

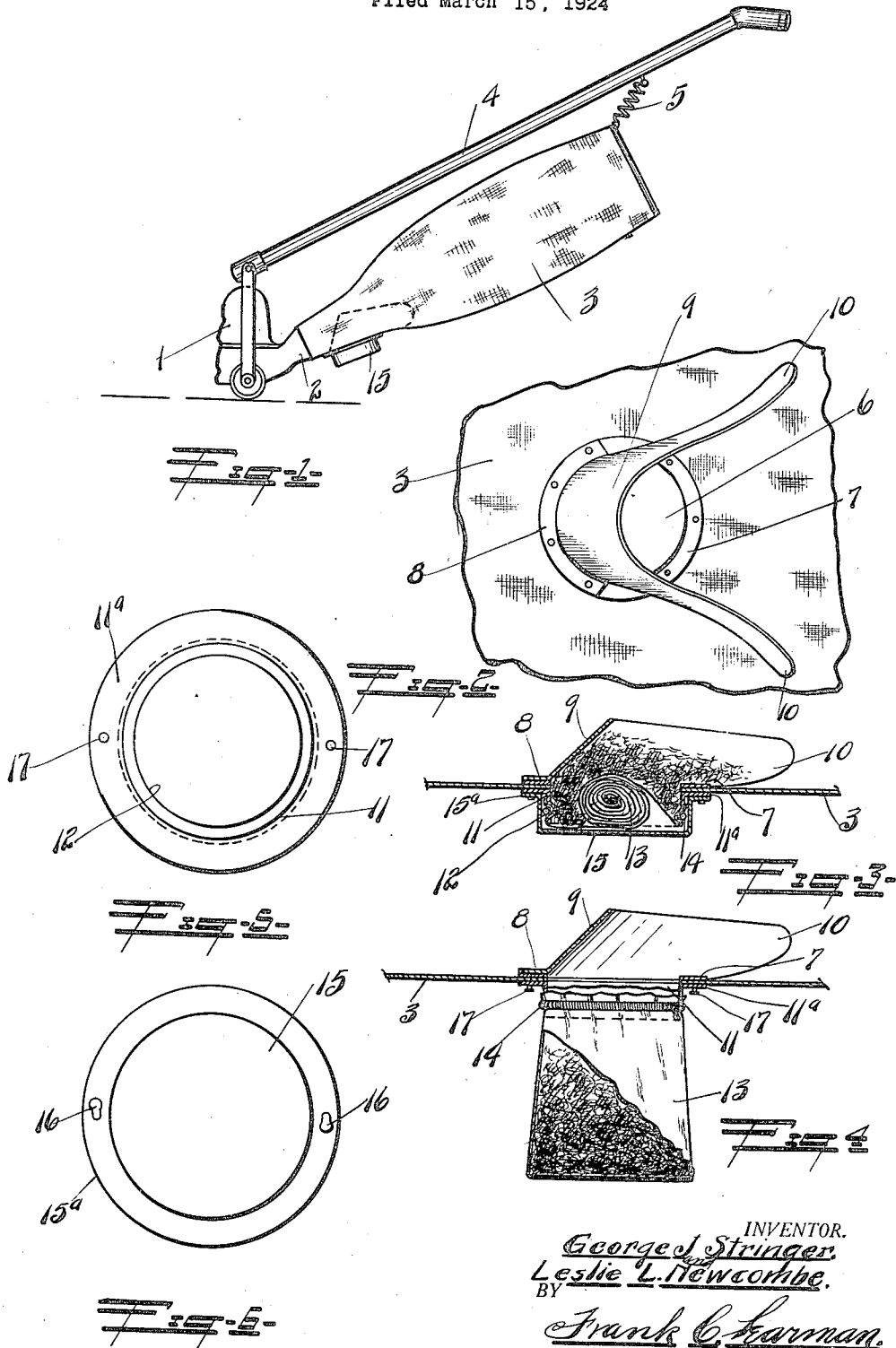
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ELECTRIC VACUUM CLEANER

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## UNITED STATES PATENT OFFICE.

