

March 22, 1927.

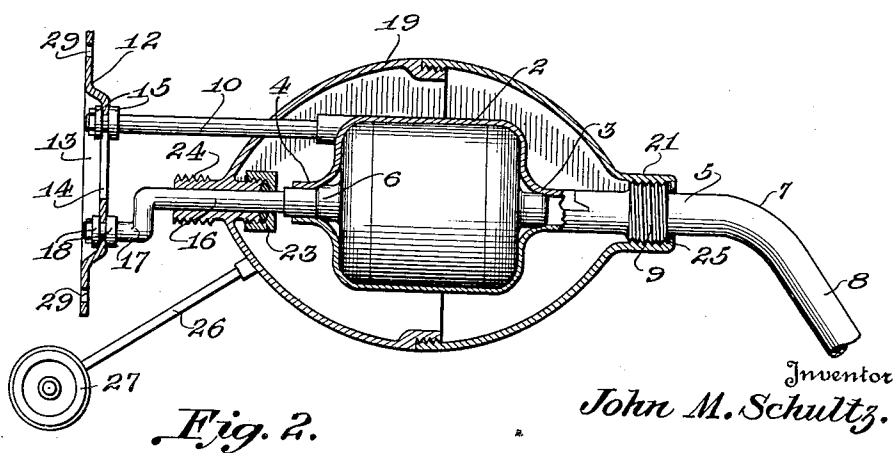
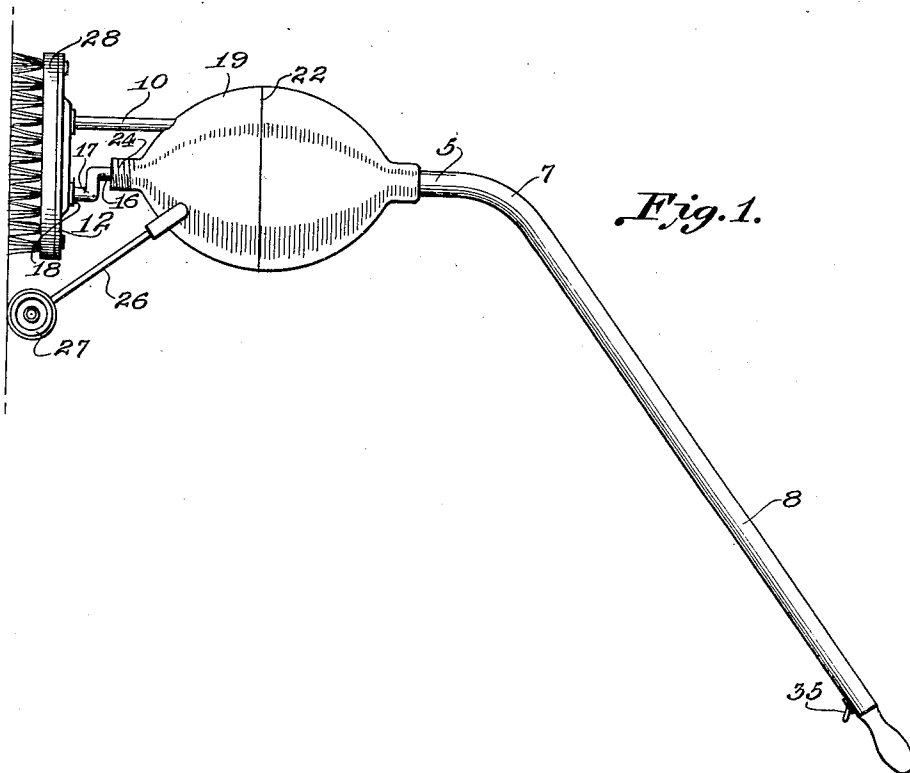
J. M. SCHULTZ

