July 16, 1935. E. FABER 2,008,067

VACUUM CLEANER

Filed Dec. 11, 1934

Fig. 1

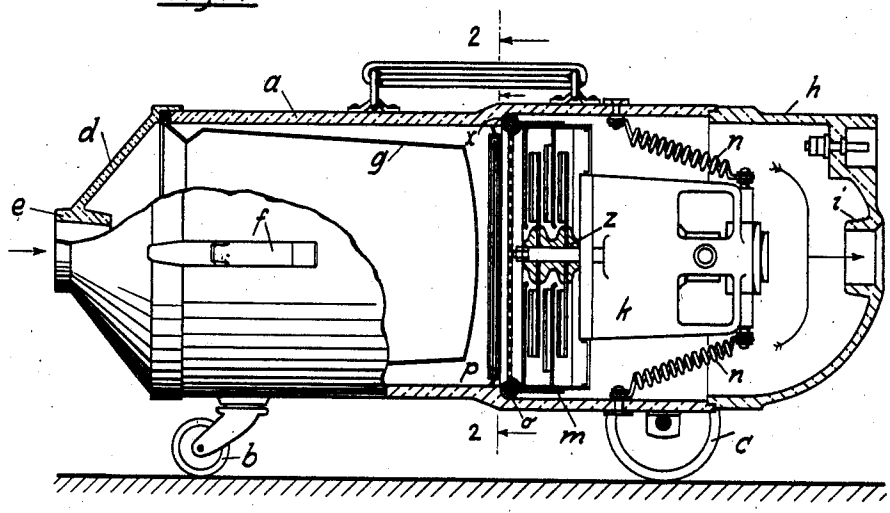


Fig. 2

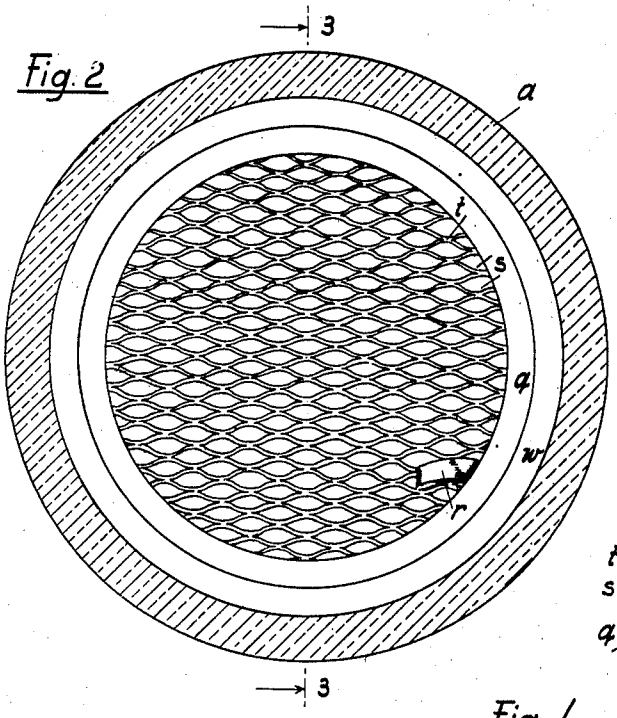
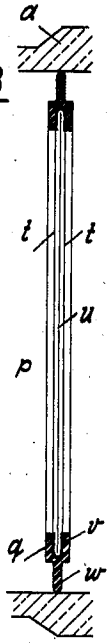


Fig. 3



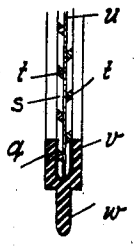


Fig. 4

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VACUUM CLEANER

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In Germany December 14, 1932

3 Claims. (Cl. 183—37)

This invention relates to vacuum cleaners and more especially to the arrangement, in apparatus of the kind aforesaid, of the filter designed to free the air sucked through the apparatus from the bacteria existing therein. It is an object of my invention to provide means for mounting such filter in position in the cleaner casing in such manner that it can easily be withdrawn from, exchanged and/or reinserted in the casing, and, when mounted therein, will be packed tightly in the casing without requiring any separate fixation or packing means connected with this casing.

