

Sept. 10, 1929.

T. O. ADAMS

1,727,922

CASING FOR VACUUM CLEANERS

Filed July 19, 1927

5 Sheets-Sheet 1

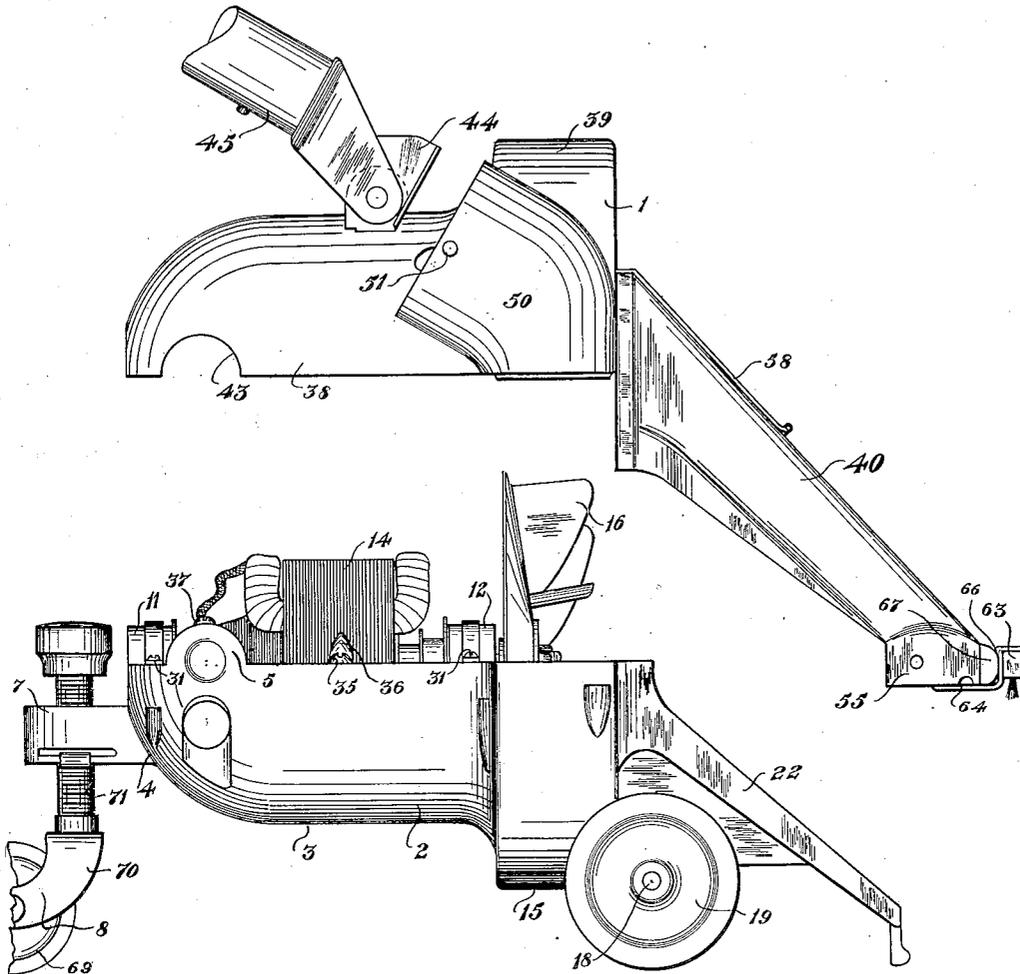


Fig. 1

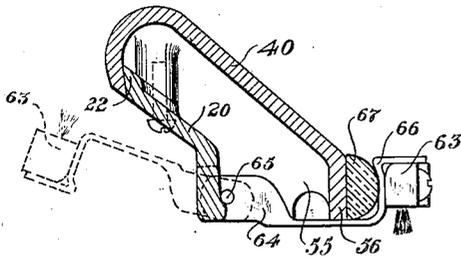


Fig. 7.

