D. E. G. CLARKE.

DUST COLLECTOR FOR VACUUM CLEANERS.

APPLICATION FILED APR. 27, 1917.

1,253,939. Patented Jan. 15, 1918.

Fig. 1.

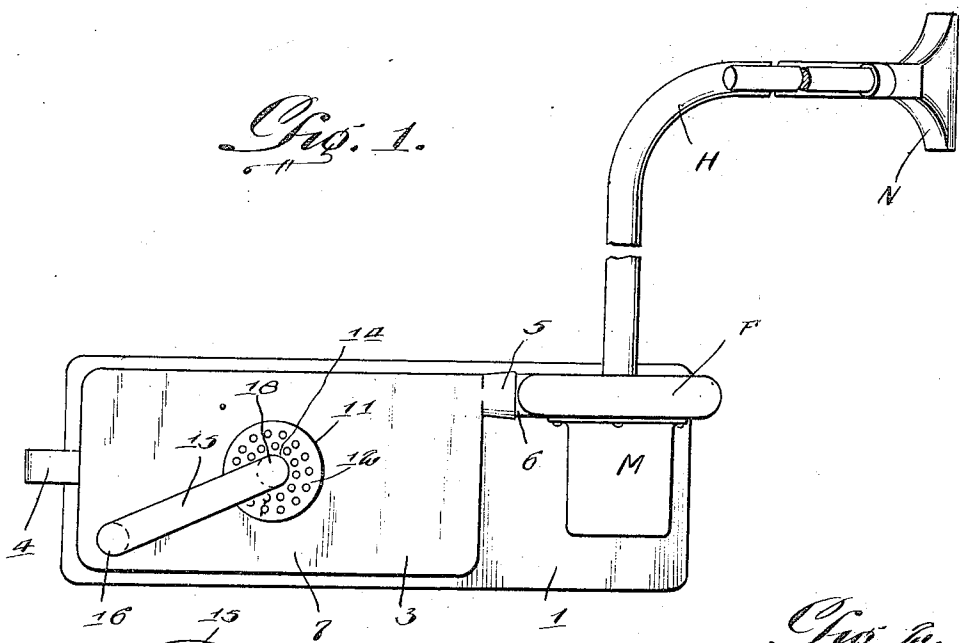


Fig. 2.

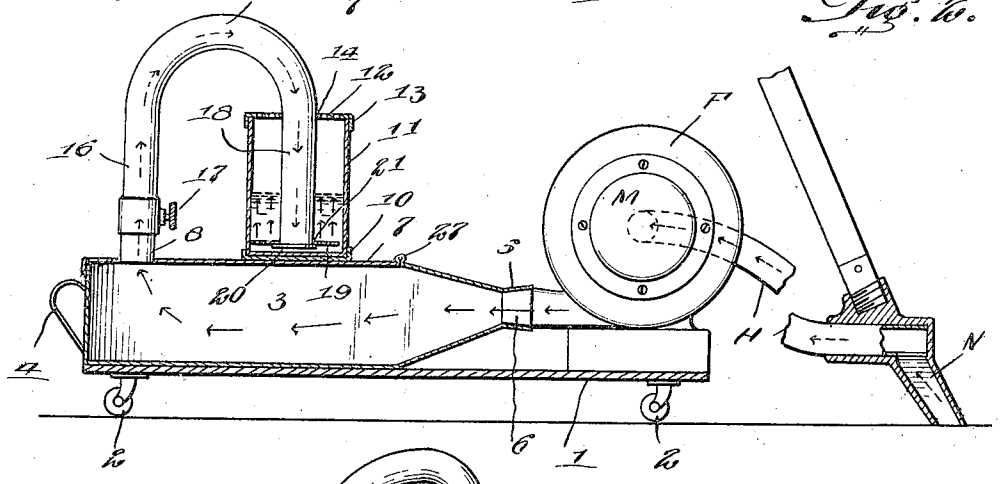
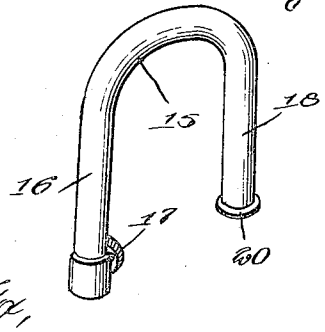


Fig. 3.



WITNESSES

Fredk L. Fox,

N. L. Coleman

INVENTOR

David E. G. Clarke

BY Victor J. Evans.

ATTORNEY

UNITED STATES PATENT OFFICE.

DAVID E. G. CLARKE, OF BAYONNE, NEW JERSEY.

DUST-COLLECTOR FOR VACUUM-CLEANERS.

1,253,939. Specification of Letters Patent. Patented Jan. 15, 1918.

Application filed April 27, 1917. Serial No. 164,938.

To all whom it may concern:

Be it known that I, DAVID E. G. CLARKE, a subject of King of Great Britain, residing at 15 West 5th street, Bayonne, in the county of Hudson and State of New Jersey, have invented new and useful Improvements in Dust-Collectors for Vacuum-Cleaners, of which the following is a specification.

This invention relates to pneumatics, and more especially to fluid tanks for removing from the air collected by the nozzle of a vacuum cleaner the dust with which it is impregnated; and the object of the same is to make improvements in this part of a vacuum cleaner.

To this end the invention consists in the details hereinafter more fully described and claimed and as shown in the accompanying drawings wherein:—

Figure 1 is a plan view of the vacuum cleaner complete, and Fig. 2 is a longitudinal vertical section thereof.

Fig. 3 is a perspective detail of the goose-neck pipe removed.

In the accompanying drawings, the letter N designates a nozzle and M is a motor driving a suction fan F to whose casing the nozzle is connected by a section of flexible pipe or hose H as usual. The motor drives the fan and the fan creates suction through the nozzle, and when the latter is directed to the point or placed against the object to be cleaned, the dust-laden air is sucked off the same in a manner well understood.

