

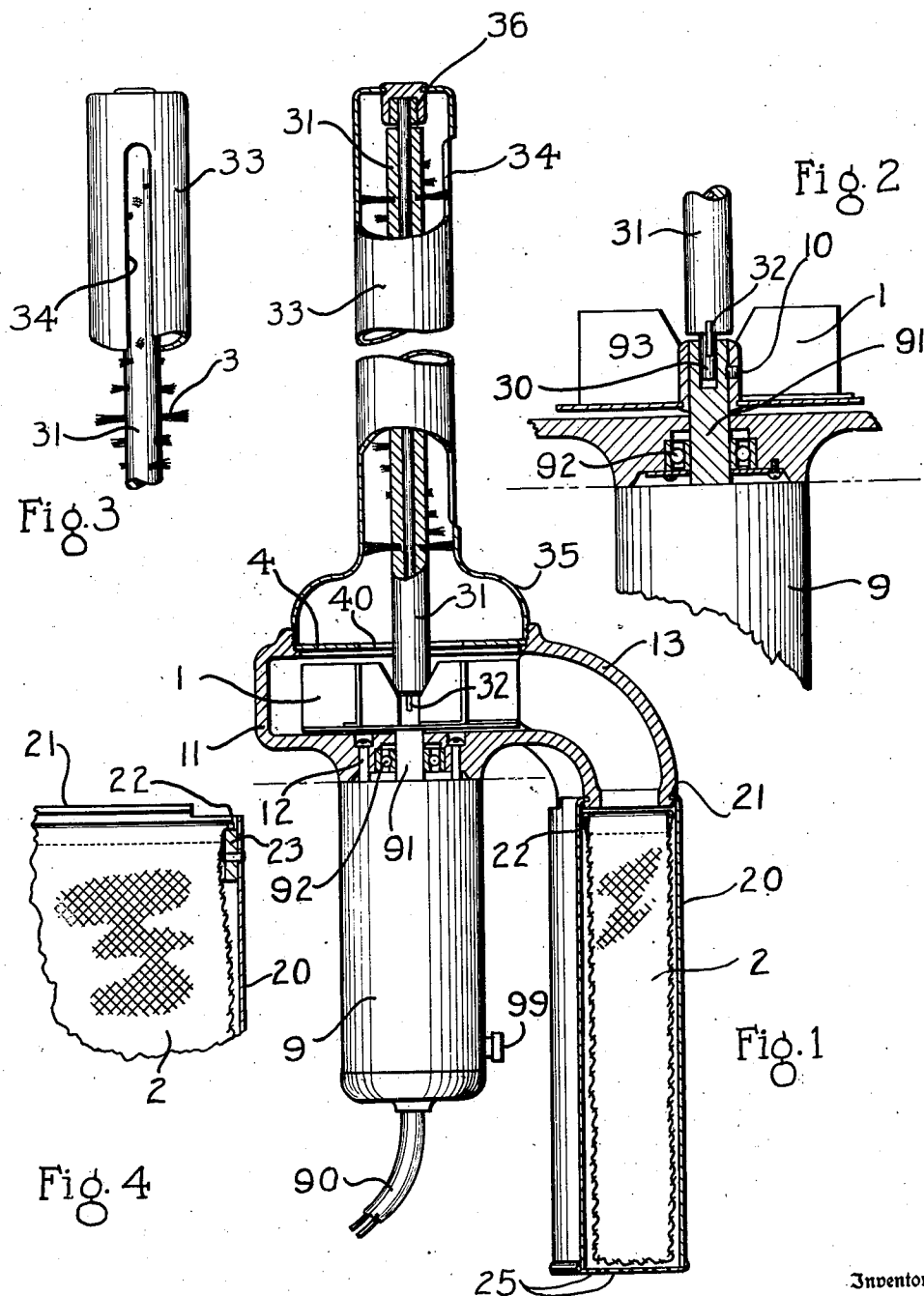
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H. R. MITCHELL

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DEVICE FOR REMOVING DUST FROM CLOTHES

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Inventor

Harry R. Mitchell

By *Charles L. Reynolds*
Attorney

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DEVICE FOR REMOVING DUST FROM CLOTHES

Harry R. Mitchell, Bremerton, Wash., assignor
of one-half to Douglas G. Smith, Mercer
Island, Wash.

