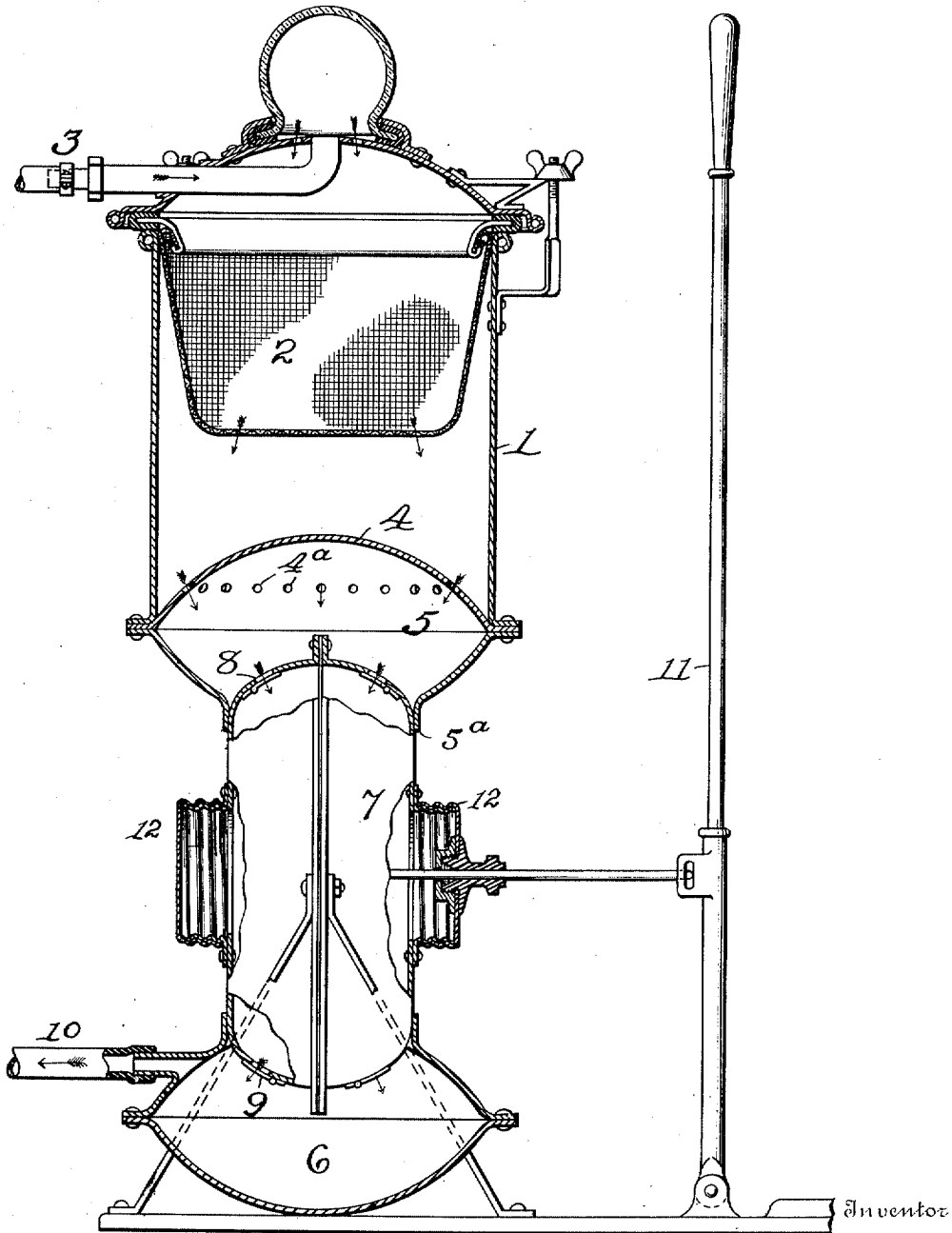


J. C. LUDEN.
 SUCTION PUMP FOR VACUUM CLEANERS.
 APPLICATION FILED MAY 21, 1910.

984,227.