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## ELECTRIC VACUUM CLEANER.

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*To all whom it may concern:*

Be it known that we, GEORGE J. STRINGER and LESLIE L. NEWCOMBE, citizens of the United States of America, and residents of Bay City, in the county of Bay and State of Michigan, have invented certain new and useful Improvements in Electric Vacuum Cleaners, of which the following is a specification.

10 This invention relates to improvements in electric vacuum cleaners and the like, and particularly to the type provided with a dust bag into which the dirt and dust is exhausted by the motor.

15 One object of the invention is to provide means whereby the dust bag of a vacuum cleaner can be emptied and cleaned without detaching the bag proper from the machine and shaking the dirt contained therein onto the floor or into a receptacle.

Another object is to provide and position a metallic guard or lip on the inside of the dust bag so that a vacuum will be created and the dust and dirt collected thereby.

25 A further object is to provide a discharge opening or throat, and means for detachably securing a flexible bag thereto, and in such manner that the bag can be rolled up and concealed within the discharge opening when the cap or cover is in place, and until such time as it is necessary to clean the dust bag, when upon removal of the cover, the dust and dirt can be exhausted into the bag, which can then be removed and placed in a furnace or other convenient receptacle. A still further object is to provide a simple and inexpensive attachment preferably made up of sheet metal, and on which quantity production can be secured.

40 With the above and other objects in view, the present invention consists in the combination and arrangement of parts herein-after more fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes may be made in the size, shape and proportion of the different parts without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings—

Fig. 1 is a fragmentary side view of a

conventional electric vacuum cleaner showing our improved attachment in place thereon.

Fig. 2 is an enlarged top plan view of the guard.

Fig. 3 is a fragmentary cross sectional view of the attachment showing the flexible bag rolled and the cover in position.

Fig. 4 is a view similar to Fig. 3, the cover being removed and the flexible bag inflated, a portion being broken away to show the dirt collected therein.

Fig. 5 is a top plan view of the discharge throat.

Fig. 6 is a top plan view of the detachable cover.

Referring now particularly to the drawing in which we have shown the preferred embodiment of our invention, the numeral 1 indicates the motor of the conventional vacuum cleaner, this is provided with a throat 2 to which the flexible dust bag 3 is connected, the one end being shaped to fit thereover, and adapted to be secured thereto in any approved manner, the opposite end of the bag being attached to the cleaner handle 4 by means of a spring 5, the operation of the cleaner proper being exactly the same as the conventional cleaners at present in general use.

In the usual vacuum cleaner the suction device collects the dust and dirt from the surface being treated, and this dirt is then exhausted into a fabric bag which must be cleaned from time to time, this being done by detaching the bag from the machine, opening the one end thereof, and then shaking the dust and dirt therefrom. This is a very dirty and disagreeable task, as the fine dust and dirt spreads over the person doing the cleaning, as well as over the room where the bag is being cleaned, and this disagreeable feature we have overcome by providing means attached to the bag for centralizing and collecting the dust and dirt and means directly therebeneath into which it can be exhausted and which can then be removed and disposed of as desired.

In our improved construction we provide an opening 6 in the underside of the dust bag and secure a flat ring member 7 in position as shown, a metallic guard 8 having a

flange 8<sup>a</sup> adapted to register with the ring 7 is fitted to this opening 6 on the inside of the bag, and is formed as clearly shown in Fig. 2 of the drawing, the front end being inclined as indicated at 9, so that as the current of air is exhausted into the bag by the motor, it strikes this inclined wall and a vacuum is created, the dirt and dust being deposited in the discharge opening and behind the wall. Outwardly diverging wings 10 are formed integral with this wall 9 and these wings are also slightly inclined, the ends of the wings normally extending to the side walls of the bag, and as certain makes of cleaners are provided with larger dust bags than others, it will of course be necessary to proportion the wings of the metallic guard accordingly.

