Sept. 5, 1939. F. W. PULLEN 2,171,633

CARPET SWEEPER BRUSH DRIVE MECHANISM

Filed Oct. 12, 1936

Fig. 1.

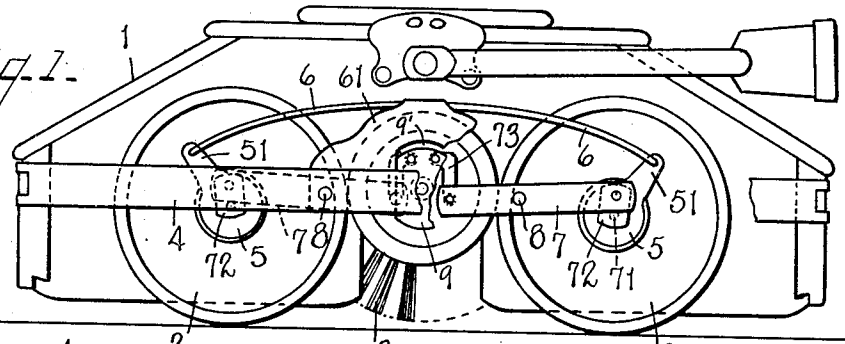


Fig. 2.

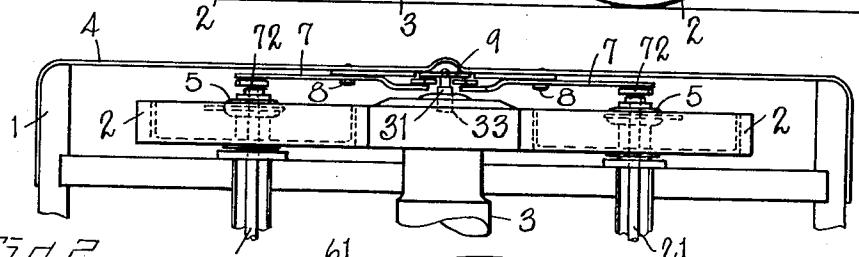


Fig. 3.

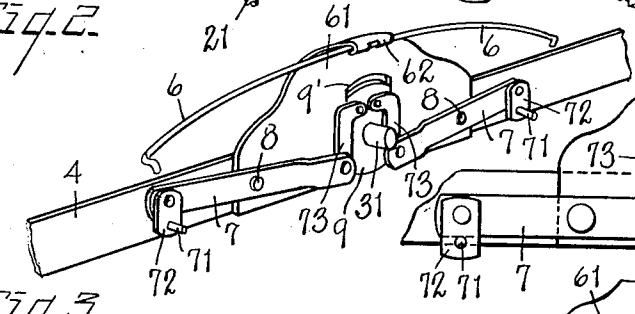


Fig. 4.

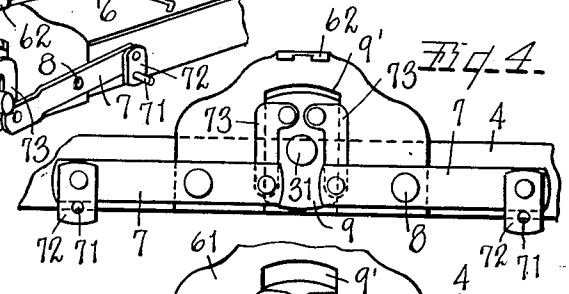


Fig. 5.

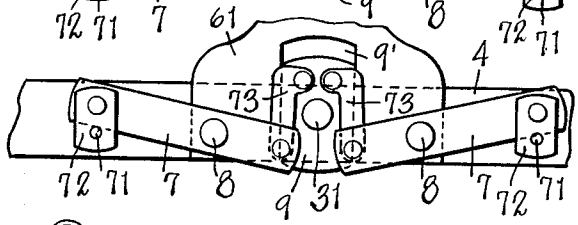
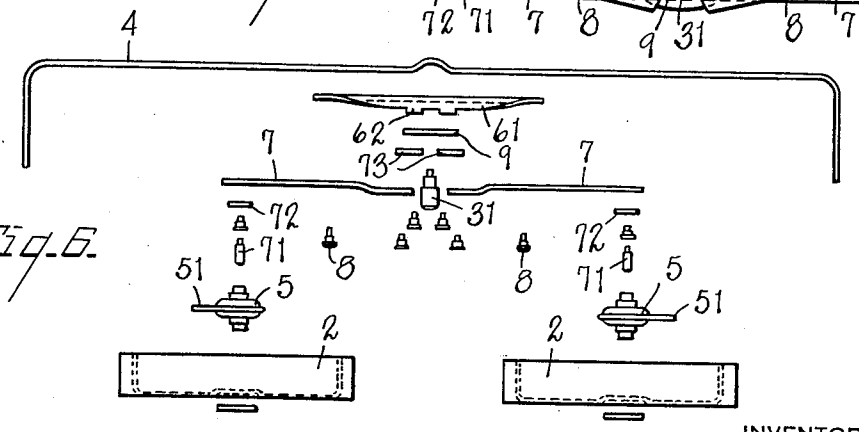


Fig. 6.



