

July 4, 1967

P. E. AMOS

3,328,826

COMBINATION VACUUM CLEANER AND HASOCK

Filed June 25, 1965

3 Sheets-Sheet 2

FIG. 5.

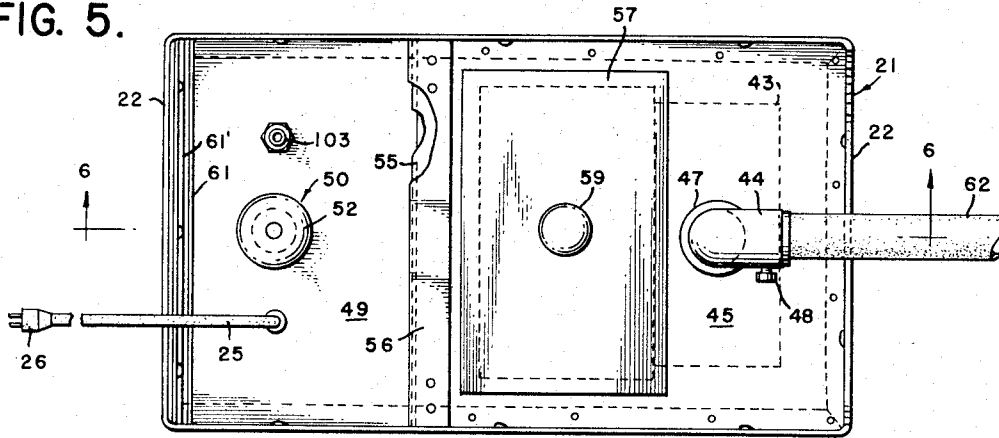


FIG. 6.

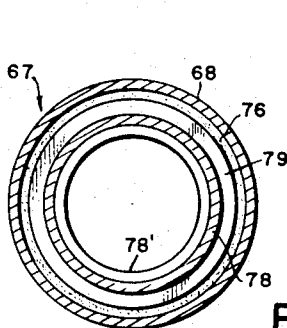
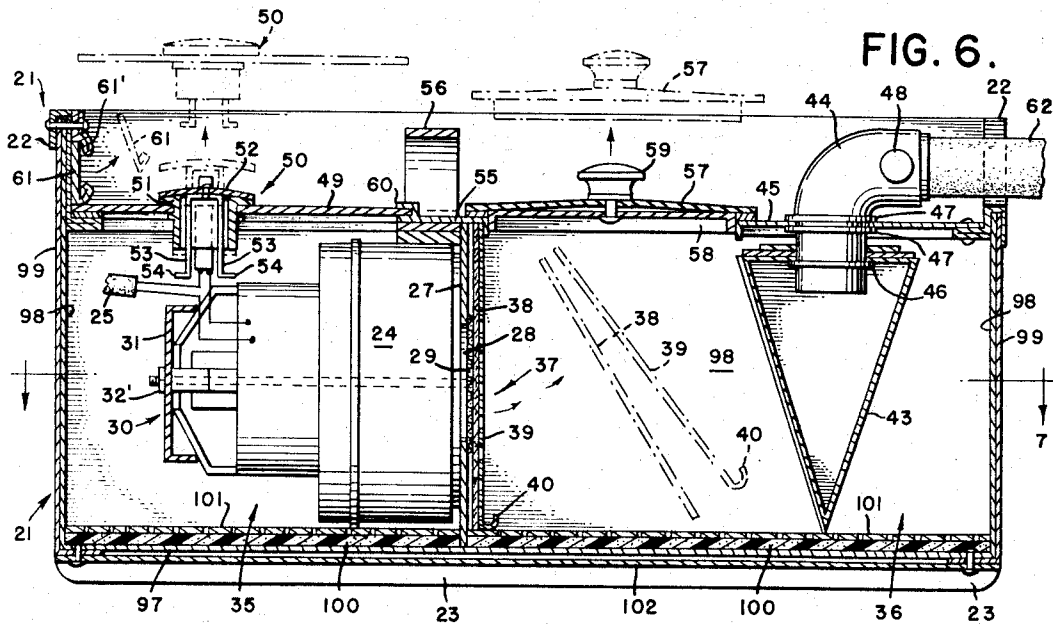


FIG. 10.

