L. J. KUCKI.

CLEANER.

APPLICATION FILED DEC. 18, 1913.

1,102,765.

Patented July 7, 1914.

Fig. 1.

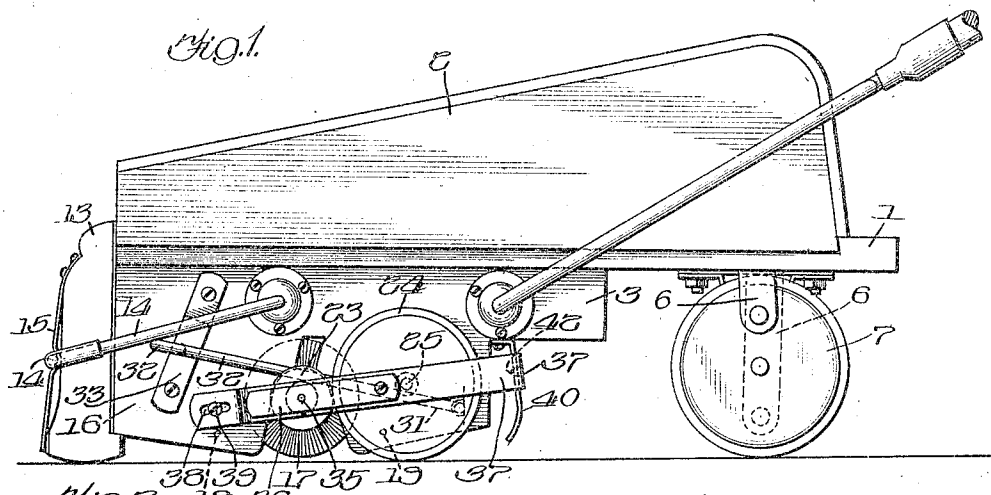


Fig. 2.

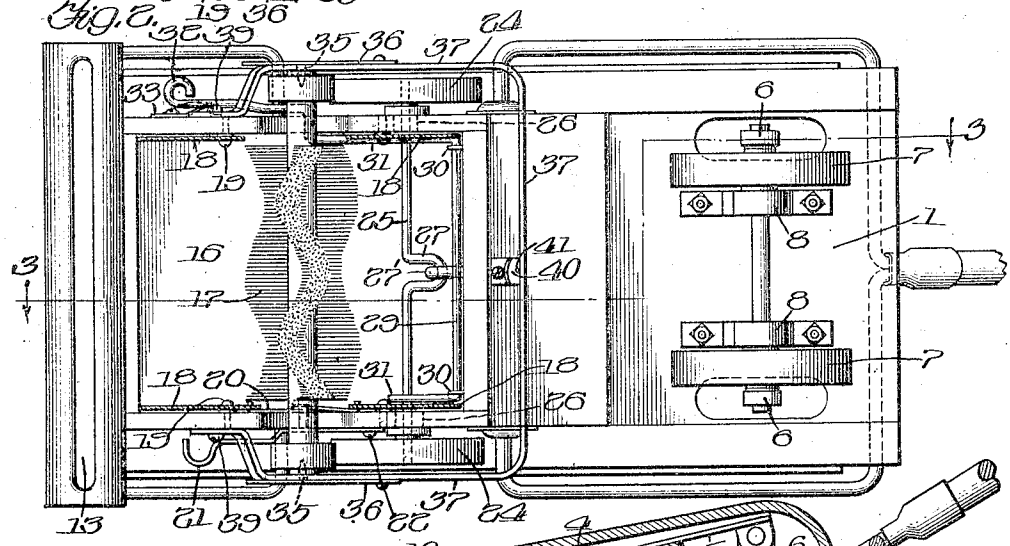
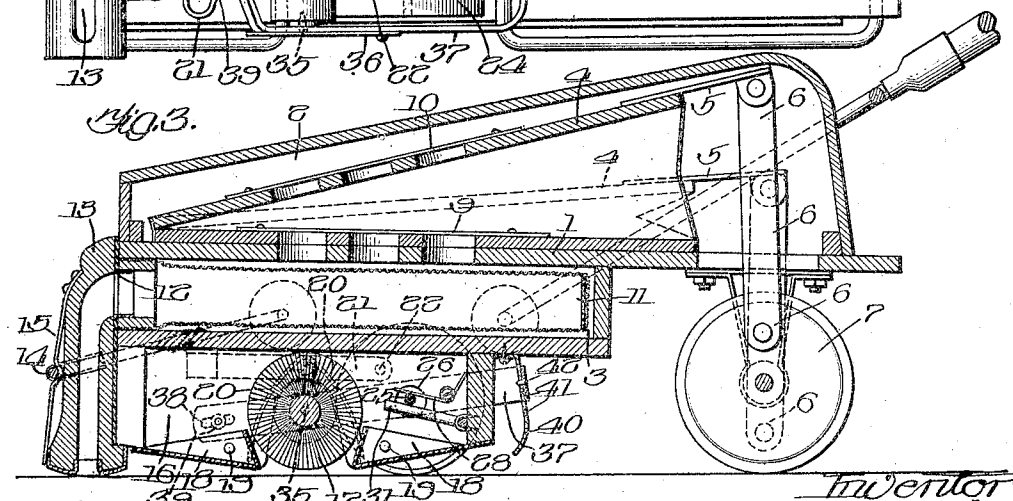


