Oct. 17, 1933. M. J. SKIDELSKY 1,930,778

VACUUM CLOTHES BRUSH

Original Filed July 25, 1929 4 Sheets-Sheet 1

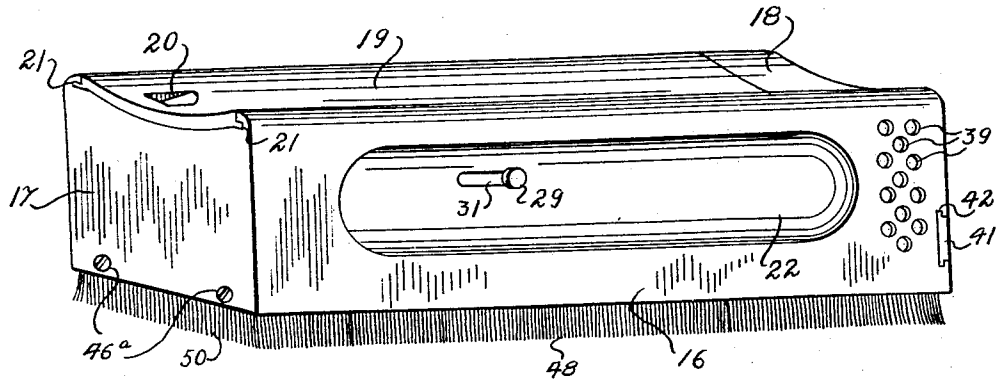


Fig. 1.

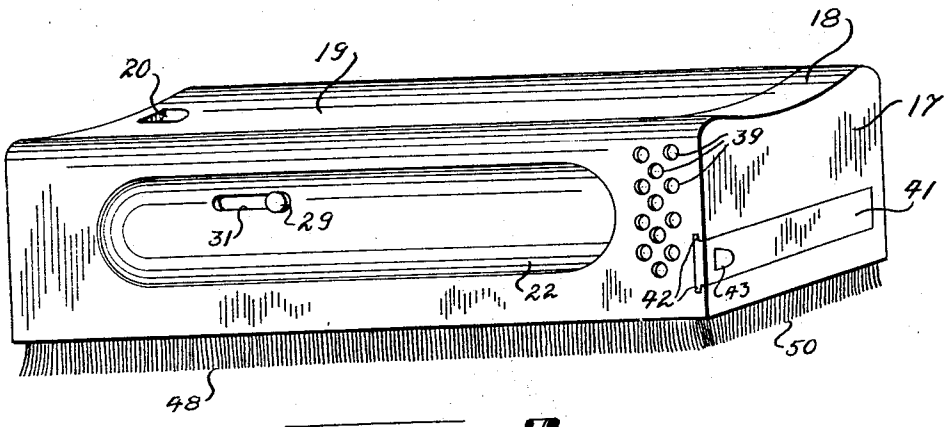


Fig. 2.

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VACUUM CLOTHES BRUSH

Original Filed July 25, 1929 4 Sheets-Sheet 2

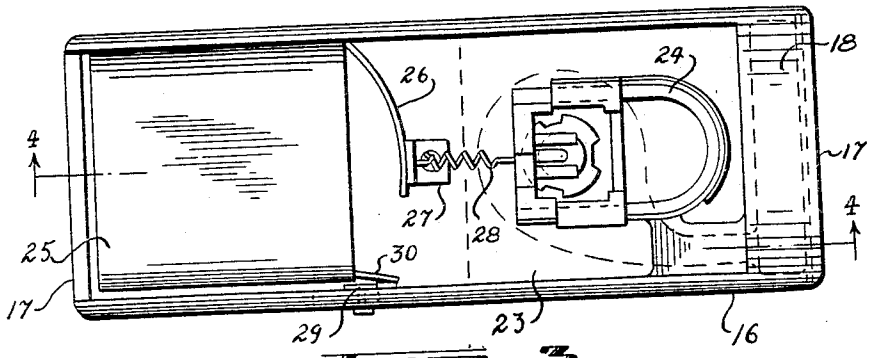


Fig. 3.

