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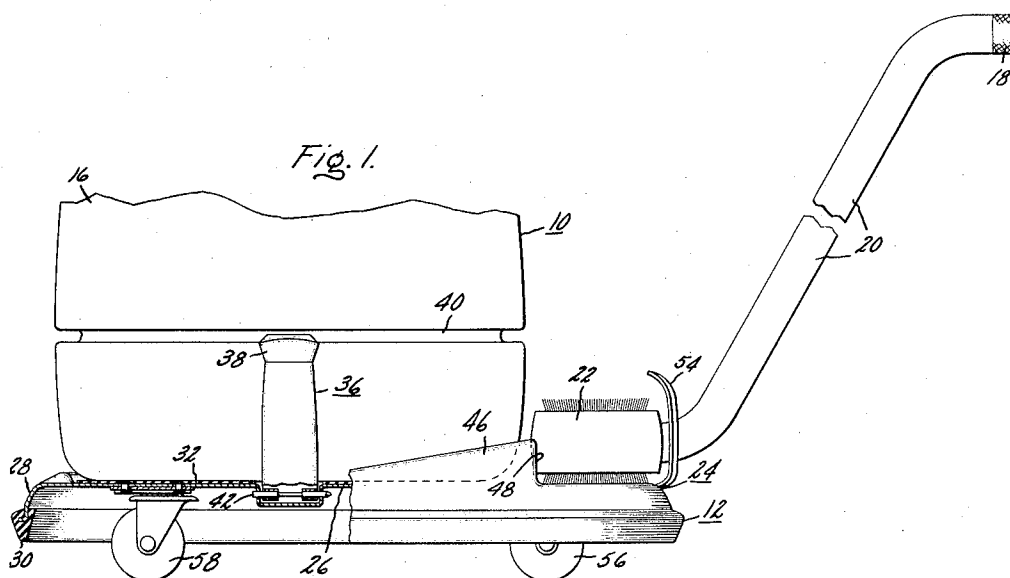
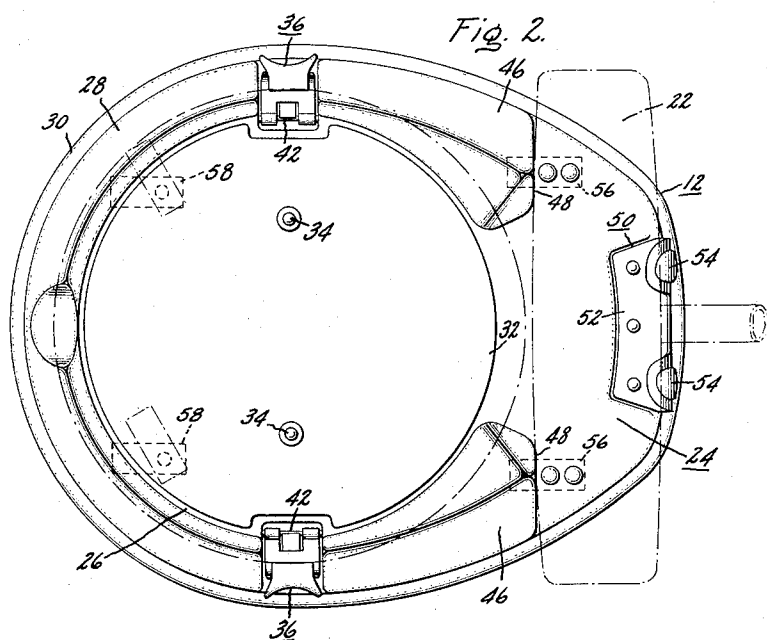
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2,862,220