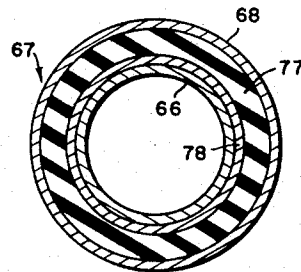


FIG. 11.

INVENTOR
PAUL E. AMOS

BY *Garvey & Garvey*
ATTORNEYS

July 4, 1967

P. E. AMOS

3,328,826

COMBINATION VACUUM CLEANER AND HASSECK

Filed June 25, 1965

3 Sheets-Sheet 3

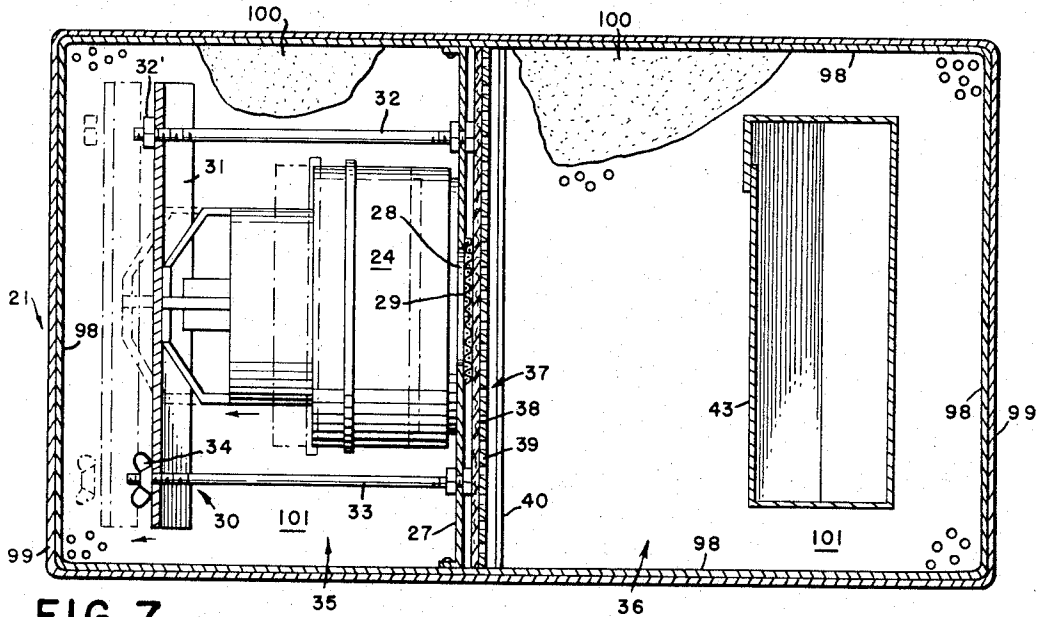


FIG. 7.

