

Lebrecht Knipping

ALTENA / Westphalia

Altena, October 24, 1969

HANDHELD VACUUM CLEANER

The invention relates to a handheld vacuum cleaner in pistol form, in which, in contrast to the known devices of similar size and shape, the motor is covered with a filter bag across its entire length and against the suction opening on the front side, with the motor being arranged in such a way that it is freely suspended between the suction wheel and the dust chamber.

The filter bag is attached to a sealing ring by means of a wire ring, which is held in place against a ring flange inside the double-walled housing by means of the container's front edge. At least one clamp attached to the outside of the double-walled housing engages behind a lug, which is provided on the container inserted into the double-walled housing in an easily detachable manner in the assembled state,

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In addition to the noise-reducing suspension of the motor described in more detail below, a cellular plastic disk is also provided in front of the air outlet opening.

In the arrangement according to the invention, the dust enters through the suction nozzle into a chamber formed by the container. To empty this chamber, two clamps arranged at 90° to the handle and opposite the longitudinal axis of the housing are preferably released, whereupon the container can be easily removed from the double-walled housing. The filter bag, which otherwise also functioned as a dust chamber in the vacuum cleaners known to date, no longer needs to be removed with a usually complicated removal of the fastener. Emptying the previously known filter bags was not advantageous either due to the associated generation of dust.

One embodiment according to the invention is shown and described in the drawing.

Fig. 1 shows a longitudinal section of the handheld vacuum cleaner at a reduced scale, with the upper half of the section representing a section offset upwards by 90° ,

Fig. 2 shows a section II-II of Fig. 1,

Fig. 3 is a greatly reduced representation of the handheld

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vacuum cleaner with only half of the brush and suction nozzle indicated, and the longitudinal arrangement of the clamps placed at a 90° angle to the handle.

The double-walled housing 1, which is integrally formed with the handle 16, has a cylindrical cross-section, is open at both ends, and is provided at right angles to the handle 16 with two opposing clamps 12, which are suitable for holding the container 2 inserted into the annular groove 17 formed by the double wall up to the annular flange 10. This container has two lugs 13 cast on it for this purpose, which are arranged in the same way as the two clamps 12. Radial ribs 20 are also cast on the inner annular wall 18 of the double-walled housing 1 in the axial direction against the suction direction. These ribs enclose a flange 21 at approximately half of their length and onto which the motor 6 is screwed in the opposite direction to the ribs 20 - freely suspended with one of its end plates 22. The suction wheel 7 is located behind the motor 6 in the suction direction, but still inside the outer annular wall 19 of the double-walled housing 1. It is closed by a cap 23 provided with a cellular plastic disk 14 on the inside, inserted into the housing 1 and fastened thereto. It only makes sense that an air outlet opening 15 is preferably provided on the end face of the cap 23. The suction air that was filtered by

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the filter bag 4 flows through the motor 6, and in particular the winding, which usually gets very hot, with the radial ribs 20 preventing the filter bag 4 from collapsing during operation due to the suction air flow. The filter bag 4 is attached to the sealing ring 9, which is held between the ring flange 10 and the container end wall 3, by means of wire rings 11. The filter bag 4 is easy to clean or replace from time to time.

It should also be mentioned that the dust accumulated in the container 2 after prolonged use and retained by the rubber strike plate 24 can be emptied by simply releasing the clamps 12. The optional attachment of a brush 25 or a suction nozzle 26 is known and not the object of the invention, nor is the arrangement of the switch 27 and the electrical parts in the handle 16.

The suction air flowing above the motor 6 exits through the suction wheel 7 in the opposite radial direction of the cap 23 through the air outlet opening located in the center.

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1. Handheld vacuum cleaner in pistol form of any size and current type, with brushes or a suction nozzle connection, characterized in that the motor (6) freely suspended between the suction wheel (7) and the dust chamber (8) is covered by a filter bag (4) across its entire length and against the suction opening (5) on the end face.
2. Handheld vacuum cleaner according to claim 1, characterized in that the double-walled housing (1), which is integrally formed with the handle (16) and has a cylindrical cross-section, is open at both ends and is provided with two opposing clamps (12) at right angles to the handle (16).
3. Handheld vacuum cleaner according to claims 1 and 2, characterized in that the container (2) forming the dust chamber (8) is pushed into the annular groove (17) of the double-walled housing (1) down to the annular flange (10), covering the filter bag (4), and in that, in this state, the clamps (12) each engage behind a lug (13) which is cast onto the container (2) at the suitable point for this purpose.