DOLLY FOR VACUUM CLEANER AND THE LIKE

Filed March 28, 1955

2 Sheets-Sheet 1



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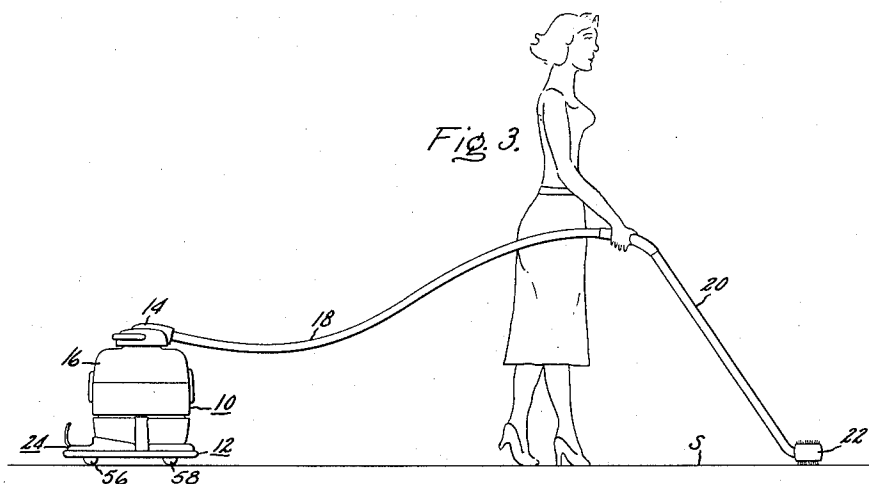
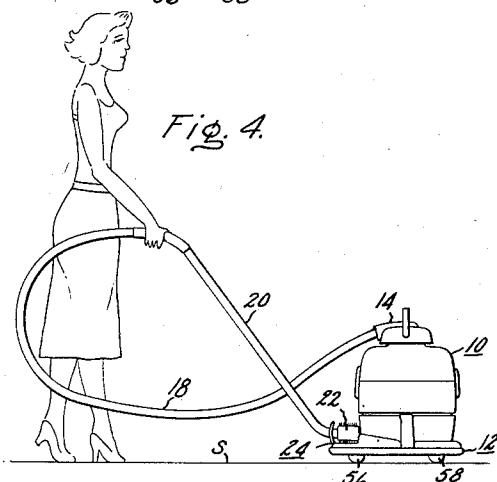
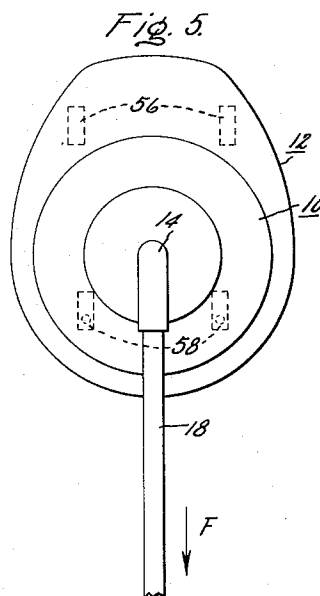
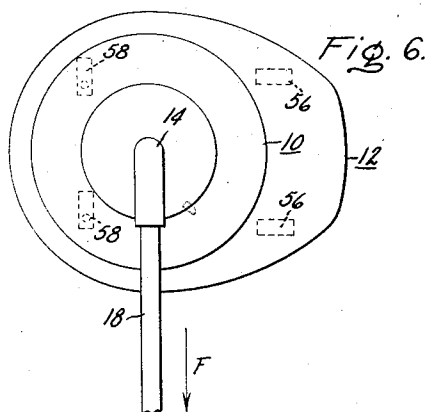
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DOLLY FOR VACUUM CLEANER AND THE LIKE

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2 Sheets-Sheet 2



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DOLLY FOR VACUUM CLEANER AND THE LIKE

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7 Claims. (Cl. 15—257)

This invention relates to a mobile wheeled support, commonly known as a dolly, and particularly to one which is adapted to carry a vacuum cleaner.

Moving objects is a chore at best, and a particularly odious one to the average housewife, who is beset by the multifarious lifting and carrying tasks that abound in the average home. Labor saving is panacea in the arts relating to household devices, and much effort and energy has been expended in recent years to simplify and ease the many operations which an average housewife performs in an average day. One domestic task, which is a recurrent one, is that of maintaining the home in a clean and sanitary state. There are many cleaning devices available to assist the housewife in this task, some being of general utility and others being designed for specific purposes. These devices vary in size, weight, mobility and storing facility. It is the fundamental goal in this general field to strive for compactness, lightness, mobility and ready storage; it is a concomitant, fundamental goal to maintain devices simple in structure and low in cost.

It is an object of this invention to provide a simple, inexpensive, compact, lightweight dolly which is particularly adapted to be used in conjunction with, and to support a vacuum cleaner, and which includes means which renders the cleaner mobile and readily stored.

It is another object of this invention to provide an improved dolly for a vacuum cleaner which permits the vacuum cleaner to be moved under the effective and accurate control of the operator.