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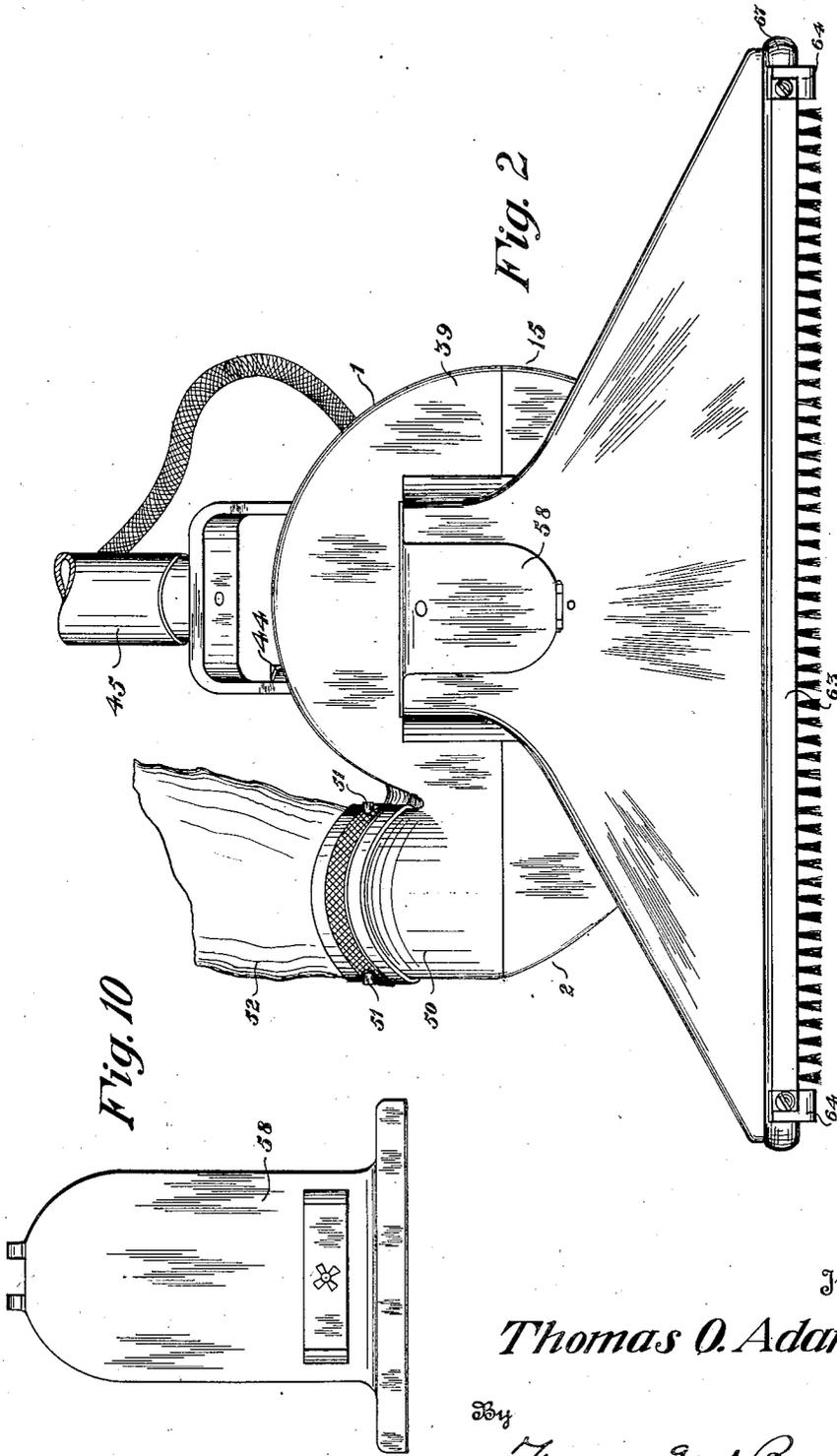
