

Feb. 8, 1938.

T. H. STOUGH

2,108,003

CARPET SWEEPER

Filed Oct. 29, 1936

2 Sheets-Sheet 1

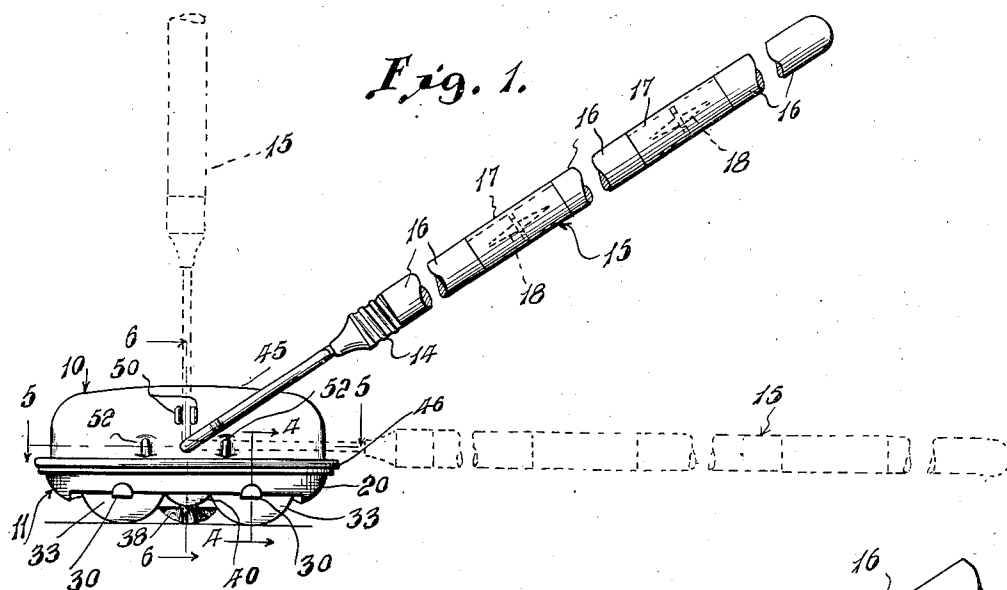


Fig. 2.

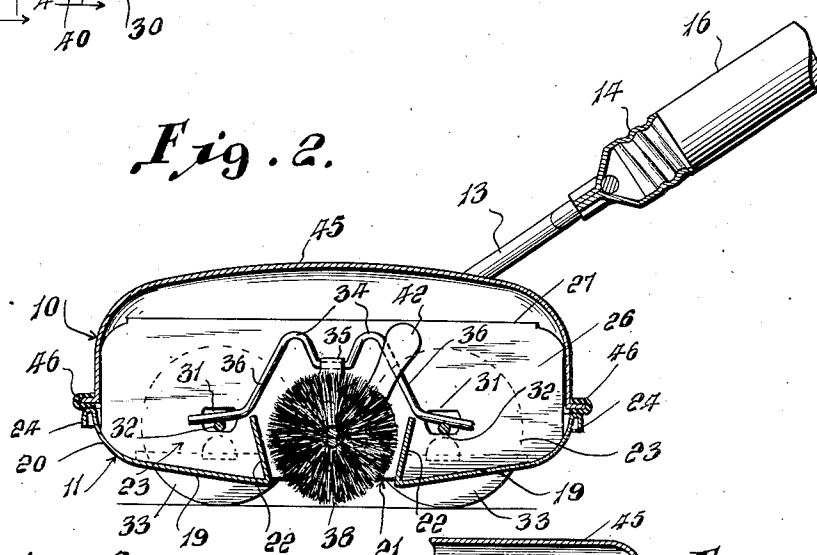


Fig. 3.

