

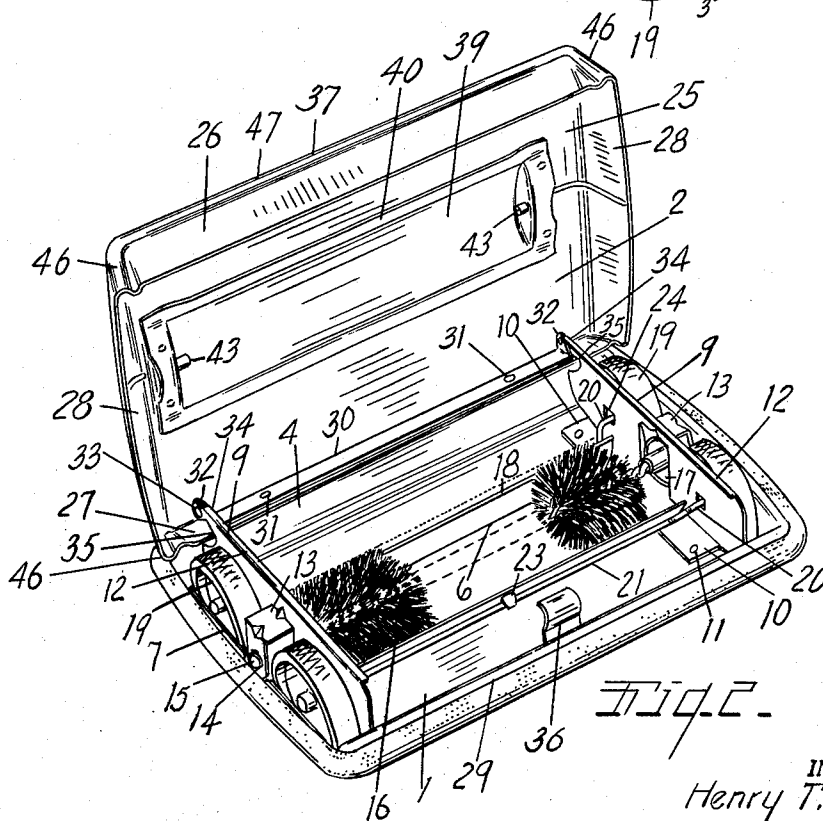
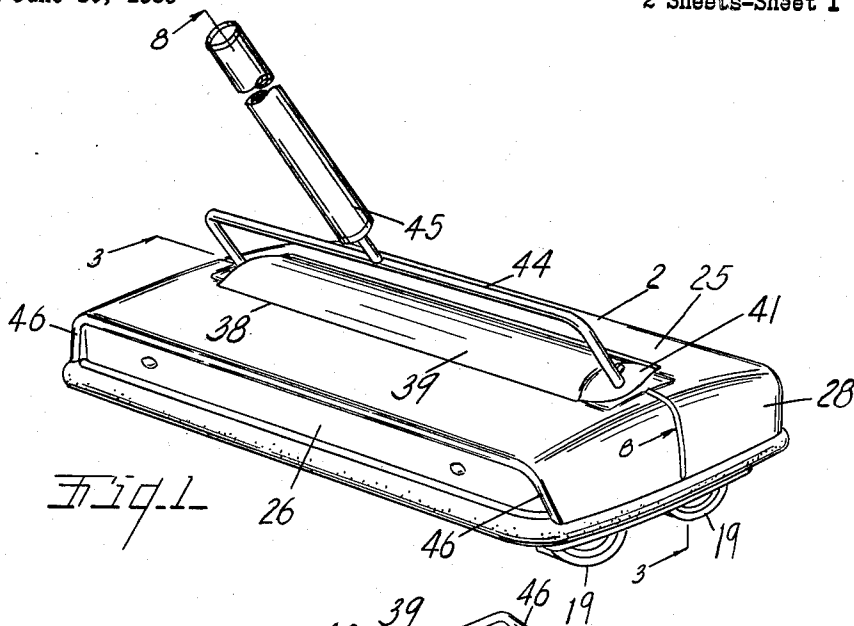
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H. T. LATHROP  
CARPET SWEEPER

