L. L. FERGUSON.

FILTER FOR PNEUMATIC CARPET CLEANERS.

APPLICATION FILED JUNE 8, 1914.

1,108,094. Patented Aug. 18, 1914.

Fig. 1.

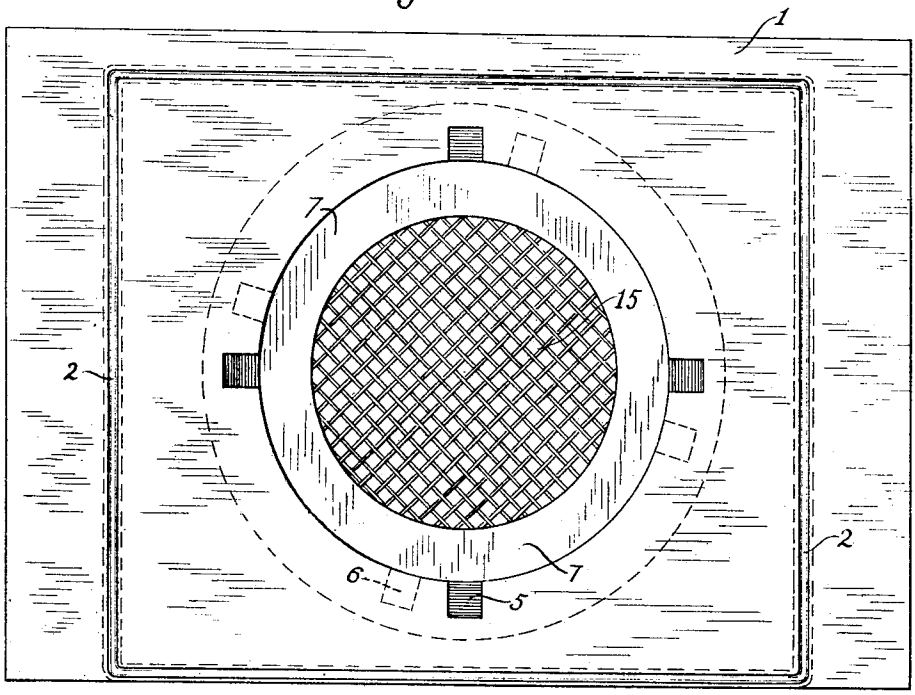
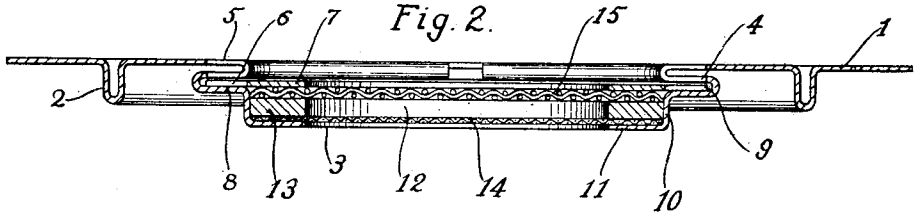


Fig. 2.



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UNITED STATES PATENT OFFICE.

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FILTER FOR PNEUMATIC CARPET-CLEANERS.

1,108,094. Specification of Letters Patent. **Patented Aug. 18, 1914.**

Application filed June 8, 1914. Serial No. 843,751.

To all whom it may concern:

Be it known that I, LEONARD L. FERGUSON, a citizen of the United States of America, and a resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Filters for Pneumatic Carpet-Cleaners, of which the following is a specification.

The main objects of this invention are to provide an improved filtering device for pneumatic carpet cleaners having a filter separably mounted on the structure or frame for the purpose of facilitating the cleaning and renewal thereof.

An illustrative embodiment of this invention is shown in the accompanying drawings, in which—

Figure 1 is a plan view of a filter constructed according to this invention. Fig. 2 is a longitudinal sectional view of the same.

The device shown in the drawings comprises a sheet metal frame 1, having a strengthening bead 2 formed therein to resist either lengthwise or crosswise bending strains. A circular opening 3 is cut in frame 1 and the metal at the edges of said opening is bent backwardly upon itself at 4. Slots 5 are cut in the bent portions 4 to provide a passage for tongues 6 of a ring-shaped sheet metal retaining device 7. The inner edges of frame 1 after being bent inwardly are again bent outwardly at 8 to provide an annular recess 9 for receiving tongue 6 of the retaining device 7. The metal is then bent downwardly at 10 and then inwardly at 11 to provide a seat for a detachable filtering device 12.

The detachable filtering device comprises a ring-shaped frame 13 preferably punched out of cardboard and on one face of which is mounted a filtering fabric 14. Between the frame 13 and the retaining ring 7 is a circular metallic screen 15 preferably detachable from the remainder of the device when the retaining ring 7 is removed.

In assembling the structure, the frame 13 and the filtering fabric thereon is placed within the seat formed by the downwardly and inwardly bent edge of frame 1. The metallic screen 15 is then placed on the frame 13 and finally the retaining ring 7 is placed in position by passing its tongues 6 through slots 5 into the recess 9. The ring or plate 7 is then slightly rotated in the recess for the purpose of retaining the parts of the device in assembled condition.

In the operation of the device, the current of air to be filtered passes upwardly through the opening 3 and is filtered by the fabric 14. The metallic screen 15 serves the usual function of limiting the upward bowing of the filtering fabric under the action of the current of air, and also prevents the fabric from closing ports in pumping apparatus which is usually located immediately above the filtering device.

It may be seen that in the device above described, when renewal of the filtering fabric is required, the latter may be supplied without requiring transmission of the entire filter structure to and from the manufacturer, but the cardboard ring 13 and filtering fabric 14 may be sent to the user through the mails and the latter may also quickly assemble the new filter with frame 1.

Although but one specific embodiment of this invention has been herein shown and described, it will be understood that numerous details of the construction shown may be altered or omitted without departing from the spirit of this invention as defined by the following claims.

I claim:—

1. In a device of the class described, the combination of a sheet metal frame having a circular opening therein, the edges of said opening being bent backwardly upon themselves and then inwardly to form an annular recess and then bent downwardly and inwardly to form a seat, a filtering device in said seat, and retaining means for said filtering device removably supported in said annular recess.

2. In a device of the class described, the combination of a sheet metal frame having a circular opening, the edge of said opening being bent backwardly upon itself and then inwardly to provide an annular recess and then downwardly and inwardly to provide a seat, the backwardly bent portion of said edge being slotted, a filtering device in said seat, and an annular sheet metal locking device having tongues adapted to pass through said slots and into said recess for the purpose of retaining the filtering device in said frame.

3. In a device of the class described, the combination of a sheet metal frame having a

circular opening, the edge of said opening being bent backwardly upon itself and then inwardly to provide an annular recess and then downwardly and inwardly to provide a seat, the backwardly bent portion of said edge being slotted, a filtering device in said seat, and an annular sheet metal locking device having tongues adapted to pass through said slots and into said recess for the purpose of retaining the filtering device in said frame, said filtering device comprising a supporting ring and fabric mounted thereon.

Signed at Chicago this 16th day of May 1914.

LEONARD L. FERGUSON.

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