June 12, 1923.

1,458,602

W. H. UPTON

VACUUM CLEANER

Filed July 9, 1919

Fig. 1.

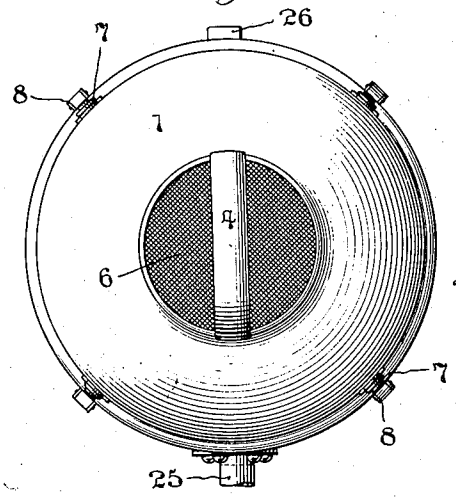


Fig. 4.

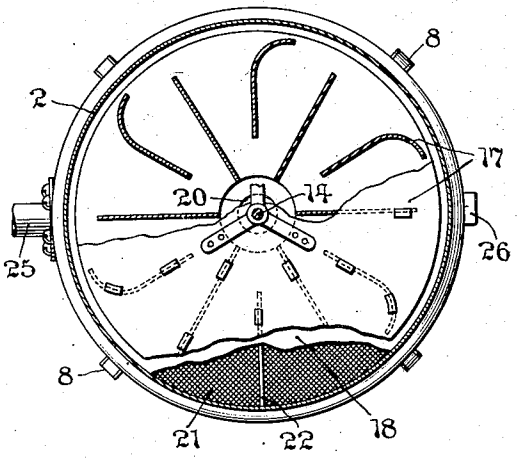


Fig. 2.

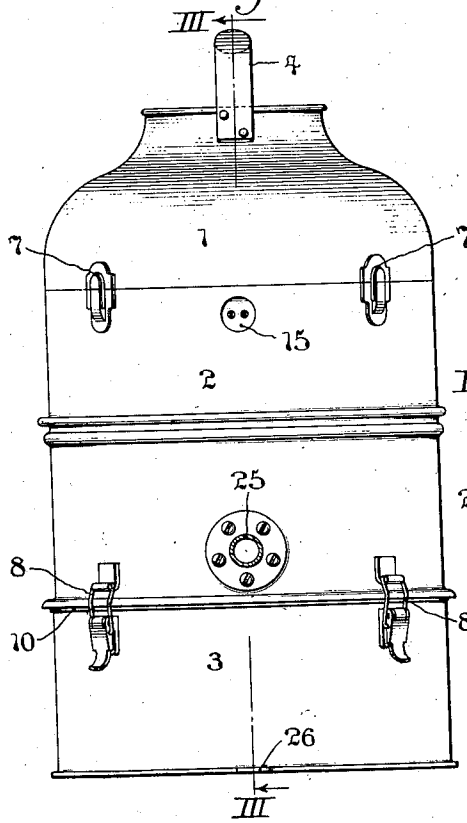
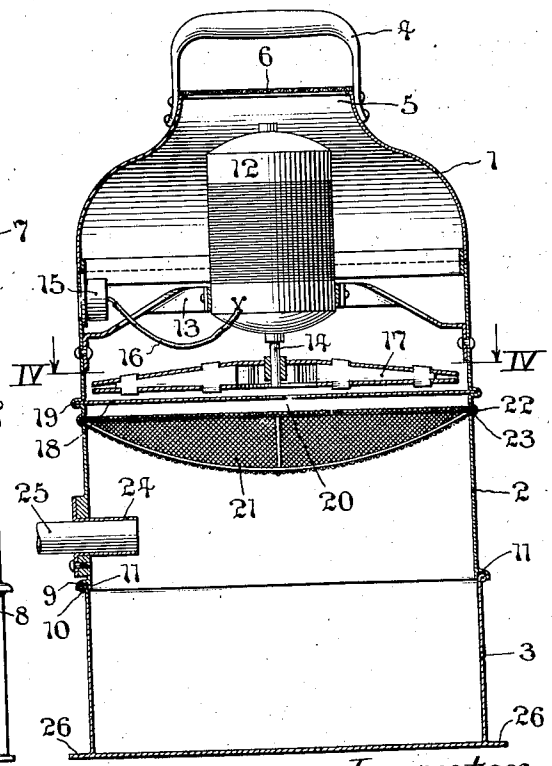


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM H. UPTON, OF NEW YORK, N. Y.

VACUUM CLEANER.

Application filed July 9, 1919. Serial No. 309,707.

To all whom it may concern:

Be it known that I, WILLIAM H. UPTON, a citizen of the United States, and resident of the borough of Manhattan in the city and State of New York, have invented a new and useful Improvement in Vacuum Cleaners, of which the following is a specification.

This invention relates to vacuum cleaners and has for its object to provide a device which may be readily taken apart for removing the dust and dirt collected therein.

Another object is to provide a device in which the casing is composed of several members arranged to be locked one to the other.

Another object is to provide a device in which the casing is composed of several members removably locked together, one member of which receives the dust, one member collects the dust and another member acts as a carrier and cover for the first named member.

A still further object is to provide certain improvements in the form, construction and arrangement of the several parts, whereby the above named and other objects may be effectively attained.