Patented Feb. 14, 1911.



Witnesses
 Daniel Webster, Jr.
 J. O. Kelly.

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UNITED STATES PATENT OFFICE.

JACOB C. LUDEN, OF READING, PENNSYLVANIA.

SUCTION-PUMP FOR VACUUM-CLEANERS.

984,227.

Specification of Letters Patent.

Patented Feb. 14, 1911.

Application filed May 21, 1910. Serial No. 562,562.

To all whom it may concern:

Be it known that I, JACOB C. LUDEN, a citizen of the United States, residing at Reading, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Suction-Pumps for Vacuum-Cleaners, of which the following is a specification.

This invention relates to improvements in vacuum cleaners, and, as shown in the drawing, it is intended more particularly for domestic use as a hand operated machine.

The invention is intended as an improvement on the device shown in United States Letters Patent No. 950,072 issued to me under date of February 22nd, 1910, and the object in the present construction is to provide a device in which all connecting tubes between the chambers and pump are dispensed with, thus simplifying the machine.

Another object is to provide for exhausting the air from the machine under the same pressure at which it is drawn into the machine, so that the machine may be used as a blower as well as a suction device, or it may be used as both blower and suction cleaner at the same time. It frequently happens that during the operation of cleaning, small spaces cannot be reached with the suction nozzle, in such cases, the blower nozzle is applied and the dust is removed in that manner. It is evident that two operators may be thus employed at the same time while the machine is being operated.

The invention consists of a dust receptacle, an inlet air chamber, a pump and an outlet air chamber, arranged one upon the other in the order named, and so joined together as to form substantially one vertical body.

The drawing shows a vertical central sectional view of my machine, the pump showing partly in elevation.

The numeral 1 designates the cylindrical chamber provided with the usual dust straining device 2, into which the particles of dust are drawn through the inlet 3. In this respect the present device is identical with the one shown in my patent above referred to. In the present case the bottom 4 of the chamber 1 is also concaved and it forms the upper half of an inlet air chamber 5, and it is provided with an annular series of perforations 4^a. The numeral 6 designates a second chamber, the outlet chamber, located in vertical alinement with the chamber 5

and these two chambers are joined by a suction pump 7. This pump is substantially of the usual construction and it is joined to the chambers 5 and 6 by cutting an opening in the said chambers and extending therein sufficiently to cover the inlet and outlet valves. The edges of the chambers are either brazed or otherwise secured to the pump, at 5^a. The upper end of the pump, in the chamber 5, is provided with the inlet valves 8 while the lower end, in the chamber 6, has the outlet valves 9. The chamber 6 is formed with an outlet or exhaust tube 10. The pump is provided with the usual operating handle 11.

The action is simple. The operation of the pump will draw the dirt particles into the receptacle as usual, and the air will be drawn into the pump through valves 8 and exhaust therefrom into the chamber 6 through the valves 9. This exhaust however will be with the same force as the air is drawn into the machine and with my construction, is used for cleaning in the form of a blower.

The main chamber, the pump and both air chambers are formed integral and constitute one vertical body, compact and simple in construction and so made that all connecting tubes are dispensed with, thus eliminating much care in repairs.

The pump 7 is provided with an opening at each side to permit access to the interior of the pump, in the event of the valves 8 and 9 needing attention. These openings are provided with closures in the form of screw caps 12.

Having thus fully described my invention, what I claim is:—

A suction pump provided with inlet and outlet valves; a chamber secured to the top of the pump and inclosing the inlet valves, said chamber being formed with an annular series of air inlet perforations; a second chamber secured to the bottom of the pump and inclosing the outlet valves, said lower chamber being provided with a single outlet opening; said pump having a central opening in each side and closures therefor in the form of screw caps.

In testimony whereof I affix my signature, in presence of two witnesses.

JACOB C. LUDEN.

Witnesses:

ED. A. KELLY,
M. C. KREIDER,