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

LOUIS J. KUCKI, OF CHICAGO, ILLINOIS.

CLEANER.

1,102,765. Specification of Letters Patent. Patented July 7, 1914.

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To all whom it may concern:

Be it known that I, LOUIS J. KUCKI, citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Cleaners, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to cleaners, one feature of the invention pertaining more particularly to those cleaners which employ pneumatic dust removing mechanism and rotary sweeping brushes that are operated by driving rollers which are turned by traction engagement with the carpets or rugs being cleaned. When all parts of the machine are in operation the machine is supported by the driving roller structure, the pneumatic nozzle and a supporting wheel structure whereby the rotary brush and pneumatic portions of the mechanism may be simultaneously operated. Means are provided for raising the brush operating roller structure to throw the rotary brush out of action whereby the work to be performed by the operator in pushing and pulling the apparatus is reduced, since the apparatus will then operate only as a pneumatic cleaner, and whereby the machine may be moved back and forth, while supported in normal position upon the floor, without affecting the operation of the rotary brush.

My invention has for another of its objects the provision of improved means for vertically adjusting the position of the rotary brush itself while the brush operating roller is maintained in operating position whereby the rotary brush may be suited to differing heights of the rug or carpet pile.

I will explain my invention more fully by reference to the accompanying drawing showing the preferred embodiment thereof and in which—

Figure 1 is a view in side elevation of a cleaner made in accordance with the invention; Fig. 2 is a bottom view of the cleaner shown in Fig. 1; and Fig. 3 is a sectional view on line 3 3 of Fig. 2.

Like parts are indicated by similar characters of reference throughout the different figures.

I provide a casing which has a partition 1 that divides the interior of the casing into two compartments 2, 3. An air suction pump, preferably in the form of a plurality of bellows or pneumatics 4, is located in the upper compartment 2, actuating arms 5 projecting rearwardly from the tops of the bellows. Pitmen 6 are linked to the arms 5 and have eccentric connection with the rollers or wheels 7 that engage the surface being cleaned whereby the bellows are operated to pump air as the cleaner is moved back and forth. The wheels or rollers 7 are journaled in mountings 8. The partition 1 is cut away to allow the pitmen to work and to afford free passage for air from the compartment 2 as the bellows contract and expand therein, thereby permitting these bellows freely to operate. A flap valve 9 is provided for the air passage that occurs in the bottom of each bellows, such valve opening when its bellows expands to permit the passage of air into the bellows interior from the compartment 3. A flap valve 10 is provided at the top of each bellows which is closed while its bellows expands, and opens as its bellows contracts then to permit the air to escape into the compartment 2.

A dust collector bag 11 is illustrated, this dust collector being removably received within the space 3, the bag being made of textile fabric that will intercept and collect the dust moving toward the bellows. The dust receiving and discharge end of the bag is permanently surrounded by a rubber flange 12 which is clamped in position by the suction nozzle 13, which latter is held in place by a swinging bail shaped clamp 14 which engages the downwardly projecting springs 15, whose upper ends are mounted upon the front face of the nozzle, these springs being rearwardly curved or kinked to receive and hold the front side of the clamp 14. The nozzle passage terminates at its lower end in its elongated nozzle opening, and at its upper end it communicates with the interior of the dust collecting bag.

The casing of the machine is provided with a sub-compartment 16 in which a rotary brush 17 is received, the periphery of this brush adjustably projecting but a slight distance below its compartment, properly to have brushing contact with the surface being cleaned, when the machine is adjusted to act as a sweeper. The dust gathered by the brush 17 is discharged therefrom into the dust pans 18, pivotally mounted at 19 and joined by links 20 with a lever 21 pivoted at 22, the lever being grasped to open

and shut the pans, the forward pan discharging at its front end and the rear pan discharging at its rear end.

