June 30, 1925.

1,543,972

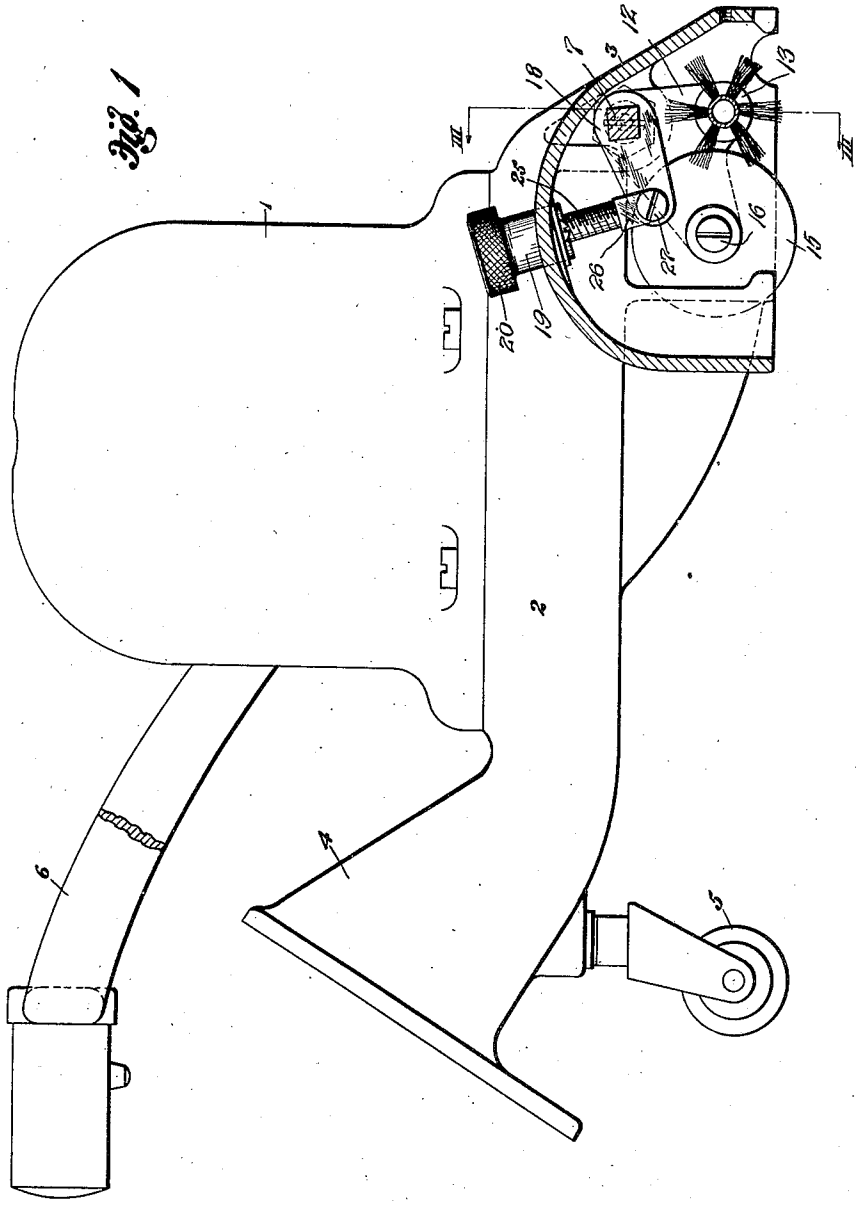
T. O. ADAMS

NOZZLE AND BRUSH ADJUSTING DEVICE

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3 Sheets-Sheet 1

Fig. 1



