Nov. 4, 1952 C. E. MEYERHOEFER 2,616,118

VACUUM CLEANER NOZZLE AND ATTACHMENT THEREFOR

Filed June 18, 1948

Fig. 1

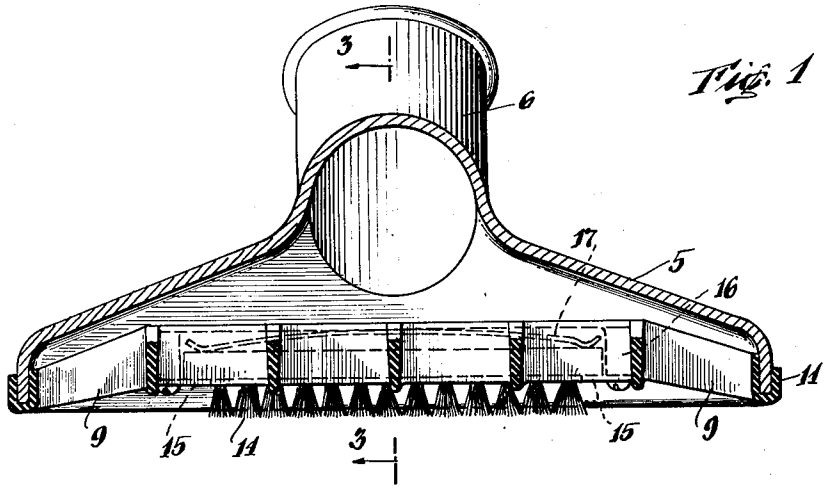


Fig. 2

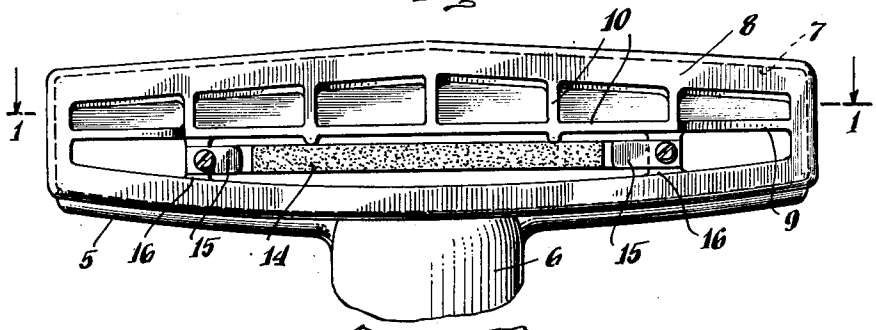


Fig. 3

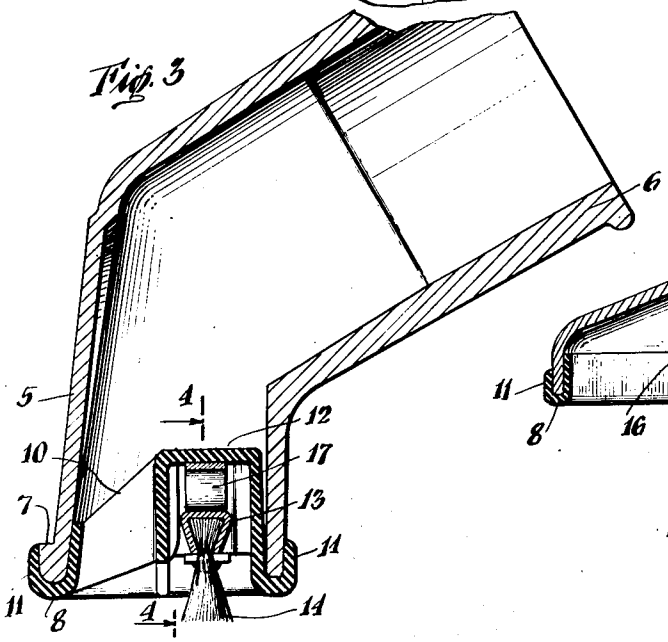
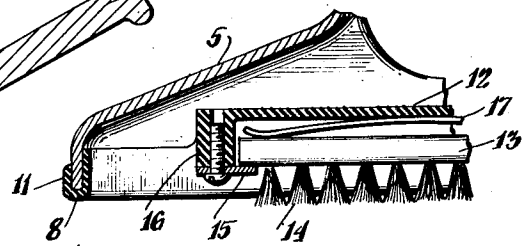


Fig. 4



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VACUUM CLEANER NOZZLE AND ATTACHMENT THEREFOR

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2 Claims. (Cl. 15—378)

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This invention relates to a structurally and functionally improved nozzle and attachment therefor, especially intended to be employed in connection with suction apparatus, such as vacuum cleaners.

It is an object of the invention to furnish a structure which may be used in connection with light or other fabrics having a fine finish to clean the same and which, in such cleaning, will not injure the material.

A further object is that of furnishing a nozzle and attachment which may be employed for cleaning materials and which will not draw the fabric into the body or throat of the nozzle and in which, moreover, no difficulties will be experienced incident to the material or fabrics "freezing" in contact with the nozzle and in a manner such that it is necessary to interrupt the cleaning operation to disengage the parts.

An additional object is that of furnishing a unit of this type which will efficiently clean drapes, fabrics, and the surfaces and bodies of other materials, such cleaning being effected with minimum effort and expenditure of time; the present device embodying relatively few parts, each individually simple and rugged in construction and operating over long periods of time with freedom from all difficulties.

