J. M. SPANGLER.

CARPET SWEEPER.

APPLICATION FILED JULY 24, 1911.

1,081,340. Patented Dec. 16, 1913

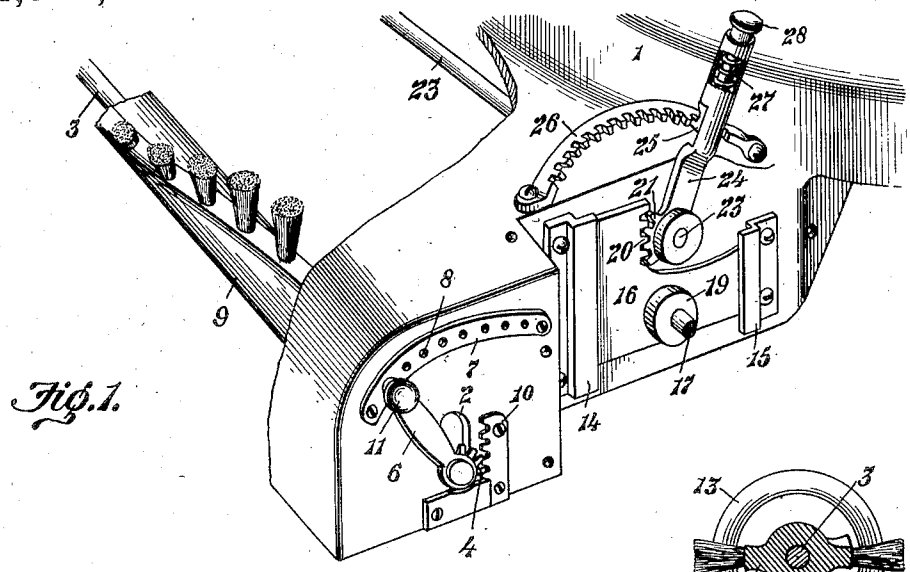


Fig. 1.

Fig. 3.

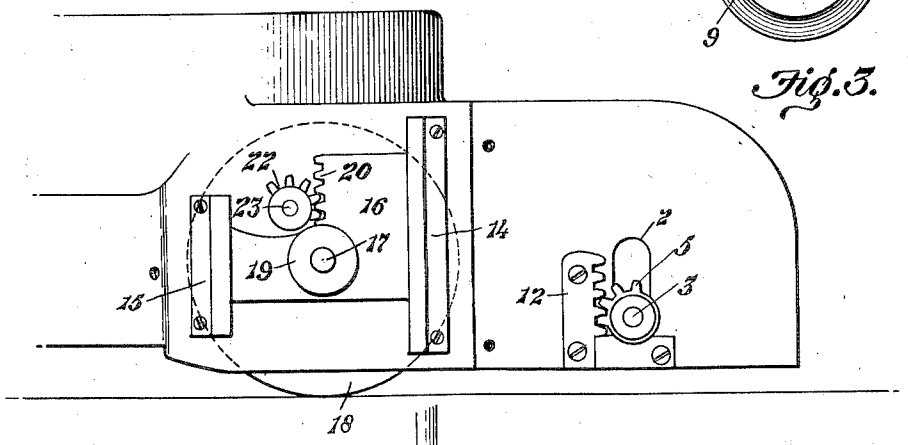


Fig. 2.

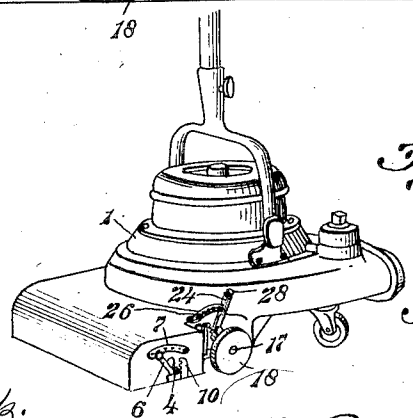


Fig. 4.

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UNITED STATES PATENT OFFICE.

JAMES M. SPANGLER, OF CANTON, OHIO, ASSIGNOR TO THE HOOVER SUCTION SWEEPER COMPANY, OF NEW BERLIN, OHIO, A CORPORATION OF OHIO.