Some of the objects of this invention are accomplished in one form by providing a wheeled dolly having means for detachably receiving a pushing implement.

Other objects of this invention are accomplished in one form by providing a wheeled dolly and mounting the wheels in a unique manner.

The above and other objects of my invention and further details of that which I believe to be novel will be clear from the following description and claims taken with the accompanying drawings wherein:

Figure 1 is a fragmentary side elevational view, with portions shown in section for clarity, of my improved dolly illustrated as supporting a vacuum cleaner.

Figure 2 is a plan view of my improved dolly with portions of the supported cleaner illustrated in phantom lines.

Figure 3 is a side elevational view showing an operator utilizing my improved dolly and a supported cleaner, the cleaner being used in a conventional manner to clean a surface.

Figure 4 is a side elevational view of an operator using my improved dolly and a supported cleaner, the cleaning tool of the cleaner being operatively associated with the dolly so as to permit pushing and steering of the assembly by the operator.

Figure 5 is a schematic plan view of my improved dolly and a supported cleaner, the parts being shown

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in position to be moved by the operator by pulling the flexible hose.

Figure 6 is a view similar to Figure 5, except that it illustrates the parts when the flexible hose is positioned at an angle to the normal line of motion of the dolly.

Referring to the drawings, and particularly to Figure 3, the operator is illustrated as using the cleaner 10 for normal cleaning. The cleaner 10 is supported on the dolly 12, and includes an inlet portion 14 which is secured to the main body 16 of the cleaner in a known manner so as to be rotatable relative thereto. The flexible hose 18 is detachably secured at one of its ends to the inlet portion 14, and secured to the rigid wand 20 at its other end. An upper portion of the wand is curved, and the operator grasps this upper portion to control the movement of the cleaning tool 22, which is connected to the free end of the wand 20, over the surface S. As is well-known in this art, the operator, by virtue of the foregoing arrangement, is able to clean a substantial area of surface by moving the cleaning tool over the surface; the area which the operator may cover while the cleaner is stationary is generally circular and defined by a radius which is the total length of the flexible hose and wand. Coverage of the circular area is permitted by rotation of the flexible hose and wand completely around the cleaner, the latter being effected by the rotatable inlet portion in a known manner.

From Figure 3 it will also be apparent that in view of the mobility of the dolly, it being provided with surface contacting wheels, the operator may increase the cleaning area by pulling on the flexible hose 18, thereby moving the location of the cleaner, which is the center about which the flexible hose and wand are rotated when cleaning the surface. The distance that the cleaner may be moved is limited by the length of an appropriate electrical cord (not shown) which is secured to the cleaner 10 and detachably connected to a conventional domestic power outlet.

Pulling the cleaner is not always desirable, primarily because the operator's control thereof is limited and, therefore, it is frequently desirable for a housewife to be able to push and steer the cleaner. This obtains particularly when it is desired to move the cleaner from room to room, and whenever it is necessary to move the cleaner around corners or obstacles. Figure 4 illustrates the manner in which the present invention permits such desired steering and pushing for it will there be seen that the cleaning tool 22 has been lifted off the surface S and inserted into a cleaning tool mounting portion 24 of the dolly, which functions as a socket for receiving the cleaning tool, and that the operator has been enabled to push and steer the dolly by virtue of this connection. After the cleaner has been moved to the point where it is needed, the operator detaches the cleaning tool 22 from the portion 24 and then utilizes it as a conventional tool in the manner illustrated in Figure 3.

By referring to Figures 1 and 2, the detailed construction of the parts will become clear. The dolly 12 comprises a formed, generally planar member 26, which may be made of sheet metal, plastic or the like, having a downwardly turned skirt 28, and being shaped in plan outline generally as shown in Figure 2. The peripheral portion of the skirt 28 is covered by a resilient bumper 30 in a conventional manner. A flat circular pad 32 is secured at the top of the member 26, as by rivets 34, and constitutes a cushion upon which the cleaner 10 may rest. At each side of the member 26 there is disposed a clamp 36, the details of which form no specific part of my invention, but which briefly comprises an upstanding arm having a latch portion 38 at its upper extremity which

is adapted to project into groove 40 in the cleaner. The arms are pivotally connected at their lower ends to the member 26 by pivot pins 42 and may be retracted during mounting or dismounting of the cleaner on the dolly.

