

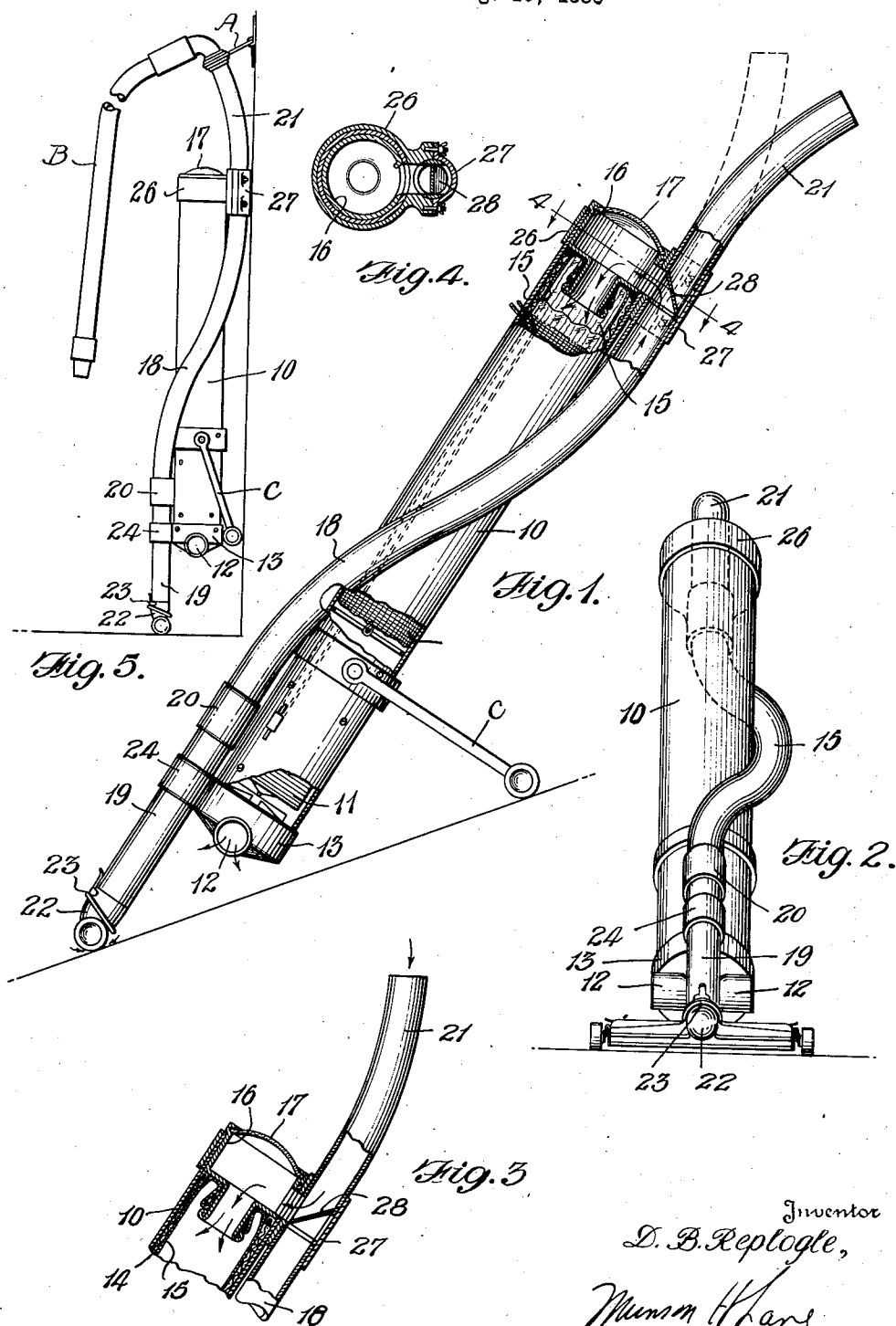
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AIR FLOW CONTROL IN AN AIR METHOD CLEANER

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AIR FLOW CONTROL IN AN AIR-METHOD
CLEANER

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The invention relates to cleaning apparatus and more particularly to a portable electric cleaner of the air-method type, which may be selectively employed for floor cleaning purposes and by the use of suitable extension devices may be employed for cleaning walls, draperies and the like.

The principal object of the present invention is to provide a simplified and improved means for controlling the flow of dust laden air into the air filtering and dust collecting devices with which the apparatus is equipped, from the floor tool or extension devices as the case may be.

The invention will be more fully understood by reference to the accompanying drawing and the following detailed description in which a specific embodiment of the invention is set forth for the purpose of illustration and not by way of limitation.

In the drawing,

Fig. 1 is a side elevation of the improved apparatus in floor cleaning position, portions being broken away to show the interior;

Fig. 2 is a front view of the same;

Fig. 3 is a fragmentary side view of the upper portion of the machine showing the control valve set for use with extension devices;

Fig. 4 is a section taken on line 4-4, Fig. 1; and

Fig. 5 is a side elevation on a reduced scale showing the apparatus in closeted position for wall cleaning or like purposes employing extension devices.

Referring to the drawing in detail, reference numeral 10 denotes the body of a suction cleaner of the general type illustrated in my Patent No. 1,887,600, dated November 15, 1932. The body is shown as cylindrical in form and may be constructed of hard fibre, "Bakelite", metal or other suitable material.

In the lower part of the body is located a power plant 11 which may be similar to that referred to in my application, Serial Number 56,384, filed December 27, 1935, the power plant having a lateral discharge outlet or outlets 12 in a removable cap 13, as more fully described in the aforesaid application.