CARPET-SWEEPER.

1,081,340. Specification of Letters Patent. Patented Dec. 16, 1913.

Application filed July 24, 1911. Serial No. 640,261.

To all whom it may concern:

Be it known that I, JAMES M. SPANGLER, a citizen of the United States, residing at Canton, in the county of Stark and State of Ohio, have invented a new and useful Carpet-Sweeper, of which the following is a specification.

My invention relates to carpet sweepers, and consists in providing traveling wheels adapted to be adjusted up or down in such a manner that the frame or body of the sweeper can be brought to or from the surface over and upon which the sweeper travels.

My invention further relates to means whereby the carpet sweeper frame proper carrying the brush is elevated or lowered and the frame held at the desired point of adjustment.

The invention is specifically applicable to that class of carpet sweepers wherein air is drawn into the sweeper adjacent the brush for the purpose of lifting the dust and dirt and more thoroughly cleaning the rug, carpet or floor, or other surface upon which the carpet sweeper is used. There are at present a number of practical applications of this combination of brushing and pneumatic cleaning, an example of such construction being shown in applicant's United States Letters Patent No. 889,823 issued June 2, 1908.

In the more successful and practical carpet sweepers employing both brush and pneumatic cleaning means, it has been found desirable to provide means for causing an inrush of air of considerable force and at other times to permit what might be termed a more free or unobstructed entrance of air into the brush chamber or, that part of the frame adjacent the brush. It frequently requires various adjustments to bring the body of the sweeper, the brush and the traveling wheels into proper relative adjustment with reference to the above mentioned parts or elements. With my improvements various adjustments can be quickly made so as to properly regulate the intake of air, reference being had to the surface or material upon which the carpet sweeper is used.

In using the carpet sweeper upon hard wood floors, or hard smooth surfaces it is of advantage to bring or set the mouth of the brush chamber in close proximity with the surface, so that little air will be drawn into the brush chamber, but whatever air is drawn comes in with a rush. In using the sweeper upon rugs and carpets of various textures, the traveling wheels to a certain extent are slightly embedded in the texture, or what might be termed a sinking of the traveling wheels into the body of the rugs or carpets, which sinking varies, reference being had to the thickness and texture of the rugs or carpets. In using the sweeper upon rugs or carpets, it has been found that by reason of the traveling wheels, sinking into the body of the rugs or carpets the edge or mouth of the brush chamber is brought into such close contact with the rug or carpet that the air is liable to be cut off to such an extent that the necessary suction is entirely cut off, or partially so to the extent that it interferes with the proper working of the sweeper.

The objects of my invention are to generally increase the effectiveness of carpet sweepers by providing suitable attachments by which adjustments may be made of the character above described, which will be simple in construction, cheaply manufactured, easily adjusted and fully capable of thoroughly accomplishing its purpose. These objects together with other objects readily apparent to those skilled in the art, I attain by the construction illustrated in the accompanying drawings, although my invention may be embodied in other forms, the construction illustrated being chosen by way of example.

In the accompanying drawings Figure 1 is a perspective view showing a portion of the body of the carpet sweeper, showing my improvements illustrating one side face of the body with the improvements there located. Fig. 2 is a view showing the opposite side of the sweeper body from that shown in Fig. 1. Fig. 3 is a transverse section of the brush and its shaft, also showing the pulley properly located upon the brush. Fig. 4 is a perspective view of the sweeper showing the different parts properly assembled.

Similar numerals of reference indicate

corresponding parts in all the figures of the drawings.

In the accompanying drawing, 1 represents the body which may be of the form shown, or it may be of any other desired form, reference being had to the proper housing of the brush and motor. The side walls of the body 1 are provided with the elongated slots 2, through which elongated slots the brush-shaft 3 is located, said brush-shaft being extended a short distance beyond the outer faces of the side walls so as to provide means for attaching to said shaft the toothed segments 4 and 5, which toothed segments are fixedly mounted upon the brush-shaft 3. From the toothed segment 4 extends the lever 6, which lever is held at the desired point of adjustment by means of the segmental bar 7 and the apertures 8 formed in said segmental bar. When it is desired to lift the brush 9 upward or away from the surface over and upon which the carpet sweeper is to travel the upper end of the lever 6 is moved to the right, which movement rocks the toothed segment 4 in the direction to cause said toothed segment to move up by reason of the teeth of said segment meshing with the teeth in the fixed toothed bar 10.

