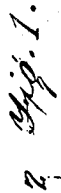


1,011,361.

2 SHEETS--SHEET 1.



L. H. Schmidt
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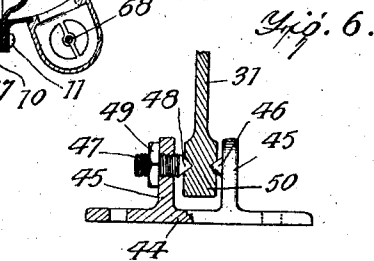
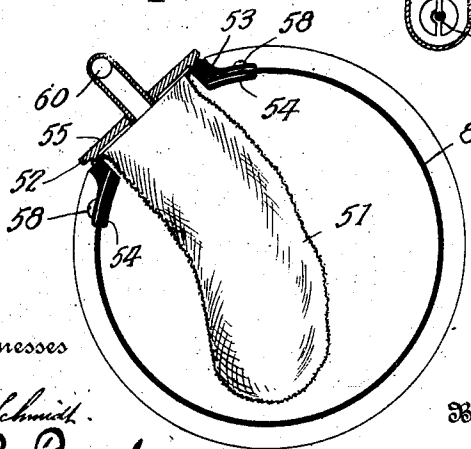
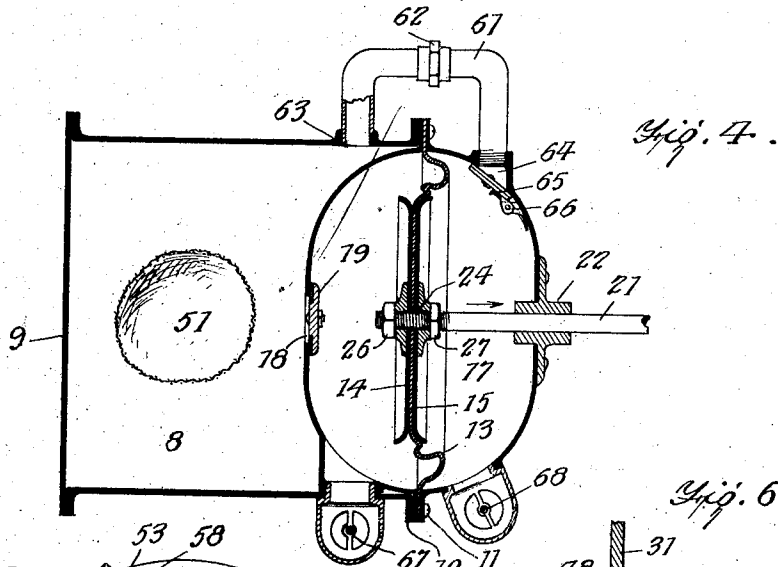
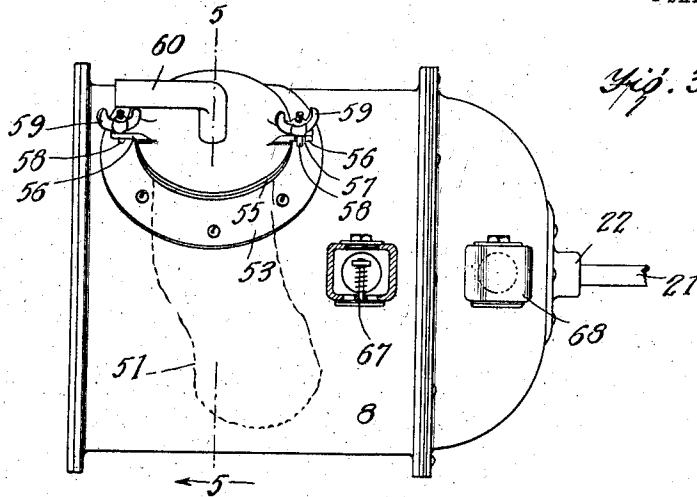
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R. C. PALM,
ROCKING CHAIR ATTACHMENT.
APPLICATION FILED JAN. 24, 1911.

