Sept. 22, 1942. R. C. LAMPE 2,296,446

VACUUM CLEANER

Filed Feb. 14, 1941 2 Sheets-Sheet 1

Fig. 1.

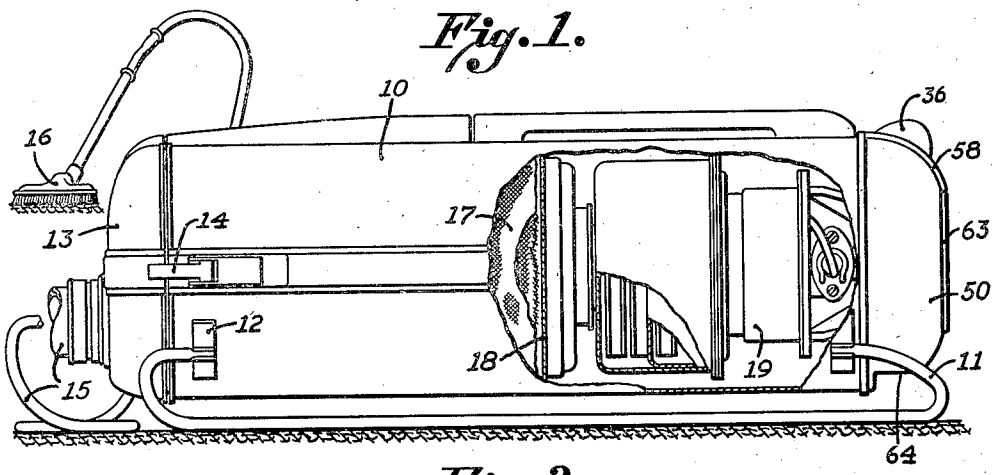
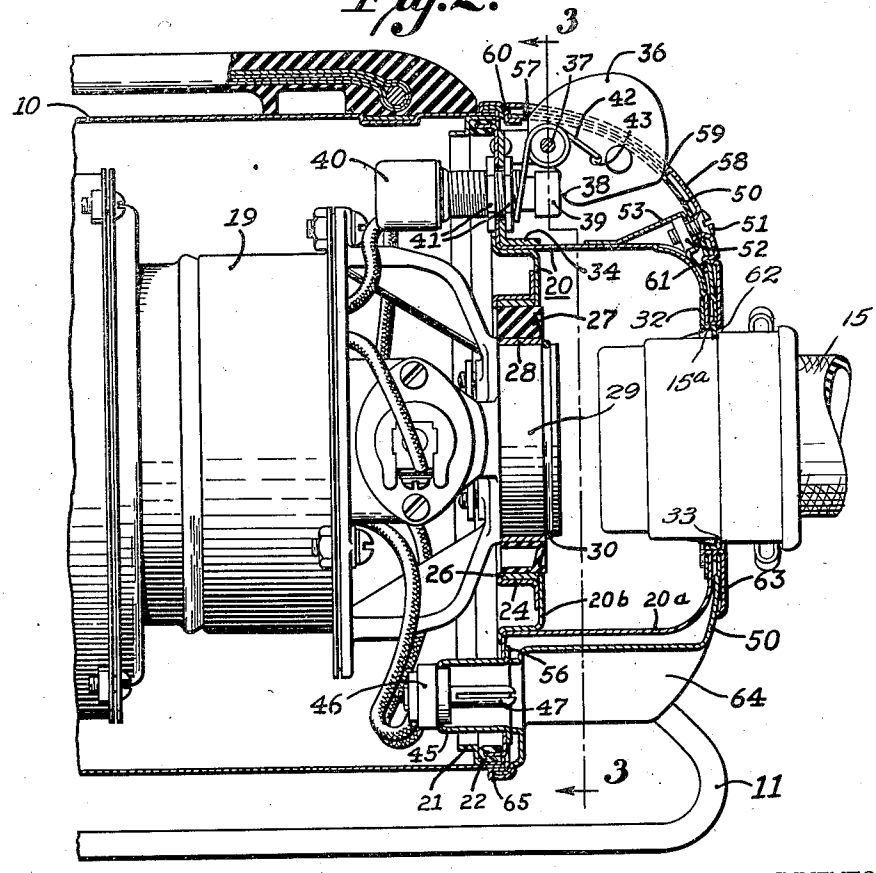


Fig. 2.



