April 7, 1942. E. B. POGGENSEE 2,278,736

CARPET SWEEPER

Filed April 26, 1941

Fig. 1.

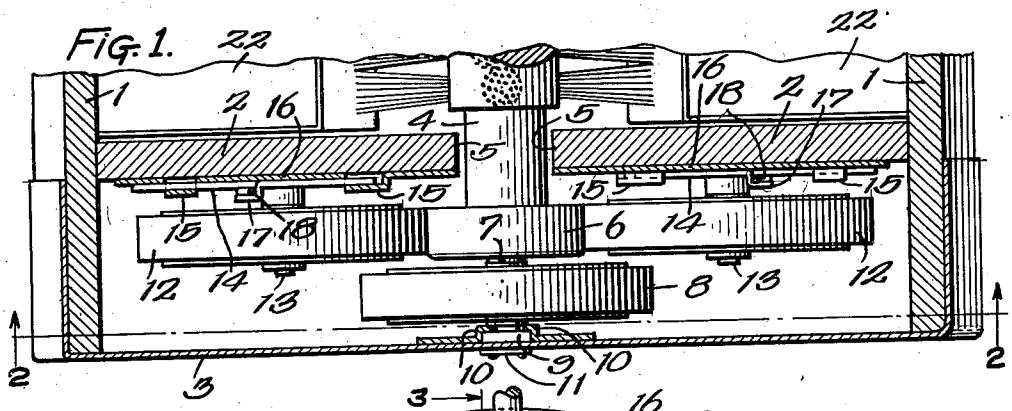


Fig. 2.

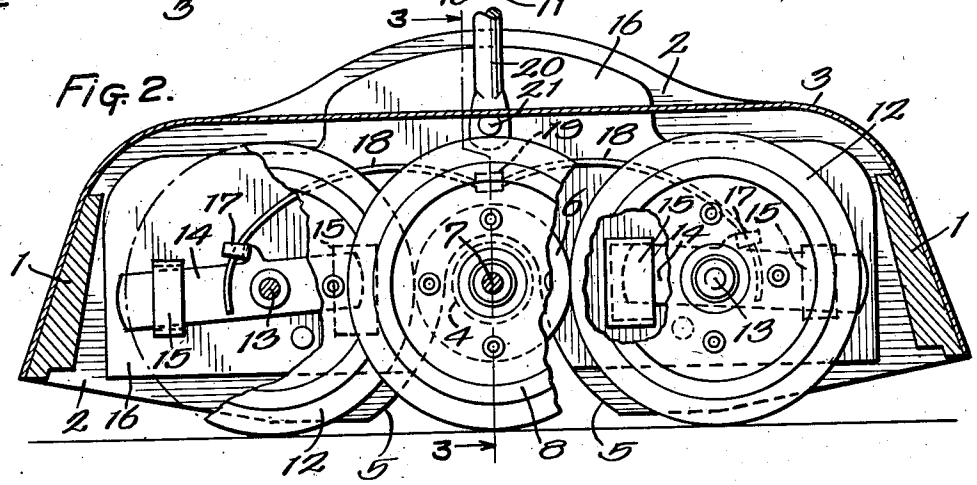


Fig. 3.

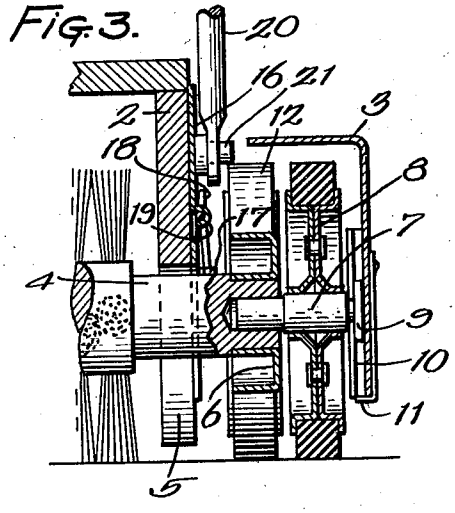
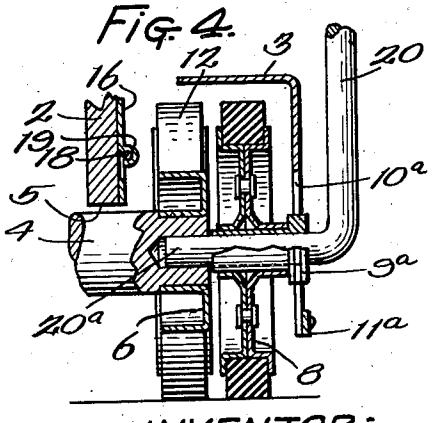


Fig. 4.



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CARPET SWEEPER

Edward B. Poggensee, Chicago, Ill.

Application April 26, 1941, Serial No. 390,466

5 Claims. (Cl. 15—41)

This invention relates to improvements in carpet sweepers and more particularly to an improved automatic control of the brush for carpet sweepers by the weight of the brush and wheels therefor whereby the engagement of the bristles with the carpet is maintained uniform irrespective of the thickness of the carpet upon which the sweeper is employed.

It is an object of this invention to provide a carpet sweeper which will automatically adjust itself to the thickness of the carpet to remove the dust and dirt from the surface without unduly wearing off the nap.

With this and other objects in view reference is made to the accompanying sheet of drawings illustrating a preferred form of the invention with the understanding that minor changes may be made without departing from the scope thereof.

In the drawing:

Figure 1 is a fragmentary top plane view of an end of the sweeper casing with the top broken away and the end and side walls together with the metal end closure or cover shown in section, illustrating the brush wheel, brush driving wheels, and automatic brush control wheel.