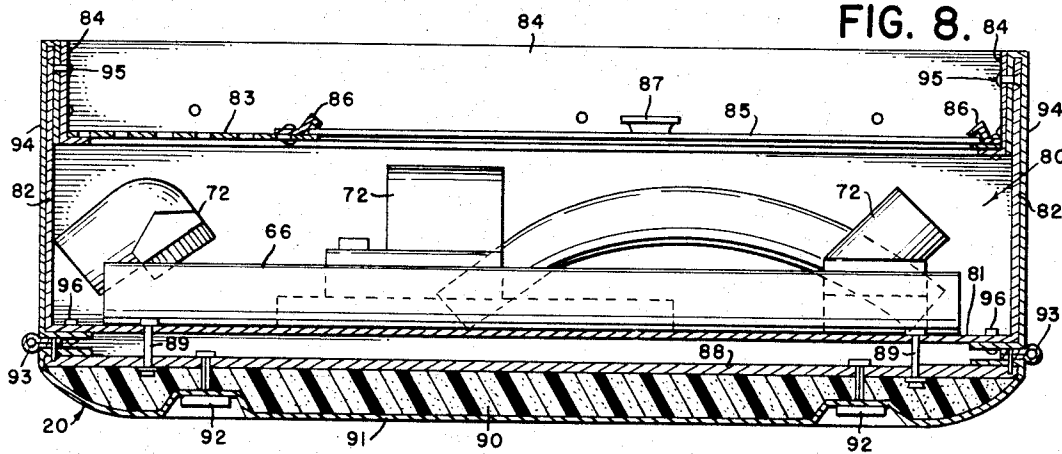


FIG. 8.

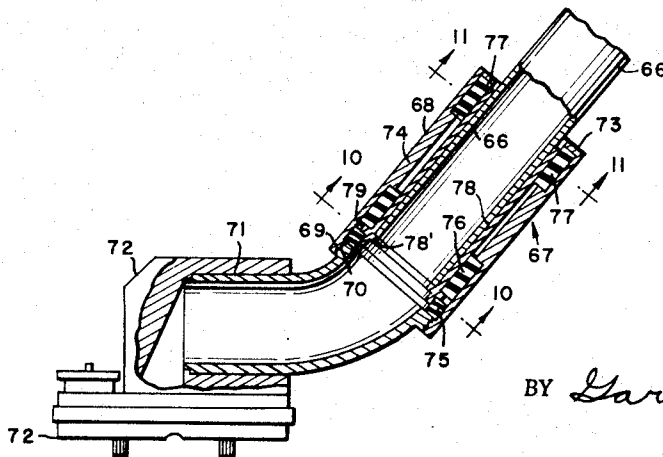


FIG. 9.

INVENTOR
PAUL E. AMOS

BY *Garvey & Garvey*
ATTORNEYS

1

2

COMBINATION VACUUM CLEANER AND HASOCK

Paul E. Amos, 1132 Pennsylvania Ave.,
McKeesport, Pa. 15131

Filed June 25, 1965, Ser. No. 466,943

1 Claim. (Cl. 15—323)

The present invention is a combination vacuum cleaner and hasock in which the hasock is the housing of the vacuum cleaner.

Objects of the invention are to include in the combination, all of the operating parts of the vacuum cleaner, such as motor, filter, dust bag, etc., in addition to providing space for the storage of the vacuum hose and other appurtenances when the cleaner is not in use; to provide further in this combination, a useful article of furniture, such as a hasock, of suitable size and contour; to provide still further in this combination, a vacuum cleaner, the parts of which are completely concealed, when the cleaner is not in use, but readily accessible and expeditiously connected for engagement with a source of power to suck the dirt through the vacuum hose and deposit it directly into a disposable dust bag; to additionally provide a vacuum cleaner hose which is equipped with a vibration and sound dampener at the juncture of the vacuum hose with the vacuum brush; to provide a carrying handle or strap secured to a fixed part of the vacuum cleaner within the confines of the bottom part of the hasock, in which the vacuum cleaner is mounted; and to provide a hasock, the bottom cleaner-carrying part of which is provided with runners for facilitating transportation thereof up a flight of stairs in sled-like fashion.

Other objects of the invention are to provide the combination already referred to, wherein the hasock, exteriorly resembles a conventional hasock comprising a top and bottom which are slidably engageable, the bottom part having mounted therein, a complete vacuum cleaner entity with the exception of the suction hose and brushes, said bottom part being partitioned to provide two communicating compartments, in one of which is mounted an electric motor and in the other, a dust bag into which the hose of the cleaner empties; to additionally provide an air current which passes through a filtering unit, mounted over a second opening in the partition between the compartments, before being forced across the electric motor, for ultimate venting through the top of the motor compartment; to provide a retaining assembly for the motor, which may be removed, without the use of tools, when it is desired to remove the motor; to provide in the hasock top a storage space to accommodate the brushes and other appurtenances, the top being turned upside down to permit insertion of the brushes and appurtenances to be stored when not in use, in said storage space, the latter being closed by a cover plate equipped with an access door which is closed, when the hasock is used as an article of furniture; and to provide a combined hasock and vacuum cleaner which is compact and of a weight which permits it to be conveniently carried from room to room when the vacuum cleaner is in use.