INVENTOR.
Robert C. Lampe

BY
Thomas C. Betts
his ATTORNEY.

Sept. 22, 1942. R. C. LAMPE 2,296,446

VACUUM CLEANER

Filed Feb. 14, 1941 2 Sheets-Sheet 2

Fig. 3.

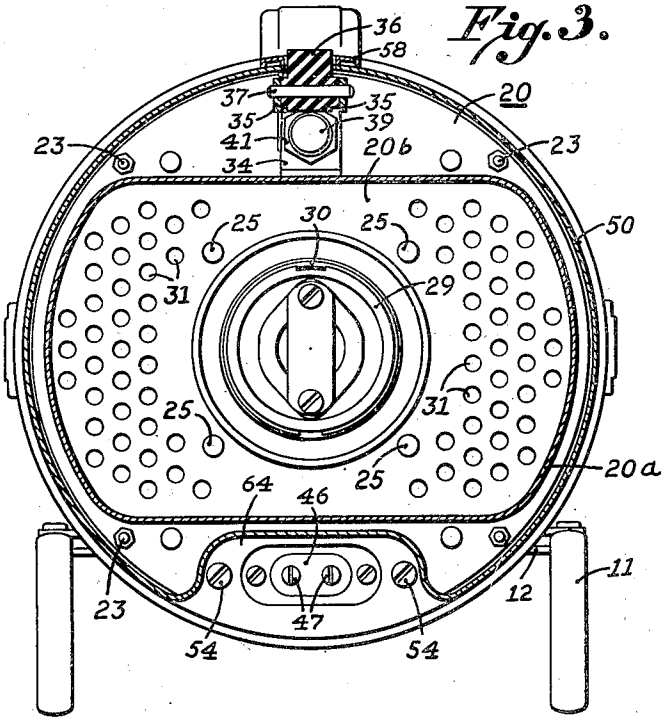
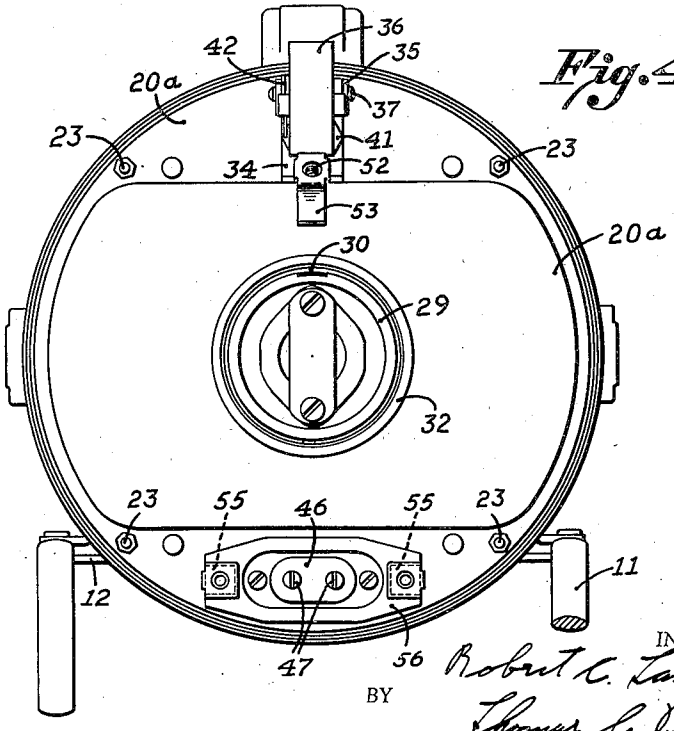


Fig. 4.



INVENTOR.
Robert C. Lampe
BY
Thomas C. Betts
His ATTORNEY.

Patented Sept. 22, 1942 2,296,446

UNITED STATES PATENT OFFICE

2,296,446

VACUUM CLEANER

Robert C. Lampe, Springdale, Conn., assignor to Electrolux Corporation, Dover, Del., a corporation of Delaware

Application February 14, 1941, Serial No. 378,869

5 Claims. (Cl. 230—132)

My invention relates to vacuum cleaners and more particularly to vacuum cleaners of the enclosed bag type.