Toward the rearward end of the member 26, there is disposed a pair of displaced portions or embossments 46, one at each side of the member, which have their forward portions curved arcuately to serve as rearward locating means for the cleaner, and their rearward sides provided with a rearwardly directed flat vertical surface 48. The rearward end of the member 26 supports a bifurcated bracket 50, which comprises the flat mounting portion 52 and a pair of spaced upstanding legs 54. From Figure 2 it will be observed that the legs 54 are aligned transversely of the member 26 and spaced from the embossments 46 so as to cooperate with the latter's surfaces 48 to form a cleaning tool receiving socket, namely, the aforementioned cleaning tool mounting portion 24. Cleaning tool 22 is shown in phantom lines in Figure 2 in the position which it occupies when it is connected to the dolly, that is, mounted in the mounting portion 24. It should be noted that in this position the tool is confined on two of its opposite sides by and between the surfaces 48 and the legs 54, and wand 20 is disposed between the upstanding legs 54. In Figure 1 the cleaning tool 22 is shown positioned in the mounting portion 24, and it will be noted that confinement of the tool is aided by the curved upper ends of legs 54.

Secured to the lower side of the member 26 are two pairs of wheels; a rearward, non-swiveling pair 56, and a forward swiveling pair 58.

The operation of the structure described is as follows:

Referring again to Figure 3, the cleaner is shown mounted on the dolly with an operator using the cleaning tool 22 to clean surface S in a conventional manner. As was previously mentioned, the cleaner and dolly can be pulled about by exerting a pulling force on the flexible hose 18. In this connection, the particular disposition and character of the wheels 56 and 58 become functionally important, for the angular relationship of the axis of the rotatable inlet portion 14 to the dolly differs, depending upon the time when the operator pulls the hose 18, and this must be provided for or the cleaner might tip over when pulled under some circumstances. Regardless of this angular relationship when the operator pulls on the hose 18 (let us assume the parts are disposed as illustrated in Figure 6), due to the fact that the forward pair of wheels 58 are swivelable and the rearward pair 56 are non-swivelable, the forward portion of the dolly will automatically turn toward the operator when the hose is pulled (toward the force F of pull as shown in Figure 6), and the swiveling wheels 58 will swivel into position whereby their axis of rotation is parallel to the axis of rotation of the non-swiveling wheels 56 (this position being shown in Figure 5). Therefore, it should be apparent that whenever the cleaner is pulled by the hose 18 it will automatically adjust itself so as to be in the position illustrated in Figure 5, wherein the line of movement of the cleaner and dolly is the same as the direction toward which the force F is exerted.

When it is desired to utilize the wand 20 as a pushing and steering implement, the operator lifts the cleaning tool 22 off the surface S and inserts it into the mounting portion 24 of the dolly into the position shown in Figures 1, 2 and 4. It should be noted that whenever the cleaning tool is mounted in the mounting 24 and the cleaner and dolly pushed by pushing on wand 20, that the wheels 56 are always at the rearward end of the dolly. It will thus be seen that regardless of whether the cleaner and dolly are being pulled by the hose 18 or pushed by the wand 20, that the wheels 56 are always at the rearward end of the dolly relative to the direction of movement. The significance of the latter is that it has been found in practice that when all four wheels are swivelable and the dolly is either pulled or pushed, the cleaner and dolly

have a tendency to wiggle or waddle across the surface, the wheels oscillating rapidly during this movement. By virtue of mounting the rearward pair of wheels 56 non-swivelably and so associating the cleaner with the dolly so that the non-swiveling wheels are always at the rearward end of the dolly relative to the line of movement of the dolly and cleaner, the objectionable wiggling or waddling is eliminated.

In view of the foregoing, it will be seen that a dolly has been provided which may be used as an accessory to an existing canister type cleaner, and which is particularly useful when used in conjunction with a canister cleaner having a swivel inlet portion. The dolly provided by my invention is compact, lightweight, mobile, simple in structure, and inexpensive to manufacture. The improved dolly permits moving of the cleaner within a room simply by pulling on the flexible hose, or if better control of the movement is desired, as when the cleaner is moved from room to room, this may be accomplished simply by placing the cleaning tool in the mounting portion of the dolly and pushing and steering it about. Lastly, when it is desired to store the cleaner in a closet or the like, this may be done without dismantling the cleaner. The flexible hose, wand and cleaning tool, may remain in their assembled relationship, it being solely necessary to push the cleaner into a closet, and prop the wand and looped hose against a wall of the closet. By virtue of this arrangement, dismantling of the cleaner parts is avoided prior to storing, and assembling the parts prior to re-use is avoided, for the cleaner is stored in condition ready for use.