Other objects of the invention will be manifest from the following description of the present preferred form of the invention, taken in connection with the accompanying drawings, wherein:

FIG. 1 is a perspective view of the invention when used as a hasock;

FIG. 2 is a perspective view of the invention showing the top elevated from the bottom to disclose the inside of the top of the hasock in which appurtenances of the vacuum cleaner are stored when the vacuum cleaner is not in use, the bottom of the hasock as illustrated, shows

the runners on the bottom part of the hasock employed in ascending stairs when the invention is used as a vacuum cleaner;

FIG. 3 is a fragmentary plan view of the hasock top in inverted position showing the access door in the hasock top and the vacuum cleaner appurtenances between the access door and the top of the hasock as illustrated in vertical section in FIG. 8;

FIG. 4 is a plan view of the bottom part of the hasock showing the vacuum suction hose stored therein, together with the electric cable adapted for engagement with an electrical outlet;

FIG. 5 is a plan view of the bottom part of the hasock with the outlet end of the vacuum hose mounted therein and showing the electric cable extending from one end of the bottom part for engagement with an electrical outlet;

FIG. 6 is a vertical sectional view taken on the lines 6—6 of FIG. 5, looking in the direction of the arrows, showing to advantage the electric motor which powers the vacuum cleaner mounted in one compartment of the bottom, the other compartment carrying a dust bag into which the vacuum hose empties, together with the filter assembly mounted in the partition between the compartments;

FIG. 7 is a horizontal sectional view taken on the lines 7—7 of FIG. 6, looking in the direction of the arrows, showing the electric motor in top plan and the dust bag in horizontal section;

FIG. 8 is a sectional view taken on the lines 8—8 of FIG. 2, looking in the direction of the arrows and showing the vacuum hose and brush stored in the top of the hasock when the vacuum cleaner is not in use;

FIG. 9 is a fragmentary sectional view taken through the outlet end of the vacuum hose and illustrating the manner of mounting the noise and vibration dampener unit attached to the hose in close proximity to one of the cleaning brushes of the vacuum cleaner;

FIG. 10 is a vertical sectional view taken on the lines 10—10 of FIG. 9, looking in the direction of the arrows; and

FIG. 11 is a vertical sectional view taken on the lines 11—11 of FIG. 9, looking in the direction of the arrows.

The combination vacuum cleaner and hasock of this invention is advantageously illustrated, when used as a hasock, in FIG. 1. The hasock is composed of two inter-fitting boxlike parts, the top 20 and the bottom 21, which are slidably engageable in a manner which will be obvious from a consideration of FIG. 2. The bottom 21 is equipped with a flange 22 along the upper edge thereof, to limit the downward sliding movement of the top 20 on the bottom 21. The bottom 21 carries a pair of runners 23 which are adapted to provide facile movement of the vacuum cleaner over a floor area or up a flight of stairs, by pulling one end of the vacuum hose, the runners 23 being of a length to span the distance between successive steps of the stairs so that the cleaner may be pulled up the stairs in a single pass of the vacuum cleaner from the bottom of the stairs to the top.

