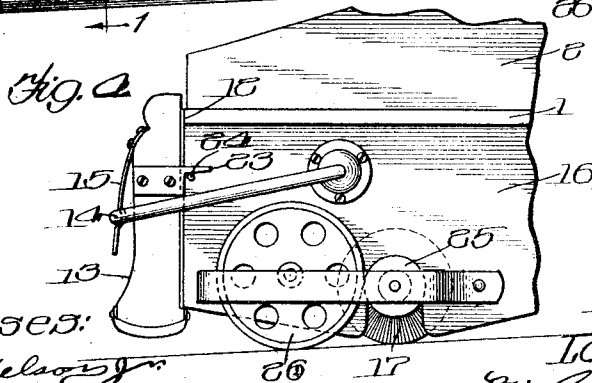
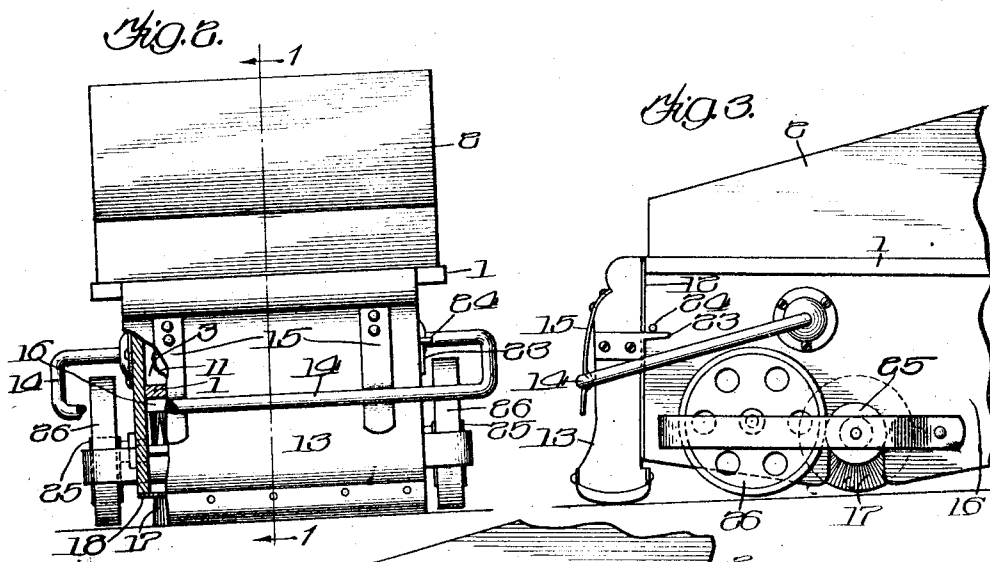
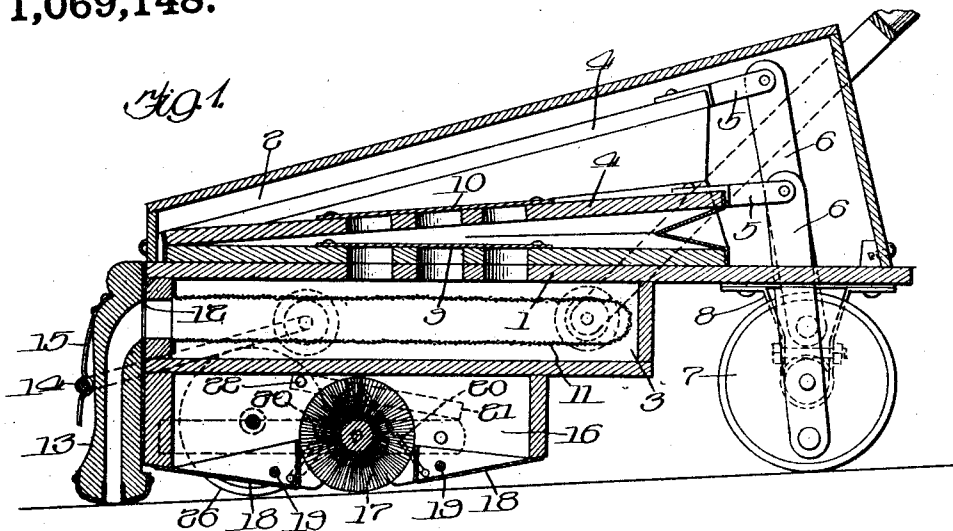


L. J. KUCKI.
CLEANING APPARATUS.
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1,069,148.



Witnesses:

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UNITED STATES PATENT OFFICE.

LOUIS J. KUCKI, OF CHICAGO, ILLINOIS.

CLEANING APPARATUS.

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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 Cleaning Apparatus, 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 hand operated cleaners and has for its object the construction of a cleaner having mechanism and provision for its adjustment whereby it may operate either as a pneumatic cleaner or a sweeper.