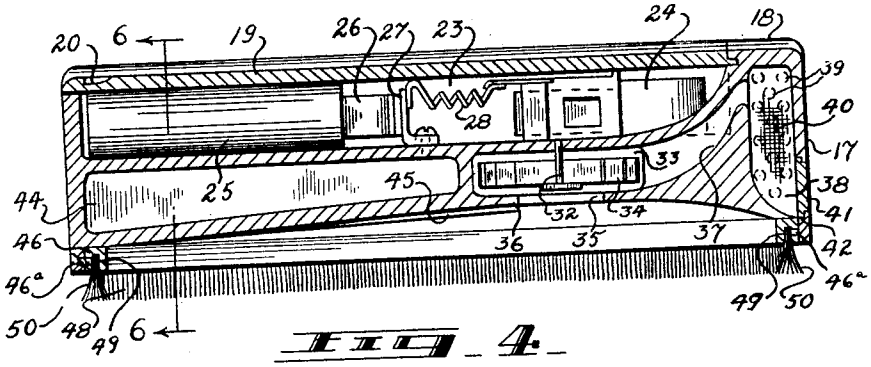


Fig. 4.

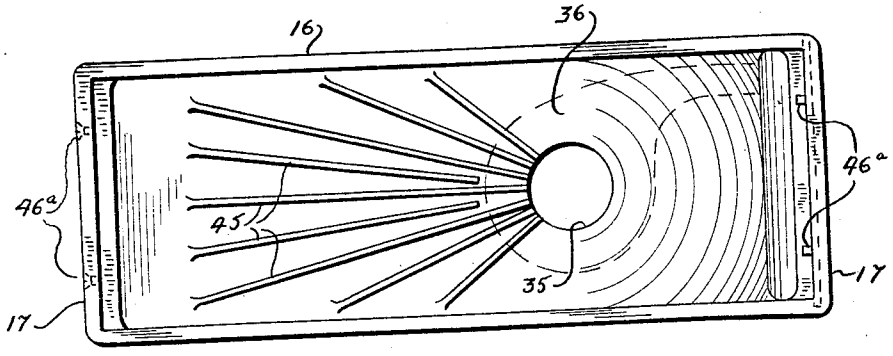


Fig. 5.

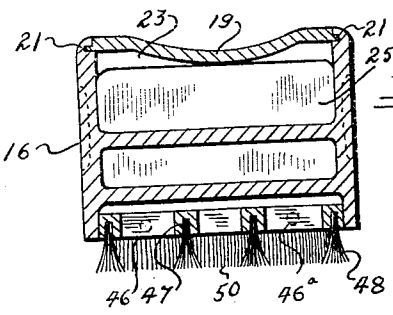


Fig. 6.

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VACUUM CLOTHES BRUSH

Original Filed July 25, 1929 4 Sheets-Sheet 3

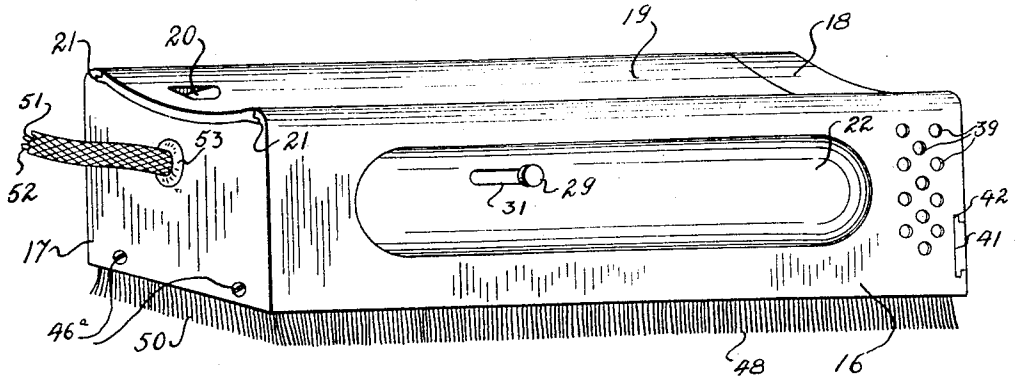


Fig. 7.