The bottom 21 carries the essential parts of the vacuum cleaner including a motor 24 and an electrical cable 25, one end 26 of which is adapted to be plugged into an electrical outlet in a conventional manner. The bottom 21 is divided into two compartments by a partition 27, which is provided with an opening 28 to allow air passage in a manner hereinafter described. The opening 28 is covered by a screen 29. The inner end of the motor 24 engages the partition 27 and is held against the partition by a motor-retaining assembly, generally designated 30. As advantageously illustrated in FIG. 7, the assembly 30 comprises a clamping plate 31 which holds the motor against the partition through the medium of clamping

3

bolts 32 and 33 respectively which are fixedly mounted in any suitable manner to partition 27. Bolt 33 is threadedly engaged by a wing nut 34 which may be backed off by hand when it is desired to remove pressure from the plate permitting it to be moved as shown by the dotted lines in FIG. 7 so that access may be gained to the motor for repair or replacement. A hex nut or the like 32' may be threadedly engaged with the free terminal of bolt 32.

As indicated above, bottom 21 of the hassock is divided into two compartments which are designated 35 and 36, the compartment 35 housing the motor as illustrated in FIG. 6. The compartment 36 has mounted therein, a filtering assembly generally designated 37 and including a filtering cloth 38 which may be periodically removed and cleaned, the cloth being held over the screened opening of partition 27 by a perforated clamping plate 39. The upper end of the plate is slidably mounted beneath a flanged part of the top of the compartment 35 to hold the top edge of filtering cloth 38 in place as illustrated in FIG. 6, while the lower part of the plate is bent outwardly and upwardly to provide a bar 40, readily engageable by the fingers to facilitate insertion and removal of the plate.

Compartment 36 also carries a disposable dust bag 43 having an upper neck portion adapted for detachable engagement with the lower terminal of a tubular elbow 44 which passes through a stationary top wall 45 of compartment 36. An annulus 46 holds dust bag 43 in operative position. In order to secure elbow 44 in position and permit swivel movement of the latter, the elbow is provided near the bend thereof with a pair of annuli 47 which are spaced apart a distance substantially equal to the thickness of top wall 45. As shown in FIG. 6, annuli 47 engage the upper and lower faces of top wall 45 to permit free rotation of the elbow. A setscrew 48 is located near the upper free terminal of the elbow for purposes to be hereinafter more fully set out. Refuse sucked in through elbow 44 is deposited in bag 43 and the air flowing therethrough passes through filtering assembly 37, over and across motor 24, and through a vent opening in a removable top wall 49 of compartment 35 normally covered by a vent cap 50. Cap 50 includes a stationary tubular body portion 51 fixed in the vent opening in any suitable manner. The opening of body portion 51 is normally covered by a vertically movable vent cover 52. Spaced legs 53 depend from cover 52, the lower terminals of which are bent outwardly to provide flange or abutment fingers 54 which are engageable with the lower terminal of tubular body portion 51 to limit the upward movement of cover 52.

A stationary reinforced supporting strip 55 extends transversely of, and is secured to, bottom 21, to the upper face of which strip is secured a carrying strap 56 for transporting bottom 21 by hand from one place to the other. As shown in FIG. 6, an opening is provided in the top of compartment 36 to permit access to filtering assembly 37 and dust bag 43. The opening is normally covered by a removable cap or plate 57 having depending flanges 58 extending into the opening for proper positioning of the cap. A knob 59 facilitates removal of the cap.

In order to permit ready removal of top wall 49 of compartment 35, a longitudinal edge of strip 55 is provided with a spaced flange member 60 leaving a recess adapted to receive an edge of removable top 49. The opposite edge of wall 49 is normally held in place by a retainer bar 61 which is forced against the side wall of bottom 21. The upper edge of bar 61 is slipped between a flange 61' fixed to the side wall thereof to exert downward pressure on top wall 49. Removal of cover 49 and vent cap 50 is effected by first removing retainer bar 61 in the manner illustrated in phantom lines in FIG. 6.

A vacuum hose is adapted for detachable engagement with elbow 44 of the cleaner and passes through a complementary opening in an end wall of compartment 36 for use. As shown in FIG. 4, the hose includes a flexible body

4

portion 62, one end of which is fitted with a rigid terminal portion 63, preferably of metal, having an annular peripheral recess 64 intermediate its length. Terminal portion 63 is detachably held within elbow 44 by engagement of setscrew 48 in annular recess 64. The opposite terminal of flexible body portion 63 is also provided with a rigid terminal 65 which is engaged with a rigid wand 66. The free terminal of wand 66 is in turn connected to a combination noise and vibration assembly 67.