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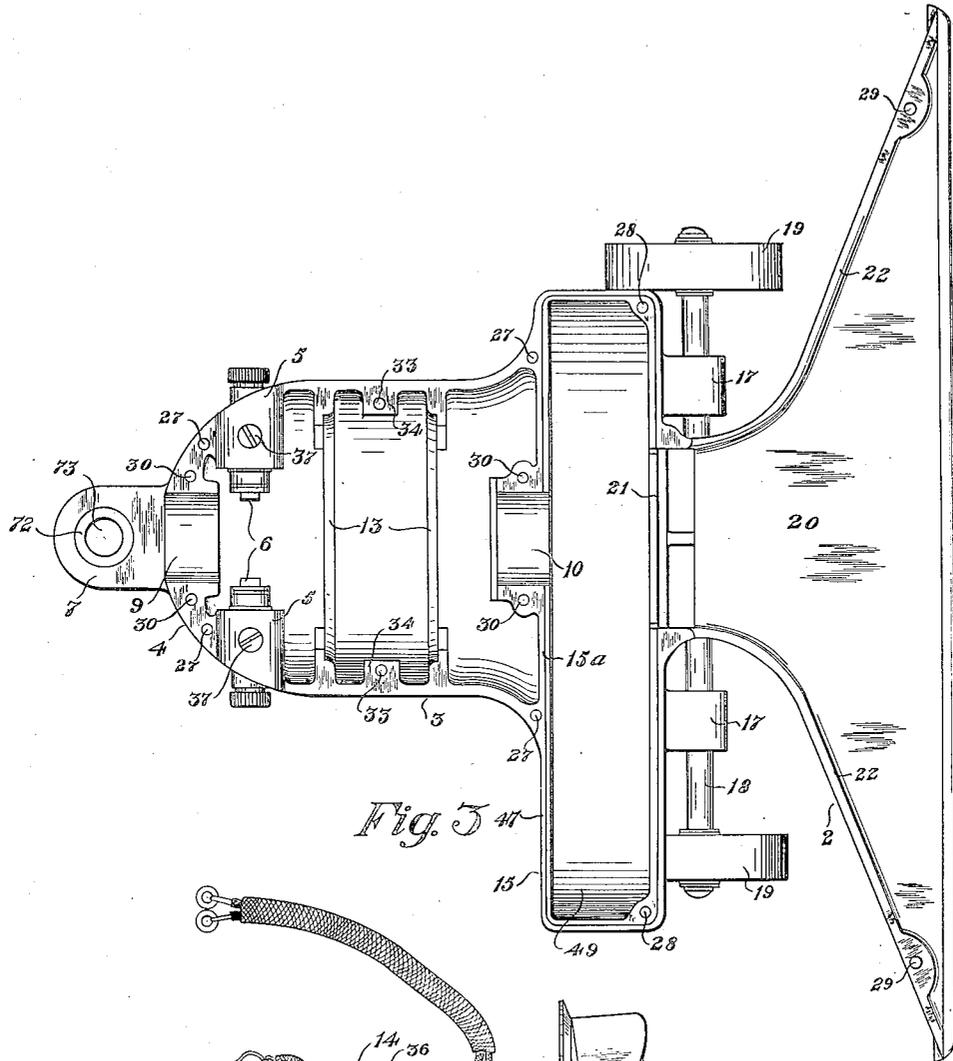


