G. LINDENBERG.

VACUUM DUST SUCKER.

APPLICATION FILED DEC. 15, 1911.

1,024,267. Patented Apr. 23, 1912.

Fig. 1

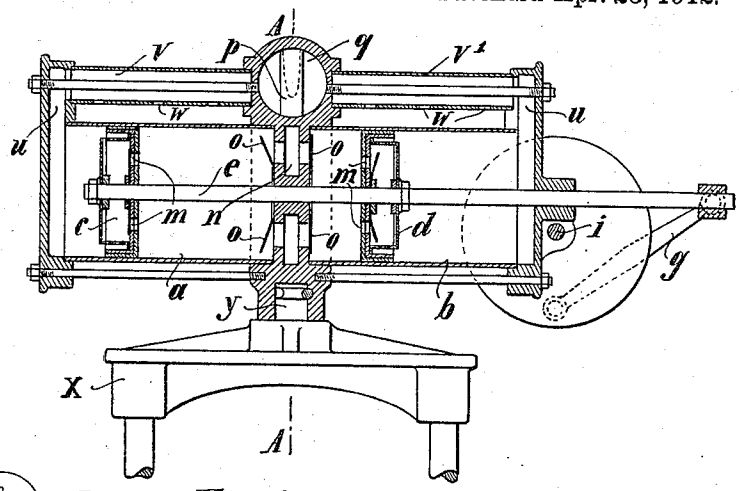


Fig. 3

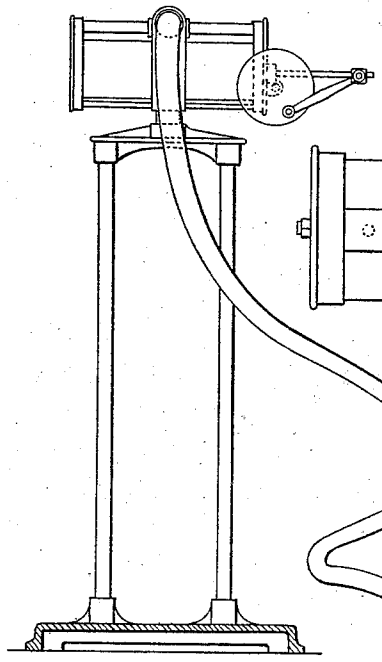
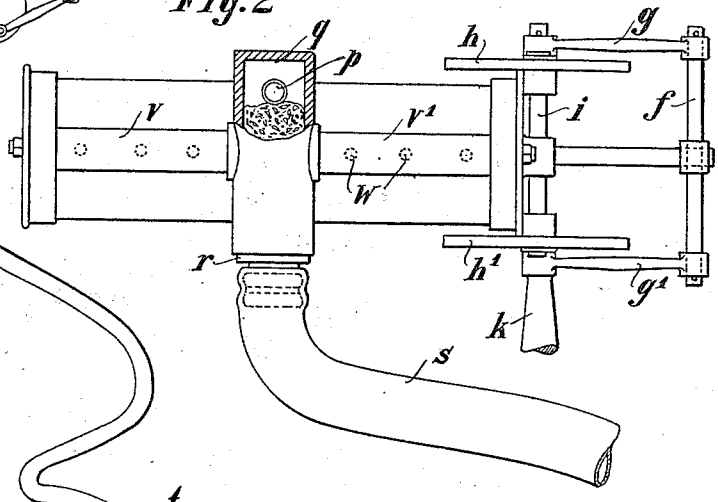


Fig. 2



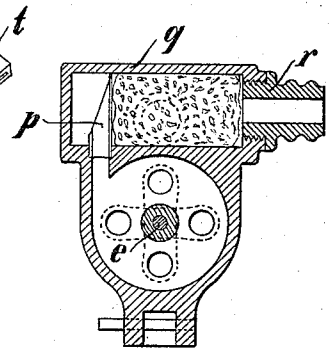


Fig. 4

Witnesses:

Hoan Rufus

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UNITED STATES PATENT OFFICE.

GUSTAV LINDENBERG, OF BARMEN, GERMANY.

VACUUM DUST-SUCKER.

1,024,267. Specification of Letters Patent. Patented Apr. 23, 1912.

Application filed December 15, 1911. Serial No. 666,057.

To all whom it may concern:

Be it known that I, GUSTAV LINDENBERG, a citizen of the German Empire, residing at Barmen, in the Province of Rhenish Prussia, Germany, have invented certain new and useful Improvements in Vacuum Dust-Suckers, of which the following is a specification.