As will be evident from the foregoing description, certain aspects of my invention are not limited to the particular details of construction of the example illustrated, and I contemplate that various and other modifications will occur to those skilled in the art. For example, the forward swiveling pair of wheels may be replaced by a single swiveling wheel, or the wheels may be disposed in reverse positions, i. e., the swiveling pair or single swiveling wheel may be mounted on the rear of the dolly and the non-swiveling pair on the forward portion of the dolly. It is, therefore, my intention that the appended claims will cover such modifications and applications as do not depart from the true spirit and scope of my invention.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A dolly for supporting a vacuum cleaner having a rigid wand and a cleaning tool secured at an end of the wand, said dolly comprising means for supporting the cleaner, means for permitting said dolly to move over a supporting surface, and means for temporarily detachably receiving the cleaning tool, said cleaning tool receiving means comprising a socket having portions arranged to confine the cleaning tool on two opposite sides thereof, whereby said dolly may be pushed and steered over the surface by the wand, said movement permitting means being substantially in contact with the surface at all times during movement of said dolly over the surface.

2. A device as defined in claim 1 wherein said cleaning tool receiving means comprises a portion integral with and displaced from said supporting means.

3. A dolly for supporting a vacuum cleaner having a rigid wand and a cleaning tool secured at an end of the wand, said dolly comprising a portion for supporting the cleaner, two pairs of wheels for permitting movement of said dolly over a surface, means on the rearward end of said dolly for temporarily detachably receiving the cleaning tool to thereby permit pushing and steering of said dolly by the wand, said cleaning tool receiving means comprising a socket having portions arranged to confine the cleaning tool on two opposite sides thereof, one pair of wheels being mounted on the forward end of said dolly for swiveling movement, and the other pair of wheels being mounted on the rearward end of said dolly and hav-

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ing its axis of rotation fixed and transverse of said dolly.

4. A device as defined in claim 3 wherein the cleaner includes a rotatable portion which has a flexible hose connected thereto, and the wand is connected to the hose.

5. A dolly for supporting a vacuum cleaner having a rigid wand and a cleaning tool secured at an end of the wand, said dolly comprising means for supporting the cleaner, means for permitting said dolly to move over a supporting surface, and means for temporarily detachably receiving the cleaning tool, whereby said dolly may be pushed and steered over the surface by the wand, said movement permitting means being substantially in contact with the surface at all times during movement of said dolly over the surface, said cleaning tool receiving means comprising a bifurcated portion that is arranged to aid in confining the cleaning tool in said cleaning tool receiving means to facilitate pushing of said dolly, said bifurcated portion also being arranged to receive a portion of the wand to thereby facilitate steering of said dolly.

6. A dolly for supporting a vacuum cleaner having a rigid wand and a cleaning tool secured at an end of the wand, said dolly comprising means for supporting the cleaner, means for permitting said dolly to move over a supporting surface, and means for temporarily detachably receiving the cleaning tool, whereby said dolly may be pushed and steered over the surface by the wand, said movement permitting means being substantially in contact with the surface at all times during movement of said dolly over the surface, said cleaning tool receiving means comprising a portion integral with and displaced from said supporting means and a bifurcated portion, said displaced portion and said bifurcated portion arranged to confine the cleaning tool to thereby facilitate pushing of said dolly, and said bifurcated portion arranged to receive a

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portion of the wand to thereby facilitate steering of said dolly.

7. A dolly for supporting a vacuum cleaner having a rigid wand and a cleaning tool secured at an end of the wand, said dolly comprising a portion for supporting the cleaner, two pairs of wheels for permitting movement of said dolly over a surface, means on the rearward end of said dolly for temporarily detachably receiving the cleaning tool to thereby permit pushing and steering of said dolly, said cleaning tool receiving means comprising a portion integral with and displaced from said supporting portion and a bifurcated portion, said displaced portion and said bifurcated portion arranged for operative co-operation with the cleaning tool and the wand to facilitate pushing and steering of said dolly, one pair of wheels being mounted on the forward end of said dolly for swivelling movement, and the other pair of wheels being mounted on the rearward end of said dolly and having its axis of rotation fixed and transverse of said dolly.

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