Fig. 3

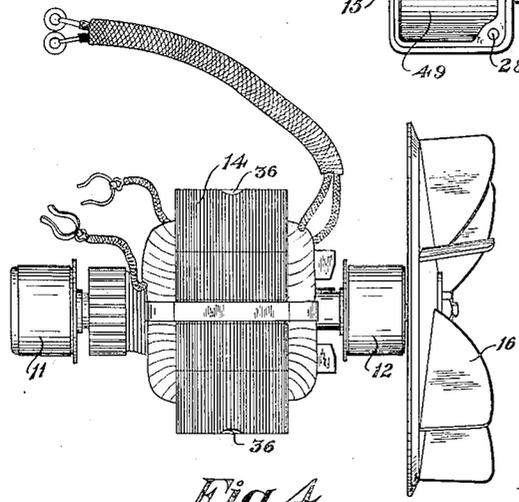


Fig. 4

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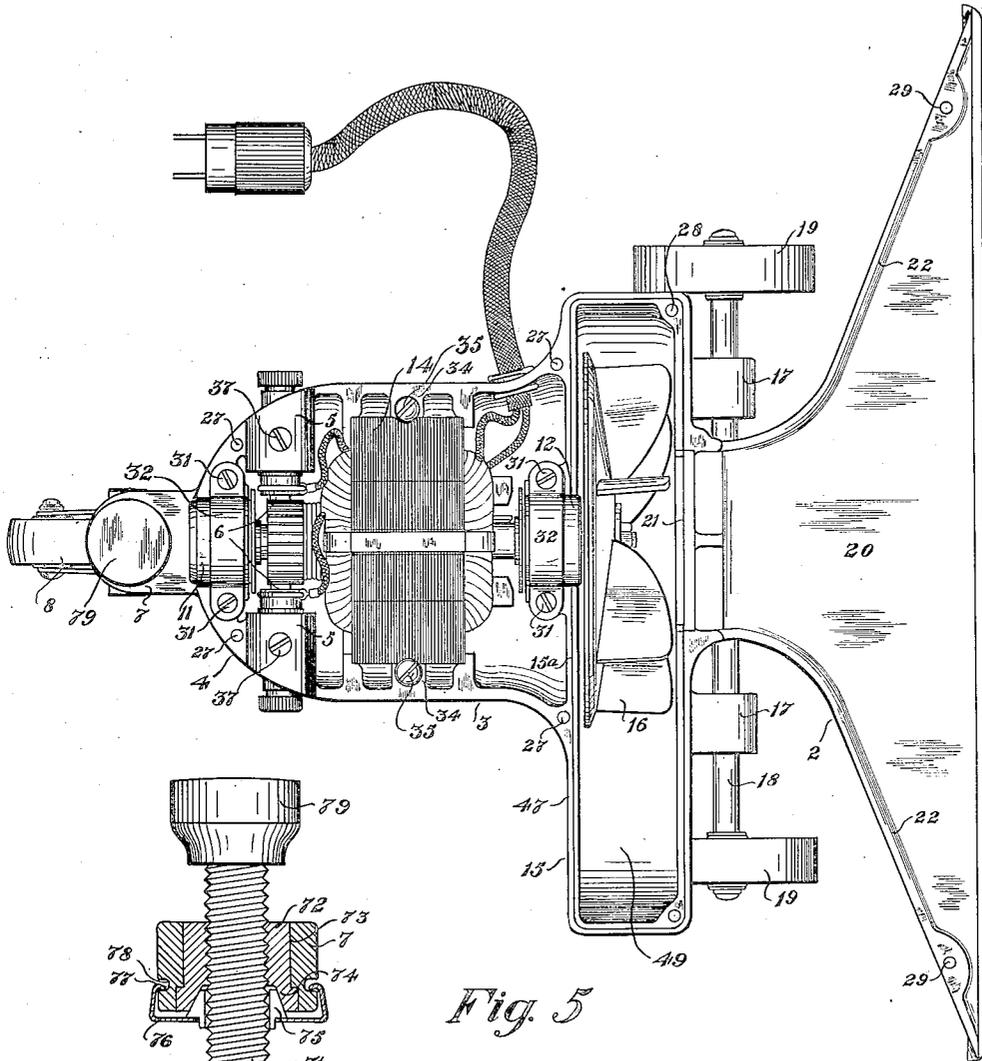