Figure 2 is a view partially in end elevation and partially in transverse vertical section taken on the line 2—2, Figure 1, looking in the direction of the arrows, and with parts broken away.

Figure 3 is a fragmentary view in longitudinal vertical section through one end taken on the line 3—3, Figure 2, looking in the direction of the arrows.

Figure 4 is a view similar to Figure 3, with parts broken away, illustrating a modified form.

In the embodiment of this invention as illustrated, the sweeper consists of the customary rectangular wooden casing open at its underside in which the longitudinal side walls 1 are extended at each end beyond the wooden walls 2 to support a metal cover or closure 3 spaced apart to enclose the driving mechanism for a cylindrical rotating brush having a longitudinal wooden brush shaft 4.

As the driving mechanism is the same at each end of the brush shaft 4 it is thought only necessary to illustrate and describe one end of the casing for a clear understanding of the invention.

The end of the brush shaft 4 projects through a semicircular opening having downwardly and oppositely flaring sides 5 in the end wall 2 and mounts a brush wheel 6, preferably a metal wheel with a wide tread, such as disclosed in this applicant's prior patent No. 2,084,777, June 22, 1937. The end of the brush shaft 4 is axially recessed to rotatably receive a stud 7 acting as an axle for the brush control wheel 8, which may be provided with ball bearings if desired. The outer free end of the stud or axle 7 is preferably reduced in diameter and then terminated in an enlarged head 9 so that it may have a vertical travel between oppositely disposed vertical guide ways 10 mounted on the inner vertical side of the metal end closure or cover 3, as shown in Figures 1 and 3. It is preferable to provide a spring closure 11 for the lower end of the guide ways 10 to allow the insertion and removal of the brush shaft 4 and the control wheel 8.

The control wheel 8 may be provided with a rubber tread if desired and the relation of the outer diameter of the control wheel to the outer diameter of the brush is such that as the control wheel travels over the carpet the ends of the bristles of the brush will engage the nap of the carpet sufficiently to remove the dust and dirt from the upper surface thereof.

The brush wheel 6 is mounted in frictional engagement with the treads of the oppositely disposed brush driving wheels 12. Each driving wheel 12 is of the same diameter as the control wheel 8 and is mounted to rotate upon a stud 13 extending outwardly from a carrier plate 14, the opposite ends of which are mounted for limiting the vertical and horizontal movement in guides 15 struck up from an end plate 16 carried on the outer side of the wooden end wall 2. To cause the treads of the brush driving wheels 12 to normally engage the surface of the carpet and tread of the brush wheel sufficiently to drive the brush each carrier plate 14 is provided with a struck out stop 17, between its driving wheel stud 13 and the outer end, to be engaged by the end of a downwardly curved spring 18 secured at its center to an anchor 19 preferably struck out from the metal end plate 16, which spring also maintains the tread of the brush driving wheels 12 in frictional engagement with the brush wheel 6.

Movement is imparted to the carpet sweeper by the usual handle, not shown, secured to a bail 20 having its ends preferably pivotally mounted upon studs 21 carried upon the metal end plate 16, as shown in Figures 2 and 3. Customary dust pans 22, 22 are provided on each side of the brush.

If desired the ends of the bail 20 may be continued, as shown in Figure 4, to terminate in an

extension 20[a] and the guide ways 10 on the inner vertical walls of the metal cover or closure 3 supplanted by a vertical slot 10[a] therein with the enlarged head of the control wheel axle 7 grooved about its periphery, as shown at 9[a], Figure 4, to reciprocate in the slot 10[a]. In this form the extension 20 is passed through the grooved head 9[a] and bearing of the control wheel 8 to be received in the axial recess at the end of the brush shaft 4 in the manner of the stud or axle 7. In this form the end of the slot 10[a] is provided with a detachable stop 11[a] to retain the head 9[a] therein.

What I claim is:

1. A carpet sweeper including a rotatable cylindrical brush having a longitudinal brush shaft, a brush driving wheel on each end of the shaft, two brush control wheels of the same diameter as the cylindrical brush, each control wheel provided with a bearing rotatably mounted in the end of the brush shaft, means for supporting and allowing vertical travel of the outer end of each control wheel bearing, and means for imparting rotation to the brush wheel upon movement of the carpet sweeper.

2. A carpet sweeper including a rectangular casing open on its under side, a cylindrical brush having its bristles mounted on a longitudinal brush shaft projecting through apertures provided therefor in the opposite ends of the casing and opening upwardly from the bottom thereof, a brush wheel on each end of the brush shaft exterior of the end wall, an extension on each end wall to form a cover or closure over said brush wheels, control wheels for the brush of a diameter equal to that of the brush rotatably carried on axles concentrically mounted on each end of the brush shaft, with the outer free end having limited sliding vertical engagement with the adjacent wall of the end closure extending beyond each end of the casing, a handle with a bail having its ends pivotally mounted upon the ends of the casing to impart movement to the carpet sweeper, and means cooperating with the brush wheel to rotate the brush upon movement of the casing over the carpet.

3. The structure of claim 2 wherein, the said means includes two oppositely disposed brush driving wheels mounted upon each end of the casing in frictional engagement with the brush wheel and carpet.

4. The structure of claim 2 wherein, each brush driving wheel is rotatably carried on a carrier plate mounted to have limited vertical and horizontal movement on each end of the casing normally urged downwardly and inwardly by a spring anchored upon the said end wall.

5. The structure of claim 2 wherein, the outer free end of the brush control wheel axle is mounted to travel in a vertical slot provided in the vertical portion of the cover extending from the casing and over the brush wheel and control wheel.

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