1,011,361.

Patented Dec. 12, 1911.

2 SHEETS—SHEET 2.



Witnesses

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UNITED STATES PATENT OFFICE.

RAYMOND C. PALM, OF READING, PENNSYLVANIA.

ROCKING-CHAIR ATTACHMENT.

1,011,361.

Specification of Letters Patent.

Patented Dec. 12, 1911.

Application filed January 24, 1911. Serial No. 604,458.

To all whom it may concern:

Be it known that I, RAYMOND C. PALM, a citizen of the United States of America, and resident of Reading, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Rocking-Chair Attachments, of which the following is a specification.

This invention relates to certain new and useful improvements in attachments to rocking chairs and it has for its objects among others to provide a simple and efficient means for operating a vacuum cleaner by the rocking of the chair. While applicable to any desired form of rocker, I have chosen to show the same in the present instance as applied to a rocker of the Boston type.

I make the seat detachable so as to permit of ready access to the cylinder and operating parts when occasion may require, and also provide a detachable connection between the lever which actuates the diaphragm and the chair seat so that the same may be readily connected, or disconnected, whenever it may be deemed desirable to use the rocker without operating the cleaner.

I aim further at improvements in the details of construction and means of connection of the various parts whereby the cost is reduced to a minimum and all liability of damage or injury to the parts is obviated.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the numerals of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a rear elevation of a rocker with portions broken away and parts in section, showing the application of my present invention. Fig. 2 is a vertical section on the line 2—2 of Fig. 1. Fig. 3 is a side elevation of the cylinder removed. Fig. 4 is a section on the line 4—4 of Fig. 1. Fig. 5 is a section taken on the line 5—5 of Fig. 3, looking in the direction of the arrow. Fig. 6 is an enlarged section on the line 6—6 of Fig. 1. Fig. 7 is an enlarged section on the line 7—7 of Fig. 1.

Like numerals of reference indicate like parts throughout the different views.

Referring to the drawings, 1 designates the base portion of a rocker, in this instance,

shown as of the Boston type, of which 2, 2 are the rocking members movable on the corresponding side members of the base in the usual manner.

3 is the seat and 4 the back portion. The seat is detachably held to the rocker members in some convenient manner, so as to be readily detachable for the purpose of providing access to the working parts when desired. In the present instance I have shown this connection as consisting of dowel pins 4 on the one member engaging corresponding sockets 5 in the other member and latches or the like 6 on the one member engaging eyes or the like 7 on the other member. By this means the seat portion is firmly held to the rocker members yet the seat can be quickly and easily removed when desired.

8 is a cylinder suitably supported on the base portion between the side members thereof and the rocker members 2, as shown. This cylinder has one fixed head 9, while the opposite end is flanged, as shown at 10, and between such flanges and flanges 11 on the head 12 is confined the outer edge of the diaphragm 13, which diaphragm itself is held between the washers 14 and 15, as seen clearly in Fig. 2. Within the cylinder is a partition 16 which, together with the head 12, forms a bowl or receptacle 17, as seen clearly in Fig. 2. Communication between the interior of the cylinder 8 and this bowl is afforded by an opening 18 closed by a flap valve 19 pivotally mounted at 20 within the bowl and closing from the inside against its seat, so as to shut off communication between the bowl and the interior of the cylinder.