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My invention relates to a small portable or readily manipulable device for removing dust, lint, and the like from clothing or upholstery surfaces, for instance. The device combines the nature of a brush and of a vacuum cleaner, which for best results under most circumstances must be used together, but certain parts or arrangements of the device may be used in other similar devices, or in other combinations, whether or not the complete combination is used.

Among the objects of the present invention are: to provide a simple, light, and inexpensive device which can be used for the purposes indicated; one which can be readily assembled and disassembled when necessary; one in which the brush in particular, and the blower, if necessary, can be removed, inspected, cleaned, or renewed from time to time; one in which the dust sack is not left free so that as the device is manipulated it may get into the way or possibly contact with and soil the clothing again, but in which the dust sack is held instead in a rigid, preferably a metal, container; one in which a dust sack is simply made and conveniently held in place, and is readily removable for emptying, and replaceable; one in which the motor employed for driving the blower and the brush may serve as the handle for the entire device, and the hand which holds the device thus by the handle is covered and guarded by the housing enclosing the dust sack.

With these and other objects in view, as will appear hereafter, my invention comprises the novel parts, and the novel combination and arrangement thereof, as shown in the accompanying drawing, and as will be hereinafter more particularly described, and defined in the claims which terminate this specification.

In the accompanying drawing my invention is shown embodied in a form which is at present preferred by me.

Figure 1 is in part an elevation and in part an axial section through the complete device, assembled.

Figure 2 is an enlarged section through the connection between the blower, the brush, and the motor.

Figure 3 is an elevation of the outer end of the brush and the tube which encloses it.

Figure 4 is a section substantially at right angles to Figure 1, showing a part of the open end of the dust sack and its housing.

A motor 9, to which current is supplied through a cord 30, terminates at one end in a shaft 91 received within a bearing 92. Upon this shaft 91 is secured a blower element 1, by means of a

set screw 10 or similar removable connection, and the end of the shaft 91 may be axially apertured, as indicated at 93, and the reduced end 30 of a brush spindle 31 (formed, for instance, by a wire extending axially through the spindle 31) may be received in this axial bore 93. To insure rotation of the brush with the motor shaft the latter may be transversely notched, as seen in Figure 1, and within this notch is received a cross pin or bar 32 secured in the brush spindle. This provides a connection between the motor shaft and the brush by which the latter is readily separable by axial, or endwise, movement.

The blower is enclosed within a casing 11, which preferably is a simple aluminum casting having one solid wall to which the motor may be secured by screws 12, and its opposite wall is provided with an aperture, as may be seen in Figure 1, of a size sufficiently large to permit the blower 1 to be inserted or removed, as may be necessary. Since it is desirable to confine the inlet to a blower to the center, or axial portion, the large hole thus provided in the blower casing may be reduced in size by the provision of a plate 4 supported within the inlet of the blower casing, and having an aperture 40 of reduced size disposed in the vicinity of the axis of the blower. The brush spindle 31 projects through this aperture 40. The brush 3 is closely surrounded by a tube 33 which is provided with a suitable aperture or apertures for inlet of air and entrained dust, lint, and the like, but in order to perform this function and to permit contact between the bristles of the brush and the clothes, which are drawn somewhat inwardly by suction, it is preferred that the aperture be a single longitudinally extending slot 34 in the tube 33.

The inner end of the tube is belled, as indicated at 35, and is threadedly received within the inlet opening of the blower casing 11, so that it is readily removable. However, when so received in the inlet to the blower casing, the belled end 35 clamps the disk 4 in place, and prevents its rattling or moving about. The outer end of the tube is preferably provided with a bearing, indicated at 36, for the outer end of the brush spindle 31, and with the brush end received in this bearing 36 it is impossible for the inner end of the brush spindle to be disengaged from the motor shaft 91.

The blower casing is provided with an outlet 13 at one side, which preferably is curved to direct the discharge in a direction parallel to the axis of the motor, blower and brush. At the outlet 13 is supported a dust sack 2, preferably

made of fabric to filter out the dust and permit discharge of the air, but instead of connecting this dust sack directly to the outlet, and permitting it to lie limply adjacent the motor, the dust sack is enclosed within a housing 20. This housing is engaged with the end of the outlet 13 for ready removal, and in consequence it is necessary to provide the dust sack 2 with a single opening only, and through this opening the dust is discharged into it, and upon removal of the dust sack the dust may be emptied from it.