Vacuum cleaners of this type include a casing within which is mounted a motor-fan unit and which also encloses a dust bag. One end of the casing is provided with a closure member which may be removed in order to take out the dust bag for the purpose of emptying it. The other end of the casing may be provided with a closure member which may also be removable in order to give access to the motor unit. In accordance with the present invention, the closure member at this end is also utilized to support the motor-fan unit and while removable, in order to provide a proper support it is not so readily removable as is the case where it is not utilized as a motor support. However, it is desirable that certain of the electrical connections, such as a switch and connector plug, be readily accessible, and in accordance with my invention a hood member is placed over the closure member, portions of the two members being spaced apart so as to provide room for such electrical connections.

An exhaust air passage is conveniently provided through the closure and hood members and in accordance with my invention a hose connector is carried solely by the closure member so that no strain is applied to the hood member, which consequently may be of relatively light construction.

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

Fig. 1 is a side view, partially broken away, of a vacuum cleaner embodying my invention;

Fig. 2 is a side view on an enlarged scale of a portion of the vacuum cleaner shown in Fig. 1;

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

Fig. 4 is a rear view of the vacuum cleaner shown in the preceding figures, but with the hood member removed.

Referring to the figures, reference character 10 indicates a hollow elongated casing which is supported by means of runners 11 secured thereto in any suitable manner, as by brackets 12. The left-hand end, as viewed in Fig. 1, of the casing is provided with a removable closure member 13 which is secured in place by means of latch members 14 on either side, one of which is shown in Fig. 1. Closure member 13 is provided with an inlet opening to which may be connected a hose 15 leading from a suction nozzle 16. Disposed within the casing 10 in well known manner is a dust bag 17, the open mouth of which is secured to a ring which is clamped between the closure member 13 in the end of the casing.

Extending transversely of the casing is a partition 18 which serves to support one end of a motor-fan unit 19. The other end of the motor-fan unit is supported by means of a partition 20 which also constitutes a removable closure member for this end of the casing. Partition 20 is formed of two parts 20*a* and 20*b* suitably secured together, as by welding.

As shown more particularly in Fig. 2, the right-hand end of the casing is provided with an internal ring 21 which has two axial flanges joined together by means of a radial web. The outer edge of part 20*a* of partition 20 is formed with an axial flange which carries a gasket 22 adapted to seat in the ring 21. The partition 20 is secured in place by means of a plurality of bolts 23, which are shown in Figs. 3 and 4.

Part 20*b* of partition 20 is formed with a centrally located aperture and a ring 24 is secured to the partition in any suitable manner, as by rivets 25, so as to provide with the partition an annular groove in which is seated a ring 26. The outer surface of a rubber ring 27 is secured to ring 26, as by vulcanizing, while the inner surface of ring 27 is secured to a ring 28. The latter ring is adapted to closely embrace a circular projection 29 formed on the housing of the electric motor, and a lock ring 30 prevents axial movement between the ring 28 and the motor housing.

As shown more particularly in Fig. 3, part 20*b* of partition 20 is provided with a series of apertures 31 for the passage therethrough of air.

Part 20*a* of the partition includes an axially extending cup-shaped portion which is formed with a centrally located exhaust air opening in which is suitably secured a ring 32 provided with an inwardly extending flange 33. The end of the hose 15 may be inserted in this exhaust opening and the flange 33 engaged by spring-pressed latch members 15*a* of known design for retaining the hose in place.

A bracket 34 is secured to the upper part of part 20*a* of the partition and is provided with parallel arms 35 between which is pivotally mounted a member 36 by means of a pin 37. Member 36 is formed with a shoulder 38 which may be brought to bear against a reciprocable plunger 39 forming part of an electric switch 40. The switch is supported from partition 20 by means of nuts 41 which engage the partition on either side thereof. A coil spring 42 has one end bearing against one of the nuts 41 while the other end engages a recess 43 formed in member 36 so as to normally hold the shoulder 38 spaced from the plunger 39.

Part 20*a* of partition 20 is formed with an oblong recess in the lower part thereof within which is seated the shell 45 of an electric connector 46 having the usual prongs 47.

