as is provided by the illustrated devices.

[0024] FIG. 3 is a front view of an assembly 10. As can be seen, in this embodiment the main body 12 of the assembly 10 is formed of a transparent or translucent material, e.g., an at least partially transparent polymeric material, such that the terminus 22 of the shaft 18 can be seen through the main body 12. This is not a requirement of disclosed devices, and in other embodiments, the main body 12 may be opaque. The terminus 22 of the shaft 18 can intersect the main body 12 with an elongated cross section, as illustrated. This is understood to improve air flow around and through the main body 12 during use. This is not a requirement of disclosed devices, however, and in another embodiment, the terminus of a shaft can define a different cross section, such as circular, square, or any other shape.

[0025] FIG. 4 is a rear view of an assembly 10. The shaft 18 and second end 24 of shaft 18 of the assembly 10 can generally define a circular cross section, so as to adapt to the shape of a typical vacuum device. As with the terminus 22 of the shaft 18, however, disclosed devices are not limited to any specific cross sectional shape. In one embodiment, the shaft 18 can be formed of a pliable material, so as to be easily adaptable to a vacuum hose or device of any shape.

[0026] FIG. 5 presents a cross sectional view of an attachment assembly 10. In this embodiment, a shaft 18 can include a shaft insert 20 therein. A shaft insert 20 can be fixed within a shaft 18 or can be removable, as desired. A shaft insert 20 can define a decreasing radius of curvature over the length of the shaft insert 20. Thus, a shaft insert 20 can provide a tight friction fit to a vacuum device of multiple different sizes. Shaft insert 20 can generally be formed of a material that can form to a vacuum portion (e.g., a vacuum hose) and hold to same with a friction fit, for instance an elastomeric polymer.

[0027] At attachment can include an opening 25 that passes from the top to the bottom of a main body 12, as illustrated in FIG. 6. As can be seen, however, the total width of the interior of the main body 12 can be greater than the opening 25 passing therethrough. Thus, upon passage of an object through the main body 12, e.g., a duster, a piece of clothing, etc., air flow can be maintained around as well as through the object passing through the attachment 10. Moreover, it should be understood that though illustrated as a generally circular main body from the top view, disclosed attachments are not limited to any specific geometry.

[0028] FIG. 7 provides an exploded view of an attachment 10. In one embodiment, an attachment 10 may be disassembled, so as to provide easier cleaning, though this is not a requirement of disclosed devices.

[0029] FIG. 8 and FIG. 9 illustrate two perspective views of an attachment 12 as described herein.

[0030] In one embodiment, an attachment 10 can include one or more removable portions. For example, FIG. 10 illustrates one embodiment of an attachment device 10 including a suction control attachment 26 and a brush 28. As can be seen a suction control attachment 26 can be provided at an opposite side of a main body 12 as a second attachment, such as the illustrated brush 28.

[0031] FIG. 11 illustrates an attachment device 10 with the brush 28 of FIG. 10 removed, and the suction control attachment 26 in a closed orientation. Thus, the full suction power of the attached vacuum can be provided through the open bottom of the main body 12 during use. In FIG. 12 the same suction control attachment 26 is shown in a fully opened orientation, such that the suction at the opposite side of the main body 12 is less, as may be preferred when cleaning certain objects, such as loose-hanging drapes.

[0032] It will be appreciated that the foregoing examples, given for purposes of illustration, are not to be construed as limiting the scope of this disclosure. Although only a few exemplary embodiments have been described in detail above, those skilled in the art will readily appreciate that many modifications are possible in the exemplary embodiments without materially departing from the novel teachings and advantages of this disclosure. Accordingly, all such modifications are intended to be included within the scope of this disclosure as defined in the following claims and all equivalents thereto. Further, it is recognized that many embodiments may be conceived that do not achieve all of the advantages of some embodiments, yet the absence of a particular advantage shall not be construed to necessarily mean that such an embodiment is outside the scope of the presently disclosed subject matter.

What is claimed is:

1. A vacuum attachment assembly comprising:
   a main body including an upper section and a lower section forming a hollow interior, a first opening being defined in the upper section and a second opening being defined in the lower section, the first and second openings being aligned with one another, an interior width of the main body being greater than a cross sectional dimension of the first and second openings;
   a shaft extending from the main body, the shaft including a first end and a second end, the first end intersecting the main body and the second end being distal to the main body.

2. The vacuum attachment assembly according to claim 1, further comprising a shaft insert that is either removable attachable at or fixed at the second end of the shaft.

3. The vacuum attachment assembly according to claim 2, wherein the shaft insert defines a length and a round cross section that has a decreasing radius along the length.

4. The vacuum attachment assembly according to claim 1, wherein the upper section and the lower section are removably attachable to one another.

5. The vacuum attachment assembly according to claim 1, wherein the main body defines a toroidal shape.

6. The vacuum attachment assembly according to claim 1, wherein the main body is at least partially translucent or transparent.

7. The vacuum attachment assembly according to claim 1, wherein the intersection between the first end of the shaft and the main body is an elongated intersection.

8. The vacuum attachment assembly according to claim 1, wherein the second end of the shaft is round.

9. The vacuum attachment assembly according to claim 1, wherein the shaft is pliable.
10. The vacuum attachment assembly according to claim 1, wherein the first end of the shaft intersects both the upper section and the lower section.

11. The vacuum attachment assembly according to claim 1, further comprising a suction control attachment that is removably attachable at the first opening.

12. The vacuum attachment assembly according to claim 11, further comprising an attachment that is removably attachable at the second opening.

13. The vacuum attachment assembly according to claim 12, wherein the attachment is a brush.

14. The vacuum attachment according to claim 13, the suction control attachment defining at least one opening with variable orientations.

15. A vacuum attachment assembly comprising:
   a main body having a toroid shape, the main body including an upper section and a lower section forming a hollow interior, a first opening being defined in the upper section and a second opening being defined in the lower section, the first and second openings being aligned with one another, an interior width of the main body being greater that a cross sectional dimension of the first and second openings;
   a shaft extending from the main body, the shaft including a first end and a second end, the first end intersecting the main body and the second end being distal to the main body;
   a shaft insert that is either removably attachable at or fixed at the second end of the shaft;
   a suction control attachment that is removably attachable at the first opening, the suction control attachment defining at least one opening with variable orientations; and
   a brush that is removably attachable at the second opening.

16. The vacuum attachment assembly according to claim 15, wherein the shaft insert defines a length and a round cross section that has a decreasing radius along the length.

17. The vacuum attachment assembly according to claim 15, wherein the upper section and the lower section are removably attachable to one another.

18. The vacuum attachment assembly according to claim 15, wherein the intersection between the first end of the shaft and the main body is an elongated intersection.

19. The vacuum attachment assembly according to claim 15, wherein the second end of the shaft is round.

20. The vacuum attachment assembly according to claim 15, wherein the first end of the shaft intersects both the upper section and the lower section.

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