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CARPET SWEEPER BRUSH DRIVE MECHANISM

Fred W. Pullen, Grand Rapids, Mich., assignor to Bissell Carpet Sweeper Company, Grand Rapids, Mich.

Application October 12, 1936, Serial No. 105,267

4 Claims. (Cl. 15—41)

This invention relates to 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 lever connections between the floor wheels and brush and an improved automatically adjustable slide support and connection for the brush pivot to the equalizing means.

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 drawing, in which:

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

Fig. 2 is an inverted plan view of the end of the carpet sweeper illustrated in Fig. 1.

Fig. 3 is a fragmentary perspective view of the guard bar, equalizing levers, slide and brush pin connection taken from the inside of the opposite end of the sweeper illustrated in Fig. 1, the ends corresponding to each other, with the brush supporting pivot in high position.

Fig. 4 is an elevation view of the same parts from the same position as illustrated in Fig. 3, showing the high position.

Fig. 5 is a detail similar to Fig. 4, more of the parts being cut away showing the depressed position of the equalizing levers and brush pintle.

Fig. 6 is a detailed plan view of the parts of the structure in separated relation, the spring being omitted.

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

1 is a carpet sweeper casing of the usual form. 2, 2 are the floor wheels at one end of the carpet sweeper, the two ends being the same. 21, 21 are the connecting axle rods for the floor wheels in the opposite ends of the case. (See Fig. 2.) 3 is the usual brush. 4 is the end guard bar embracing the mechanism at the end of the carpet sweeper casing. 5, 5 are the usual ball bearings for the hubs of the floor wheels provided with projecting arms 51 for the connection of the spring. 6 is the spring carried by the spring plate 61 which is riveted or otherwise secured to the end guard bar 4. The spring 6 is retained by the central loop 62 and engages the ends of the arms 51 in the usual way.

I provide equalizing lever supports 7 between the floor wheels and the brush. These are carried on fulcrum pins 8 on the end bars 4. At the outer ends of each lever 7 are journal pins 71 which are on the lower ends of links 72 and are jonrnaled in the hubs of the floor wheels. Brush journal pivot 31 is journaled in each end of the brush being provided with a bearing part 33 and riveted to the vertical slide 9 which reciprocates in ways 9′ in the spring plate 61. The inner ends of the levers are connected by links 73, 73 to said vertical reciprocating slide 9 as seen in Figs. 3, 4 and 5 of the specification. The outer ends of the levers are connected by vertical links, bearing journal pins to the hubs of the floor wheels.

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 connection between floor wheels and the brush hub and as the handle of the carpet sweeper is manipulated the brush will adjust itself to the floor, whether that be a carpet or rug with a long pile or a hard surfaced 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.

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, a support fixedly attached to and arranged alongside the end of said case having a vertical central slideway and having a fulcrum each side of the central slideway, a brush disposed within the case having a driving hub at its end, floor wheels disposed in driving engagement with said hub, spring means extending between said floor wheels and said case for holding said floor wheels yieldingly in engagement with said hub and for supporting said case from said floor wheels, a slide in said slideway with journal connections to said brush, horizontally disposed equalizing levers each pivoted between its ends on one of said fulcrums, a link pivoted at the inner end of each lever having its other end pivotally connected to the slide, and a second link pivoted to the other end of each lever and pivotally connected to a corresponding floor wheel.

2. In a carpet sweeper structure, the combina-

tion of a case, a support fixedly attached to and arranged alongside the end of said case, a brush disposed within the case having a driving hub at its end, a fulcrum on each side of the brush hub on said support, floor wheels disposed in driving engagement with said hub, spring means extending between said floor wheels and said case for holding said floor wheels yieldingly in engagement with said hub and for supporting said case from said floor wheels, horizontally disposed equalizing levers each pivoted between its ends on one of said fulcrums, a link pivoted at the inner end of each lever having at its other end means forming a pivotal connection between said end and the brush, and a second link pivoted to the other end of each lever and pivotally connected to a corresponding floor wheel.

3. In a carpet sweeper structure, the combination of a case, a brush disposed within the case having a driving hub at its end, a fulcrum fixedly supported from said case on each side of the brush hub, floor wheels disposed in driving engagement with said hub, spring means extending between said floor wheels and said case for holding said floor wheels yieldingly in engagement with said hub and for supporting said case from said floor wheels, horizontally disposed equalizing levers each pivoted between its ends on one of said fulcrums, a link pivoted at the inner end of each lever having at its other end means forming a pivotal connection between said end and the brush, and a second link pivoted to the other end of each lever and pivotally connected to a corresponding floor wheel.

4. In a carpet sweeper structure, the combination of a case, a brush disposed within the case having a driving hub at its end, a fulcrum fixedly supported on said case on each side of the brush hub, floor wheels disposed in driving engagement with said hub, spring means extending between said floor wheels and said case for holding said floor wheels yieldingly in engagement with said hub and for supporting said case from said floor wheels, horizontally disposed equalizing levers each pivoted between its ends at one of said fulcrums and having at its inner end means forming a pivotal connection between said end and the brush and at its outer end means forming a pivotal connection between said end and a corresponding floor wheel, two of the pivoted connections from each lever consisting of a link pivoted to the lever at one end and pivoted to the corresponding element at its other end.

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