21 is a rod movable through a tubular guide 22 carried by the plate 23 secured to the head 12 of the cylinder and having its inner end screw-threaded, as shown at 24, and engaged in the plates 25 upon opposite sides of the washers 14 and 15 and held by nuts 26 and 27, as shown in Fig. 2, whereby the said rod may be detached when desired or adjusted as occasion may require. The outer end of this rod is pivotally connected, as at 28, with a link 29 which, in turn, is pivotally connected, as at 30, with a link 31, this connection being between the ends of the said link, the lower end of which is pivotally connected, as at 32, with a member of the base of the chair, while its other end is pivotally connected, as at 33, with one end of a link 34, the other end of which is piv-

otally connected, as at 35, with the seat portion 3. While this latter connection may be of any approved form of construction, I prefer that seen best in Figs. 1 and 7, as the same permits of ready application or detachment when desired. In the present instance I have shown this connection as comprising a plate 36 secured to the back face of the seat portion in any suitable manner, this plate having the lugs 37 between which the end of the link 34 is received, the pivot 35 comprising a bolt passing through the two lugs 37 and the end of the link 34, its other end being guided in a lug 38 projecting from the plate 36, as seen clearly in Fig. 7, the outer end of the bolt having a head or the like 39, a spring 40 surrounding the bolt between the lug 38 and the adjacent lug 37 and bearing against a collar or the like 41 on a sleeve 42 secured to the bolt in any suitable manner, as by a pin 43. This spring serves to keep the bolt normally projected, so as to hold the link 34 in place, but when pulled endwise against the spring, the link may be removed. The sleeve serves, by abutting against the lug 38, to prevent entire removal of the bolt. It will readily be seen that this provides an easy means for attaching or detaching the link 34 and while this forms a convenient mode of attachment, it is evident that other means may be provided for this purpose.

While the lower end of the link 31 may be pivotally mounted in any suitable manner, I find the construction shown in Fig. 6 to be desirable. As here shown, 44 is a plate secured to the base portion of the chair and having the vertical lugs 45 in one of which is a pointed projection 46 engaging a corresponding depression in the end of the link 31, while in the other lug 45 is screw threaded a screw 47 having a pointed end 48 engaging a corresponding depression in the end of the link 31, a jam nut 49 being provided for an obvious purpose. This provides an efficient bearing for the end of the link which is somewhat enlarged, as seen at 50, for this purpose, and insures easy movement of the link upon its pivot.

Within the cylinder is a dust bag 51 of some suitable reticulated material which will permit of the passage of the air therethrough but which will retain the dust and dirt. This dust bag is removably held within the cylinder in some convenient manner. In the present instance I have shown it as having a flange 52 which rests upon the dust cap 53 which is cast to fit the curvature of the cylinder, 54 being a ring on the interior of the cylinder, 55 being the cover which bears against the flange 52 of the dust cap and secured in position by suitable means so that it may be readily detached when desired. In the present instance I have shown the dust cover 55 as provided with oppositely dis-

posed lugs 56 having oppositely arranged openings 57, forming hooks or the like which engage the bolts 58 which are secured to the cylinder and provided with thumb nuts 59, so that when the hooked lugs 56 are engaged with the bolts 58 and the thumb nuts 59 tightened, a perfect air-tight joint is provided. Loosening of the nuts and partial revolution of the dust cover so as to disengage the lugs from the bolts, permits of removal of the dust cover and then the bag can be easily removed and cleaned.

60 is the nipple or elbow for the connection of a pipe or tube designed for connection with a vacuum cleaner head of any suitable form of construction.

61 is a pipe with a suitable coupling 62 so it can be readily disconnected, one branch of this pipe communicating with the interior of the cylinder 8, as shown at 63, and the other communicating, as at 64, with the interior of the bowl 17. 65 is a flap valve pivotally mounted, as at 66, and controlling the communication at 64 between the bowl and the said pipe.

67 is a spring-actuated valve such as a puppet valve, seen best in Figs. 3 and 4, controlling the outlet from the bowl 17 upon one side of the diaphragm therein, while 68 is a similar valve controlling the outlet from the bowl upon the opposite side of the diaphragm.