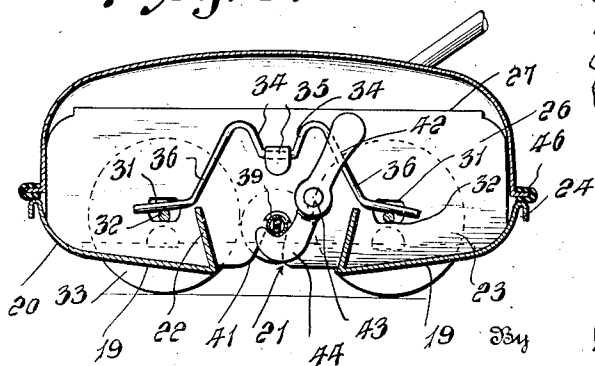
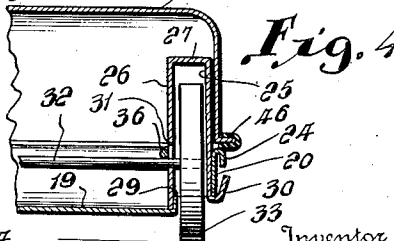


Fig. 4.



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Fig. 5.

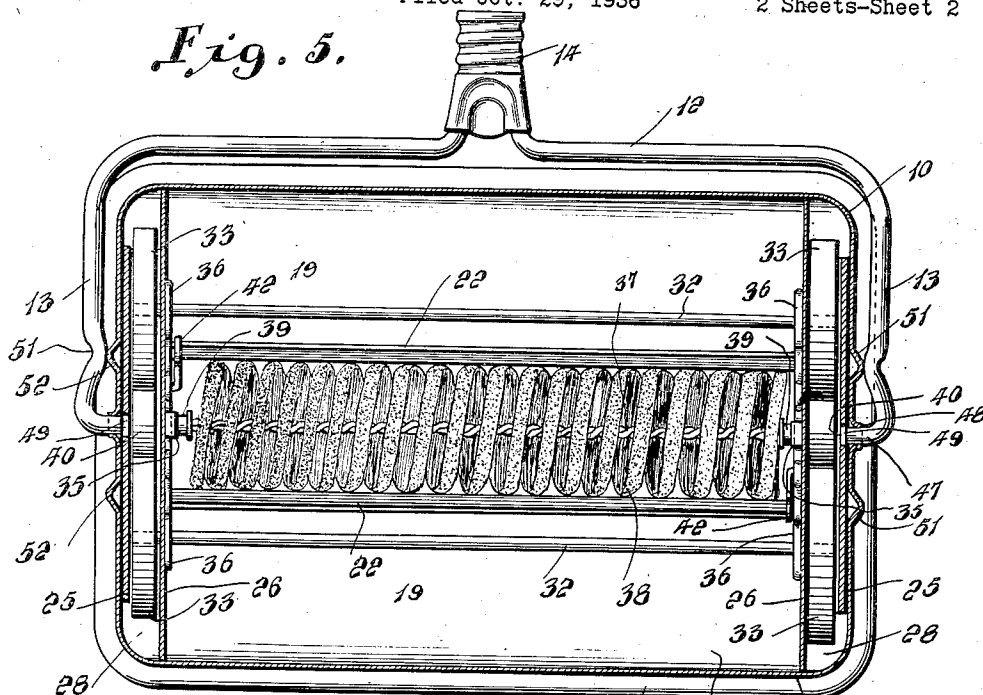


Fig. 6.

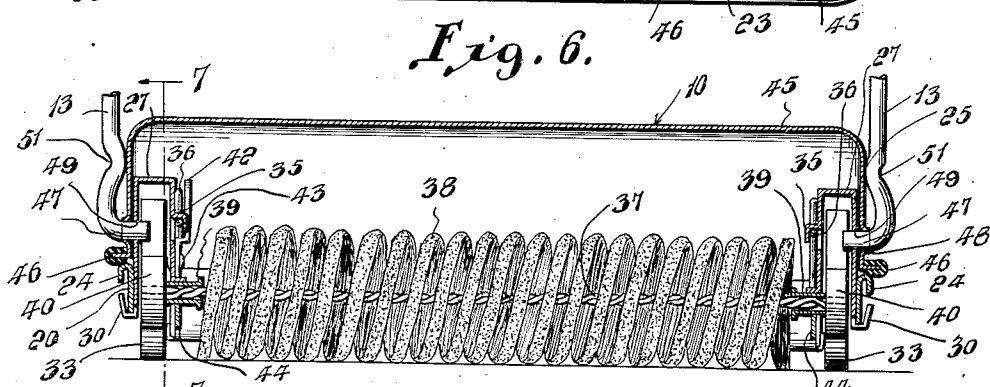


Fig. 7.

