Sept. 23, 1952 H. LEVY 2,611,149

VACUUM CLEANER CARRIER

Filed March 22, 1950

Fig. 1

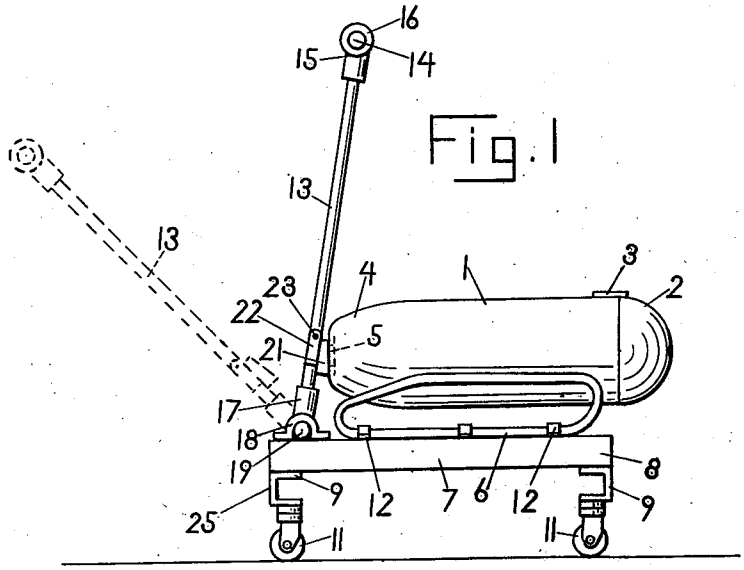


Fig. 2

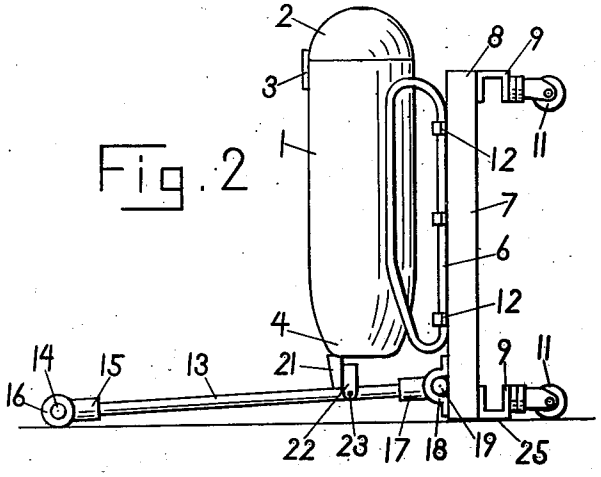


Fig. 4

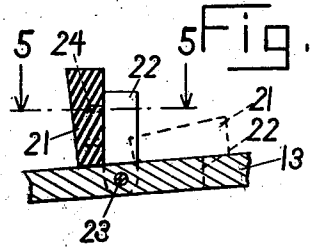


Fig. 5

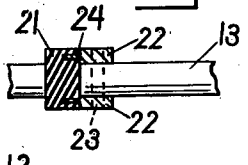
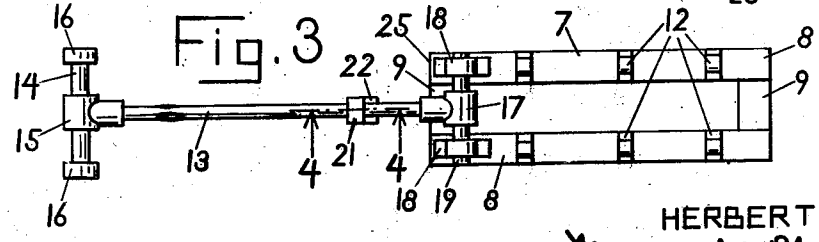


Fig. 3



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VACUUM CLEANER CARRIER

Herbert Levy, Bronx, N. Y.

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3 Claims. (Cl. 15—327)

1

My invention relates to carriers or supports for vacuum cleaners and, more specifically, for vacuum cleaners of that well known type which has an inner dust-collecting receptacle.

In order to remove the collected dust, it is from time to time necessary to open one end of the vacuum cleaner, to take out the receptacle, to replace the same after it has been emptied and to close the vacuum cleaner again. These operations must be performed while the vacuum cleaner is positioned vertically, its openable end being on top. Holding the cleaner in this position and handling the closure or the receptacle simultaneously is very inconvenient and cumbersome and requires considerable strength and skill if spilling of dust or toppling of the cleaner should be avoided.