My invention relates to improvements in vacuum dust suckers and my object is to provide a machine of the class referred to in which horizontal cylinders of a double-acting pump are disposed one behind the other in one common shell and have interposed between them a common sucking-chamber to which there is attached a filtering compartment, where the air inhaled is purified so that pure and dustless air is received only by the cylinders and discharged into the open air in the same condition, defilement of the pumping cylinders and valves being thereby entirely avoided.

As a filter I use in my invention a moist sponge which is pushed into the filtering compartment where it settles tightly against the inside and fills the width of the compartment, the said sponge thus blocking the passage of the sucked-up air.

Another object of my invention is to provide a vacuum dust sucker which is exceedingly simple and plain in construction and thus very far from expensive, operates excellently and is easy to handle and convenient to clean.

In describing my invention I refer to the drawing herewith in which an exemplification of my invention is illustrated, Figure 1 being a vertical longitudinal section through the body of my apparatus, Fig. 2 a top-view of the same with part of the cover of the filtering-chamber removed, Fig. 3 a front-view at a reduced scale and Fig. 4 a section through the body of the apparatus on the line A—A of Fig. 1.

As above mentioned the cylinders *a* and *b* are disposed in tandem position within one barrel or shell, their pistons *c*, *d* being mounted on a common rod *e*. The latter is operated by the crank-wheels *h*, *h'* having connecting rods *g*, *g'* and a transverse bar *f*, the said crank-wheels being mounted on the shaft *i* and set to motion by a hand crank *k*. As usually, the pistons are provided with clack-valves *m*.

Between the cylinders *a* and *b* there is provided within the pump-barrel a common sucking compartment or chamber *n* the sides of which are also provided with clack-valves *o*, respectively opening into the cylinders. Above the said sucking compartment *n* I prefer to provide a cylindric filter-case or chamber *q*, which is in communication with the sucking compartment by means of a tube *p* having an obliquely cut mouth opening toward the side of the box which is opposed to the sucking side. To the cover sealing up the said compartment *q* is joined the suction-inlet *r* and the hose *i* which has attached to its outer end a sucking nozzle *t*. The said filter box *q* is adapted to receive a moistened sponge *z* of such relative size that by its elasticity and yieldingness it fits against the inside of the shell of the box *q*. The vertical tube *p* being tranverse to said filtering chamber and said sponge and closed on the side toward the latter, holds said sponge in place admitting no particle of the latter into said tube. The obliquely cut part of said tube provides the maximum air-inlet consistent with the best sponge-holding action. This connects with the open space left in the filtering chamber on the side of said tube away from the sponge. The two ends of the common shell or barrel in which the cylinders are disposed behind each other, as aforesaid, are on top provided with openings *u* connecting the interior of the cylinders with tubes *v*, *v'* which are in their bottom-side provided with discharge openings *w*.

The air sucked up by the pumping device and filled with dust and dirt is forced to pass the sponge which retains the dirt and dust and, accordingly, nothing, but pure air is received by the suction-compartment *n* from which it gets into the cylinders and is discharged into the open air through the openings *u*, tubes *v*, *v'* and outlets *w*. The peculiar shape and disposal of the pipe *p* prevents the fluid in the sponge or the sponge itself from being taken farther into the compartment *q*. When the sponge is saturated with dirt and dust and requires cleaning all which is necessary to be done is to open the filtering compartment and take out the sponge which by itself removes all dirt from the said compartment and may then be easily cleaned in any suitable way,

as by washing out, whereupon it is ready for use again.

The whole apparatus may be mounted on a table x on a vertical pivot y on which it may be turned in any direction, so that there will be no difficulty in getting with the suction hose and nozzle to any place in a room without moving the table x from its place.

What I claim is:

1. In combination with the suction chamber of a vacuum cleaner and means for establishing suction therein, a filtering chamber which receives the dust-laden air before this passes to the said suction chamber, filtering material within said filtering chamber and a pipe making connection between the two chambers above named, said pipe being arranged in the said filtering chamber to hold the said filtering material in position and having its side-wall closed on the side toward the material, but open on the opposite side in order that air may freely enter it from said filtering chamber, though particles of said material will be excluded.

2. In a dust cleaner, the combination of suction devices, a horizontal filtering chamber arranged to receive the dust-laden air drawn by said devices, a vertical pipe within said chamber, a removable sponge arranged within said chamber on one side of said pipe and in the line of draft thereto, the opposite side of said pipe being cut away from the top downward to provide an inclined face and an ample air opening and the lower end of said pipe being arranged to supply said suction devices.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

GUSTAV LINDENBERG. [L. S.]

Witnesses:

HELEN NUFER,

A. NUFER.