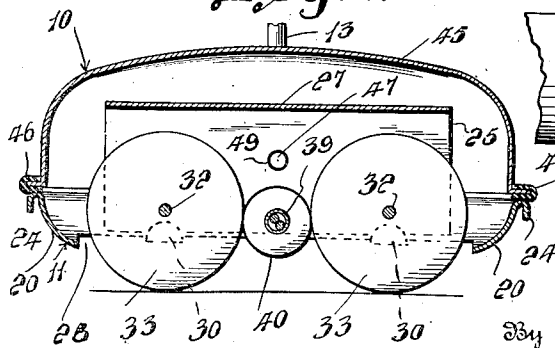
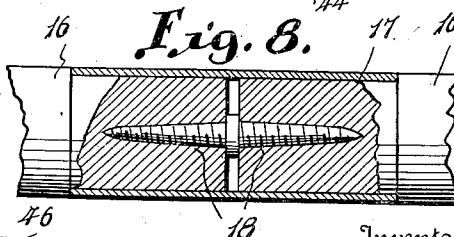


Fig. 8.



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UNITED STATES PATENT OFFICE

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CARPET SWEEPER

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Application October 29, 1936, Serial No. 108,284

3 Claims. (Cl. 15—41)

This invention relates to certain new and useful improvements in carpet sweepers.

An object of the invention is to provide a carpet sweeper of extremely simple construction, embodying a minimum number of parts and one that is inexpensive to manufacture, the body of the sweeper is formed of sheet metal that is pressed, stamped or otherwise shaped to the desired configuration to facilitate assembly and dis-assembly.

A further object of the invention is to provide a carpet sweeper wherein the body portion thereof is formed of top and bottom sections, the latter carrying the rotary floor brush and provided with dust collection receptacles while a pivotally mounted handle member carried by the top section is adapted within a range of pivotal movement to form an interlocking connection between the top and bottom sections with cooperating cam members carried by the handle element and top section to separate said interlocking connection and permit separation of the top and bottom sections of the sweeper body.

With the above and other objects in view that will become apparent as the nature of the invention is better understood, the same consists in the novel form, combination and arrangement of parts hereinafter more fully described, shown in the accompanying drawings and claimed.

In the drawings:—

Figure 1 is a side elevational view of the carpet sweeper constructed in accordance with the present invention, the handle being shown in full line position and partly broken away, the handle being illustrated by dotted lines in vertical position when the carpet sweeper is out of use and further lowered to a horizontal position as shown by dotted lines to permit separation of the top and bottom sections of the sweeper body;

Figure 2 is a cross-sectional view showing the rotary brush disposed between two dust collection chambers;

Figure 3 is another cross-sectional view adjacent one end of the sweeper body and showing the spring arms for tensioning the bearings of the floor rollers and the latch lever for retaining the rotary brush in position;

Figure 4 is a detail sectional view taken on line 4—4 of Figure 1, showing an end bearing for a floor roller that has an interlocking connection with the bottom section;

Figure 5 is a horizontal sectional view taken on line 5—5 of Figure 1, showing the side legs of the bail of the handle lowered to horizontal

position with the cooperating cam devices carried by the side legs and top section of the sweeper body engaged with each other for displacing the ends of the legs from interlockingly connecting the top and bottom sections of the sweeper body;

Figure 6 is a vertical sectional view taken on line 6—6 of Figure 1, showing the side legs of the handle bail vertically disposed and the ends of the legs interlockingly connecting the top and bottom sections of the sweeper body;

Figure 7 is a vertical cross-sectional view taken on line 7—7 of Figure 6, showing the friction drive connection between the floor rollers and rotary brush; and

Figure 8 is a fragmentary side elevational view of the handle rod, partly in section and showing the screw connection between sections thereof.

The sweeper body is formed of top and bottom sections 10 and 11 respectively, the sections being detachably connected together by means of a handle device that comprises a bail 12 having side legs 13 that act to separably connect the body sections in a manner to be later described. The bail 12 carries a threaded socket 14 intermediate its ends as shown in several of the figures for the threaded reception of one end of a handle rod 15 that is formed of sections 16, shown in Figure 8 as having their adjacent ends reduced and surrounded by a collar or sleeve 17 with a double screw device 18 forming a connection between the handle sections 16.

