June 8, 1943. G. E. LOFGREN 2,321,222

VACUUM CLEANER

Filed Nov. 8, 1940

Fig. 1.

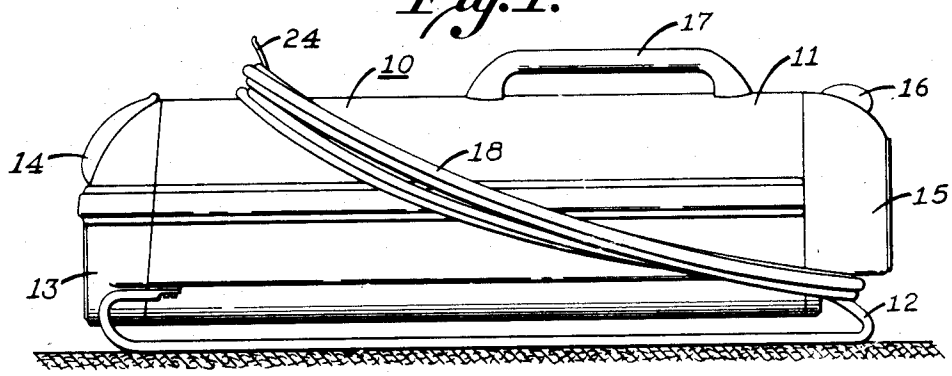


Fig. 2.

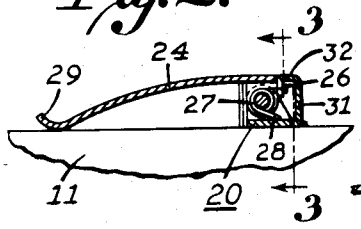


Fig. 3.

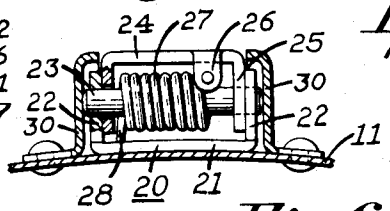


Fig. 4.

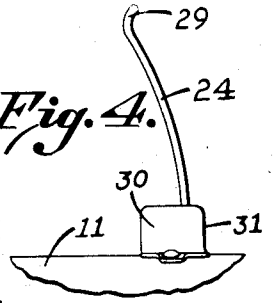


Fig. 5.

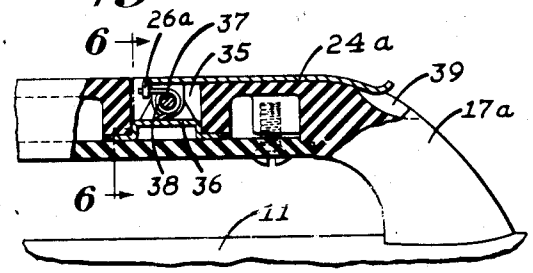


Fig. 6.

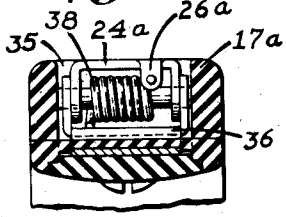


Fig. 7.

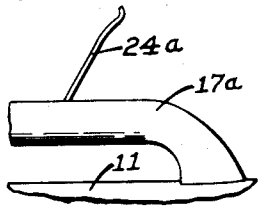


Fig. 8.

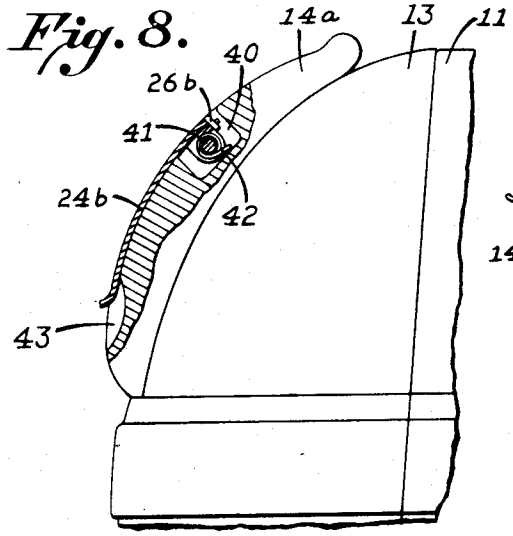
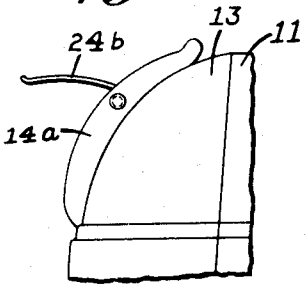


Fig. 9.



INVENTOR.

BY Gustaf Emanuel Lofgren

Thomas C. Betts

his ATTORNEY.

UNITED STATES PATENT OFFICE

2,321,222

VACUUM CLEANER

Gustaf Einar Lofgren, Riverside, Conn., assignor to Electrolux Corporation, Dover, Del., a corporation of Delaware

Application November 8, 1940, Serial No. 364,803

1 Claim. (Cl. 15—1)

My invention relates to vacuum cleaners and more particularly to an improved arrangement on vacuum cleaners of the enclosed bag type for supporting the electric cord when wound thereon.

In accordance with my invention, I provide at least one spring-pressed pivoted member which, when extended from the surface of the cleaner, serves as a retaining member around which the electric cord may be wound. The cord itself serves to hold the member in extended position against the force of the spring, and consequently when the cord is removed the member is automatically pivoted by the spring to a position close to the surface of the cleaner.

If desired, the other end of the cord loop may be held by a stationary part of the cleaner, or two pivoted members may be provided.