3,003,170

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2 Sheets-Sheet 1



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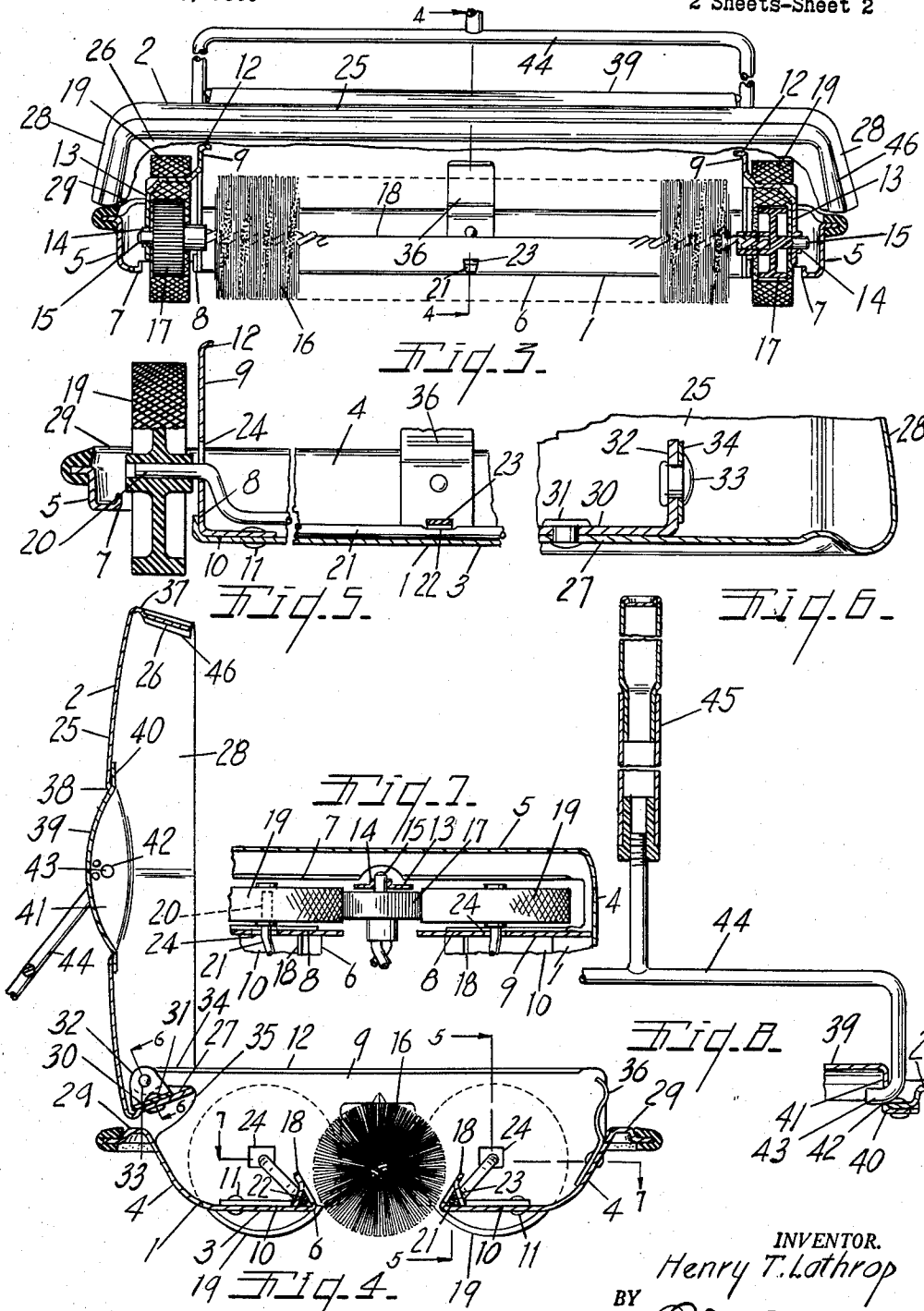
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2 Sheets-Sheet 2



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## CARPET SWEEPER

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This invention relates to carpet sweepers of the rotary brush type. The main objects of this invention are,

First, to provide a carpet sweeper which is of relatively few parts and at the same time is efficient and capable of withstanding severe usage.

Second, to provide a carpet sweeper which may be very economically produced and one in which all moving parts are housed or covered when the top casing member is closed.

Third, to provide a carpet sweeper in which the main body portions are formed as stampings.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

FIG. 1 is a perspective view of a carpet sweeper embodying my invention, the handle being partially broken away and being conventionally illustrated.