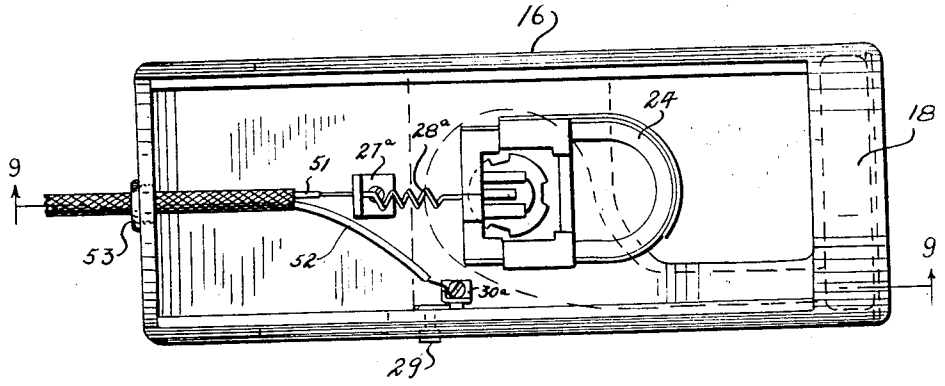


Fig. 6.

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VACUUM CLOTHES BRUSH

Original Filed July 25, 1929 4 Sheets-Sheet 4

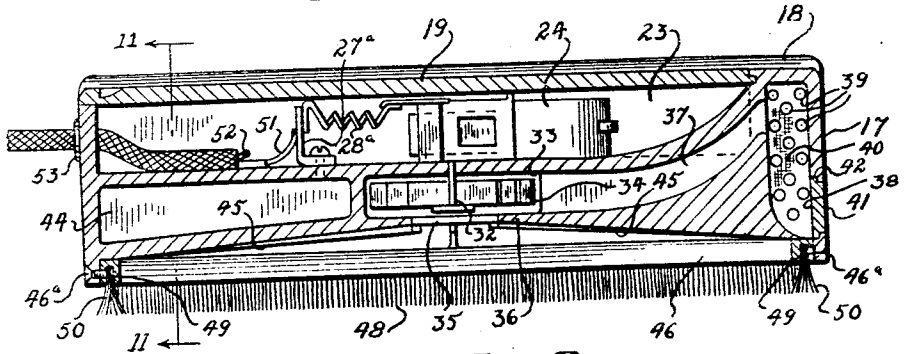


FIG. 9.

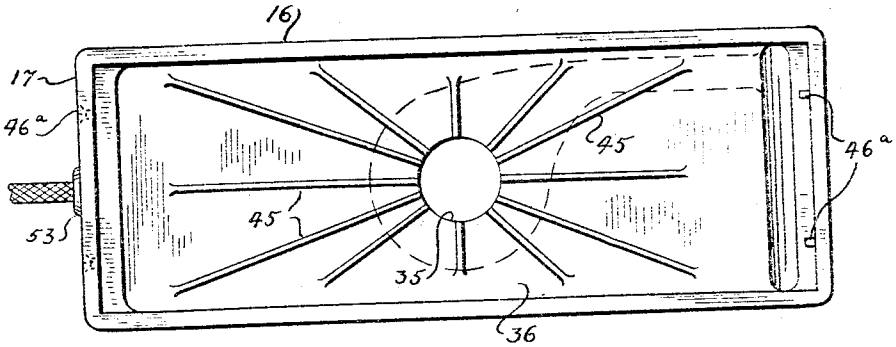


FIG. 10.