Within the upper portion of the body is mounted the dust collector which is shown as comprising an outer reinforcing member 14 of a relatively coarse mesh which may be of wire, cloth, matting or the like, its function being to support and sustain an inner relatively fine mesh dust collector 15, preferably composed of porous paper. The inner member or bag 15 is preferably detachably secured to the lower portion of a re-

movable cap 16. This cap is provided with a transparent top 17 made of glass, celluloid or other suitable material.

The function of the transparent top is to permit the operator to see the character of the material which is being drawn into the cleaner and to determine the quantity of dust entering the same. Consequently it is of importance that this cap should be visible at all times and close to the eye of the operator. For this purpose it is located at the top of the body member and it is one of the features of the present invention that the handle portion of the cleaner is so arranged as not to obstruct the visibility of the transparent top.

With the above mentioned body in view, I provide a pipe or handle 18 so curved from top to the bottom that the upper portion is on one side of the longitudinal axis of the body member 10 and the lower is on the opposite end. This pipe member may be rigid and composed of hard fibre, "Bakelite", metal, or the like, or may be in the form of flexible hose, as disclosed in my application Serial Number 56,384, referred to above. The pipe 18 is provided with an extension 19 communicating therewith and connected by means of a coupler 20. There is also an extension member 21 at the top in the form of a curved grip member or handle portion. To the lower end of the pipe 19 is detachably connected a suitable floor tool such as is shown, for example, in my Patent No. 1,994,868, dated March 19, 1935, and preferably provided with a rotatable joint 23 as disclosed therein and for the purpose described in the aforesaid patent.

The hollow members 18, 19, 20 and 21 together constitute what might be termed a suction handle to the opposite ends of which cleaning tools are adapted to be secured. The suction handle or pipe is preferably rigidly connected to the body portion adjacent to the bottom by an extension 24 of the cap 13 and at the upper portion by a connector 26 having a detachable portion 27.

A collapsible roller support or bracket C may be hingedly attached to the body member at a point near the upper portion of the power plant and when opened up as shown in Fig. 1 cooperates with the supporting rollers of the floor tool in carrying the weight of the cleaner as the same is moved to and fro across the floor by the operator. It will be noted that the power plant is suspended below and in rear of the floor tool which is the desired position from the point of view of supporting the weight of the fan motor or motors. On the other hand, the handle grip 21 is below

the body member so that it does not obstruct the operator's view of the transparent cap. The curved pipe section 18 makes possible the above described arrangement.

- 5 To regulate the passage of air into the dust filtering portion of the cleaner, a valve 28 is provided which is carried by the grip portion 21 and may be swivelled to either of the two positions shown in full and dotted lines, respectively, in
10 Fig. 1. The valve 28 and the grip may be also bodily removed from the rest of the apparatus.

- In operation of the device, as illustrated in Fig. 1, the bracket C is moved to the extended position and the handle grip portion 21 is turned to the full line position indicated where it is convenient to the hand of the operator and may be used for moving the apparatus to and fro across the floor. The fan motor or motors being started, the air is drawn into the floor tool 22 and passes
20 thence through pipes 19, 20 and 18, from which latter it is directed through the dust filter, thence through the elements of the power plant, cooling the same and out at 12.

- The valve 28 may be reversed by rotating the
25 handle about the center axis of the pipe to the dotted line position shown in Fig. 1 and shown in full lines in Fig. 3. Air may then be drawn into the end of the suction handle grip portion 21 and thence into the body of the cleaner where
30 it is filtered and the clean air discharged at 12.

- The apparatus may be closeted as described in my prior patents and as illustrated in Fig. 5 of the present drawing. For this purpose the bracket is first folded against the body and the
35 top of the handle portion 21 is supported by a hose pipe hanger A which may be of the type illustrated in my Patent No. 1,884,870, dated October 25, 1932. From this hanger may be detachably supported an extension hose B having a nozzle at the end thereof, or other suitable extension devices may be employed as shown, for example, in my Patent No. 1,533,271, dated April
40 14, 1925. Other supporting means may be used as shown in my prior Patents 1,884,864; 1,884,865; 45 1,884,866; 1,884,868; 1,884,870; 1,970,576; and 1,983,567. When in the closeted position the

cleaner constitutes a semi-permanent system which performs the functions of the usual stationary system, but may be at once converted into the portable floor cleaning apparatus by simply removing the handle from the hanger A, lowering
5 the bracket C and turning the handle grip portion 21 to such a position that the floor tool will be placed in communication with the source of suction.

The device has been described in detail for the
10 purpose of illustration but it will be apparent that many variations and modifications may be resorted to without departing from the spirit of the invention.

I claim:

1. A suction cleaner comprising a body member including suction producing means and air filtering means, an open ended suction pipe communicating intermediate its ends with the air filtering means, and adapted to be connected at either end
20 with suction tools, and valve means in said pipe for controlling the flow of air, and operated by rotating a section of the pipe relative to the remainder of the pipe.

2. A suction cleaner comprising a suction pipe
25 handle adapted to connect with suction cleaning tools at either end, suction producing and dust collecting means adapted to be operatively connected to the handle intermediate its ends, said handle including a movable grip portion, and
30 valve means associated with and actuated by said movable portion serving to automatically place one end of the handle in communication with the suction producing means, while cutting off communication with the other end.

3. In a suction cleaner, a source of suction, an open ended suction pipe communicating intermediate its ends with the source of suction, and adapted to be connected at either end with suction tools, and valve means in said pipe for controlling the flow of air and operated by moving
40 a section of the pipe with reference to the remainder of the pipe.

4. A suction cleaner as defined in claim 3, wherein the movable section is rotated axially.

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