Dec. 30, 1930. F. W. PULLEN 1,786,864

CARPET SWEEPER BRUSH DRIVE MECHANISM

Filed June 4, 1928 2 Sheets-Sheet 1

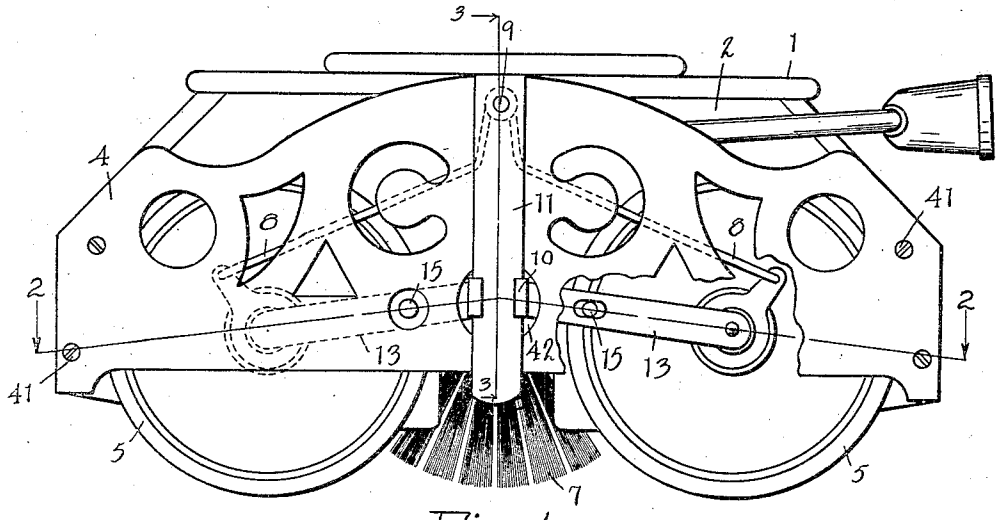


Fig. 1

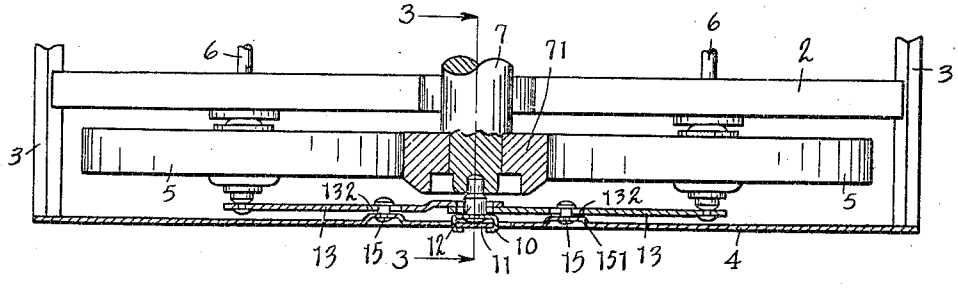


Fig. 2

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CARPET SWEEPER BRUSH DRIVE MECHANISM

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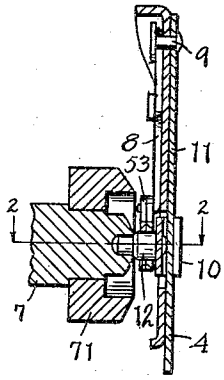