Further objects and advantages of my invention will be apparent from the following description considered in connection with the accompanying drawing which forms a part of this specification, and of which:

Fig. 1 is a side view of one embodiment of my invention;

Fig. 2 is an enlarged view, partially in cross section, of a portion of the apparatus shown in Fig. 1;

Fig. 3 is a cross-sectional view on a still larger scale taken on the line 3—3 of Fig. 2;

Fig. 4 is a view similar to Fig. 2, but with certain parts in different relative positions;

Fig. 5 is a view, partially in cross section, of a portion of the vacuum cleaner showing another embodiment of my invention;

Fig. 6 is an enlarged cross-sectional view taken on the line 6—6 of Fig. 5;

Fig. 7 is a view similar to Fig. 5, but showing certain parts in different relative positions;

Fig. 8 is a view, partially in cross section, of a different portion of the vacuum cleaner; and

Fig. 9 is a view similar to Fig. 8, but on a smaller scale, showing different parts in different relative positions.

Referring more particularly to Figs. 1 through 4, reference character 10 designates generally a vacuum cleaner of the enclosed bag type. This cleaner includes a casing 11 supported on a horizontal surface by means of runners or the like 12. A cover member 13 is secured to the front of the casing and may be released therefrom by means of a pivoted handle 14. A rear cover member 15 is suitably secured to the housing 11 and carries an electric switch 16. A handle 17 is attached to the upper side of the casing 11.

Within the casing there is mounted an electric motor which serves to drive a fan for creating a suction and, inasmuch as the vacuum cleaner is moved around over the floor during cleaning, it is necessary to provide a sufficient length of electric cord, one end of which is connected to the vacuum cleaner while the other end is connected to any convenient electric outlet. This electric cord must be of a durable nature, inasmuch as it is dragged around on the floor and is subject to rather hard usage. Consequently, it is usually of the rubber-covered type and, inasmuch as it must be up to twenty feet in length in order to provide sufficient radius of operation for the cleaner, it has considerable bulk when coiled up. When the vacuum cleaner is not in use, it is desirable to store the cleaner and the cord together and a convenient way to do this is to wind the cord around the cleaner.

In accordance with my invention, I provide a U-shaped bracket 20 having a bottom portion 21 suitably secured to the casing 11. The bracket has upstanding arms 22 which support a pin 23. Pivoted on the pin is an arm 24 having flanges 25. The arm 24 also is provided with an ear 26 which engages one end of a coiled spring 27 which is wrappen around the pin 23. The opposite end 28 of the spring contacts the bracket 20, as is clearly shown in Fig. 2, so as to prevent rotation of this end of the spring when the arm 24 is pivoted.

As shown, the arm 24 is somewhat arcuate so as to extend down and contact the casing 11 when in retracted position. It preferably is provided with a slightly upturned end 29 to permit it to be engaged by the cord.

The bracket 20 and pin 23 are enclosed within a housing having side walls 30, an end wall 31 and a short top wall 32. The construction of the parts is such that when the arm 24 is in the retracted position shown in Fig. 2, the upper surface of the arm and the top wall 32 are in alignment so as to form a substantially uninterrupted surface. The end of the top wall serves as a stop for the arm when the latter is in the extended position shown in Figs. 1 and 4.

When it is desired to wind the cord 18 around the cleaner, the arm 24 is engaged by the cord at the upturned end 29 and pivoted against the force of spring 27 to the extended position shown in Figs. 1 to 4. Thereupon the cord is looped around the extended arm and the rear end of the cleaner between the runners 12 and the cover

15. When so looped the cord retains the arm 24 in extended position against the force of the spring, but when the cord is removed the spring 27 automatically biases the arm to the retracted position shown in Fig. 2.

In Fig. 5 there is illustrated a spring-pressed pivoted arm 24*a* mounted on the handle 17*a* of the cleaner. The handle is formed with a recess 35 within which is mounted bracket 36 which carries a pin 37. A spring 38 is wrapped around the pin with one end engaging an ear 26*a* on the arm while the other end engages the bracket 36. The handle 17*a* is also formed with a depression 39 below the end of the arm 24*a* when the latter is in a retracted position in order to permit insertion of the cord underneath the end of the arm.

In Fig. 8, the handle 14a for releasing the front cover 13 from the casing 11 is provided with a recess 40 within which is mounted a pin 41 which pivotally carries an arm 24*b*. A spring 42 is wrapped around the pin 41 with one end engaging an ear 26*b* on the arm while the other end contacts the bottom of the recess 40. Arm 24*b* is curved so as to lie along the surface of the handle 14*a* in retracted position and the handle is provided with a depression 43 underneath the end of the arm for the insertion of the cord.

The arrangements illustrated in Figs. 5 and 8 are intended to be used together on a cleaner of the type shown in Fig. 1. When so used, the arms 24*a* and 24*b* are pivoted towards each other to the position shown in Figs. 7 and 8, respectively, whereupon the cord may be wrapped around these two arms. When the cord is unwound, the springs 38 and 42 pivot the arms 24*a* and 24*b*, respectively, to their retracted positions where they are out of the way and do not project beyond the surface of the cleaner.

While I have shown two more or less specific embodiments of my invention, it is to be understood that this has been done for purposes of illustration only and that the scope of my invention is not to be limited thereby, but is to be determined from the appended claim.

What I claim is:

In combination with a portable vacuum cleaner having a casing enclosing an electric motor and provided with supporting runners and an electric cord, said runners being formed to provide a cord-receiving recess between themselves and the casing, cord-retaining structure mounted on said casing adjacent to the end thereof remote from said recess, said structure including a pivoted arm, resilient means for biasing said arm from any pivotal position thereof away from said recess to a retracted position close to said casing, and stop means for limiting pivotal movement of said arm to an extended cord-retaining position.

GUSTAF EINAR LOFGREN.