The means for supporting the housing 20 may vary widely, but preferably this housing and the outlet are provided with interengageable means, such as the rib and groove connection shown at 21, whereby the two may be disconnected by relative sliding movement transversely of the outlet. Such a rib and groove connection will also form a substantially air-tight connection at this point, so that air and dust will not leak out here. Preferably also the housing 20 is curved transversely to surround the motor 9, though spaced away from the latter, thus to occupy the minimum of space and to act as a guard for the hand which grasps and manipulates the device, holding it by the motor 9 serving as a handle. A motor switch or push button 99 is located for convenient operation by a hand thus grasping the handle.

The dust sack 2 is provided at its open end with a marginal frame 22, of wire, for instance, of a shape and size to register with the end of the outlet 13, and by means of this rigid marginal frame 22 the entrance to the dust sack may be held open, and closely to the end of the outlet 13, without actual connection to the latter. For example, members 23 spaced around the housing 20, just inside its open end, serve as ledges for the support of the marginal frame 22. The housing 20 is, of course, apertured at a point distant from the outlet 13 to permit the discharge of air screened through the dust sack 2, and for this purpose apertures 25 as shown at its end (see Figure 1).

With such a device, which need weigh at most only two or three pounds, a suit or coat may readily be "brushed" to remove lint, dust, and the like, and without appreciable effort. The brush will loosen and start the removal of such dust and lint, and the suction will pick it up and remove it through the blower to the dust sack 2. When the sack is filled it is easily removed and emptied merely by sliding the housing 20 transversely and lifting out the dust sack, and the sack is as easily replaced. Should the brush require cleaning or replacing, or should the blower need inspection or replacing, this may be done readily by removing the tube 33, whereupon the brush may be withdrawn by axial movement, the disk 4 may be lifted out, and the blower 1 may be disconnected by slacking off the set screw 10, if its removal is necessary. The motor 9 serves as a handle, the housing 20 as a guard, and the entire device is compact, simple and convenient.

What I claim as my invention is:

1. A device for removing dust from clothes, comprising a motor, a blower, and a rotative brush, all disposed coaxially, the blower and

brush being each removably secured on the end of the motor shaft, a blower casing having a solid wall at one side for securement to the motor, and an inlet opening at the opposite side of a size for the passage of the blower, and having a lateral outlet, a dust sack connected to the outlet, a slotted tube closely surrounding the brush and belled at its inner end, such inner end being threadedly received in the blower inlet, and a centrally apertured disk supported in such inlet, and clamped therein by the belled end of the tube, its central aperture confining inlet to the blower casing to the vicinity of the blower's axis.

2. A vacuum cleaning device including a blower casing having a laterally disposed, elongated outlet, a motor secured to and projecting from said casing to serve as a handle, a rigid housing having an entrance shaped to register with the blower casing outlet, disposed parallel to but spaced outwardly from the motor, and transversely curved to fit about a hand grasping the motor, said casing and housing having complementary members similarly curved and engageable by a relative transverse sliding motion, a dust sack open at one end, and received within the housing, a marginal frame secured about the opening of the sack, of a shape and size to surround the outlet, a ledge within the housing supporting the marginal frame in close proximity to the outlet, the housing being apertured, distant from such outlet, for discharge of air.

3. A device for removing dust from clothes, comprising a motor, a blower, and a rotative brush, the blower and brush being removably secured on the end of the motor shaft, a blower casing having a wall at one side for securement of the motor and its housing, the motor being operatively connected to said blower and projecting outwardly from said blower casing, an inlet opening at the opposite side of the casing of a size for the passage of the blower, a lateral outlet from said blower casing, a dust sack connected to said outlet, a slotted tube closely surrounding the brush, the inner end of said tube being removably received at the blower inlet, and a disk having a restricted central aperture, to confine its suctional effect to the axis of the blower, removably supported in such inlet, and disposed between the blower casing and said tube.

4. A vacuum cleaning device including a blower casing having an outlet, the length of such outlet being greater than its width, a housing having an entrance shaped to register with said outlet, and the outlet and housing having complementary relatively slidable members interengageable by relative movement transversely of the outlet, to hold said entrance and said outlet in registry, to receive all discharge from the outlet within the housing, a dust sack open at one end, and received within the housing, a marginal frame secured about the opening of said sack, of the shape and size of the outlet, and ledges within the housing supporting the marginal frame in close proximity to the outlet, the housing being apertured, distant from the entrance, for discharge of air.

HARRY R. MITCHELL.