Dec. 23, 1930. W. J. AMSTUTZ 1,786,384

VACUUM BRUSH

Filed Jan. 12, 1927

Fig. 1.

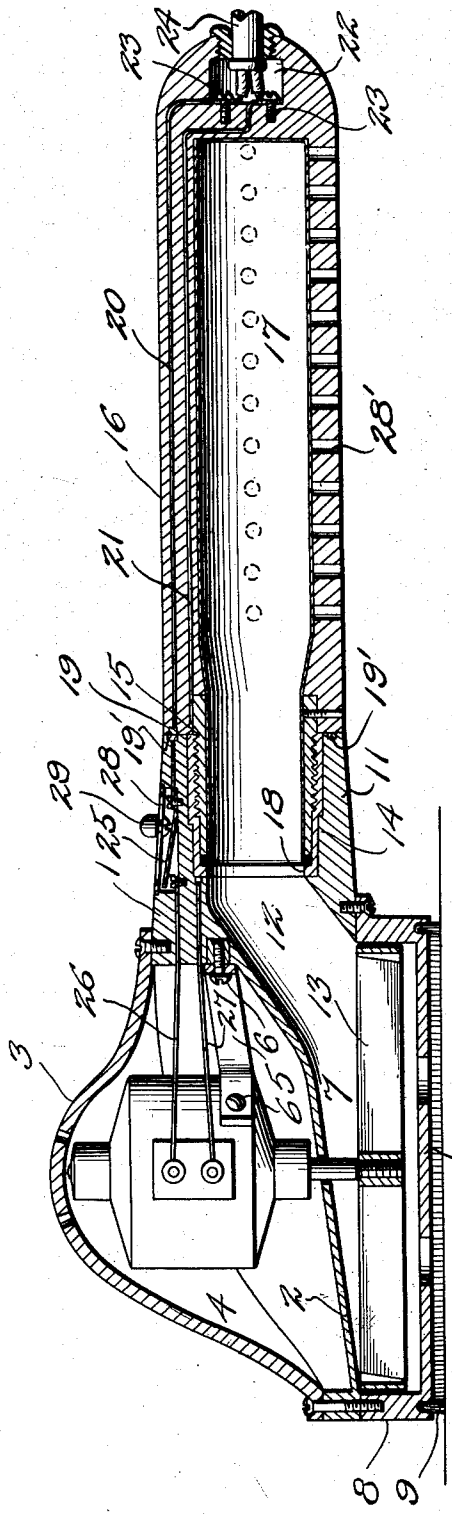


Fig. 3.

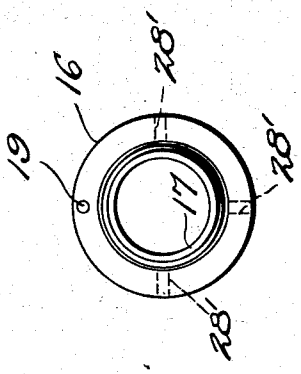


Fig. 2.

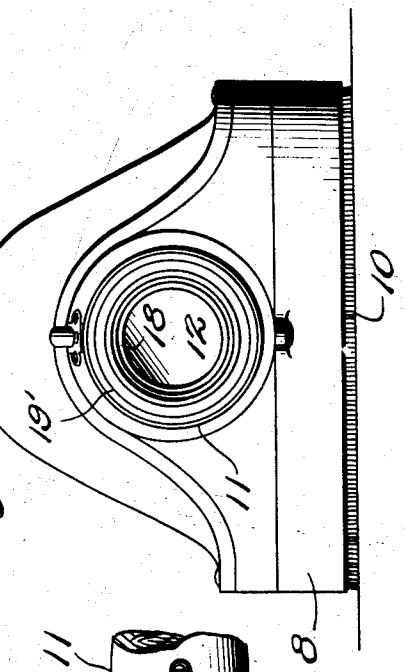
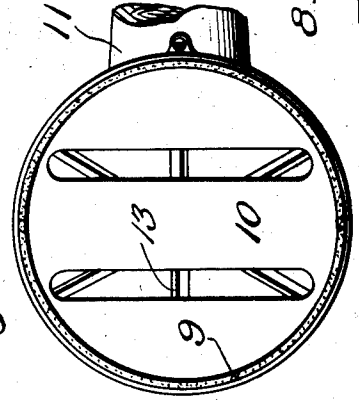


Fig. 4.



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UNITED STATES PATENT OFFICE

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VACUUM BRUSH

Application filed January 12, 1927. Serial No. 160,720.

This invention relates to vacuum cleaners and one of its objects is to provide a vacuum brush for cleaning purposes that can be advantageously used for quickly and easily removing dirt, dust and the like from places inaccessible for the use of brushes of the usual construction.

A further object of the invention is to provide a brush of the vacuum type, that is extremely simple in construction, strong and sturdy and one that can be handled with ease for thoroughly cleaning articles and places with very little effort on the part of the operator.

Another object of the invention is to provide a brush including a dirt receiving bag housed in the handle of the brush which is detachable from the body thereof whereby ready access may be had to the bag for cleaning the latter.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing my invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is a longitudinal sectional view taken through the brush forming the subject matter of the present invention.