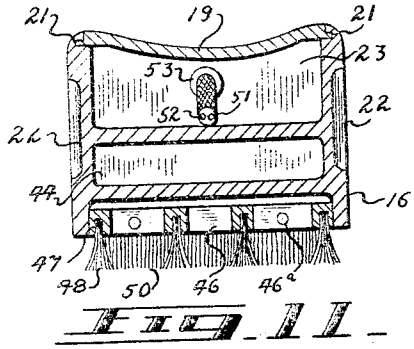


FIG. 11.

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UNITED STATES PATENT OFFICE

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VACUUM CLOTHES BRUSH

Michael J. Skidelsky, Ottawa, Ontario, Canada

Application July 25, 1929, Serial No. 380,949
Renewed March 8, 1933

3 Claims. (Cl. 15—7)

This present invention relates to certain new and useful improvements in a vacuum clothes brush.

The primary object of the invention resides in the provision of a vacuum clothes brush which is highly efficient in operation as well as simple and inexpensive in construction.

Another object of the invention resides in the provision of a vacuum clothes brush which will efficiently draw the dust and dirt from clothes and the like when passed over the same.

Another object of the invention resides in the provision of a vacuum clothes brush of the character stated which is of convenient and compact form and light in weight so that it may be conveniently handled and efficiently employed for brushing clothes and the like to thoroughly cleanse the same by withdrawing all dirt therefrom by means of vacuum suction.

The invention has for a further object the provision of a vacuum clothes brush of the character stated which will serve to draw dust and dirt out of clothing and the like as well as brushing the same as the brush is moved over the surface, thus thoroughly cleaning the fabric and removing dust and other foreign matter from between the threads of the surface.

The invention has for a still further object the provision of a vacuum clothes brush of the character stated which will thoroughly clean clothing and other articles of fabric without requiring a scratching or scraping of the surface or digging out of the dust and other foreign matter from between the threads, as required by the use of the ordinary clothes brushes and the like, now in general use.

The invention has for a still further object the provision of a vacuum clothes brush of the character stated which is portable and formed so that the operative parts are enclosed in the body of the brush so as to eliminate possibility of the operative parts coming into contact with the surface over which the brush is operated.

The invention has for a still further object the provision of a vacuum clothes brush of the character stated which is electrically operated and requires only the minimum power for efficient operation.

The invention has for a still further object the provision of a vacuum clothes brush of the character stated in which the entire body is utilized to the best advantage and the series of brushing members firmly held by the brush body.

The invention has for a still further object the provision of a vacuum clothes brush of the character stated which may be operated either by a source of electrical energy from within the body of the brush, such as an electric battery or by a source of electrical energy, outside of the brush structure and to which the same is detachably connected.

The invention has for a still further object the provision of a vacuum clothes brush of the character stated which may be manufactured at small cost, and retailed at a popular price with good profit, thus providing a commercially attractive proposition.

To the accomplishment of these and related objects as shall become apparent as the description proceeds, my invention resides in the construction, combination and arrangement of parts as shall be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the claims hereunto appended.

The invention will be best understood and can be more clearly described when reference is had to the drawings forming a part of this disclosure, wherein like characters indicate like parts throughout the several views.

In the drawings:—

Figure 1 is a perspective of the improved vacuum clothes brush;

Figure 2 is a view similar to Figure 1, looking at the vacuum clothes brush from a different angle and disclosing the opposite end thereof;

Figure 3 is a plan view of the vacuum clothes brush with the slide cover for the body removed;

Figure 4 is a longitudinal vertical section, taken substantially on the plane of line 4—4 of Figure 3, looking in the direction indicated by the arrows;

Figure 5 is a bottom plan view of the vacuum clothes brush;

Figure 6 is a transverse vertical section, taken substantially on the plane of line 6—6 of Figure 4, looking in the direction indicated by the arrows;