It is another object of my invention to provide a packing and fixing means for the filter which can easily be mounted on, and removed from, the filter and therefore allows readily exchanging the filter body proper whenever it is spent.

With these and other objects in view I will now proceed to describe my invention with reference to the drawing affixed to this specification and forming part thereof, in which

Fig. 1 is an elevation, partly in axial section, of a vacuum cleaner having a filter embodying my invention mounted therein, the filter and its combination with the cleaner being shown by way of example and in a purely diagrammatic manner.

Fig. 2 is a cross section, drawn to a larger scale, on the line 2—2 in Fig. 1;

Fig. 3 is a cross section on the line 3—3 in Fig. 2, and

Fig. 4 is a partial cross section, similar to Fig. 3, drawn to an enlarged scale.

Referring to the drawing, *a* is the cylindrical casing of the vacuum cleaner, mounted on rollers *b*, *c*, and comprising a removable conical cap *d* at the front end with a socket *e* for the insertion of the suction hose. Between this cap *d* and the casing *a* the dust filter bag *g* is clamped by means of clips *f* allowing to remove the cap and the dust filter. In the rear end of the casing *a* a cap *h* with a central socket *i* for the discharge of the purified air or for the insertion of a blowing hose is mounted. In the casing *a* are further arranged an electro-motor *k* and a centrifugal blower *z* with casing *m*. The electro-motor and the casing *m* of the centrifugal blower are forced by means of springs *n* against a rubber ring *o* resting against a shoulder *x* of the casing *a*. Thus not only the filter bag *g* but also the motor fan aggregate is removably mounted in the casing.

According to the invention the bacteria filter *p* is mounted in the casing in such manner that it can be readily removed, simply fixed in place and reliably packed. The bacteria filter, as shown in Figs. 2 to 4, is formed of two metal discs *t* formed with numerous perforations *s* and of a disc *u* of fibrous material placed between the two metal discs *t* and impregnated with a bactericidal substance or liquid. The three discs *t*, *u*, *t* are forced against each other on their circumferences by a metal ring *v* of U-shaped cross section and held together by this metal ring. A rubber ring *q* of U-shaped cross section and having a radially projecting annular outer flange *w* is slipped over the metal ring *v*. By means of the flange *w* of the rubber ring *q* the filter can be fixed as a whole in the casing of the vacuum cleaner with sufficient tension to be securely held in its position. The ring-shaped flange *w* serves at the same time for securely packing the filter in the casing so that the air drawn through the dust filter *g* is compelled to flow through the bacteria filter *p*.

On the other hand the tension with which the filter bears against the casing is not so high as to prevent removal of the filter after the cap *d* and dust bag *g* have been removed from the casing.

In order to facilitate the removing of the bacteria filter a handle *r* is provided thereon.

The filter is removed whenever the bactericidal liquid with which the fabric *u* is impregnated, is spent so that it is necessary to again impregnate the fabric or to insert a fresh filter or filter frame *v*, *t*, *u*, *t* in the rubber ring *q*, *w*.

Obviously the flexible flange portion *w* of the rubber ring greatly facilitates the insertion and removal of the filter while at the same time providing an absolutely tight packing in the plain wall of the casing which need not being formed with any separate means to hold the filter in place.

I wish it to be understood that I do not desire to be limited to the exact details of construction shown and described for obvious modifications will occur to a person skilled in the art.

I claim:—

1. In a vacuum cleaner, a casing, a bacteria filter transversely mounted in said casing, and a rubber ring formed with an outwardly projecting flange, surrounding said filter and bearing tightly against the inner wall of the casing, to pack the filter against said casing.

2. In a vacuum cleaner, a casing, a bacteria filter transversely mounted in said casing, and a rubber ring of U-shaped cross section formed with an outwardly projecting flange, surrounding said filter and bearing tightly against the inner

wall of the casing, to pack the filter against said casing.

3. In a vacuum cleaner, a casing, a bacteria filter transversely mounted in said casing, and a ring of resilient material surrounding said filter and bearing tightly against the inner wall of the casing, to pack the filter against said casing, said filter comprising two metal sieves, a layer of fabric impregnated with a bactericidal substance between said sieves and a metal ring of U-shaped cross section engaging over the circumferential edges of said metal sieves and said fabric.

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