D. P. MOORE AND S. B. PACK.

PORTABLE SUCTION CLEANING MACHINE.

APPLICATION FILED JAN. 31, 1910.

1,342,345.

Patented June 1, 1920.

2 SHEETS—SHEET 1.

Fig. 1.

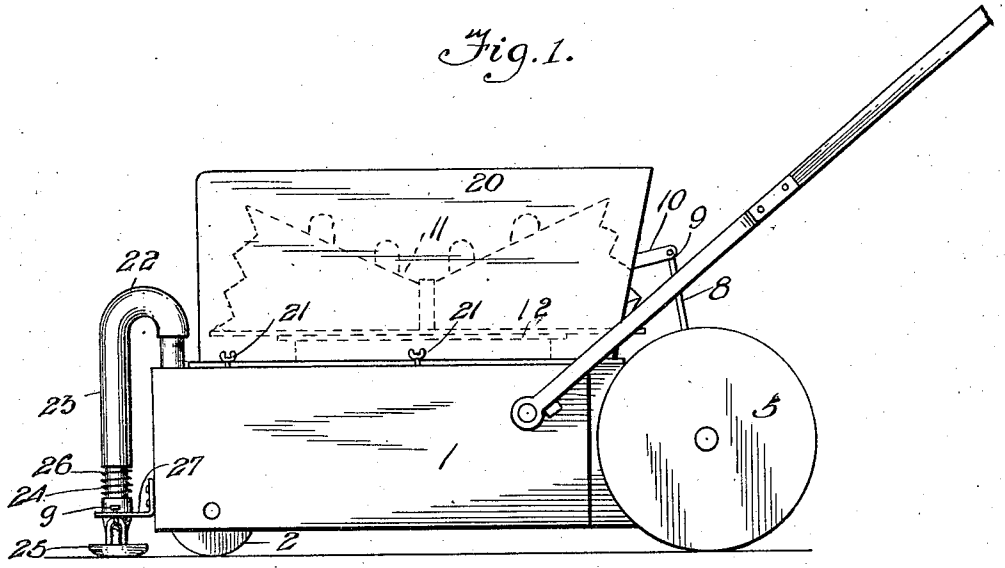
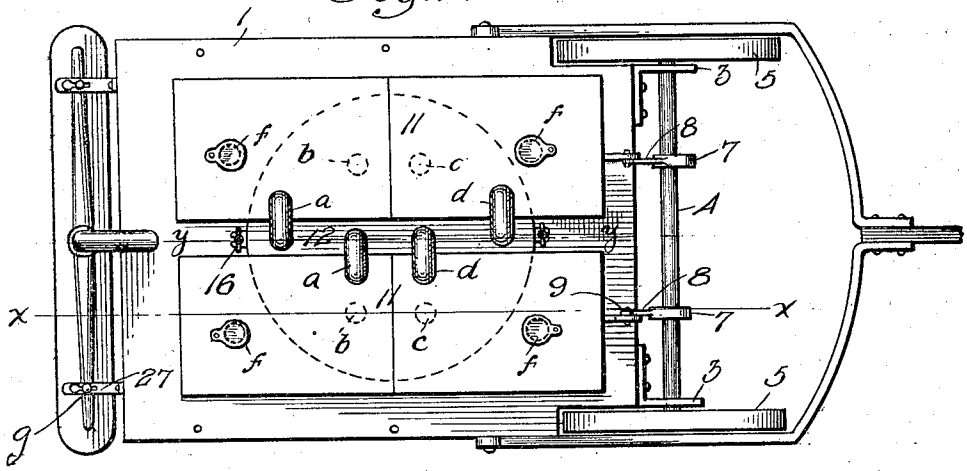