As shown in FIG. 9, assembly 67 includes an outer tubular housing 68, the inner periphery of which is internally thickened and threaded at one end, as indicated at 69, for engagement with external threads 70 of an elbow 71 of reduced diameter and of any suitable angle, the free terminal of which elbow complements, and is adapted for slidable engagement in, the outlet opening of a vacuum brush 72. For carrying out the objects of assembly 67, the terminal of housing 68, opposite threaded terminal 69, is provided with an inwardly directed annular flange 73 in spaced relation to which is an intermediate thickened peripheral portion 74. Spaced internal elements formed by threaded portions 69 and 70, flange 73 and peripheral portion 74 form annular grooves or channels along the inner periphery of housing 68 adapted to receive dampening rings 75, 76 and 77, made of rubber or other suitable vibration and sound absorbent material. The inner periphery of rings 75, 76, and 77 extend inwardly beyond housing peripheral portion 74, ring 75 being in contiguous relationship with threaded portions 69 and 70, and ring 77 being engaged with annular flange 73. A tubular member 78 is adapted for positioning coaxially within, and in spaced relation to, outer housing 68, the outer periphery of which terminal is in engagement with the inner periphery of spaced rings 75, 76 and 77. An annular extension 79 of member 78 is located between rings 75 and 76 to prevent casual axial displacement of member 78 with respect to outer housing 68. By this arrangement of parts, rings 75, 76 and 77 dampen noise and vibration between the vacuum hose and brush and is of particular use where beater-type brushes are employed. The inner periphery of tubular member 78 is provided with an annular extension 78' which serves as an abutment or stop to limit inward movement of wand 66 which is inserted therein.

Top 20 is provided with an accessory compartment 80, formed by a bottom wall 81 and side and end walls 82 which are preferably of plywood construction. The compartment is closed by means of an upper wall 83 spaced from the upper limit of side and end walls 82 as viewed in FIG. 8, the upper wall preferably being of metallic grille-work construction. Wall 83 is supported by peripheral angular members 84 located proximate side and end walls 82. Access to storage compartment 80 is effected by means of a sliding door 85 covering an opening in wall 83, which door is operable between guides 86. A knob 87 facilitates sliding movement of the door.

In spaced parallel relation to bottom wall 81 is a second plywood wall 88, the walls being fixedly secured together by rivets or the like 89. A foam cushion 90 is positioned on the outer face of wall 88 and upholstery material 91 is pulled tightly thereover and stapled to the underface of wall 88. Buttons 92 are installed by piercing cushion 90, the shanks of which buttons extend through openings in wall 88 for fixing the buttons thereto. Welt 93 is also stapled to wall 88. Upholstery material 94 is applied to the side and end walls 82 by sewing the same into a skirt which is stretched over the upper terminals of side and end walls 82, the upper portion of the material being trained between angular members 84 which serve as a retainer frame, and side and end walls 82. Securement of the material in place is then effected by means of rivets 95 or other suitable means. The lower end of the upholstery skirt is then pulled downwardly and held against the underface of wall 81 by means 96. In manufacture, this latter

5

step is effected prior to securing of walls 81 and 88 together by means 89.

Bottom 21 is made in the same basic manner as top 20 and includes bottom wall 97 and side and end walls 98 preferably of plywood construction. Upholstery material 99 is applied to the side and end walls in similar fashion to that described above. It will also be noted from FIG. 6, that foam pads 100 are secured to the upper face of bottom wall 97 on which foam cushion is superimposed a grille work or the like 101. A panel 102, beneath bottom wall 97 conceals exterior rivets employed in upholstering bottom 21.