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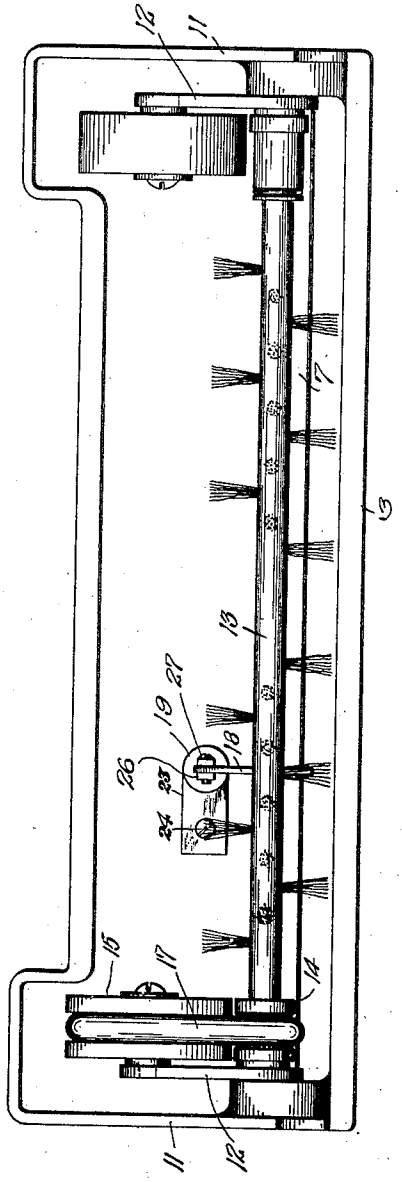


Fig. 2

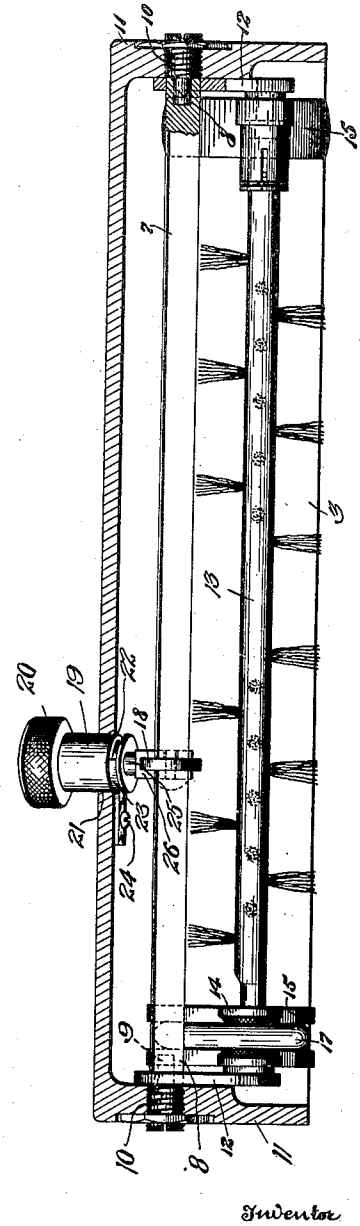


Fig. 3

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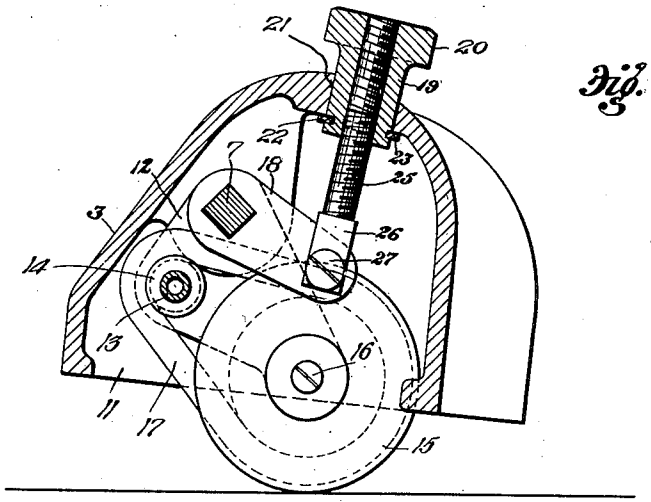