FIG. 2 is a perspective view with the casing in fully open position, a fragment only of the brush being illustrated.

FIG. 3 is a fragmentary side view with the casing partially broken away, certain parts being shown in section, portions only of the brush being illustrated and those portions other than the spindle and wheel mounting being conventionalized.

FIG. 4 is a transverse section on a line corresponding to line 4-4 of FIG. 3 with the top casing member in open position.

FIG. 5 is an enlarged fragmentary view partially in section on a line corresponding to line 5-5 of FIG. 4 illustrating the details of the lower wheels, the axle therefor and the mounting thereof.

FIG. 6 is an enlarged fragmentary view on a line corresponding to line 6-6 of FIG. 4 illustrating certain details of the hinge mounting for the top casing member.

FIG. 7 is a fragmentary horizontal section on a line corresponding to line 7-7 of FIG. 4.

FIG. 8 is an enlarged fragmentary view partially in section on a line corresponding to line 8-8 of FIG. 1 illustrating structural details of the top casing member and of the handle mounting.

One of the main objects of the invention is to provide a carpet sweeper structure which while desirable for carpet sweepers of standard sizes or dimensions is well adapted for embodiment in small sweepers which at the same time are efficient in use.

The embodiment illustrated comprises a bottom casing member designated generally by the numeral 1 and a top casing member designated generally by the numeral 2 which is hingedly mounted on the bottom casing member at one side thereof as will be hereinafter described. These casing members 1 and 2 are formed as integral stampings, that is, the main or body portions thereof. The bottom casing member 1 comprises a bottom portion 3, side walls 4-4 and end walls 5-5. The bottom 3 has a longitudinal brush opening 6 therein desirably centrally located and is provided with transversely disposed slot-like openings 7 which open to the central or brush opening. The bottom is provided with upturned flanges 8 at the inner edges of these openings. Crosspieces 9 are disposed on the inner sides of these flanges 8 and provided with inturned flanges 10 which are secured to the bottom as by means of the rivets 11. These crosspieces 9 are

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provided with laterally turned stiffening flanges 12 at their upper edges and have portions 13 struck outward therefrom and provided with bearings 14 for the spindles 15 of the brush 16. These spindles are provided with pulleys 17 which are fixedly secured to the spindles. These pulleys are desirably formed of thermoplastic material, nylon being suitable. The bottom is provided with upturned outwardly inclined flanges 18 extending from the inner edges of the brush opening and from end to end thereof. These flanges, the side walls and the crosspieces define dustpans at each side of the brush opening. The floor wheels 19 are rotatably mounted on the journals 20 of the springable axles 21 which are disposed in the angle defined by the bottom and its flanges 18. The axles are provided with central notches 22 which are retainingly engaged by the tongues 23 struck out from the flanges, see FIGS. 4 and 5. The axles are of springable material and their spindles are arranged through the openings 24 in the cross members which are dimensioned so that their upper and lower edges constitute stops limiting the vertical movement of the wheels. These axles springably urge the floor wheels against the brush pulleys and the peripheries of the floor wheels are preferably knurled to provide effective driving engagement with the brush pulleys which are also desirably roughened as indicated. The floor wheels in the preferred embodiment are formed of resiliently flexible material such as rubber, synthetic rubber, or the like.

The top member 2 comprises the top 25, inwardly inclined side walls 26 and 27, and outwardly inclined end walls 28. These walls seat upon the outwardly projecting flanges 29 with which the bottom, side, and end walls are provided. A bar-like hinge member 30 is secured to the inner side of the top member side wall by the rivets 31 and provided with inwardly projecting pivot ears 32 connected by the pivots 33 to the ends 34 of the crosspieces 9. These crosspieces are notched at 35 to receive the wall 27 when the top member is swung to open position and the upper edge of the notches constitute stops for the edge of the top member when in fully open position, as shown in FIG. 4. A springable detent 36 projects upwardly from the bottom casing member to springably engage the inwardly inclined wall 26 of the top casing member when it is in closed position. This detent 36 is of substantial spring tension so that it retains the top member in closed position for manipulation of the sweeper in use. The inwardly inclined wall 26 is somewhat inwardly offset to provide a finger grip portion 37 extending longitudinally of the top member.