By upholstering the combination vacuum cleaner and hassock in the manner above described, the present device is completely undistinguishable as a cleaner when used as an article of furniture, and requires no tools for converting the hassock for use as a cleaner.

When the vacuum cleaner is to be used, power is supplied by motor 24 connected by an electric cable 25 having a plug end 26 which is inserted in an electric outlet. 103 designates an on-off switch in circuit with the motor for controlling operation thereof. The operation of the vacuum cleaner is substantially the same as the action of standard vacuum cleaners, the suction being created in the hose, and the elbow 71 of assembly 67 being selectively engageable with several types of brushes 72. After dirt is sucked through the hose, it empties into dust bag 43, which may be readily removed and replaced in a manner heretofore described. When the vacuum cleaner is to be used on an upper floor, accessible by steps, the preferable manner of transporting the cleaner is to pull the vacuum hose with bottom 21 attached, so that runners 23 engage and span successive steps and the cleaner moves upwardly in sled-like fashion. In vacuuming the steps, the cleaner may be stopped at any position on the steps by resting the aft end thereof on a step surface in detent fashion.

While a preferred embodiment of the invention has been described, it is nevertheless to be understood that various changes may be made therein, without departing from the spirit of the appended claim.

I claim:

A combined vacuum cleaner and hassock comprising a bottom and top of box-like construction slidably connected together, said bottom including top, bottom and side walls, a partition extending centrally of the bottom, to divide the latter into two compartments, an opening in said partition to allow air passage from one compartment to another, a filtering unit extending across the partition opening, an elbow extending through, and swivelly mounted in, the top wall of one of said compartments, a dust bag removably attached to the lower terminal of said elbow, a removable plate in the top wall of said bottom to permit access to said dust bag, a source of suction power mounted in the other of said compartments, a retaining assembly for the source of suction

6

power, the assembly including hand operable securing means for ready access to the suction power source, means for permitting removal of that portion of said top wall above the source of suction power, a vent opening in said removable top wall, a vent cap normally covering vent opening, means for permitting limited movement of said vent cap to permit escape of air through the air opening upon actuation of said suction power source, a carrying strap extending transversely of said bottom and engaged with the top wall thereof for permitting movement of said bottom from place to place, a flexible hose, means for detachably engaging one end of said hose to said elbow, a rigid wand engaged with the free terminal of said hose, a vibration assembly engaged with the free terminal of said wand, said vibration assembly including an outer tubular housing, a tubular member positioned within and in spaced relation to said outer housing, vibration and sound-absorbent means interposed between said tubular member and said outer tubular housing, spaced resilient rings interposed between said tubular member and said outer tubular housing, a vacuum brush, means for engaging said vacuum brush with a terminal of said wand, runners fixed to the underface of said bottom, to effect slide-like movement thereof, by pulling on the free end of the flexible hose, the top of the vacuum cleaner and hassock including a box-like unit including bottom, top and side walls forming an accessory compartment, or means in said top wall for permitting entry to said accessory compartment, and upholstery material fixed to said bottom and top for giving the same the appearance of an article of furniture.

References Cited

UNITED STATES PATENTS

986,678	3/1911	Bordo.	
2,030,133	2/1936	Baxter	55—357
2,177,588	10/1939	Genell.	
2,203,088	6/1940	Hansson.	
2,260,237	10/1941	Stahl	55—276
2,381,426	8/1945	Allen et al.	
2,400,558	5/1946	Lindberg	55—472 X
2,544,405	3/1951	Weir	15—323 X
2,699,838	1/1955	Holm-Hansen	55—472 X
2,776,726	1/1957	Brace	55—373 X
2,865,465	12/1958	Lachowicz.	
2,929,462	3/1960	Nowak	15—326 X
3,002,215	10/1961	MacFarland.	
3,232,030	2/1966	Owenmark	55—470 X

FOREIGN PATENTS

341,743	1/1931	Great Britain.
468,720	7/1937	Great Britain.

HARRY B. THORNTON, *Primary Examiner.*

D. TALBERT, *Assistant Examiner.*