1,622,166

CLEANING MACHINE

Filed July 6, 1926

2 Sheets-Sheet 1



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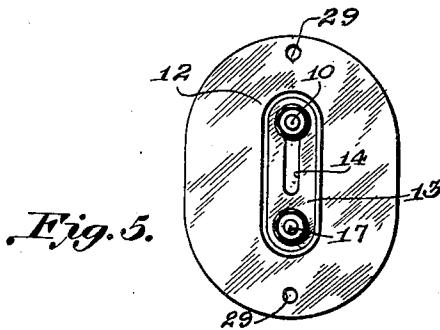
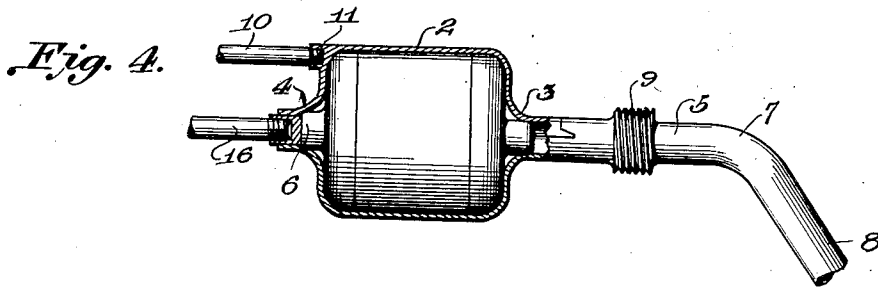
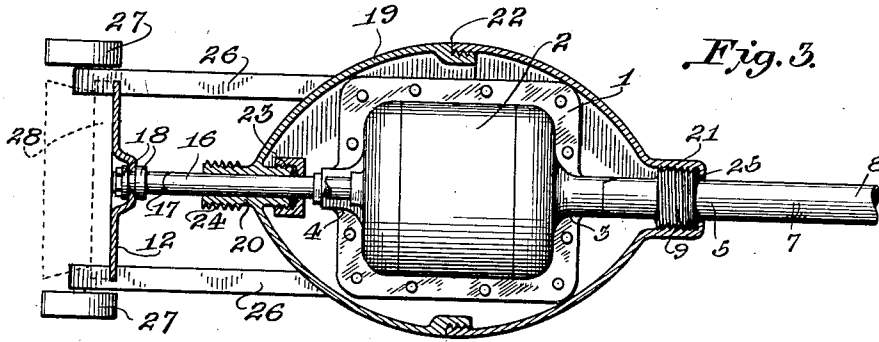
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CLEANING MACHINE

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UNITED STATES PATENT OFFICE.

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CLEANING MACHINE.

Application filed July 6, 1926. Serial No. 120,811.

This invention relates to improvements in cleaning machines, having for an object to provide a portable power operated machine which may be advantageously used for brushing, washing, wiping or dusting various surfaces, as for example, floors, walls, ceilings, windows, etc., having means thereon for imparting an oscillatory motion to a cleaning element carrying device to which a brush, cloth, sponge or other appliance may be attached and caused to be moved over a surface to be cleaned in a manner to simulate, in a fashion, the usual manual operation of the particularly selected appliance.

It is also an object of the invention to provide a machine of the character mentioned utilizing a novel form of casing, the same housing the motive means employed in the machine and protecting such motive means from liquid when used for washing purposes, as well as being equipped with efficient bearing means for the power shaft and carriage means whereby proper relative adjustment of the cleaning element carrying device with respect to a surface being cleaned, will be assured.

Another and equally important object of the invention may be stated to provide a portable cleaning machine having a cleaning element carrying device so constructed as to permit the convenient and effectual connection of various types of cleaners thereto and to firmly retain the same in position thereupon for the transmission of oscillatory motion to such carrying device.

It is also among the aims and objects of the invention to provide the same with a holder for cloths, sponges, or like devices, which can be removably attached to the machine when it is desired to manually operate the same, when it is not desired to operate the power or motive means thereof for transmitting oscillatory motion to the cleaning element carrying device.

Other objects of the invention will be in part obvious and in part pointed out hereinafter.