The lever 6 should be so adjusted that it will be normally held against movement by reason of the inner end of the knob 11 entering one of the apertures 8. This construction, however is ordinary and no specific description is necessary. For the purpose of moving both ends of the brush-shaft 3 together with the brush 9 at the same time the toothed segment 5 is provided, which toothed segment meshes with the toothed rack bar 12.

For the purpose of imparting a rotary movement to the brush 9 a pulley such as 13 should be attached to the brush shaft and may be driven by a belt in the ordinary manner. The parts above referred to being common and hence the belt is not illustrated.

The mechanism for creating the suction and rotating the brush forms no specific part of the present invention, but must necessarily be present in carpet sweepers of the class to which this construction pertains.

Upon the vertical sides of the body 1 are securely attached the guide flanges 14 and 15, which guide flanges are for the purpose of holding and guiding the movable plates 16, to which movable plates are attached the short stub-shafts 17 and upon which stub-shafts are located the traveling wheels 18, which traveling wheels are of the usual construction, such as are in use in carpet sweepers. For the purpose of providing sufficient clearance for the guide flanges 14 and 15, the stub-shafts 17, should be provided with the spacing disks 19, or if desired the traveling wheels 18 may be provided with lateral hubs as it is immaterial what means is used for holding the traveling wheels in such a position upon the stub shafts that they will clear the guide flanges 14 and 15. The plates 16 are provided with the rack bar portions 20, which rack bar portions mesh with the toothed segments 21 and 22, which toothed segments are fixed to the cross-shaft, or bar 23, which cross shaft is journaled in the vertical side walls of the body 1 in such a manner that it can rock as hereinafter described.

From the toothed segment 21 extends the operating lever 24, which operating lever is provided with the sliding notch bar 25, which notch bar is normally held in such a position that it will engage the notches of the toothed segmental bar 26. For the purpose of normally holding the notch bar 25 in proper engagement with the toothed segment 25, the spring 27 is provided and when it is desired to release the operating lever 24, the knob 28 is pressed downward, thereby disengaging the operating lever from the segmental toothed bar 26, at which time the operating lever can be moved to the left, (reference being had to Fig. 1). The plates 16 together with the traveling wheels will be moved downward carrying with them the traveling wheels 18, by which arrangement the traveling wheels can be set so as to adjust the body 1 to or from the surface over and upon which the traveling wheels 18 move.

In order to provide for the vertical adjustment of the brush shaft 3 the brush proper must necessarily be rotatably mounted upon said brush shaft and consequently the brush head or brush proper 9 is formed hollow as best illustrated in Fig. 3 so that after the brush has been properly adjusted the brush head will revolve upon the brush shaft or rod 3; but at the same time a rocking movement can be imparted to said brush shaft 3 during the time it is being adjusted up or down. It will be understood that the brush located in the chamber in some instances must be adjusted vertically to compensate for the vertical adjustment of the carpet sweeper body and in other instances it is not necessary to adjust the brush in order to compensate for the vertical adjustment of the sweeper body.

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

In a carpet sweeper, a sweeper body, said sweeper body provided with vertically adjustable plates, means for holding said adjustable plates upon the sweeper body, bearings secured to said adjustable plates and traveling wheels mounted upon said bearings, a shaft located above the bearings carried by the adjustable plates, a lever fixed

to the shaft, the plates being provided with rack-bar portions, segments fixed to said shafts and adapted to mesh with said rack-bar portions and means for holding the lever in fixed adjustment, substantially as and for the purpose specified.

In testimony that I claim the above, I have hereunto subscribed my name in the presence of two witnesses.

JAMES M. SPANGLER.

Witnesses:
WILLIAM H. MILLER,
IRENE LUTZ.