The rollers which drive the brush 17 are preferably in the form of small wheels 23 at each end of and co-axial with the brush and a larger rubber tired wheel 24 operatively engaging each wheel 23 and adapted to have traction engagement with the surface being cleaned when the brush 17 is to be rotated, this brush being thus rotated when the machine is pulled and pushed. In this adjustment the dust which is raised by the sweeper 17 but not collected thereby may be sucked into the nozzle. When the machine is to be constituted primarily a pneumatic cleaner the roller structure 24 is raised from the surface being cleaned so that the brush 17 will not be turned by the roller element 24. In order that this result may be accomplished the structural characteristics now to be described are preferably employed. The wheels 24 are free to turn upon the outer ends of a shaft 25 which pass freely through openings 26 in the sides of the sub-compartment 16. The shaft 25 has a U-curve 27 at its mid portion passing through an eye 27^1 that projects from a wall of the compartment 16, the eye 27^1 in coöperation with the formation 27 confining the shaft 25 in the range of adjustment to which it is adapted for the purpose of bringing the rollers 24 upon and removing them from the surface being cleaned. The springs 28 engage the top of the shaft 25 and serve, when free to operate, to press the shaft downwardly and thereby place the rollers 24 in engagement with the surface being cleaned, the springs 28 being anchored each at one end upon interior portions of the sub-compartment 16 to enable them to bear downwardly upon the shaft 25. The lever 29 has its intermediate portion journaled in bearings 30 and two portions 31 adapted for engagement with the lower side of the shaft 25, these portions 31 being located near the springs 28 which themselves are near the ends of the shaft 25, the elements 28 and 31 being preferably within the sub-compartments 16. One of the elements 31 is continued to form a handle 32 located upon the exterior of the sub-compartment 16 where it is engageable with a spring clip 33 for holding the handle in its adjustment. When the handle 32 is depressed the shaft engaging portions 31 are lowered so that the springs 28 are free to depress the shaft 25 and thereby lower the rollers 24 into engagement with the surface being cleaned. When the handle 32 is elevated the portions 31 lift the shaft 25 against the force of the springs 28 to lift the rollers 24 from the surface being cleaned so that the brush 17 is not then turned as the machine is pulled and pushed. The shaft of the rotary brush 17 desirably has sockets in each end that receive inwardly projecting stub shafts 35 carried upon strip spring metal supports 36 each mounted at one end upon a bail 37, the ends of the bail 37 being pivotally secured upon the exteriors of the sub-compartment 16. The spring supports 36 are under such tension that when the stub shafts 35 are brought into alinement with the socket recesses such springs, when free to act, will effect the entry of the shafts 35 within said sockets whereby the brush 17 is rotatably supported. When the brush 17 is to be removed one or both of the springs 36 is moved outwardly sufficiently to clear the roller 17 from its supporting shaft or shafts 35 whereupon the brush may be removed and cleaned.

The fulcrum ends of the bail 37 are provided with slots 38 in sliding relation to the pivoted screws 39 while the intermediate side of this bail is rearwardly pressed upon by a leaf spring 40, this spring 40 thus serving to hold the rollers 23 in engagement with the rollers 24. The spring 40 is provided with a number of openings 41 (three as shown in Fig. 3) each adapted to receive a forwardly projecting pin 42 carried by the bail 37. The lower end of the spring 40 is free and may be forwardly pressed so as to dislodge it from engagement with the pin 42 whereupon the bail 37 may be brought to a new adjustment by engaging the pin 42 with another hole 41. In each of the adjustments the spring 40 maintains the rollers 23 in engagement with the rollers 24 so that when the rollers 24 are in their lowered positions the rollers 23 will be operated irrespective of the adjustment of their mounting bail 37, in which way the operating height of the rotary brush 17 may be adjusted to suit the pile of the carpet or rug being cleaned.

While I have herein shown and particularly described the preferred embodiment of my invention I do not wish to be limited to the precise details of construction shown as changes may readily be made without departing from the spirit of my invention, but

Having thus described my invention I claim as new and desire to secure by Letters Patent the following:—

1. A cleaner including two supports to position the same while in operation; a rotary brush; a swingingly supported bail upon which the rotary brush is mounted; means for adjusting the bail in different positions to which it may be swung to adapt the brush to the surface being cleaned; and a brush operating roller structure mounted independently of the rotary brush and maintained in actuating relation thereto in the different adjustments of the brush.

2. A cleaner including a rotary brush; a swingingly supported bail upon which the rotary brush is mounted; means for adjust-

ing the bail in different positions to which it may be swung to adapt the brush to the surface being cleaned; and a brush operating roller structure mounted independently of the rotary brush and maintained in actuating relation thereto in the different adjustments of the brush.

In witness whereof, I hereunto subscribe my name this 15th day of December A. D., 1913.

LOUIS J. KUCKI.

Witnesses:
G. L. CRAGG,
ETTA L. WHITE.