Figure 2 is a rear view of the brush head with the handle removed.

Figure 3 is a front view of the handle detached from the brush head.

Figure 4 is a bottom plan view of the head of my brush.

Referring to the drawings in detail the reference numeral 1 broadly indicates the head of my brush, which includes a hollow body provided with a curved partition 2 and a detachable curved top 3 which together with the partition 2 forms a compartment 4 within which is supported an electric motor through the medium of bracket arms 5 having their ends secured to said motor and inner wall of the compartment respectively, by screw bolts 6 as shown in Figure 1 of the drawings. The partition 2 also forms the top of an air chamber 7 which has secured to the bottom of its wall an annular member 8 having fixed in a plurality of bores arranged in its bottom bristles 9. Underlying the bottom of the air chamber 7 and formed integral with the annular member 8 as shown, is a bottom plate 10 formed with spaced slots having their ends terminating adjacent the opposite side edges thereof, so as to allow ample passageway for dirt, dust and other matter. The body has integrally formed therewith a sleeve 11 which is in communication with the air chamber 7 through the medium of an inclined passage 12. The motor is arranged so as to have its shaft passing through the partition 2 and terminates in a threaded lower end to receive the hub of a suction fan 13 disposed in the air chamber 7 above the bristles as clearly shown in Figure 1 of the drawings.

The sleeve 11 is reinforced by an interiorly arranged collar 14 which is threaded to receive a threaded ferrule 15 secured interiorly of the handle 16 whereby the handle can be detachably secured to the head in a manner to provide a substantially leak proof connection. The handle is hollow as shown and arranged therein is a bag 17 formed from fabric or other like material and which is provided with a bead at its open end to be clamped between a flange 18 on the collar 14 and the inner end of the ferrule 15, so as to retain the bag 17 in open position and in communication with the air chamber 7 when the handle is secured to the head as will be readily apparent. The handle and sleeve have secured on their confronting faces a contact plate 19 and a contact ring 19′ respectively, and the plate of the handle has electrically connected therewith a conductor 20 which extends longitudinally of the handle and in parallelism with a conductor 21 having electrical connection with the threaded ferrule 15. The conductors 20 and 21 terminate in a recess 22 in the free end of the handle and are secured to terminal screws 23 which also have secured thereto conductors 24 having connection with a suitable source of electrical energy not shown.

The sleeve 11 is formed with a recess to accommodate a switch which includes a leaf spring 25 having one end secured by a terminal screw which has connected thereto a conductor having electrical connection with the ring 19′ of the sleeve. Secured in the recess is another terminal screw arranged in the path of the free end of the leaf spring 25 and this last mentioned terminal screw is electrically connected to one end of a conductor 26 which has its opposite end in electrical connection with the motor as shown. A conductor 27 is also electrically connected with the motor at one end while its opposite end is fixed to the flange 18 of the collar 14. Slidably mounted in a plate 28 covering the recess is a button 29 slidable for engagement with the leaf spring whereby the latter may be caused to contact the adjacent contact screw and close a circuit to the motor as will be readily apparent. The handle 16 is provided with a plurality of parallel arranged openings 28′ which are arranged in row formation upon opposite sides and bottom of said handle.

From the above description and disclosure of the drawings, it will be obvious that I have provided a vacuum brush that can be used with very little effort on the part of the operator for thoroughly cleaning articles and places inaccessible for the use of brushes of the usual construction and upon closing the switch above referred to the motor will be put into operation for rotating the blades of the fan 13 which creates a suction action to draw dust and dirt up to the passage 12 and thence to the bag 17. The air created by the fan 13 will escape through the pores of the bag 17 and openings 28′ as will be apparent.

It is thought from the foregoing description that the advantages and novel features of my invention will be readily apparent.

I desire it to be understood that I may make changes in the construction and in the combination and arrangement of the several parts, provided that such changes fall within the scope of the appended claims.

What I claim is:

1. A vacuum brush comprising a hollow head, a detachable top for said head, a curved partition formed in said head and dividing the latter into upper and lower chambers, a motor supported in the upper chamber with its shaft extending thru the partition into the lower chamber, a fan secured to the extending end of the shaft, a bottom plate for said head formed with parallel slots disposed upon opposite sides of the shaft, bristles secured to said bottom plate, a sleeve formed with said head, a handle secured to said sleeve, dust receiving means in said handle, said head having a passage-way providing communication between said sleeve and the lower chamber, and means carried by said sleeve to control the motor.

2. A vacuum brush comprising a head, suction means arranged in said head, a sleeve formed with said head, a collar having an interiorly threaded portion and secured in said sleeve, an annular flange on the inner edge of said collar and extending inwardly therefrom, a hollow handle having openings arranged in longitudinally disposed rows, a threaded ferrule carried by said handle and threadedly received by the threaded portion of the collar for securing the handle with respect to the head, a dust receiving bag in said handle having a bead around its open end adapted to be received between the flange and threaded ferrule for securing the bag in open position and in communication with the suction means of the head.

In testimony whereof I affix my signature.

WILLIS J. AMSTUTZ.