A practical embodiment of my invention is represented in the accompanying drawings, in which

Fig. 1 represents a plan view of my improved vacuum cleaner.

Fig. 2 represents a side elevation of the same.

Fig. 3 represents a vertical section taken in the plane of the line III—III of Fig. 2, looking in the direction of the arrows, and

Fig. 4 represents a horizontal section taken in the plane of the line IV—IV of Fig. 3, looking in the direction of the arrows.

The casing of the device comprises three members arranged in vertical alinement and denoted by 1, 2 and 3. The member 1 is provided with a handle 4 which straddles a restricted exhaust opening 5, which is covered by a wire screen 6. The member 1 is removably secured to the member 2 by fastenings 7 of well known and approved construction, and the member 2 is removably locked to the member 3 by bale fasteners 8 also of well known and approved construction. Thus it will be seen that when the three members are secured together the handle 4 on the member 1 will form a convenient means by which the device may be carried.

To form an air tight joint between the members 2 and 3, the member 2 is provided with an inverted annular groove 9 offset from the body, which groove is adapted to seat upon a beaded rim 10 of the member 3. A yielding gasket 11 of felt or other suitable material is interposed between the groove 9 and rim 10 to absorb the inequalities of the groove and rim.

A motor 12 is supported in the member 2 by means of a spider 13 carried by the member. The motor with its shaft 14 is arranged vertically and centrally within the member 2 and supported so that a portion of the motor will extend upwardly into the member 1 and into the restricted exhaust opening 5. A plug 15 is fixed in the member 2 and serves as a convenient means by which the source of power (not shown) may be applied to the motor, through the wires 16, which connect the plug with the motor.

An exhaust fan 17 is secured to the lower end of the motor shaft 14, the construction of which fan is covered by United States Patent No. 1249692 dated December 11, 1917, and is not specifically claimed herein.

A horizontally arranged diaphragm 18 is permanently crimped in an annular interior recess 19 formed in the member 2 in close proximity to the fan 17. The diaphragm has a central hole 20 for the passage of the air to the exhaust fan.

A dust screen having a covering of cloth 21 stretched over a yielding wire frame 22 is arranged to be removably held in a horizontal position by means of an annular interior recess 23 pressed outwardly in the member 2. A dust and air inlet 24 is provided in the member 2 below the dust screen, which inlet is adapted to receive a pipe connection 25 to which is secured a suitable nozzle or other means (not shown) which contacts with the article to be cleaned.

To facilitate the ready removal of the members, I provide the member 3 with outwardly extending ears 26 which may be engaged by the feet of the operator to hold the device on the ground while either of the members 1 or 2 are removed.

In operation, the motor rotates the fan which exhausts the air through the hole 20 in the diaphragm, thereby drawing the dust and air through the pipe connection 25 into the member 2. The air will pass through the dust screen and leave the dust to fall into the member 3. When it is desired to remove

the dust and dirt collected in the member 3, the fasteners 8 are released from the member 2, leaving the members 1 and 2 free to be lifted from the member 3. The member 3 when separated from the members 1 and 2 may, if desired, be carried to a place where the dust collected therein may be quickly and easily removed and the member cleaned, returned and connected to the members 1 and 2 for further use.

The member 1, when locked to the member 2, acts as a cover for the motor and fan.

It is evident that various changes may be resorted to in the form, construction and arrangement of the several parts, without departing from the spirit and scope of my invention; and hence I do not intend to be limited to the details shown and described, except as they may be specifically set forth the claims.

What I claim is:—

1. A vacuum cleaner comprising, a casing having three separable members in vertical alinement consisting of a cover member having its upper portion contracted into a neck to form an exhaust opening, a dust collecting bottom member, an intermediate member having a horizontally arranged inlet adjacent the lower edge thereof for receiving the dust to be deposited in the bottom member, said members being provided with coacting means for removably securing one member to the adjacent member, a handle secured to said neck on the cover member for carrying the cleaner, and laterally extending ears on the bottom member to facilitate holding the bottom member while separating the members.

2. A vacuum cleaner comprising, a casing having three separable members in vertical alinement consisting of a cover member having its upper portion contracted into a neck to form an exhaust opening, a dust collecting bottom member, and an intermediate member having a motor extending upwardly into said neck portion of the cover member, an exhaust fan, a dust screen and an inlet for receiving the dust to be deposited in the bottom member, said screen being disposed a distance from the lower edge of said intermediate member to form a receiving chamber for the dust, and said inlet entering said receiving chamber between the screen and the lower edge of the intermediate member, said members being provided with coacting means for removably securing one member to the adjacent member.

3. A vacuum cleaner comprising, a casing having three separable members in vertical alinement consisting of a cover member having its upper portion contracted into a neck to form an exhaust opening, a dust collecting bottom member, an intermediate member having a motor extending upwardly into said neck portion of the cover member, an exhaust fan, a dust screen, a diaphragm located between said fan and screen having a centrally arranged hole for the passage of air therethrough, and an inlet disposed between said screen and the lower edge of said intermediate member for receiving the dust to be deposited in the bottom member, said members being provided with coacting means for removably securing one member to the adjacent member.

In testimony, that I claim the foregoing as my invention, I have signed my name this 19th day of June 1919.

WILLIAM H. UPTON.