Fig. 3

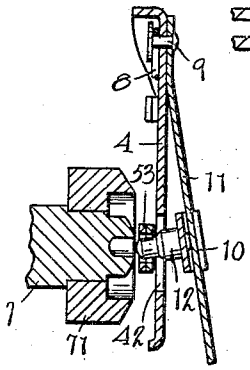


Fig. 4

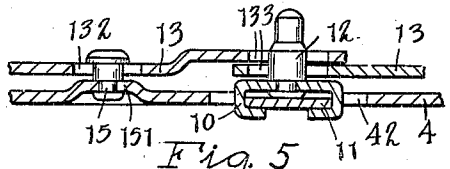


Fig. 5

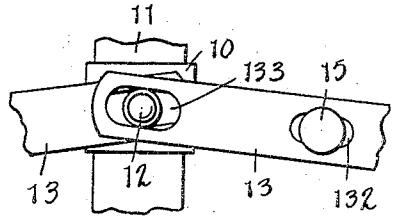


Fig. 6

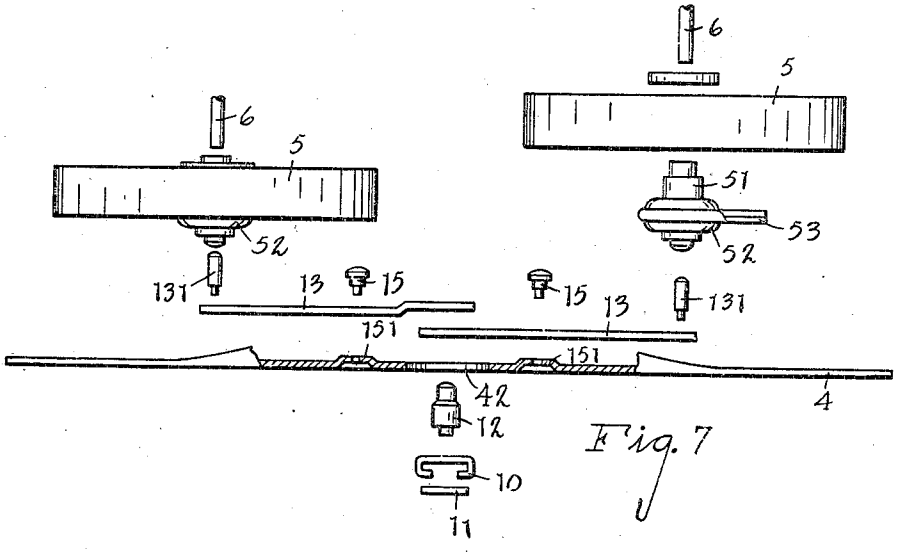


Fig. 7

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Patented Dec. 30, 1930 1,786,864

UNITED STATES PATENT OFFICE

FRED WALTER PULLEN, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR TO BISSELL CARPET SWEEPER COMPANY, OF GRAND RAPIDS, MICHIGAN

CARPET-SWEEPER BRUSH-DRIVE MECHANISM

Application filed June 4, 1928. Serial No. 282,580.

This invention relates to an improved carpet sweeper brush drive mechanism.

The objects of the invention are:

First, to provide improved means of automatically controlling the relative height of the brush and floor wheels under varying conditions.

Second, to provide improved adjusting fulcrumed connections between the floor wheels and brush.

Third, to provide an improved automatically adjustable slide support for the brush pivot.

Objects relating to details of construction and operation will appear from the detailed description to follow. The invention is defined in the claims. Structures embodying my invention are clearly illustrated in the accompanying drawings, in which:

Fig. 1 is an end view of a carpet sweeper of regular Bissell design incorporating my improved brush control mechanism.

Fig. 2 is a detail sectional plan view of one end of the carpet sweeper taken on the irregular section line 2—2 of Fig. 1

Fig. 3 is a vertical detail sectional view on line 3—3 of Figs. 1 and 2, showing the brush pivot in engaged position.

Fig. 4 is a sectional view similar to Fig. 3 showing the spring slide deflected and the brush pivot withdrawn to permit the removal of the brush.

Fig. 5 is an enlarged detail sectional view on the line 2—2 of Figs. 1 and 3 showing the relation of the spring slide and the slotted connection of the lever.

Fig. 6 is an enlarged detail fragmentary elevation view from the inside of the levers as illustrated in Fig. 2 showing the brush pivot engaged by the slotted levers and the disposition and arrangement of the slide on the spring slide-way.

Fig. 7 is a detail plan view similar to Fig. 2 with the various parts in separated relation, the brush and case being omitted.

The parts of the drawing will be identified by their numerals of reference which are the same in all the views.