A hood member 50 is secured to partition 20 so as to cover both parts 20*a* and 20*b* thereof and

to conceal them from view. The hood is removably secured in place by means of a screw 51 engaging a threaded member 52 which is permanently carried by a bracket 53 welded to the upper part of portion 20a, and by means of a pair of screws 54 which engage threaded members 55 which are permanently secured between the partition and a flange 56 on the shell 45 of the electric connector. Hood 50 is spaced from the upper part of the partition so as to provide a space into which extends the plunger 39 of the switch 40 and within which the member 36 is pivoted. This member extends through a slot 57 in the hood so as to be accessible for operation. Inasmuch as member 36 is intended to be operated by the foot, it is unavoidable that the foot will at times slip off the member and contact the adjacent surface of the hood. If the hood is painted, this would result in marring and consequently there is provided a band 58 which is formed with a slot 59 so as to be disposed on either side of the member 36. This band is secured to the hood by having one end thereof formed as a hook 60, while the other end has an offset lip 61, both the hook and the lip engaging recesses formed in the hood. In addition, bolt 51 engages strip 58. This strip may be made of unpainted metal, and is preferably chromium plated.

Hood 50 is formed with an aperture 62 which is in alignment with the exhaust air opening in part 20a of the partition. This opening is surrounded by a ring 63, preferably of the same material as strip 58, which is held in place by having its inner edge crimped over the edge opening 62 in the hood. This ring serves to prevent marring of the painted surface of the hood in the event that the end of the hose is knocked against while being inserted in the exhaust air opening.

The lower part of hood 50 is so shaped as to provide a space 64 in alignment with the electric connector 46, so that the plug of an electric cord may be inserted therein. The periphery of the hood is formed with a bead 65 which fits closely over the end of casing 10.

It will thus be seen that the hood 50 may be easily removed by unscrewing screws 51 and 54 so as to expose both the switch-operating member and the connector in the event that repairs to either are required. This hood member is not subjected to any strain when the hose is connected to the exhaust opening, inasmuch as the hose engages the flange 33 which is carried by the part 20a of the partition, and not by the hood. Furthermore, there is no air flow within the space between the end member 20 and the hood, and consequently there is no tendency for air to leak out around the switch-operating member through the opening 57, or through the joint between the hood and casing 10.

If it is necessary to gain access to the motor, partition 20 may be removed by removing screws 23, whereupon the motor-fan unit may be pulled out of the casing with partition 20.

While I have illustrated and described one more or less specific embodiment of my invention, it is to be understood that this has been done for the purpose of illustration only and the scope of my invention is not to be limited thereby, but is to be determined by the appended claims.

I claim:

1. In a vacuum cleaner, a hollow casing, means for producing flow of air through said casing, an end member secured to said casing and formed with a port for flow of air therethrough, a hood member surrounding said end member and secured thereto and having an opening in alignment with said port, and means for securing a hollow member in communication with said port, the last-mentioned means being carried by said end member entirely independently of said hood member.

2. In a vacuum cleaner, a hollow casing, means for producing flow of air through said casing, an end member secured to said casing and formed with a port for flow of air therethrough, a hood member surrounding said end member and secured thereto and having an opening in alignment with said port, means for removably securing a hollow member in communication with said port, the last-mentioned means being carried by said end member entirely independently of said hood member, and a protective ring carried by said hood member and disposed around said port.

3. In a vacuum cleaner, a hollow casing, a motor-fan unit for producing flow of air through said casing, an end member secured to said casing and including a transverse portion and an axially extending portion, means for supporting said motor-fan unit from said transverse portion, said axially extending portion forming a passageway for flow of air and being formed at the end remote from said transverse portion with an exhaust air port, said transverse portion being formed with an opening connecting the interior of said casing with said passageway, a hood member surrounding said end member and secured thereto, portions of said members being spaced from each other to provide an enclosed chamber, the walls of said end member which bound said chamber being imperforate so as to prevent flow of air from said casing and said passageway into said chamber, and means carried by said axially extending portion for removably securing a hollow member in communication with said port, said last-mentioned means being entirely independent of said hood member.

4. In a vacuum cleaner, a hollow casing, means for producing flow of air through said casing, an end member secured to said casing and formed with a port for flow of air therethrough, and a hood member surrounding said end member and secured thereto and having an opening in alignment with said port, the diameter of the port in said end member being smaller than the diameter of the opening in said hood member whereby to provide means for engaging a hollow member and securing it in communication with said port entirely independently of said hood member.

5. In a vacuum cleaner, a hollow casing, means for producing flow of air through said casing, an end member secured to said casing and formed with a port for flow of air therethrough, and a hood member surrounding said end member and secured thereto and having an opening in alignment with said port, the portion of said end member which bounds said port extending into said opening to thereby provide means for engaging a hollow member and securing the latter in communication with said port entirely independently of said hood member.

ROBERT C. LAMPE.