Coming now to the details of the present invention the numeral 1 designates a base mounted on caster wheels 2. On this base is movably mounted a dust receptacle 3 having at its rear end a handle 4 and at its front end a nozzle 5 which slips over the outlet tube 6 of the fan F as best seen in Fig. 2 when the dust receptacle is put in place, and therefore the dust-laden air delivered by the fan is driven into the receptacle as indicated by the arrow. This receptacle has a top which is closed as at 7 except for an upright outlet pipe 8 at its rear end, and therefore when the receptacle is removed from the base its contents can be emptied out of its nozzle 5 into the waste receptacle or wherever the dirt is to be delivered, and in this use the handle 4 is employed. While I call this element a dust receptacle, it will be seen from what follows that it also collects the heavier particles picked up by the nozzle N.

Secured upon the top 7 of the receptacle is an upstanding ring 10 forming a socket in which is removably mounted a can 11 which is preferably cylindrical and normally open at its upper end. The cover 12 for this can has a skirt 13 which fits down over its upper end, and has an opening 14 at its center. A bent pipe or "goose-neck" 15 is provided, its inlet leg 16 slipping over the outlet pipe 8 and preferably secured thereto by a set screw 17, and its outlet leg 18 passing down through the opening 14 in the cover 12 and nearly or quite to the bottom of the can 11 and carrying a perforated disk 19 which may be secured to this leg in any suitable manner, but is preferably loose. To this end the outer end of the leg may be flanged outwardly as at 20, and the disk provided with a central hole 21 of a size to slip along the leg but not pass over the flange, and therefore it will normally rest on the flange at the lower end of the outlet leg.

The parts are assembled as best seen in Fig. 2, and the can 11 is filled partially with water as seen. When the motor is set to work and dust-laden air is drawn in through the nozzle and hose H, and the fan F delivers it through the outlet pipe 6 and nozzle 5 into the dust receptacle 3. Herein the heavier particles picked up by the machine gather at the bottom of the pan, and the lighter particles and the air pass out the pipe 8 and up through the goose-neck 15. Traveling over the curve of the latter and down its outlet leg 18, the air passes through the water in said leg and out its lower end beneath the disk 19, and rises or bubbles upward through the water as indicated by the arrows in Fig. 2. During this action the dust is removed, and the air escapes through the openings 14 in the cover 12 or elsewhere in a pure condition because it is freed from the dust and washed or cleansed by its passage through the water. The latter need not be replenished very often, and it is quite possible to introduce into it chemicals or compounds which will enhance its value as a purifying or washing agent. I would not be limited in this respect. After the vacuum cleaner has been used for a considerable time, it is obvious that matter collected will accumulate at the lower part of the can 11 outside the leg 18, and therefore the perforated plate or disk 19 will be raised by the sediment within the water, its

opening 21 sliding upward along the leg 18. It is not beyond the scope of my invention that the can 11 be made of glass or other transparent material so that the operator can observe what is taking place within. Eventually the accumulation reaches such proportions, or the water becomes so clouded that it is desirable to empty the can and replenish the liquid. This can be accomplished by loosening the set screw 17 and withdrawing the goose-neck 15 bodily. In this action its inlet leg 16 pulls off the pipe 8 and its outlet leg 18 rises within the opening 14 and carries the perforated disk 19 with it. Finally it lifts the cover 12 off the can 11, and exposes the interior of the latter, and then the entire can may be lifted out of the flange or ring 10 and emptied, perhaps washed, refilled to the proper extent with water or other compound, and the parts replaced for continued use. I have said that the cover 7 of the receptacle 3 is a closed top. It is quite possible, however, that this top could be hinged as at 27 so that the cover could be raised for inspecting the interior. Ordinarily when the goose-neck and can are removed, the entire dust receptacle can be carried by its handle 4 to a suitable point and its contents dumped out through its outlet nozzle 5 as above suggested. Then the receptacle is replaced upon the base and the can and goose-neck replaced as above described, and the entire machine is ready for further use. I do not wish to be limited to the sizes, proportions, materials or other details of parts.

What is claimed as new is:—

1. An air cleanser for vacuum machines and the like comprising an upright can adapted to contain a purifying substance, a removable cover therefor having air outlets and a central opening, a dust-receptacle whose top has a ring within which said can is mounted, an upstanding outlet pipe in the top of the receptacle adjacent said ring, a goose-neck pipe whose inlet leg is slipped over said pipe and whose outlet leg is passed through the opening in said cover and down to the bottom of the can, and a set screw through the inlet leg bearing against said pipe, for the purpose set forth.

2. An air cleaner for vacuum machines and the like comprising an upright can adapted to contain fluid, a removable cover therefor having air outlets and a central opening, a dust-receptacle whose top has a ring within which said can is mounted, an upstanding outlet pipe in the top of the receptacle adjacent said ring, a goose-neck pipe whose inlet leg is slipped over said pipe and whose outlet leg is passed through said opening in the cover of the can and down to a point near the bottom of the latter and provided with a flange, and a perforated disk having a central opening mounted on the outlet leg and with its body normally resting on said flange.

3. In an air cleaner for vacuum machines and the like, the combination with a base, and a flat dust receptacle removably mounted on said base and having an inlet nozzle at one end and a handle at the other end, its top being closed by a hinged cover having an outlet opening; of an upright can resting on said cover and adapted to contain water, and a goose-neck pipe whose inlet leg is adapted to connect with said cover and communicate with the outlet opening therein and whose outlet leg is passed down into the can beneath the water level, for the purpose set forth.

In testimony whereof I affix my signature.

DAVID E. G. CLARKE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."