The bottom section 11 of the sweeper body is of rectangular form in plan view and includes the bottom wall 19 having upwardly arched side and end wall sections 20, the bottom wall 19 inclining downwardly towards the center from opposite sides and being longitudinally cut away as at 21 to provide a clearance for a roller brush. Upstanding walls 22 carried by the spaced bottom wall sections 19 border the opening 21 and define dust collection chambers 23. A downturned relatively short marginal flange 24 is carried by the wall 19 of the bottom section 11.

A rotary brush and floor wheels are carried by the bottom section 11 and the mounting for the brush and wheels includes an inverted U-shaped spring plate comprising side walls 25 and 26 and a connecting top wall 27, the arched end wall sections 20 being longitudinally cut away to provide a clearance for the floor wheels and the mounting of the bearing plate. The inner wall 26 of the bearing plate rests upon the upper face of the bottom wall sections 19 at opposite sides of the cut away portion 19 and is engaged

by the upturned flange 29 on the bottom wall sections 19 at the inner sides of the cut away portion 28 while the lower edge of the outer wall 25 of the bearing plate is located inwardly of the end wall section 20 and in contact therewith, a pair of lugs 30 as shown in Figures 1, 2 and 6 being carried by the lower edge of the outer wall 25 of the bearing for engagement with the end wall sections 20, the bearing plate being rigidly attached to the bottom section 11.

As shown in Figures 2 and 3, the inner wall 26 of each bearing plate is provided with a pair of slotted openings 31 respectively within the area of the dust collection chambers 23 and a longitudinal-rod within each dust collection chamber 23 projects through the adjacent slotted openings 31 into the cut-away portion 28 of the bottom section 11 with a floor wheel 33 fixed to each end of the rod. A spring device is associated with the bearing plate and rod end for normally holding the floor rollers 33 in their lowered position and the bottom section 11 elevated relative thereto, the spring device as illustrated in Figs. 2 and 3 having the intermediate portion 34 thereof anchored to the wall 26 by means of the lug 35 struck out from said wall, the end legs 36 being engaged with the upper sides of the rods 32.

A roller brush is removably journaled in the walls 26 of the bearing plate and extends longitudinally of the cut away portion 21 in the bottom between the bottom wall sections 19, the rotary brush comprising a twisted wire core 37 carrying bristles 38, the opposite ends of the wire core 37 having a collar 39 anchored thereto outwardly of the bristles 38 with a friction roller 40 anchored on the outer end of each collar and disposed in the cut away portion 28 of the bottom section 11 for engagement with the floor wheels 33 as clearly shown in Figure 7, the spring device acting to maintain frictional engagement between the wheels 33 and 40. The lower edges of the inner walls 26 are centrally cut away as at 41 to permit insertion of the collar 39 therein and the retaining element for opposite ends of the rotary brush includes a lever 42 pivoted as at 43 to each wall 26 with a hook 44 at the end of each lever providing a bearing for the brush collar 39 as shown in Figure 3. To remove the roller brush 38 from the body of the carpet sweeper, the levers 42 are moved on their pivotal mountings 43 to displace the hook bearings 44 laterally of the notches or cut away portions 41 in the walls 26 whereupon the roller brush may be readily removed from the sweeper body.

The top section 10 has an upwardly arched wall 45 carrying an outwardly directed marginal flange at its lower edge that is surrounded by a rubber or other cushion bead 46.

When the top and bottom sections 10 and 11 of the carpet sweeper are assembled, the rubber gasket 46 is seated on the edge bead 24 carried by the bottom section 11 and the top and bottom sections are detachably connected together by means of the bail 12. The bail 12 is carried by the top section 10 and being of a resilient character, the side legs 13 thereof normally move toward the end walls of the wall 25 with the inwardly directed angular ends 47 on the legs 13 extending through openings 48 in the end walls of the cover wall 45 and adapted for projection through openings 49 in the outer wall 25 of the bearing plate for the floor wheels and brush as shown in Figures 5 and 6. Each end wall of the cover wall 45 carries a pair of spaced lugs 50 intermediate the sides of the cover wall 45 and