Fig. 2.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 3

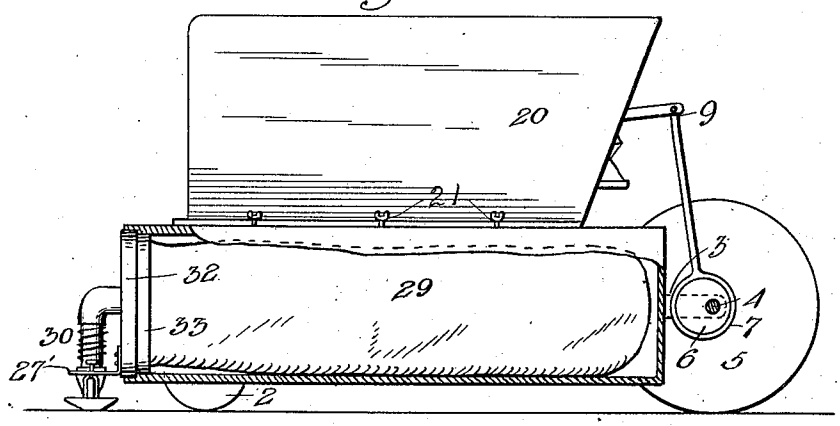


Fig. 5.

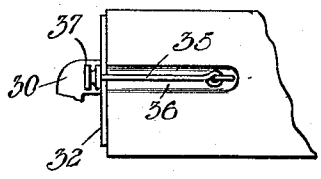


Fig. 6.

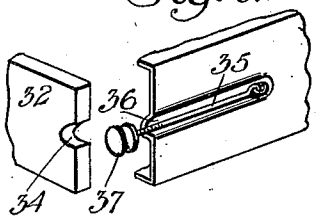
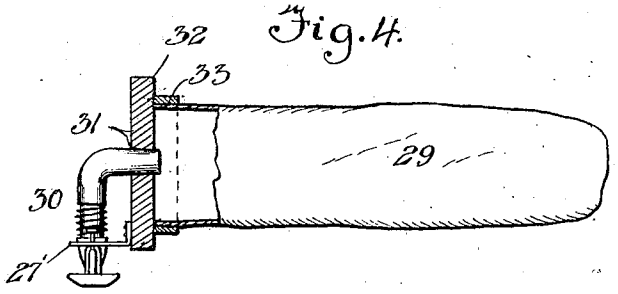


Fig. 4.



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UNITED STATES PATENT OFFICE.

DAVID P. MOORE AND SAMUEL B. PACK, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, TO PACKMORE MANUFACTURING COMPANY, A CORPORATION OF DELAWARE.

PORTABLE SUCTION CLEANING-MACHINE.

1,342,345. Specification of Letters Patent. **Patented June 1, 1920.**

Application filed January 31, 1910. Serial No. 541,094.

To all whom it may concern:

Be it known that we, DAVID P. MOORE and SAMUEL B. PACK, citizens of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Portable Suction Cleaning-Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

Our present invention relates to improvements in vacuum cleaners and has for its object to produce a portable machine of this character, having the novel features hereinafter described and claimed.

In the accompanying drawings:—

Figure 1 is a side elevation of one form of the complete machine.

Fig. 2 is a top plan view thereof with the hood or dome removed.

Fig. 3 is a side elevation of a machine, the receptacle being shown in section with the dust bag in position therein.

Fig. 4 is a detail view of the air filtering and dust collecting bag, the suction head and the closure for the casing of the machine with which the suction head is associated.

Figs. 5 and 6 are detail views of the means for detachably holding the closure for the open end of the casing to the receptacle or casing of the machine.

Referring to the drawings:—

The numeral 1 designates the casing or receptacle, which is provided with the two forward rollers or casters 2, and with the brackets 3, in which is journaled the shaft 4, carrying the large power wheels 5, preferably at the rear of the casing. Mounted upon this shaft, are the series of eccentric disks 6, upon which are mounted the eccentric straps 7, carrying the rods 8, whose upper ends 9, are connected to the central or rocking member 10, of the double-acting bellows 11. These bellows are carried by the removable lid or cover 12, which is removably fitted over the upwardly projecting flange 13, which forms an exit through which the contents are removed from the casing, the two clamps 16, holding the cover in place.

These bellows are suitably constructed and supported, being represented, in Fig. 2, as held in place by the clamps 16. They operate in a well known manner to produce substantially continuous vacuum or reduced air pressure within the casing 1, the air being taken from the casing to the bellows through valved pipes *a*, *b*, *c*, *d* and escaping through the valved apparatus *f*. As these details of bellows construction and air connection form no part of our present invention they need not be shown or described in detail.