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4. Handheld vacuum cleaner according to claims 1 to 3, characterized in that at least three radial ribs (20) are axially cast onto the inner annular wall (18) of the double-walled housing (1) against the suction direction, said ribs enclosing a flange (21) connected integrally thereto at approximately half their length, and in that the motor (6) and the suction wheel (7) are screwed to said flange opposite the ribs (20) with one of its end plates (22) in a freely suspended manner.
5. Handheld vacuum cleaner according to claims 1 to 4, characterized in that the suction wheel (7) located behind the motor (6) in the suction direction is arranged inside the outer annular wall (19) of the double-walled housing (1).
6. Handheld vacuum cleaner according to claims 1 to 5, characterized in that a cap (23) is provided with a cellular plastic disk (14) that does not close off the air outlet opening (15) and in that the cap is detachably fastened inside the outer annular wall (19) with its outer wheel.

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7. Handheld vacuum cleaner according to claims 1 to 6, characterized in that the air outlet opening (15) is preferably arranged centrally on the end face of the cap (23).
8. Handheld vacuum cleaner according to claims 1 to 7, characterized in that the filter bag (4) is placed over the entire motor (6) and over the radial ribs (20) projecting beyond the motor, and it spread open by said ribs.
9. Handheld vacuum cleaner according to claims 1 to 8, characterized in that the filter bag (4) is fastened by means of wire rings (11) to the sealing ring (9), which is held between the ring flange (10) and the container end wall (3).

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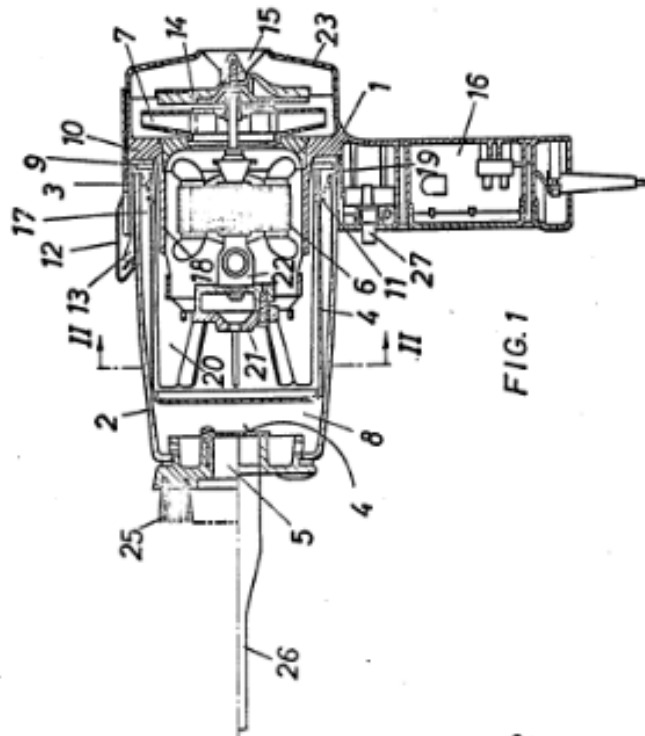


FIG. 1

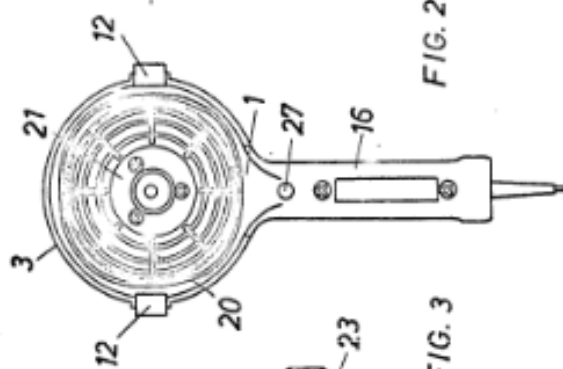


FIG. 2

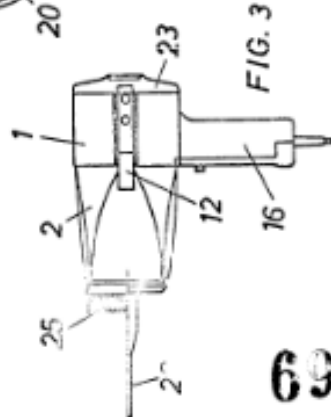


FIG. 3

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TRANSLATION CERTIFICATION

Date: June 12, 2024

To whom it may concern:

This is to certify that the attached translation is an accurate representation of the documents received by this office. The translation was completed from:

- German (Germany)

To:

- English (USA)

The documents are designated as:

- DE6942662U

Emily Paras, Project Manager in this company, attests to the following:

"To the best of my knowledge, the aforementioned documents are a true, full and accurate translation of the specified documents."

A handwritten signature in black ink, appearing to read "Emily Paras", written in a cursive style.

Signature of Emily Paras