Objects of my invention are to facilitate the removal and reinsertion of the receptacle so that the same will not be damaged by toppling and that spilling of dust will be easily avoided, to provide the cleaner with a support holding the same immovably in a vertical position, thereby to eliminate the necessity of holding the cleaner by hand, and thereby to make both hands available for handling the closure and the receptacle.

Other objects are to provide the vacuum cleaner with a carrier that supports the cleaner optionally in vertical or horizontal position, to provide the carrier with wheels, thereby to make possible rolling movement of the cleaner, thereby to facilitate the use of the cleaner and to avoid damage of a carpet or the like by sliding movement of the cleaner.

Further objects are to provide the carrier with a driving shaft, thereby to facilitate the rolling movement of the cleaner, to use the same shaft for supporting the cleaner in vertical position, to provide the shaft with a member which contacts the cleaner supportingly in this vertical position, to connect this member with the shaft hingedly whereby the member can be optionally positioned along or across the direction of the shaft, thereby to avoid crossing projection of the member when the same is not used as a support, to use the same member as a cover for the rear opening of the cleaner when the latter is not used, and thereby to protect the motor of the cleaner from dust and damage.

Still further objects are to protect the housing of the vacuum cleaner from injury, to prevent immediate contact between this housing and the shaft and to provide a member made of rubber or similarly soft and resilient material which contacts the housing when the position of the inventive device results in its contact with the housing.

Still other objects are to attain these results with simple and reliable means and to provide a carrier that has the mentioned advantages and can be inexpensively made and easily handled.

Still other objects and advantages will appear from the following description of an exemplifying embodiment of my invention, from the appended claims and from the accompanying drawing in which:

2

Fig. 1 shows a side view of an illustrative embodiment of my invention affixed to a vacuum cleaner in horizontal position.

Fig. 2 shows a similar side view, the carrier and vacuum cleaner being positioned vertically.

Fig. 3 shows a top view of the same embodiment without the vacuum cleaner, the carrier being positioned horizontally as in Fig. 1, its shaft being positioned about horizontally as in Fig. 2.

Fig. 4 shows a cross-section of a broken off part of the same embodiment, this cross-section being taken along the line 4—4 in Fig. 3 and being represented on a larger scale.

Fig. 5 shows a cross-section taken along the line 5—5 in Fig. 4.

Referring to the drawing, numeral 1 indicates the housing of a vacuum cleaner of well known type. A cap 2 forms the front end of this housing and is held in closed position by a locking device 3 of any known and suitable structure. This front end is openable for the purpose of taking out the dust-receptacle whenever it is necessary to empty the same. The opposite rear end 4 of the housing 1 is provided with an opening 5. This type of vacuum cleaner has two parallel sled-like runners 6 which are affixed to the housing 1 and support it so that the apparatus can slide over a floor or a carpet. This sliding movement causes considerable friction, hence considerable effort and damage, superficial layers being rubbed off, and long depressions being formed in the floor or in the carpet.

According to my invention a vacuum cleaner of this type can be moved rollingly by means of a carrier having a frame 7 which is positioned horizontally during this movement. On top of this frame, the cleaner is affixed without any alternation of the cleaner's structure. The frame 7 may consist of two longitudinal beams 8 and two cross-beams 9 affixed to the lower sides of the ends of the beams 8. The beams may have U-shaped cross-sections, the open sides of the U's facing inwardly. Wheels or casters 11 support the frame 7 and are connected thereto in well known manner. Clamps 12 surround the runners 6 tightly and are affixed to the beams 8 in any suitable manner whereby the cleaner is firmly united with the carrier. The clamps 12 are so positioned and affixed to the runers 6 that the cap 2 is at the front of the frame 7 and preferably projects beyond the same while the rear end of the frame is farther backward than the end 4 of the housing 1.

A shaft 13 has one end hinged to the frame 7 and another end forming a broad handle extending parallel to the hinge axis. The handle may be constituted by an elongated bar 14 tightly passing through the bore of a tubular T-piece 15 and having ends affixed to rings 16 which contact the floor simultaneously when the handle is laid down as shown in Fig. 2. The median or main part of the shaft 13 is affixed to the T-piece 15

in any suitable manner, for example, is screwed into this piece.

The hinge may be constructed in the following manner: The other end of the shaft 13 is formed by a T-piece 17 similarly shaped and affixed as the piece 15. Two clamps or shells 18 are affixed to the frame 7, for example, to its beams 8 near the rear end of the latter. A hinge axle 19 has a median part passing tightly through the piece 17 and has ends passing rotatably between the beams 8 and the shells 18.