A cylindrical discharge throat 11 is secured to the outside of the dust bag, being formed with a flange 11<sup>a</sup> for securing it to the ring 7, the throat 11 being formed with a beaded portion 12 intermediate its length, and when a flexible paper sack 13 is placed over the end of the throat, a small coiled spring 14 is placed thereover and rests in the groove formed by the bead.

A cylindrical cap member 15 is adapted to cover the throat member 11. This cap member is slightly larger in diameter than the throat, being formed with a flange 15<sup>a</sup> which is adapted to register with the flange 11<sup>a</sup> of the throat and is provided with spaced apart openings 16 adapted to engage headed studs 17 secured to the flange 11<sup>a</sup>, and it will be obvious that when the studs are introduced into the openings that slight rotation of the cap will firmly lock it in position.

When the paper sack is placed over the end of the throat, it is rolled as clearly shown in Fig. 3 of the drawing, allowing the cap to be placed in position thereover, and the dirt and dust will then collect as indicated in this same figure, but when the cap is removed and the cleaner is in operation this paper sack will be inflated, the air forcing the dirt and dust into the sack as shown in Figure 4. The bag can then be removed by merely removing the spring 14, and another bag placed in position.

While in the present instance we have shown and described a paper sack for receiving the dirt, it will be apparent that a sack of any flexible material will be equally good, but as there are always paper sacks about the home, it presents a very inexpensive and convenient means of disposing of the dirt.

From the foregoing description it will be obvious that we have perfected a very simple and efficient attachment whereby the dust bags of vacuum cleaners can be easily and quickly cleaned without removing them from the cleaner and without soiling the operator's hands or clothing, or scattering the

dust and dirt in the room or place where the dust bag is being cleaned.

What we claim is:—

1. A dust bag for vacuum cleaners having a guard secured therein, a discharge opening beneath the guard and means for securing a flexible sack thereto.

2. A dust bag for vacuum cleaners having a metallic guard secured therein, a discharge throat beneath the guard, a flexible sack secured thereto, and a cover for said throat.

3. A dust bag for vacuum cleaners having a metallic guard secured therein, a discharge opening beneath the guard, a flexible sack secured thereto, and a cover detachably secured to the said throat.

4. A dust bag for vacuum cleaners having a metallic guard formed with an inclined front wall and outwardly diverging wings secured therein, a discharge opening beneath the guard, a flanged discharge throat secured thereto, a flexible sack removably secured to said throat, and a cover detachably secured to the said throat flange.

5. A dust bag for vacuum cleaners having a metallic guard secured therein and formed with an inclined front wall terminating in outwardly diverging wings, a discharge opening beneath the guard, a flanged discharge throat secured thereto and having a beaded portion intermediate its length, a sack adapted to be fitted to the mouth of the discharge throat, a coiled spring cooperating with the beaded portion of the throat for holding it in position, and a cover detachably secured to the flange of the throat.

6. The combination with the dust bag of a vacuum cleaner, of a metallic guard secured therein and formed with outwardly diverging wings, a discharge opening therebeneath, a cylindrical throat secured thereto and adapted to have a flexible sack fitted thereto, a restricted area intermediate the length of the throat, a coiled spring cooperating therewith, and a detachable cover set over the said cylindrical throat member.

7. The combination with the dust bag of a vacuum cleaner, of a flanged metallic guard secured therein and formed with outwardly diverging wings, a discharge opening beneath the guard, a flanged cylindrical discharge throat secured thereto and provided with a beaded portion intermediate its length, a flexible sack adapted to fit the mouth of said opening, a coiled spring for securing the sack thereto, a cover fitted over said cylindrical throat portion, lugs on the throat flange, and openings in the cover and engaging the lugs for locking the said cover in place.

In testimony whereof we affix our signatures.

GEORGE J. STRINGER.  
LESLIE L. NEWCOMBE.