Figure 7 is a perspective view of the improved vacuum clothes brush showing a slightly modified form thereof;

Figure 8 is a top plan view of the brush as shown in Figure 7, with the slide cover for the body removed;

Figure 9 is a longitudinal vertical section through the improved vacuum clothes brush, taken substantially on the plane of line 9—9 of

Figure 8, looking in the direction indicated by the arrows;

Figure 10 is a bottom plan view of the modified form of clothes brush, shown in Figures 7, 8 and 9; and

Figure 11 is a transverse vertical section, taken substantially on the plane of line 11—11 of Figure 9, looking in the direction indicated by the arrows.

Referring more in detail to the drawings, it is to be noted that the hollow body 16 is of rectangular form and has flat ends 17 and a transversely curved top 18. A slide cover 19 is also employed and extends from one end of the body to a point near the opposite end thereof, the slide cover 19 being in width almost equal to the width of the body 16, and slidable by way of one end of the body. The slide cover 19 has a notch 20 or the like provided in its upper face to receive a finger for removing or withdrawing the slide cover 19. The slide cover 19 also has side flanges 21 which work in grooves in the sides of the body 16 adjacent the top or upper side thereof, so as to provide for proper fitting of the slide cover 19 on the body 16. The sides of the body 16 are provided with elongated substantially oval depressions 22, to permit a firm gripping of the body by the thumb and fingers of the hands engaged over or across the top of the body 16.

The body 16 of the brush is hollow and divided into compartments, the upper compartment 23 opening on the top of the brush body and being closed by the slide cover 19, previously mentioned. Within this upper compartment 23 or chamber is located a small electric motor 24 which may be operated by a small conventional battery 25 also positioned in the upper compartment 23. The motor 24 is preferably located near one end of the compartment 23 while the battery 25 occupies the other end thereof. One of the terminal members 26 of the battery 25 is adapted for resilient engagement with a contact member 27 mounted in the compartment 23 and insulated from the body in an appropriate manner. Electrical connections 28 are provided between the contact member 26 and the motor 24. The motor 24, as will be apparent, may be grounded with the brush body 16 and a slidable switch contact or circuit closing member 29 may be employed for engagement with the other contact or terminal member 30 of the battery 25 when it is desired to complete the circuit through the battery 25 and the motor 24 to operate the latter from said battery 25. The slidable switch contact member 29 is slidable in the elongated longitudinal slot 31 in one side of the brush body 16, so that the circuit through the battery 25 and the motor 24 may be readily closed or opened, as desired, by proper adjustment of the slidable switch contact member 29 within the slot 31.

The motor 24 is so positioned in the upper compartment 23 that one end of the main shaft 32 thereof, depends into the suction fan compartment 33 beneath a portion of the upper compartment 23, said depending end of the motor main shaft 32 carrying thereon, within the suction fan compartment 33, a conventional suction fan 34, working over the opening 35 in the bottom wall of the suction fan compartment 33 and which bottom wall 36 serves also as the bottom wall of the brush body 16. Leading from the side of the suction fan compartment 33 is the tangentially extending air passage 37 which is also inclined and opens at its inclined restricted discharge end into the dust collecting chamber 38 arranged vertically and transversely in the adjacent end of the brush body 16. This chamber 38 has a plurality of air outlet openings 39 in its side wall, extending through the sides of the brush body 16, at the end thereof and covered on the inner face of said wall with a screening material 40 such as silk, or some other appropriate screening material of fine weave. The compartment 38 may be readily cleaned of the dust, dirt and other foreign matter accumulated therein by removing the cleanout door 41 therefor, which is slidable transversely of the end of the brush body 16 and has longitudinal side flanges 42 working in appropriate grooves in the upper and lower walls of the cleanout opening of said compartment 38. The door 41 may also be provided with a finger receiving notch 43 or the like to provide for ready removal or withdrawal of the door 41.