To cover the bellows and form a box like machine, we employ the removable hood or dome 20, which is held in place by means of a series of catches 21.

Connected to the casing, preferably at the forward end, is the goose-neck 22, carrying the downwardly projecting tube 23, which has a close sliding fit over the tube 24, carried by the suction head or nozzle 25, which is disposed transversely of the casing and is substantially the same width as the casing; and to yieldingly hold the suction mouth therein in contact with the surface to be cleaned, we employ the coil spring 26. In order to prevent the suction head from turning and also to prevent it from being shocked by wrinkles in the rug or carpet as the head passes thereover, we employ the two flat springs 27, which are secured to the casing and have their openings receiving the screws *g* carried by the suction head. To remove the suction head and employ a hose to clean draperies, upholstery and walls, the screws are slipped through the openings of the springs 27 and the head with its tube pulled out of the tube 23, permitting the hose to either slip over the tube 23 or have a pipe to slip in similarly to the tube 24. This construction is clearly shown in Figs. 1 and 2.

In the machine represented in the drawings the casing is open at one end, which opening is closed when the machine is in use by a tight fitting, although easily removable, closure 32. For removing the dust we employ an air-filtering and dust-and-dirt-collecting bag 29, of suitable fabric, which will permit the air to freely pass through it while retaining the dirt. The open end of this dust-filtering bag is fitted to a frame 33 that holds it distended, this frame fitting the interior of the casing, as represented in Fig. 3, and being removable from the casing, carrying with it the filtering bag, as represented in Fig. 4. The closure 32 is perforated at 31 to receive the elbow 30 of

the suction head or nozzle. It carries the springs 27 for holding the nozzle or suction head. In order to hold the closure rigidly in position closing the end of the casing, we preferably recess its ends, as represented at 34, Fig. 6, and employ catches or rods 35 pivotally connected with the sides of the casing, as represented in Figs. 5 and 6. These rods may lie in depressions 36 formed therefor in the side walls of the casing. They are screw threaded at their ends and carry thumb screws 37 that bear against the closure to hold it in place.

The removable closure 32 carries the suction nozzle of the machine and also closes the open end of the casing. It serves also to close and hold in place the frame 33 that carries the dust bag and holds the mouth thereof distended. This arrangement is exceedingly advantageous in vacuum cleaners of the portable, manually operated, type, in which the suction is relatively feeble, so that it becomes of the utmost importance that the length of the conduit between the suction nozzle and the place where it discharges into the dust bag should be as short as possible. The arrangement shown, in which the mouth of the removable dust bag is held distended by a frame that fits the end of the casing of the machine, and that frame in turn is closed and held in place by the closure frame 32, and the suction nozzle is carried or supported directly by the said closure, reduces to a minimum the length of said air conduit. This arrangement also permits the employment of a dust bag of a size to practically fill the chamber of the casing into which it is inserted.

What we claim, as new, is:—

1. A portable suction cleaning machine comprising a casing formed with an open end, a removable dust filter bag, adapted to be inserted into and removed bodily from the casing through the said open end, a frame for holding distended the open end of the filter bag arranged to fit the casing adjacent to its open end, a removable closure for the open end of the casing carrying a suction nozzle, means pivoted to the casing for engaging with the said closure for holding it tightly against the casing and in position to close the open end thereof and also to hold the frame for the open end of the dust bag in place, and means for causing a suction of air through the casing.

2. A portable suction cleaning machine, comprising a casing open at one end, means for causing a suction of air through the casing, a nozzle adapted to move in close engagement with the surface being cleaned, a frame by which the nozzle is carried arranged to close the open end of the casing practically air tight and separable therefrom, means for securing the nozzle to the casing, an open frame adapted to fit closely the inner wall of the casing near its open end and to be itself closed by the frame that carries the nozzle, and a filter bag secured to the said open frame, the open frame being removable from the casing and carrying with it the filter bag when the nozzle-supporting frame is separated from the casing.

In testimony whereof we affix our signatures in presence of two witnesses.

DAVID P. MOORE.
SAMUEL B. PACK.

Witnesses:
CARROLL BEALE,
RALPH HEALY.