In order that the invention and its mode of operation may be readily understood by those skilled in the art, I have in the accompanying illustrative drawings and in the detailed following description based there-

upon, set out one possible embodiment of the invention.

In these drawings:

Figure 1 is a side elevation of the machine,

Figure 2 is a longitudinal sectional view in a vertical plane,

Figure 3 is a view similar to the Figure 2 taken on a horizontal plane,

Figure 4 is a detailed sectional view,

Figure 5 is an end elevation of the plate and associated parts.

Having more particular reference to the drawings, in connection with which like characters of reference will designate corresponding parts throughout, the improved machine may be stated to comprise a motor or other power supporting means or frame designated in its entirety by the numeral 1, said frame being formed of metal or other suitable material and being substantially rectangular in configuration whereby to receive and support in appropriate bearings thereon, an electric motor 2. The opposite end portions of the frame 1 are provided with extensions 3 and 4; the extension 3 serving to receive therein the inner end of a handle 5 while the extension 4 receives a bearing of the armature shaft of the motor 6 therein. In this connection, it will be noted that the outer portion of the handle 5 is curved upon itself as is indicated by the numeral 7 and is formed with an elongated portion 8; an enlarged circular screw threaded element 9 being formed upon the inner end of said handle 5, for a purpose which will be subsequently described.

With a view toward providing the machine with means for supporting a brush or similar appliance, a longitudinally disposed supporting rod 10 is fixedly engaged with a portion of the frame 1 through the medium of a suitable bracket 11 formed thereon and has its outer end reduced whereby to provide a bearing means for a cleaning element carrying device or head plate 12, such cleaning element carrying device consisting of a metal or suitable material having an inwardly pressed intermediate portion designated by the numeral 13, wherein a longitudinally disposed slot 14 is formed in one portion thereof while a bearing opening is formed in the opposite portion thereof; the

slot 14 serving to slidably and pivotally receive the bearing end of the supporting rod 10 therein whereupon locking and jam nuts 15 are turned into engagement with the opposite sides of the adjacent portions of the device 12, as is shown in the Figure 2, thus effecting the oscillatory and sliding support of the cleaning element carrying device 12 with respect to said rod 10.

To transmit oscillatory motion to the device 12, the armature shaft of the motor 2 is extended or elongated as is indicated by the numeral 16, having the outer extremity thereof formed with an offset or crank portion 17, the free extremity of which is adapted to be pivotally engaged in the opening formed in the opposite portion of the inwardly pressed part 13, whereupon locking nuts or similar devices 18 are engaged therewith and thus, serve to effect a positive connection as between said crank 17 and the device 12. Because of this connection of the carrying device 12 with the armature shaft 16, it will be understood that with rotation of the motor 2, the crank portion 17 will serve to impart oscillatory motion to the cleaning element carrying device 12 pivotally and slidably mounted upon the outer end of the supporting rod 10 aforesaid.

To house the motor 2 and to protect the same from liquids or from other solutions used in a washing process wherein the portable machine is employed, I preferably provide the machine with a transversely divided casing formed of sheet metal or other suitable material generally indicated by the numeral 19. This casing 19, as stated, is transversely or medially divided into sections, the outer extremities of which are provided, one with an elongated bearing sleeve 20 and the other with an internally screw-threaded and coaxially aligned sleeve 21. The adjacent or adjoining portions of the sections of the casing 19 are provided with interfitting and complementally screw threaded portions designated by the numeral 22 and thus, by turning one section onto the other, a union as between the two will be effected as is clearly shown in the Figures 2 and 3.

With arrangement of the casing 19 over or about the motor 2 and its supporting frame 1, the internally screw threaded sleeve 21 has the enlarged circular element 9 turned into engagement therewith while the elongated portion of the armature shaft 16 is extended through the bearing sleeve 20; the inner end of said sleeve being provided with a suitable packing nut 23, for an obvious purpose, while the outer end thereof is externally screw threaded as is indicated by the numeral 24, for a purpose which will be presently described. It is also to be appreciated that a suitable packing 25 is pro-

vided in the internally screw threaded sleeve 21 whereby to render the same fluid tight and thereby, prevent the passage of fluid by the enlarged circular screw threaded element 9 into the casing 19.