The bottom wall 36, as well as serving as the bottom wall of the suction fan compartment 33, also serves as the bottom wall for the compartment 44 opposite the compartment 33 and extending to the other end of the brush body 16. This compartment 44 is beneath the battery 25 and may be left as a vacant or dead compartment to reduce the weight of the body 16 to the minimum. The wall 36 is preferably provided on its underface with a plurality of ribs 45 radiating from the opening 35 in the wall 36 toward the sides and the far end of the body 16 while the underface of the wall 36 is smooth and concave in the other directions from the opening 35 and toward the near end of the brush body 16. The edges of the wall 36 connect with the side walls and end walls of the body 16, slightly above the lower edges thereof, so as to provide a space in the bottom or underside of the brush body 16 to accommodate a rectangular brush supporting frame 46, which is removably supported in position by a series of clamping screws 46*a* or other appropriate means extending inwardly through the end walls 17 of the brush body 16 and binding against the ends of the brush carrying frame 46.

The brush carrying frame 46 includes a number of downwardly opening longitudinal channels 47 supporting rows of bristles 48 therein and transverse end channels 49 of corresponding character likewise supporting therein brush bristles 50. The brush bristles 48 and 50 project for some distance below the bottom edge of the brush body 16 so as to effectively serve the purpose of brushing the surface over which the vacuum clothes brush is operated to loosen the dirt and dust on the material and below the surface thereof, so that the action of the suction fan 34 may serve to draw all of the dirt readily from the surface and from beneath the surface thus assuring a thorough cleaning of the material.

In the modified form of the invention disclosed in Figures 7 to 11 inclusive, the motor 24 is designed to be operated from a source of electrical energy outside of the brush body 16, the electrical current being supplied to the motor 24 through the medium of the electric current conducting wires 51 and 52 extending out of one end 17 of the brush body 16, through the insulation plug 53 removably secured by threading or other means, in said ends 17 of said brush body 16. The current conducting wire 51 is connected with the contact member 27*a*

which in turn is electrically connected to the electric motor 24, by the electrical connecting means 28*a*, the contact 27*a* and the electrical connecting means 28*a* corresponding respectively to the contact member 27 and the connecting means 28 in the preferred form of the invention. The wire 52 is attached to the terminal plate 30*a* which in this form, takes the place of the contact or terminal member 30 in the preferred form. The contact member 30*a* is arranged in the brush body 16 for engagement by the circuit closing switch contact member 29 slidable in the slot 31 in the side of the brush body 16, the same as in the preferred form of the invention. It will thus be seen that this modified form is substantially the same as the preferred form, in all of the essential features of construction and will just as efficiently serve the purpose for which the device is intended. In this modified form, the character and arrangement of the several compartments within the hollow body 16 may be varied without departing materially from the first form. For instance, the suction fan accommodating compartment 33 may be arranged with its main or large portion substantially at the centre of the body and the suction fan 34 thus located at the centre of the brush body 16 with the motor 24 also centrally located in the upper compartment 23 and the opening 35 brought to the centre of the bottom wall 36. Otherwise, the construction and arrangement of the various parts of the vacuum clothes brush in this modified form correspond closely to the construction and arrangement of the various parts of the vacuum clothes brush as disclosed in the preferred form of the invention, shown in Figures 1 to 6 inclusive.

As the construction of the device has thus been described in detail, brief reference is now had to its use and modus operandi: To operate this vacuum clothes brush it is simply necessary to clasp the brush body 16 by placing the hand over or across the same, so that either the thumb or a finger may be employed for operating the electric switch contact member 29 for closing and opening the electrical circuit through the motor 24. The brush may be passed over clothing or other articles to cause the brush bristles 48 and 50 to agitate the surface and loosen dirt, dust and other foreign matter from on the surface and beneath the same, so that all such dust, dirt and foreign matter may be readily withdrawn from the article being cleaned by the brush, by the suction fan 34 with all of the extracted or gathered dust, dirt and the like, passing by way of the air passage 37 into the compartment or chamber 38 of the brush body 16 and from which compartment or chamber 38 it may be later removed, whenever it is desired to clean-out the brush body 16. It is thus apparent that the article, or material over which this brush is operated while the electric current is employed to drive the motor 24, the surface will be thoroughly brushed and all dirt, dust and other foreign matter removed therefrom. The brush may be employed for cleaning various other articles, materials and surfaces, as well as clothing, for which it is particularly designed.