Fig. 5

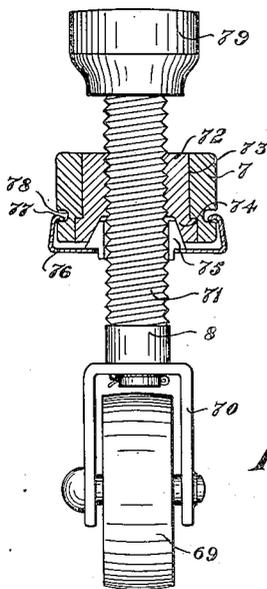


Fig. 9

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CASING FOR VACUUM CLEANERS

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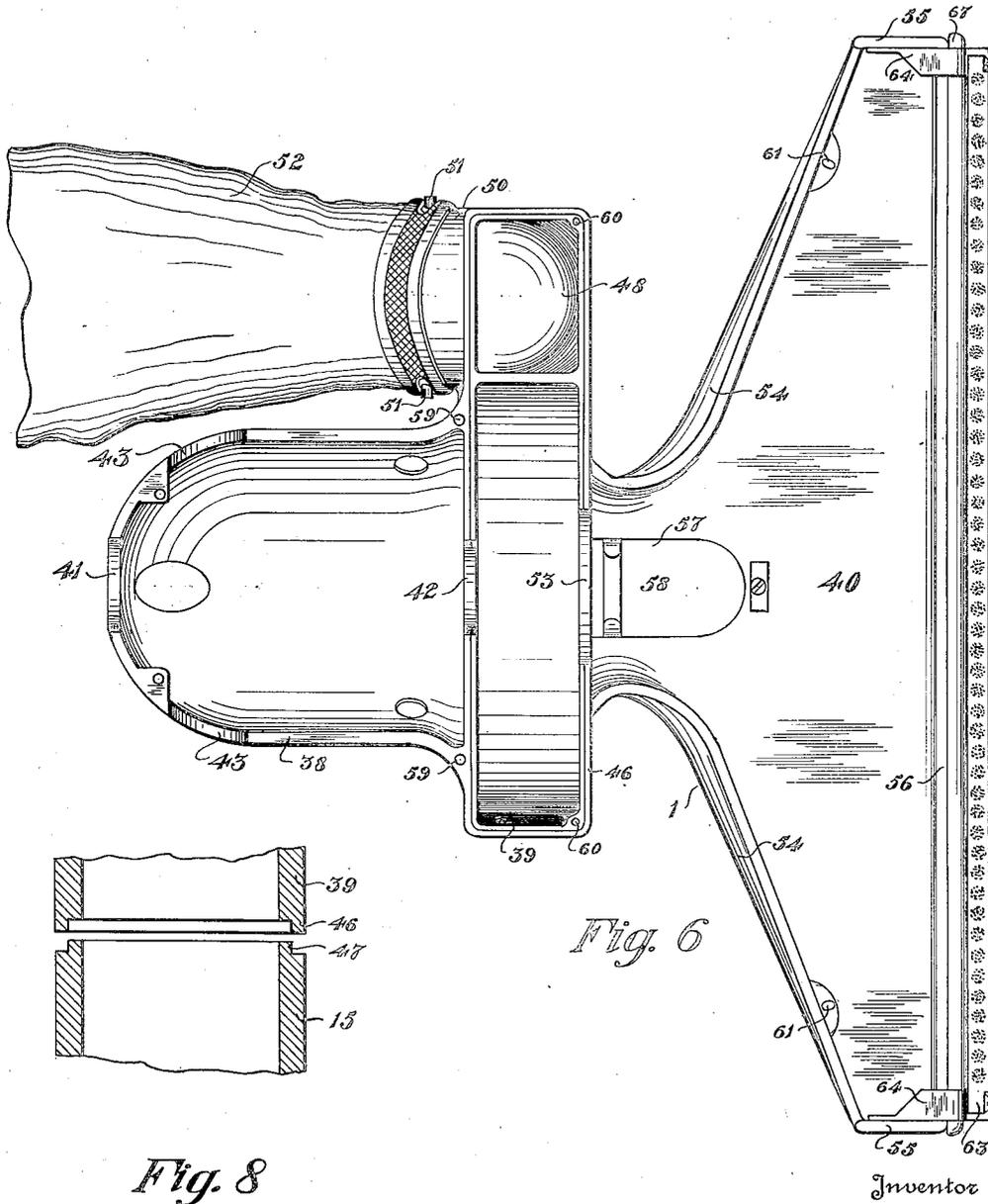


Fig. 8

Fig. 6

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UNITED STATES PATENT OFFICE.

THOMAS O. ADAMS, OF NEW PHILADELPHIA, OHIO, ASSIGNOR, BY MESNE ASSIGNMENTS, TO WISE-McCLUNG CORPORATION, OF NEW PHILADELPHIA, OHIO, A CORPORATION OF OHIO.

CASING FOR VACUUM CLEANERS.

Application filed July 19, 1927. Serial No. 206,861.

The invention relates to casings for vacuum cleaners; and the object of the improvement is to provide a casing formed of two sections adapted to be connected together by screws or the like and forming a complete motor housing, fan chamber and nozzle, separable along the median line of the motor and fan.

By forming the casing in this manner the operation of construction is greatly simplified and machine work is reduced to a minimum, while the motor, fan and bearings may be removed as a unit and the slight machine work required for receiving the motor in the casing may be completed in a single operation, thus accurately aligning the bearings and field of the motor.