In practising my invention I employ a hand operated pneumatic cleaner having a suction pump or bellows which is operated by rollers that take part in supporting the cleaner in its movement upon the surface being cleaned and I equip such pneumatic cleaner with a rotary brush and rollers adapted to turn upon the surface over which the cleaner is moving when such brush is to operate. This brush and its operating rollers are desirably interposed between the nozzle at the forward end of the pneumatic cleaner and the suction pump operating rollers located at the rear of the pneumatic cleaner. Means are provided whereby either the brush operating rollers or the nozzle may alone bear upon the surface being cleaned so that the device will operate either only as a carpet sweeper or only as a pneumatic cleaner. This adjustment is accomplished by regulating the vertical distance between the horizontal planes in which the bottom face of the nozzle and the axis of the rollers lie. When this vertical distance between these two planes is least, the nozzle is removed from effective contact with the surface being cleaned and the brush operating rollers engage said surface to be turned as the cleaner is moved back and forth whereby the brush is solely operated, the suction pump that may also operate at this time performing no work as the suction nozzle through which it draws air is clear of the surface being cleaned. When the vertical distance between said horizontal planes is greatest, the nozzle will engage the surface being cleaned and in such case will elevate the brush operating rollers from such surface, so that the device will alone operate as a pneumatic cleaner. The device is desir-

ably made convertible from one kind of a cleaner to another by affording two alternative vertical positions for the nozzle upon the casing which carries it and the brush operating rollers, the nozzle in one such position supporting the brush operating rollers out of contact with the surface being cleaned and in the other position being supported out of contact with such surface by the brush operating rollers.

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

Figure 1 is a longitudinal sectional view of the preferred form of the invention; Fig. 2 is a front view, partly in section; Fig. 3 is a side view of the front portion illustrating the machine as a pneumatic cleaner; and Fig. 4 is a side view of the front portion illustrating the machine as a sweeper.

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

First describing the portions of the drawings that reveal one construction of pneumatic cleaner, I have provided 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 number 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 depending from the partition 1 which is cut away to allow the pitmen to work and to afford free passage for air within 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 discharge end of the bag is surrounded by a thin rubber plate 12 which is held in position against the wall of the casing by the suction nozzle 13, which latter is held in place by a swinging bail shaped clamp 14 which engages the forwardly projecting lower ends of springs 15, whose upper ends are mounted upon the front face of the nozzle, these springs being rearwardly curved near the bottom edges to receive and hold the front side of the clamp 14. The nozzle has a nozzle opening which is elongated transversely of the line of movement of the sweeper and is made narrow longitudinally of such line of travel. 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 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 as indicated in Fig. 4. 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 at its right hand end (Fig. 1) to open and shut the traps, the forward trap discharging at its front end and the rear trap discharging at its rear end.

The sides of the nozzle 13 are provided with rearwardly extending fingers 23, while the side wall portions of the compartment 3 are provided with laterally projecting pins 24 near the front of the machine. The fastening elements 14 and 15 are adapted to hold the nozzle in position with the fingers 23 either above or below and in engagement with the pins 24. When the fingers 23 are below the pins 24, the device is adapted to operate only as a pneumatic cleaner, this being the adjustment illustrated in Figs. 1, 2 and 3. When the fingers 23 are above the pins 24, the device is adapted to operate only as a sweeper, this being the adjustment illustrated in Fig. 4. The rollers which drive the brush 17 desirably includes a small rubber bound wheel 25 at each end of and co-axial with the brush and a larger rubber bound wheel 26 operatively engaging each wheel 25 and having traction engagement with the surface being cleaned when the adjustment illustrated in Fig. 4 obtains, whereby the rotary brush 25 may then be turned as the machine is pushed forwardly and pulled rearwardly. Where the machine

is not to be operated as a sweeper, but as a pneumatic cleaner, and is accordingly given the adjustment illustrated in Figs. 1, 2 and 3, the nozzle 13 and wheels 7 cooperate to support the machine to hold the wheels 26 out of operative engagement with the surface being cleaned then to exclude the brush 17 from operation, but when the adjustment of Fig. 4 is given, the wheels 7 and 26 cooperate to support the machine, the reduced effective height of the nozzle then preventing the nozzle from having operative contact with the surface being cleaned.

It will be seen from the description which has been furnished that the machine is constituted a pneumatic cleaner when the horizontal planes including the bottom face of the nozzle and the axis of the wheels 26 are farthest apart and that the machine is constituted a sweeper when the space between these planes is reduced.

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 the invention, but

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

1. In a cleaner, the combination with a suction producing device; of a suction nozzle for operation upon the surface to be cleaned; a casing with whose interior the nozzle and suction producing device communicate; a roller support in driving relation to the suction producing device, said roller support engaging the surface to be cleaned while the nozzle engages said surface thereby to be driven and then in turn operating to drive the suction producing device; a rotary brush; a roller for rotating the brush, said brush and its operating roller being carried by said casing; and means whereby one end of the casing may be supported by the brush operating roller to the exclusion of the nozzle or by the nozzle to the exclusion of the brush operating roller to constitute the machine a sweeper or pneumatic cleaner.

2. In a cleaner the combination with a suction producing device; of a suction nozzle for operation upon the surface to be cleaned; a casing with whose interior the nozzle and suction producing device communicate; a roller support in driving relation to the suction producing device, said roller support engaging the surface to be cleaned while the nozzle engages said surface thereby to be driven and then in turn operating to drive the suction producing device; a rotary brush; a roller for rotating the brush, said brush and its operating roller being carried by said casing; and

means for varying the height of the axis of rotation of the brush operating roller with respect to the bottom face of the nozzle.

3. In a cleaner, the combination with a suction producing device; of a suction nozzle for operation upon the surface to be cleaned; a roller support in driving relation to the suction producing device; a rotary brush; a roller for rotating the brush; and means whereby the nozzle is vertically adjustable to change its height with respect

to the brush operating roller whereby the cleaner may be constituted either a pneumatic cleaner or merely a sweeper.

In witness whereof, I hereunto subscribe my name this 31st day of January A. D., 1913.

LOUIS J. KUCKL.

Witnesses:

G. L. CRAGG.

ETTA L. WHITE.