From the foregoing description taken in connection with the accompanying drawings, it will be manifest that a vacuum clothes brush is provided that will fulfill all the necessary requirements of such a device but as many changes could be made in the above description and many apparently widely different embodiments of my invention may be constructed within the scope of the appended claims without departing from the spirit or scope thereof, it is intended that all matters contained in the said accompanying specification and drawings, shall be interpreted as illustrative and not in a limited sense.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A vacuum clothes brush including a rectangular hollow body having longitudinal horizontal partition members therein dividing the body into upper, lower and intermediate compartments and a vertical transverse partition adjacent one end providing a vertical transverse end compartment within said body with an outlet in one end wall of the said body; the uppermost and lowermost longitudinal compartments in said body having open upper and lower faces respectively; one of said intermediate horizontal compartments in said body having an air entrance opening in its lower wall and both its upper and lower walls curved upwardly at one end and delivering into the upper portion of said vertical transverse end compartment; the lowermost horizontal compartment of said body serving to accommodate a brush carrying frame with rows of brush bristles therein projecting past the lower edge of said body; said last mentioned intermediate horizontal compartment of the body serving as a suction fan accommodating compartment to draw in dirt, dust and the like loosened by the brush bristles and deliver said dust, dirt and the like into said vertical transverse end compartment; a removable clean-out door in said end wall of the body and closing the outlet of said vertical transverse end compartment; a suction fan in said last mentioned intermediate horizontal compartment and a suction fan motor and motor control means for operating said fan mounted in the uppermost compartment in said body.

2. A vacuum clothes brush including a rectangular hollow body having horizontal partition plates therein dividing the same into upper, lower and intermediate horizontal compartments with said horizontal partition plates having one end curved upwardly and connecting with a vertical transverse partition plate forming a transverse vertical end compartment serving as a dust collecting compartment; the side walls of said transverse vertical end compartment having screened perforations therein for escape of air from said compartment; said end compartment also having a clean-out opening in one wall serving also as an end wall of said body; a clean-out door removably secured in said outlet opening; the lower horizontal partition plate also having a concave under face and an opening through said partition plate, a suction fan in the intermediate horizontal compartment of said body and immediately above the opening through said lower partition plate; a removable brushing element supported in the lower side of said body; said body having its upper side open and exposing the interior of the uppermost horizontal compartment of said body; and a suction fan operating motor and motor control means in said uppermost horizontal compartment of said body for driving said fan.

3. A vacuum clothes brush including a rectangular hollow body adapted to be held in the

hand of the user having a concave upper side with the greater portion thereof open; a slide cover plate of transverse concavo-convex form closing said open upper side of the body; said body having its interior divided into horizontal compartments and a vertical transverse end compartment by partition members within said body; said body having elongated longitudinal depressions in its opposite side walls and screened perforations in said side walls opening into the transverse vertical end compartment in said body; said transverse vertical end compartment having a clean-out opening extending through one end wall of said body; a removable clean-out door for said outlet opening of said transverse vertical end compartment; said body supporting in its open under side a brushing element; a suction fan accommodated in one of the horizontal compartments of said body for drawing into said compartment, dust, dirt and the like loosened by said brushing element and delivering said dust, dirt and the like into said transverse vertical end compartment of the body; an operating motor for said suction fan and control means for said motor accommodated in another of said horizontal compartments in said body and an actuating member for said control means projecting through one side wall of said body and into the depression in said side wall.

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