An embodiment of the invention is illustrated in the accompanying drawings, in which

Figure 1 is a side elevation of a sweeper provided with the improved casing, showing the two halves of the casing separated;

Fig. 2, a front elevation of the improved casing;

Fig. 3, a plan view of the lower half of the casing;

Fig. 4, an elevation of the motor and fan assembled;

Fig. 5, a plan view of the lower half of the casing, showing the motor and fan assembled therein;

Fig. 6, a bottom plan view of the upper half of the casing;

Fig. 7, a transverse section through the nozzle;

Fig. 8, an enlarged fragmentary transverse section through the fan chamber;

Fig. 9, a detail sectional view of the rear caster mounting; and

Fig. 10, a detached elevation of the cover plate for the attachment opening.

Similar numerals refer to similar parts throughout the drawings.

The casing is formed of the upper and lower sections indicated generally at 1 and 2 respectively which may be in the form of die castings. Each section forms substantially one-half of the entire vacuum cleaner casing and the sections are adapted, when

connected together, to form a complete motor housing, fan chamber and nozzle.

The lower section 2 includes substantially half of the motor housing, indicated generally at 3, being substantially semi-cylindrical and terminating in the semi-spherical outer end 4, having the tubular supports 5 for the motor brushes 6.

A rearwardly disposed lug 7 is formed upon the lower half of the motor housing for the attachment of the rear caster 8. Half-round bearing sockets 9 and 10 are formed in the ends of the lower half of the motor housing 3, for the reception of the motor bearings 11 and 12 respectively, and spaced half-round ribs 13 are provided therein for the reception of the field 14 of the motor.

The lower half of the fan chamber, as indicated at 15, is formed integral with and at the forward end of the lower half of the motor housing 3, being separated therefrom by the partition wall 15^a. This half of the fan chamber is of the proper size and shape to house one-half of the fan 16 which is fixed upon the forward end of the motor shaft.

Lugs 17 are formed integral with the front face of the lower half 15 of the fan chamber for the purpose of attaching the axle 18 of the front casters 19.

The lower portion 20 of the nozzle extends downward and forward from the front side of the lower half of the fan chamber, being flared outward from the inlet opening 21 thereof.

An upright flange 22 is formed integral with each side edge of the lower portion 20 of the nozzle.

After the lower section 2 is formed, the only machine work necessary thereon is a single mill operation upon the ribs 13 and bearing sockets 9 and 10, which thus accurately aligns these ribs and sockets to receive the field 14 and bearings 11 and 12 of the motor.

Apertures 27, 28 and 29 are formed in the lower halves of the motor housing, fan chamber and nozzle respectively to receive screws to connect the upper section 1 thereto. Apertures 30 are also provided adjacent to the bearing sockets 9 and 10 to receive screws

31 for attaching the clips 32 by means of which the bearings 11 and 12 are held in place within the bearing sockets.

Apertures 33 are formed in the inwardly disposed lugs 34 to receive the screws 35, the heads of which are received in the recesses 36 of the motor field to retain the same in position; and apertures are provided in the brush supports 5 to receive the screws 37 for retaining the brushes therein.

As the entire motor, fan and bearings are assembled in a single unit, it will be seen that when the lower section is formed and machined as above described, this unit may be easily and accurately mounted in position therein and attached by means of the screws 31 and 35, and clips 32.

The lower half of the casing thus has the motor, fan, bearings, and casters all assembled thereon independently of the upper section 1 which forms a cover for these parts.

This upper section comprises the upper half 38 of the motor housing, the upper half 39 of the fan chamber, and the upper portion 40 of the nozzle.

The upper portion of the motor housing has the half-round sockets 41 and 42 to accommodate the motor bearings 11 and 12 respectively, and the half-round sockets 43 to accommodate the brush supports 5, and is provided upon its top with lugs 44 for the attachment of the usual operating handle 45, by means of which the cleaner may be moved to and fro upon the objective surface.

The upper and lower halves of the fan chamber are provided around their edges with the cooperating interfitting ribs 46 and 47 respectively, adapted to overlap and form a tight joint when the sections are connected together. Grease or the like may be placed between these ribs and when the two halves of the fan chamber are drawn together by the screws an air-tight chamber is formed.

An outlet compartment 48 is formed integral with the upper half of the fan chamber and adapted to communicate with the elongated side 49 of the lower half 15 of the fan chamber.