each leg 13 has an inwardly offset abutment 51 that is adapted to be positioned between said lugs 50 for retaining the handle rod 15 in vertical position as illustrated in dotted lines in Figure 1 when the carpet sweeper is out of use. As shown in Figures 1 and 5, a pair of cam abutments 52 is carried by each end wall of the cover wall 45 adjacent the lower edge of the cover and respectively at opposite sides of the lugs 50 so that when the handle 15 is lowered to the horizontal dotted line position shown in Figure 1, the abutments 51 on the legs 13 engage the cam abutments 52 on the cover wall 45 for moving the angle ends 47 of the legs out of the openings 49 in the walls 25 of the bearing plate to permit separation of the top and bottom sections 10 and 11 of the sweeper body for cleaning the rotary brush 38 as well as the dust collection chambers 23.

Pressure on the sweeper body through the handle rod 15 causes the sweeper body to be lowered toward the floor line and against the tension of the spring device 34 with the rotary brush 38 moved into contact with the floor, operation of the brush sweeping dust and other foreign matter upwardly into the dust collection chambers 23 within the sweeper body. By forming the handle rod 15 of sections 16 as shown in Figures 1 and 8, the carpet sweeper may be packed for shipment in a relatively small package and when the handle sections are assembled, they present a rigid handle rod for operation of the sweeper. The handle rod 15 is movable through a relatively wide arc between the lugs 50 and abutment cams 52 on the sweeper body and it will be understood from an inspection of Figure 1, so that the handle rod may be positioned at various angles when the sweeper is being used. The bail 12 of the handle construction constitutes a device for interlockingly connecting the top and bottom sections 10 and 11 of the sweeper body and in order to separate such sections, it is only necessary to lower the handle rod 15 to a horizontal position as shown by dotted lines in Figure 1 for removal of the angle ends 47 of the bail legs 13 out of the bearing plate openings 49.

From the above detailed description of the invention, it is believed that the construction and operation thereof will at once be apparent and while there is herein shown and described the preferred embodiment of the invention, it is nevertheless to be understood that minor changes may be made therein without departing from the spirit and scope of the invention as claimed.

I claim:—

1. In a carpet sweeper of the character described, an elongated casing having top and bottom sections, an inverted U-shaped frame having spaced side walls rigidly mounted parallel to each other in each end of the bottom section, floor wheels and a brush journaled in the frames and projecting downwardly through openings provided in the bottom section, the top section inclosing the frames and having abutting marginal edge contact with the bottom section, the outer wall of each inverted U-shaped frame having an opening therein and the end walls of the top section having openings registering with the aforesaid openings and a handle including a bail with inwardly directed angle ends received in said registering openings for holding the top and bottom sections in assembled relation.

2. In a carpet sweeper of the character described, an elongated casing having top and bottom sections, an inverted U-shaped frame hav-

ing spaced side walls rigidly mounted parallel to each other in each end of the bottom section, floor wheels and a brush journaled in the frames and projecting downwardly through openings provided in the bottom section, the top section inclosing the frames and having abutting marginal edge contact with the bottom section, the outer wall of each inverted U-shaped frame having an opening therein and the end walls of the top section having openings registering with the aforesaid openings and a handle including a bail with inwardly directed angle ends received in said registering openings for holding the top and bottom sections in assembled relation, and a cam on the top section positioned for engagement by the bail when the latter is moved to a predetermined position for moving the angle ends of the bail out of the openings in the outer walls of the U-shaped frames with the angle ends of the bail remaining in the openings in the top section whereby the top section and handle may be unitarily removed from the bottom section.

3. In a carpet sweeper of the character described, an elongated casing having top and bot-

tom sections, an inverted U-shaped frame having spaced side walls rigidly mounted parallel to each other in each end of the bottom section, floor wheels and a brush journaled in the frames and projecting downwardly through openings provided in the bottom section, the top section inclosing the frames and having abutting marginal edge contact with the bottom section, the outer wall of each inverted U-shaped frame having an opening therein and the end walls of the top section having openings registering with the aforesaid openings and a handle including a bail with inwardly directed angle ends received in said registering openings for holding the top and bottom sections in assembled relation, and cooperating cam means formed on the top section and the handle and so constructed and arranged as to be rendered operable when the handle is moved to a predetermined position for separating the pivotal connection between the handle and the bottom section whereby the top and bottom sections may be separated.

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