A member 21 made of rubber or of similarly soft and resilient material is hinged to the shaft 13 in the following manner: Two arms 22 made of metal or of stiff material are positioned at opposite sides of the shaft 13 and are connected by a hinge axle 23 passing through the shaft. The member 21 is affixed to both arms 22, for example, by pressing small pins 24 extending from the arms tightly into corresponding openings of the member 21. The member forms a bridge from one arm 22 to the other and can be turned together with the arms about the hinge 23. In the position shown in Fig. 1 and, in dotted lines, in Fig. 4, the arms and the member 22 extend along the shaft 13. In the position shown in Figs. 2, 3 and, in full lines in Fig. 4, the arms and the member extend in a direction crossing the direction of the shaft, the member 22 being turned in counter-clockwise direction so far that it contacts the shaft and is stopped by the latter.

Fig. 1 shows the shaft 13 turned toward the housing 1 as far as possible. In this position the member 22 covers the opening 5 of the housing. The apparatus may be kept in this position when not used.

During the use of the vacuum cleaner, the shaft 13 is turned in counter-clockwise direction, for example, as far as shown in Fig. 1 in dotted lines. In this position, the shaft can be used for pushing or pulling the carrier.

If the dust receptacle shall be taken out of the housing 1, the frame with the cleaner is turned or tilted around the rear wheels 11 into the position shown in Fig. 2 while the shaft is laid down and the member 21 is turned into an upright direction crossing the direction of the shaft. In this position, the frame rests on its flat rear side 25 which, in Fig. 1, extends in a vertical plane. The member 21 is supported by the shaft 13 and supports the housing 1. The rear side of the frame resting on the floor in combination with the broad handle resting on the floor forms a broad base of the entire aggregate whereby the latter is well secured against toppling or turning laterally. Hence, the cap 2 and the dust receptacle can be handled easily.

I desire it understood that my invention is not confined to the particular embodiment shown and described, the same being merely illustrative, and that my invention may be carried out in other ways without departing from the spirit of my invention as it is obvious that the particular embodiment shown and described is only one of the many that may be employed to attain the objects of my invention.

Having described the nature of my invention, what I claim and desire to protect by Letters Patent is:

1. A carrier for a vacuum cleaner with an openable end, said carrier comprising a frame, wheels supporting said frame rollingly in a horizontal position, means for affixing said vacuum cleaner on top of said frame in a horizontal position where said openable end is positioned at the front of said frame, a driving shaft hinged to said frame near the rear end thereof, said frame having a rear side positioned farther backward than the rear end of said vacuum cleaner and extending in one vertical plane whereby said frame with said vacuum cleaner can be turned into a vertical position where said frame rests on said rear side while said shaft contacts the floor, and a member hingedly connected to said shaft and, in said latter position of shaft and frame, supportingly contacting the lower side of said vacuum cleaner.

2. A carrier for a vacuum cleaner with an openable end, said carrier comprising a frame, wheels supporting said frame rollingly in a horizontal position, means for affixing said vacuum cleaner on top of said frame in a horizontal position where said openable end is positioned at the front of said frame, a driving shaft hinged to said frame near the rear end thereof, said frame having a rear side positioned farther backward than the rear end of said vacuum cleaner and extending in one vertical plane whereby said frame with said vacuum cleaner can be turned into a vertical position where said frame rests on said rear side while said shaft contacts the floor, and a member hinged to said shaft and turnable between a position along said shaft and a position crossing the direction of said shaft, said member, in said crossing position, supportingly contacting the lower side of said vacuum cleaner when said frame is in said vertical position.

3. In combination, a vacuum cleaner with an openable end and with an opening in the opposite end, and a carrier for said vacuum cleaner, said carrier comprising a frame, wheels supporting said frame rollingly in a horizontal position, means for affixing said vacuum cleaner on top of said frame in a horizontal position where said openable end is positioned at the front of said frame, a driving shaft hinged to said frame near the rear end thereof, said frame having a rear side positioned farther backward than the rear end of said vacuum cleaner and extending in one vertical plane whereby said frame with said vacuum cleaner can be turned into a vertical position where said frame rests on said rear side while said shaft contacts the floor, and a member hinged to said shaft and turnable between a position along said shaft and a position crossing the direction of said shaft, said member, in said crossing position, supportingly contacting the lower side of said vacuum cleaner when said frame is in said vertical position, said member having a broad surface so large and positioned that said surface covers said opening of the vacuum cleaner when said member is positioned along said shaft and said shaft is turned toward said vacuum cleaner.

HERBERT LEVY.

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