No. 842,661. PATENTED JAN. 29, 1907

A. HEIN.

DUST SUCTION APPARATUS.

APPLICATION FILED FEB. 21, 1906.

Fig. 1

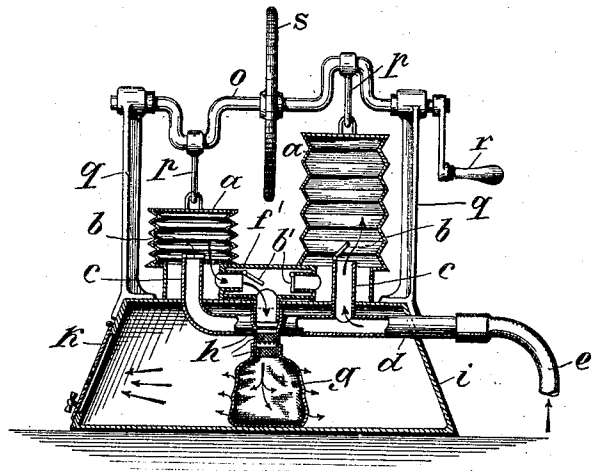
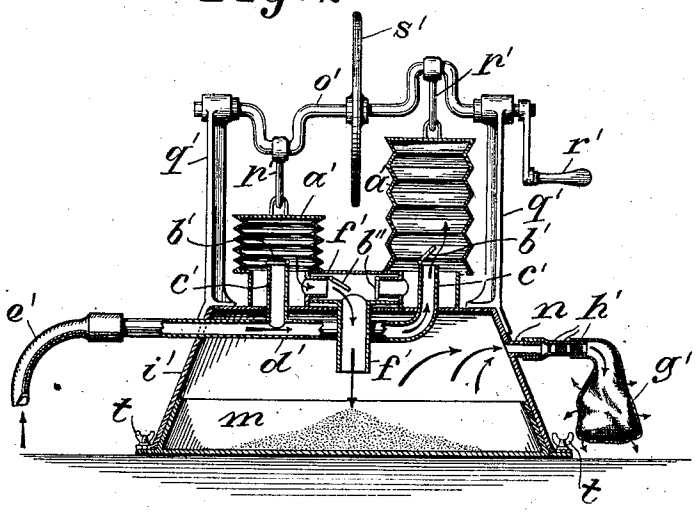


Fig. 2



WITNESSES:

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DUST-SUCTION APPARATUS.

No. 842,661. Specification of Letters Patent. Patented Jan. 29, 1907.

Application filed February 21, 1906. Serial No. 302,184.

To all whom it may concern:

Be it known that I, ADOLF HEIN, a subject of the King of Prussia, and a resident of Berlin, in the Kingdom of Prussia, German Empire, have invented a new and useful Improvement in Dust-Suction Apparatus, of which the following is a full, clear, and exact description.

This invention relates to an apparatus for dusting carpets, covers, and so on by means of air-suction, the essential feature of which is that the air charged with dust passes through the air-pump which produces the current of suction-air and is freed of its dust after leaving the same or shortly before it passes out into the open air without any necessity of inclosing the air-pump in a covering or receptacle.

The apparatus is illustrated in the accompanying drawing, in which is—

Figure 1, a first form of construction in a longitudinal section; and Fig. 2, also a longitudinal section of a second form of construction of the apparatus.

The dust-suction apparatus consists of two concertina-like bellows *a*, which produce the necessary air-suction and are provided for this purpose with alternately-working return-valves *b b'*, inlets and outlets, respectively. The valves *b* are arranged at the mouth of pipes *c*, which are connected with one common main pipe *d*, which in its turn is connected, through the pipe *e*, with the suction-nozzle, which sucks up the dust when it is passed over the objects to be dusted. The valves *b'* have their seat at the ends of pipes connected on the one side with the suction-bellows *a* and entering on the other in a T-tube *f*, to the third outlet of which in the construction shown in Fig. 1 a bag *g*, of fine-meshed fabric, is connected. Between the mouth of the pipe and the entrance to the bag are still arranged a few filters *h* of any kind—wet sponges, layers of cotton-wool, sieves, or the like. The hollow socle or stand *i*, to which are fastened the suction-bellows *a*, is preferably provided with a door *k*, through which the filter-bag *g* is accessible, so that, if necessary, it can be exchanged. The filter-bag can be fastened by means of an india-rubber ring drawn over the pipe *f* or by means of screws. According to the construction shown in Fig. 2, the vertical part of the T-pipe *f* terminates quite open into the hollow stand *i'*, which is closed at the bottom by a plate-like receptacle *m*, fastened to it by removable screws *t*. The stand *i'* is provided in any suitable place with an outlet-socket *n'*, to which is connected, in the same way as in Fig. 1, the filter-bag *g'*, together with a few intermediate filters *h'*. The sucking-bellows are actuated by a crank-shaft *o'*, which is connected, through connecting-rods *p'*, with the bellows *a' a'*. The shaft *o'* is journaled in the bearing *q* and is driven by a cranked handle *r'*. A fly-wheel *s'* serves to make the suction-bellows work uniformly.

The apparatus works as follows: When the sucking-bellows are worked by the crank-handle *r*, a suction air-current charged with dust is formed in the conduit *e*, connected with the nozzle through which the dust enters. The air, with the dust, passes through the pipe *d*, branch pipes *c*, and valves *b* into the sucking-bellows *a a*, from which it passes through the valves *b'* into the T-pipe *f*, and, according to Fig. 1, after passing through the filter *h* it enters into the filter-bag *g*, and the dust is retained partly in the filters *h* and partly in the filter-bag *g*. The air passes through the meshes of the filter-bag and enters, freed of dust, into the hollow stand *i*, from which it passes out through openings in the door *l* or any other opening in the stand *i* into the open air. As already mentioned, the filter-bag *g*, together with the filters *h*, can be taken out of the apparatus, if desired, to be cleaned. According to the construction shown in Fig. 2, the greater part of the dust is deposited in the receptacle *m*, from which it can then be easily removed after loosening the screws *l*. In the filter *h* and the filter-bag *g* the finer particles of dust which are floating in the hollow stand are retained. Also here the filter-bag may be removed from time to time and cleaned.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A dust-suction apparatus, comprising suction-bellows having valved inlets and outlets, a crank-shaft and connections for working the bellows, a bifurcated pipe for conducting dusty air to the bellows-inlets, a pipe leading from the bellows-outlets to the interior of the hollow stand for the bellows, and a filter through which the air from the bellows passes prior to escaping to the atmosphere, substantially as described.

2. A dust-suction apparatus, comprising suction-bellows having valved inlets and outlets, a crank-shaft and connections for work-

ing the bellows, a bifurcated pipe for conducting dusty air to the bellows-inlets, a pipe leading from the bellows-outlets to the interior of the hollow stand for the bellows, a filter-bag, through which the air from the latter pipe passes prior to escaping to the atmosphere, and preliminary filtering means located between the bellows and the mouth of said bag, substantially as described.

3. A dust-suction apparatus, comprising suction-bellows having valved inlets and outlets, a crank-shaft and connections for working the bellows, uprights supporting said shaft, a hollow stand supporting the bellows and said uprights, a pipe for conducting from the bellows-outlets to the interior of the hollow stand, a filter-bag, through which the air passes prior to escaping to the atmosphere, and preliminary filtering means located between the bellows and the mouth of the said bag, substantially as described.

In witness whereof I have hereunto signed my name, this 29th day of January, 1906, in the presence of two subscribing witnesses.

ADOLF HEIN.

Witnesses:

WOLDEMAR HAUPT,

HENRY HASPER.