With these and other objects in mind, reference is had to the attached sheet of drawings illustrating one practical embodiment of the invention and in which:

Fig. 1 is a sectional front view of a nozzle and attachment taken along the lines 1—1 and in the direction of the arrows as indicated in Fig. 2;

Fig. 2 is a bottom plan view of the device as shown in Fig. 1;

Fig. 3 is an enlarged transverse sectional view taken along the lines 3—3 and in the direction of the arows as indicated in Fig. 1; and

Fig. 4 is a fragmentary sectional view taken along the lines 4—4 and in the direction of the arrows as indicated in Fig. 3.

In these views the numeral 5 indicates the body of a nozzle which body is hollow and has connected to it an outlet 6. These parts are preferably formed of a suitable plastic or other material; it being understood that the outlet 6 may be coupled in an acceptable manner to a hose or wand section connected to a vacuum cleaner. The body 5 may embrace any desired contour and size. Preferably, and as shown, it embraces a forward edge including a central apex portion and a curved rear edge. Also, as especially shown in Fig. 3, the forward edge may

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present a flange or enlarged portion 7. While a structure such as this is preferred, it is to be understood that the illustration is not to be construed in a limiting sense.

Disposed within the body 5 and extending to points adjacent and preferably around the edges of the same is an attachment, the main portion of which has been indicated by the numeral 8. This attachment is formed of a suitable plastic which should have the characteristics—when completed—of presenting a smooth, hard surface. The main part of the attachment preferably projects slightly within the body of the nozzle. To this end, the body 8 may include upwardly and inwardly extending portions 9 serving to support a grid of bars 10 conveniently arranged at right angles to each other. The edges of body 8 preferably embrace channel portions 11. Thus, recessed parts are furnished into which the edges of body 5 may project. With a proper design and fitting of the parts, the attachment thus furnished will be maintained in position incident to frictional engagement between the surfaces. It is apparent, however, that any supplemental securing means (not shown) might be employed to assure against an accidental separation of the attachment from the nozzle proper.

Preferably the attachment will have associated with it a brush. With this in mind, body 8 may present a longitudinally extending portion 12 providing a well structure. Within the latter a brush comprising a backing strip 13 and bristles or tufts 14 may be disposed. To prevent the brush from being displaced from the well portion, retaining elements 15 may be mounted on bosses 16 of body 8 and extend below the backing portion 13, as especially shown in Figs. 2 and 4. In order to normally maintain the bristles or tufts 14 in a position where their outer ends extend below the plane of the assembly, a spring 17 may be utilized. This spring is interposed between the space of portion 12 and the outer edge of the backing strip 13. It is apparent that if a brush forms a part of the attachment, that the parts may be proportioned in a manner such that the ends of the bristles or tufts will extend to a greater or lesser distance than the position illustrated.

It will be understood that the edges of the bars 10 and the edge encircling portions 11 are rounded and smooth as shown. Also, the edges of the upwardly and inwardly extending portions 9, as well as the exposed surfaces of body 8 are smooth. The attachment being formed of a hard-drying plastic or similar material, it follows that a glass-

like contact surface is provided adjacent the operative portions of the nozzle. Therefore, the nozzle in traversing any fabric or material will not present sharp or extending portions which will catch in the material and damage the finish. Also, when traversing a surface, the attachment will serve to minimize any noise of contact which might otherwise occur aside from the fact that breakage will be reduced to a minimum even if the nozzle might be dropped on, for example, a glass or similar surface.

Of equal importance is the fact that fabric or material being cleaned will not be drawn into the throat of the nozzle even if that fabric be of relatively light weight. This will be prevented by the grid structure defined by the bars **10**, which will act as guards to preclude such an occurrence. It will be borne in mind, however, that this structure does not prevent a normal air flow such that a thorough cleaning of the fabric or material fails to occur.

Such cleaning will be especialy pronounced if the attachment includes a brush structure. The bristles or tufts of the latter will engage the surface of the fabric or material and serve to dislodge any deeply embedded particles of foreign matter which will then be immediately sucked into the body of the nozzle. Due to the provision of the spring **17**, the brush will automatically project and retract as it traverses an uneven surface or is pressed against surfaces to a greater or lesser extent. As shown, the brush is capable of oscillation to a limited extent around its longitudinal axis. This will provide for a free floating action in all necessary directions. Therefore, the brush will be efficient in its cooperation with the dirt to be removed and regardless of the direction in which the nozzle is caused to traverse.

Thus, among others, the several objects of the invention as specifically aforenoted are achieved. Obviously numerous changes in construction and rearrangement of the parts might be resorted to without departing from the spirit of the invention as defined by the claims.

I claim:

1. An attachment for association with the nozzle of a vacuum cleaner, said attachment comprising a body presenting edge parts adapted to be secured to the side edges of a nozzle body, portions extending upwardly and inwardly from said parts and arranged at angles with respect to each other to furnish a grid structure, said structure terminating in a plane above the plane of said edge parts and forming a well adapted to receive a brush.

2. A vacuum cleaner nozzle structure including in combination a nozzle body presenting downwardly and outwardly flared surfaces terminating in lower edges and means forming an outlet connected to said body for coupling to a vacuum-producing apparatus, a grid structure comprising a body presenting edge parts adapted to be secured to the lower edges of said nozzle, portions extending upwardly and inwardly from said parts and arranged at angles with respect to each other to furnish a grid structure, said structure terminating in a plane above the plane of said edge parts and forming a well adapted to receive a brush.

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