1 is the carpet sweeper case having ends 2 and extension sides 3 forming a recess for the brush driving mechanism. 4 is the end plate secured to the extensions 3 by suitable screws 41. 5 are the floor wheels carried on a pair of axles 6 at each side, the opposite ends of the sweeper being identical. 7 is the carpet sweeper brush having a friction pulley 71 yieldingly engaged by the floor wheels. The floor wheels have extended hubs 51 embraced by bearings, the outer case 52 of which has extended arms 53.

A spring 8 is folded centrally and carried by the stud 9 and has laterally disposed ends engaging the extended arms 53 of the bearings, thus tensioning the floor wheels in the manner in which such wheels are tensioned on a Bissell carpet sweeper. A slide 10 is on a blade spring 11 which is secured by the stud 9. To the slide 10 is secured the brush pivot 12. The slide is adapted to play up and down in a slot 42 in the plate 4. The spring permits the brush pivot to be readily withdrawn from the brush, thus permitting its removal. When the brush is engaged the slide will play up and down on the blade spring 11 very freely.

I provide equalizing lever supports 13 between the floor wheels and the brush. These are carried on fulcrum pins 15 on the end plates 4. In the preferred construction, pivot pins 131 on the outer ends of the lever 13 enter into the hubs 51 of the floor wheels which are journaled therein. The lever 13 is slotted centrally at 132 for the fulcrum pin 15 and at its inner end or the brush end it is slotted at 133 where it engages the brush pivot 12. 12, as already indicated, is the brush pivot which engages the end of the brush in the usual way.

A boss 151 is provided for each fulcrum pin to hold the levers in proper spaced relation. From this description it will be seen that on the manipulation of the carpet sweeper the brush will be driven because of the yielding spring pressure connection between the floor wheels and the brush wheel. As the handle of the carpet sweeper is manipulated the brush will adjust itself to the floor level whether that be a carpet or rug with a long pile or a hard surface carpet or even a hard floor. The brush automatically takes the correct position

to properly sweep the surface over which the carpet sweeper is passed. This is done automatically by the action of the carpet sweeper when it is manipulated. The action of the floor wheels, while free, is equalized.

The adjustment of the levers is independent of the spring pressure of the floor wheels on the brush pulley so that there is no interference with the proper drive of the brush when the adjustment takes place.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a carpet sweeper structure the combination of a case having extended sides, an end plate connected to said extension sides and having an aperture at the center, a slide in said aperture, a brush pivot secured to the said slide, a carpet sweeper brush with a drive pulley journaled on the said pivot, a blade spring secured at one of its ends to the end plate and serving as a way for said slide to support the same yieldingly in position, floor wheels to contact with the said brush and having hubs, bearings embracing said hubs and having projecting arms, a compression spring secured to the end plate of the case and connected to said arms for tensioning said floor wheels, levers with journal pins extended into the hubs of the said floor wheels and having central fulcrum slots and slotted inner ends embracing the brush pivot, and fulcrum pins on the end plates for said levers, as specified.

2. In a carpet sweeper structure the combination of a case having an end plate, a slide, a brush pivot secured to the said slide on which the carpet sweeper brush journals, a carpet sweeper brush with drive pulley journaled on said pivot, a blade spring serving as a way for the said slide secured at one end to the end plate to yieldingly support the slide in position, floor wheels for the said carpet sweeper and means for maintaining yielding contact between the floor wheels and the drive pulley of the brush, and levers having their midportions pivoted to said plate and their ends connected to said floor wheels and the brush, as specified.

3. In a carpet sweeper structure the combination of a case having an end plate, a slide, a brush pivot secured to the said slide on which the carpet sweeper brush journals, a carpet sweeper brush with drive pulley journaled on said pivot, a blade spring serving as a way for the said slide secured at one end to the end plate to yieldingly support the slide in position, floor wheels for the said carpet sweeper and means for maintaining yielding contact between the floor wheels and the drive pulley of the brush, as specified.

In witness whereof I have hereunto set my hand.

FRED WALTER PULLEN.