Fig. 5

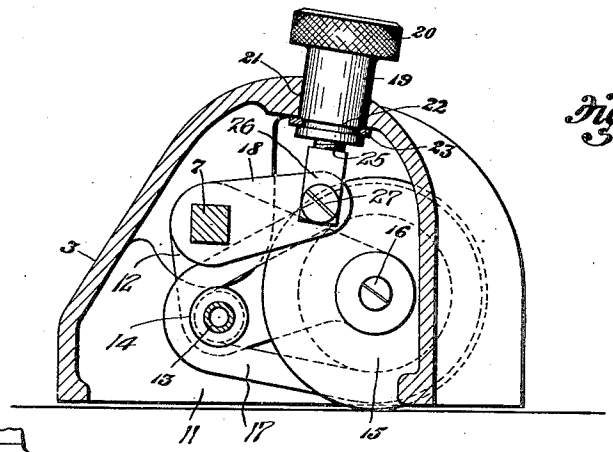
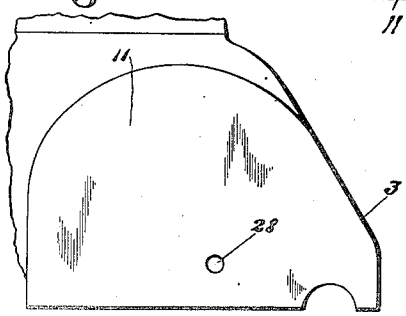


Fig. 4

Fig. 6



Inventor

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Patented June 30, 1925. 1,543,972

UNITED STATES PATENT OFFICE.

THOMAS O. ADAMS, OF NEW PHILADELPHIA, OHIO, ASSIGNOR TO THE WISE-McCLUNG MANUFACTURING COMPANY, OF NEW PHILADELPHIA, OHIO, A CORPORATION OF OHIO.

NOZZLE AND BRUSH ADJUSTING DEVICE.

Application filed November 23, 1921. Serial No. 517,205.

To all whom it may concern:

Be it known that I, THOMAS O. ADAMS, a citizen of the United States, residing at New Philadelphia, in the county of Tuscarawas and State of Ohio, have invented a new and useful Nozzle and Brush Adjusting Device, of which the following is a specification.

This invention relates to vacuum cleaners of the portable type such as are adapted to be moved to and fro upon the floor, and more particularly to means for adjusting the nozzle and brush relative to the floor.

The objects of the invention are to provide a vacuum cleaner having a rotatable brush within the nozzle, means being provided for adjusting the brush and nozzle toward or from the floor, and for raising the nozzle a sufficient distance from the floor to allow the attachment of the usual flexible hose by means of which special attachments for cleaning tapestry, upholstery and the like are connected to the vacuum cleaner.

The above and other objects may be attained by providing a rock shaft longitudinally located through the upper portion of the nozzle, plates being fixed near opposite ends of said rock shaft, the brush and traction wheels being journaled upon said plates, a rock arm being fixed upon the rock shaft and arranged to be oscillated by means of a screw, whereby the traction wheels and brush are raised or lowered with reference to the nozzle.

A preferred embodiment of the invention thus set forth in general terms is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a vacuum cleaner, the nozzle being shown in section illustrating the nozzle and brush adjusting means embodying the invention;

Fig. 2, an inverted plan view of the nozzle portion of the vacuum cleaner, showing the adjusting mechanism therein;

Fig. 3, a section on the line 3—3, Fig. 1;

Fig. 4, a transverse sectional view through the nozzle showing the parts in the cleaning position;

Fig. 5, a similar view showing the nozzle in the raised position; and

Fig. 6, an end view of the nozzle portion of the vacuum cleaner showing one of the air holes for cleaning the wheels and belt.

Similar numerals of reference indicate corresponding parts throughout the drawings.

The motor casing 1, fan casing 2, and nozzle 3 may be of any common form, the fan casing being provided with the usual outlet neck 4 to which the dust collector bag is attached, the rear portion of the cleaner being supported upon the wheel or castor 5, the usual handle for moving the cleaner to and fro upon the floor being attached to the handle bail 6.

A rock shaft 7, preferably square in cross section, is located longitudinally through the upper portion of the nozzle, the ends thereof being provided with the bearing portions 8 which are journaled upon the pins 9 formed on the threaded studs 10 which are located through tapped openings in opposite end walls 11 of the nozzle portion of the vacuum cleaner.