With the parts constructed and arranged substantially as hereinbefore described, the operation is, briefly stated, as follows. As the seat is rocked, assuming the parts to be in the position in which they are seen in Fig. 2, downward pressure upon the seat in the direction of the arrow seen in Fig. 2, forces the diaphragm 13 in the direction of the arrow seen in said Fig. 2. This closes the valve 19 and opens the valve 68 and the valve 65, creating a vacuum in the cylinder 8. As the seat is moved in the opposite direction, the diaphragm is moved in the reverse direction, opening the valve 19 and the valve 67, closing the valve 65 and the valve 68. The alternate movements of the seat causes, by means of the suction, the dust and dirt from the floor or other surface to be cleaned to be drawn into the dust bag 51. It is to be understood that the alternate opposite movements of the diaphragm automatically controls the valves and, consequently, the suction, so that as long as the chair is being rocked, the vacuum cleaner will be actuated. As nothing is claimed as new in the vacuum cleaner itself and as any suitable form may be employed and connected with the pipe 60 leading to the dust bag, it has not been deemed necessary to illustrate such cleaner.

From the above it will be seen that I have devised a simple, efficient and durable form of operating means for a vacuum cleaner de-

signed to be actuated by the movement of a rocking chair, and while the structural embodiment of the invention as herein disclosed is what I at the present time consider preferable, it is evident that the same is subject to changes, variations and modifications in details, proportions of parts etc., without departing from the spirit of the invention or sacrificing any of its advantages. I, therefore, do not intend to restrict myself to the details, proportions of parts etc., as hereinbefore described, but reserve the right to make such changes, variations and modifications as come properly within the scope of the protection prayed.

The seat of the chair is preferably provided with a trap door for the purpose of removing the dust bag without taking the chair apart.

What is claimed as new is:—

1. A rocker, a cylinder supported beneath the seat portion thereof, a bowl within the cylinder, a diaphragm in the bowl, a rod connected with the diaphragm, pivoted link connections between the seat and base portions of the chair, a pivotal connection between said rod and one of said links, a connection between the cylinder and bowl upon one side of the diaphragm, and a valved connection between the bowl and cylinder upon the opposite side of the diaphragm.

2. A rocker, a cylinder supported beneath the seat portion thereof, a bowl within the cylinder, a diaphragm in the bowl, a rod connected with the diaphragm, pivoted link connections between the seat and base portions of the chair, a pivotal connection between said rod and one of said links, a connection between the cylinder and bowl upon one side of the diaphragm, a valved connection between the bowl and cylinder upon the opposite side of the diaphragm, and valve controlled communications between the atmosphere and the bowl upon opposite sides of the diaphragm.

3. The combination with a rocker and its base, of a cylinder supported on said base beneath the seat portion, a bowl within the

cylinder, a diaphragm in the bowl, a rod connected with said diaphragm and extended rearward from said rocker, pivoted link connections between the rear of said seat and the rear of said base of the chair, a pivotal connection between said rod and one of said links whereby rocking of the seat portion actuates said diaphragm, a connection between the bowl and cylinder upon one side of the diaphragm, a valved connection between the bowl and cylinder upon the opposite side of the diaphragm, valve controlled communications between the atmosphere and the bowl upon opposite sides of the diaphragm, and means for the connection of a vacuum cleaner head with the interior of said cylinder.

4. The combination with a rocker and its base, of a cylinder supported on said base beneath the seat portion, a bowl within the cylinder, a diaphragm in the bowl, a rod connected with said diaphragm and extended rearward from said rocker, pivoted link connections between the rear of said seat and the rear of said base of the chair, a pivotal connection between said rod and one of said links whereby rocking of the seat portion actuates said diaphragm, a connection between the bowl and cylinder upon one side of the diaphragm, a valved connection between the bowl and cylinder upon the opposite side of the diaphragm, valve controlled communications between the atmosphere and the bowl upon opposite sides of the diaphragm, means for the connection of a vacuum cleaner head with the interior of said cylinder, and an automatically actuated outwardly closing valve pivotally mounted within said bowl for controlling the connection between the same and the cylinder.

Signed by me at Reading, Penna., this 21 day of Jan'y. 1911.

RAYMOND C. PALM.

Witnesses:

WM. B. HUNBERGER,
JOHN W. HENDRICKS.