In the embodiment illustrated, the top casing member has a longitudinally extending opening 38 therein centrally disposed, and this is closed by the transversely bowed closure member 39, the edges 40 of which are disposed on the underside of the top 22 and fixedly secured thereto. The ends 41 of this member 39 are provided with openings 42 for the journals 43 of the handle yoke 44 which is provided with a handle 45. This member 39 not only provides means by which the handle yoke may be engaged, but it may be readily designed to constitute an ornamental member, however, its main function is to provide a connection for the handle in which the arms of the bail are inwardly offset relative to the ends of the casing. The top casing member in closed position seats upon the outturned flanges of the bottom casing member. With the parts thus arranged they may be made of relatively light stock and the walls are effectively braced against springing, the bottom walls by the outturned flanges, the top walls by the end walls being outwardly inclined, and the side walls being inwardly inclined. This results in what amounts to corner braces designated generally by the numeral 46 which also adds to the attractive appearance of the structure and, as

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stated, provides a finger opening on the swinging of the casing top member, the inward offset of the side member resulting in a rib-like portion 47.

This invention has been illustrated and described in a highly practical commercial embodiment thereof. No attempt has been made to illustrate or describe various modifications or adaptations as it is believed that this disclosure will enable those skilled in the art to embody or adapt this invention as may be desired.

Having thus described the invention what is claimed as new and desired to secure by Letters Patent is:

1. In a carpet sweeper, the combination of a casing comprising a bottom member, operative carpet sweeping mechanism including a central longitudinal brush and end supporting wheels rotatably carried by said bottom member in openings therein and with the member providing fixed dust pans fore and aft of the brush, a top member substantially coextensive with said bottom member and covering said mechanism, means joining said members pivotally at one side and releasably fastening the same together at the opposite side to provide access to said mechanism and for emptying said dust pans; said bottom member comprising a bottom with integrally formed upstanding side and end walls, said bottom having upward outwardly inclined flanges at the edges of the brush opening and upstanding flanges at the inner edges of the wheel openings to provide the said dust pans, the said flanges at the wheel openings having means to journally carry the corresponding wheels; said wheels being carried by axles extending inwardly through openings in said upstanding flanges, said axles being bent downwardly and inwardly to extend along the angular space between the bottom and the corresponding outwardly inclined flange, means securing said axles against displacement from said angular space, said axles resiliently urging said wheels toward said brush, and brush pulleys engaged by said wheels to drive said brush during operation of the sweeper.

2. The carpet sweeper of claim 1 in which the means for securing the axles against displacement comprises, notches formed in the central portion of the axles, and tongues struck outwardly from the said outwardly inclined flanges and disposed in engagement with said notches.

3. In a carpet sweeper, the combination of a casing comprising a bottom member, operative carpet sweeping mechanism including a central longitudinal brush and end supporting wheels rotatably carried by said bottom member in openings therein and with the member pro-

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viding fixed dust pans fore and aft of the brush, a top member substantially coextensive with said bottom member and covering said mechanism with said top member having inwardly inclined side walls, means joining said members pivotally at one side and releasably fastening the same together at the opposite side to provide access to said mechanism and for emptying said dust pans; said bottom member comprising a bottom with integrally formed upstanding side and end walls, said bottom having upwardly outwardly inclined flanges at the edges of the brush opening and upstanding flanges at the inner edges of the wheel openings to provide the said dust pans, the said flanges at the wheel openings having means to journally carry the corresponding wheels; a hinge mechanism pivotally connecting an inwardly inclined side wall of said top member with said upstanding flanges; and means limiting the pivotal movement of said top member away from said bottom member, said last-named means comprising upwardly directed notches disposed in the said upstanding flanges and adapted to receive the adjacent side wall of said top member, the end of each notch providing a stop for the edge of said adjacent side wall.

4. In a carpet sweeper, a bottom casing member having a central longitudinal brush receiving opening upwardly flanged at its edges to provide fore and aft fixed dust pans, an upstanding partition member near each end of said bottom member and extending fore and aft of the sweeper, fore and aft pairs of wheels arranged outwardly of and adjacent the corresponding partition members, axles for said wheels extending through openings in said partition members and between corresponding pairs of wheels, the central portion of each said partition member being offset outwardly toward the corresponding end of said bottom casing member, a brush having end trunnions rotatably mounted in bearings in said offset portions of said partition members and end pulleys on said brush and engaged by said wheels to drive the brush, said wheel axles being bent downwardly at their central portions with said portions being secured to said bottom member to springingly bias the corresponding wheels into engagement with said pulleys.

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