Plates 12 are fixed upon said shaft near the opposite ends thereof, each of said plates being substantially triangular in shape. The brush 13 is journaled between said plates in any usual and ordinary manner, at a point beneath the rock shaft 7, one end of said brush being operatively connected to the pulley 14.

The wheels 15 are journaled upon suitable spindles 16 carried by the plates 12 at a point below and rearwardly of the rock shaft 7. The wheel 15 upon the side adjacent to the pulley 14 is grooved, a belt 17 being located over said pulley and around the groove of said wheel, whereby the brush is adapted to be rotated through the rotation of said wheel as the vacuum cleaner is moved to and fro upon the floor.

A rock arm 18 is fixed upon the rock shaft 7 and extends rearwardly through the nozzle portion of the device, this rock arm being preferably located at a point intermediate of the extremities of the rock shaft.

An adjusting thumb nut 19, provided with the knurled head 20, is journaled within a suitable aperture 21 formed in the top of the nozzle portion. The lower end portion of said nut, which protrudes through the upper wall of the nozzle is provided with the annular groove 22 which receives the half round bearing portion of the retaining plate 23, said retaining plate being fixed to the inner wall of the nozzle by the screw 24.

The adjusting screw 25 is located through

the adjusting nut 19 and provided at its lower end with the bifurcated portion 26 which is pivoted to the free end of the rock arm as by the screw 27. Rotation of the adjusting nut in either direction will thus raise or lower the adjusting screw 25, oscillating the rock arm 18 and rocking the rock shaft 7, the plates 12 thereon being thus rocked, the wheels and brush moving around the axis of said shaft.

It will be noted that apertures 28 are provided in the end walls 11 of the nozzle portion 3. These apertures are provided for the purpose of allowing a blast of air to be drawn into the end portions of the nozzle and upon the wheels and belt, preventing dust or threads from lodging thereon during the operation of the vacuum cleaner.

It will be seen that when the adjusting screw is in its upper position, the wheels 15 will be drawn up entirely within the casing as shown in Fig. 4, the brush being in position to engage the carpet as the cleaner is moved over the floor.

As the adjusting screw is moved downwardly, the wheels and brush rotate upon the axis of the rock shaft 7, the brush being drawn upwardly into the nozzle as the wheels are moved downwardly, raising the nozzle from the floor as shown in Fig. 5.

When the adjusting screw is moved to its lowermost position, the nozzle will be raised a considerable distance above the floor, providing room between the under side of the nozzle and the floor to insert the usual hose attachment which carries the various attachments used for cleaning draperies, upholstery and the like.

I claim:

1. In a vacuum cleaner including a case provided with a nozzle, a rock shaft within the nozzle, a brush eccentrically suspended from the rock shaft, a pair of wheels eccentrically suspended from the rock shaft at the same side of the rock shaft as the brush and spaced from the brush and arranged to engage the floor, and means for rocking said shaft to adjust the brush within the nozzle and to adjust the nozzle with reference to the floor.

2. In a vacuum cleaner including a case provided with a nozzle, a rock shaft within the nozzle, plates fixed upon the rock shaft, wheels eccentrically mounted upon the plates, a brush carried between the plates at the same side of the rock shaft as the wheels and spaced from the wheels, a rock arm upon the shaft, an adjusting screw engaging the rock arm and an adjusting nut swivelled in the case and engaging the screw.

3. In a vacuum cleaner including a case provided with a nozzle, a rock shaft within the nozzle, triangular plates fixed upon the rock shaft at their upper corners, a rotary brush suspended between the lower forward corners of the plates and wheels mounted at the lower rear corners of the plates and means for rocking the rock shaft.

4. In a vacuum cleaner including a case provided with a nozzle, a rock shaft within the nozzle, triangular plates fixed upon the rock shaft at their upper corners, a rotary brush suspended between the lower forward corners of the plates and wheels mounted at the lower rear corners of the plates, a rock arm upon the shaft, an adjusting screw engaging the rock arm and an adjusting nut swivelled in the case and engaging the screw.

In testimony that I claim the above, I have hereunto subscribed my name.

THOMAS O. ADAMS.