It is desirable that the portable machine be provided with means for effectually retaining the cleaning element carrying device 12 and a cleaning appliance secured thereto in proper relation to a surface to be cleaned and with this in view, I fixedly secure to an outer portion of the sectional casing 19, a pair of relatively straight and complementally disposed bracket arms 26, arranging suitable bearings upon their outer ends whereby rollers 27 may be rotatably carried thereby. In this connection, it is to be understood that the rollers 27 are so positioned with respect to the cleaning element carrying device 12 as to insure its proper relative position with respect to a surface to be cleaned by the machine and likewise, to permit of the moving of the machine freely over such surface.

It is preferable that the cleaning element carrying device 12 be provided with a brush or other similar cleaning appliance, equipped with a flat back or head 28, from which fingers are extended and adapted to be engaged through openings 29 formed in appropriate portions of the opposite ends of the cleaning element carrying device 12, whereupon nuts or similar fastening devices are engaged therewith and serve to prevent displacement of the cleaning appliance with respect to the device 12.

In operation of the improved portable washing machine, the motor 2 is preferably energized by the closing of an electrical switch or similar device 35 conveniently arranged upon the handle thereof and with rotation of said motor 2, it will be understood that rotary motion will be transmitted by way of the elongated armature shaft 16 and the crank 17 thereon to the cleaning element carrying device pivotally and slidably mounted upon the outer end of the supporting rod 10. In this connection, it will be understood that a brush or other cleaning appliance 28 has been secured to the cleaning element carrying device 12 and thus, with the transmission of oscillatory motion thereto from the crank portion 17 of the armature shaft 16, said cleaning appliance will be moved in a manner to simulate the usual manual operation thereof, washing, wiping or dusting a surface engaged thereby and over which it is moved through the medium of the rollers 27 mounted upon the relatively spaced bracket arms 26. Because of the pivotal and slidable mounting of the device 12 upon the outer end of the supporting rod 10, it will be understood that free oscillatory movement thereof will be permitted under influence of the rotating crank shaft 17 and

by consequence, that the production of an effectual vibratory cleaning motion of an appliance secured to said device 12 will be permitted.

5 The casing 19, will, as hereinbefore described, serve to prevent the passage of fluid or other solution into engagement with the working parts of the motor 2 and hence, will prevent any interference whatsoever
10 with the proper functioning of said motor. Likewise, the casing 19 will serve as a dust protector and guard for the motor 2.

Manifestly, the construction shown is capable of considerable modification and such
15 modification as is within the scope of my claims I consider within the spirit of my invention.

I claim:

20 1. A portable cleaning machine comprising a motor, a handle extending therefrom for moving the machine over the surface to be operated upon, a brush having a flat back portion, means providing a sliding and pivotal connection between said brush and
25 said motor, said brush being supported for oscillatory and sliding movement in the plane of its flat back portion, a shaft extend-

ing from and rotated by said motor and having its remote end formed into a crank connected to said brush, a casing completely
30 enclosing said motor and forming a support for said shaft and rollers arranged to one side of the brush and supported by the casing in position to engage the surface to be cleaned.

35 2. A portable cleaning machine comprising a motor, a shaft rotated by said motor and extending therefrom and having its remote end formed into a crank, a handle secured to the motor, a rod projecting from
40 the motor and having its remote end in proximity to said crank, a plate pivotally connected to said crank, and having a slot receiving the remote end of said rod, a brush head secured to the plate, a two part
45 casing enclosing said motor and having one part attached to said handle and the other part forming a bearing for said shaft, and rollers arranged to one side of the brush head and supported by the casing.

50 In witness whereof I have hereunto set my hand.

JOHN M. SCHULTZ.