The outlet neck 50 communicates with the outlet compartment 48, and may be provided with the studs 51, for the attachment of the usual dust collector bag 52, the upper end of which bag may be supported from the handle 45 of the sweeper in the usual manner.

The upper portion 40 of the nozzle depends downward and forward from the front of the upper half 39 of the fan chamber and communicates therewith through the half-round opening 53. The inclined side edges of this upper portion of the nozzle are provided with the depending, slightly inclined flanges 54 adapted to overlap the upright flanges 22 upon the lower portion of the nozzle.

The depending flanges 55 are also provided at the ends of the upper portion 40 of the nozzle, forming a closure for the ends of the nozzle mouth, and the depending flange 56 is formed at the forward edge thereof, forming the forward lip of the nozzle mouth.

An opening 57 may be formed in the upper portion 40 of the nozzle, adjacent to the inlet opening to the fan chamber, for the insertion of the usual converter hose by means of which the sweeper attachments may be used. This opening may be normally closed by a hinged plate 58.

Tapped apertures 59, 60 and 61 are provided in the upper portions of the motor housing, fan chamber and nozzle respectively for the reception of the screws which are inserted through the apertures 27, 28 and 29 of the lower section for the purpose of connecting the two sections together to form a complete vacuum cleaner casing.

The brush 63 is carried by a pair of arms 64, pivotally mounted, as at 65, upon the inner sides of the end walls 55 of the upper portion 40 of the nozzle. The free ends of these arms may be curved, as shown at 66, for frictional engagement with the rubber bumper 67 upon the forward flange 56. When it is not desired to use the brush, the same may be swung backward, upon its pivots, in rear of the nozzle mouth.

The rear caster 69 is journaled in the yoke 70, which is swivelled upon the lower end of the adjusting screw 71. This screw is threaded through a fixed nut 72, which may have a drive fit in the aperture 73 formed in the lug 7.

The lower end of this nut is internally coned as at 74, to receive the split, conical bushing 75, which is retained as by the spring clip 76, having the inturned flange ends 77, received in the grooves 78 of the lug. A knob 79 may be provided upon the top of the adjusting screw for operating the same.

With this construction it is not only possible to produce a casing which is comparatively cheap to manufacture and easy to assemble, but it will be seen that with very little machine work the motor, fan and bearing unit may be accommodated and accurately aligned; the upper half of the casing may be easily and readily removed, carrying with it the dust collector bag, handle, and brush, and giving access to the motor and fan; and the motor, fan and bearings as a unit may be easily and readily removed and replaced.

I claim:

1. A vacuum cleaner casing comprising a motor housing, fan chamber and nozzle, said casing being formed of two separable sections, each forming complementary portions of the motor housing, fan chamber and nozzle.

2. A vacuum cleaner casing comprising a motor housing, fan chamber and nozzle, said

casing being formed of two separable sections, each forming complementary portions of the motor housing, fan chamber and nozzle, there being interfitting ribs around the meeting edges of the fan chamber portions of the sections.

3. In a vacuum cleaner, a casing comprising a motor housing, fan chamber and nozzle, said casing being formed of two separable upper and lower sections, each forming complementary portions of the motor housing, fan chamber and nozzle, and a motor, fan and bearing unit carried by the lower section.

4. A vacuum cleaner casing comprising a motor housing, fan chamber and nozzle, said casing being formed of two separable upper and lower sections, each forming complementary portions of the motor housing, fan chamber and nozzle, and aligned half-annular ribs and bearing sockets in the lower section to receive the field and bearings of a motor.

5. A vacuum cleaner casing comprising a motor housing, fan chamber and nozzle, said casing being formed of two separable upper and lower sections, each forming complementary portions of the motor housing, fan chamber and nozzle, the lower section having supports for motor brushes, and aligned half-annular ribs and bearing sockets to receive the field and bearings of a motor.

6. A vacuum cleaner casing comprising a motor housing, fan chamber and nozzle, said casing being formed of two separable upper and lower sections, each forming complementary portions of the motor housing, fan chamber and nozzle, and depending flanges upon the nozzle portion of the upper section overlapping the edges of the nozzle portion of the lower section.

In testimony that I claim the above, I have hereunto subscribed my name.

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THOMAS O. ADAMS.

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