

(No Model.)

2 Sheets—Sheet 1.

G. A. WORZ.
CARPET SWEEPER.

No. 571,549.

Patented Nov. 17, 1896.

Fig. 1

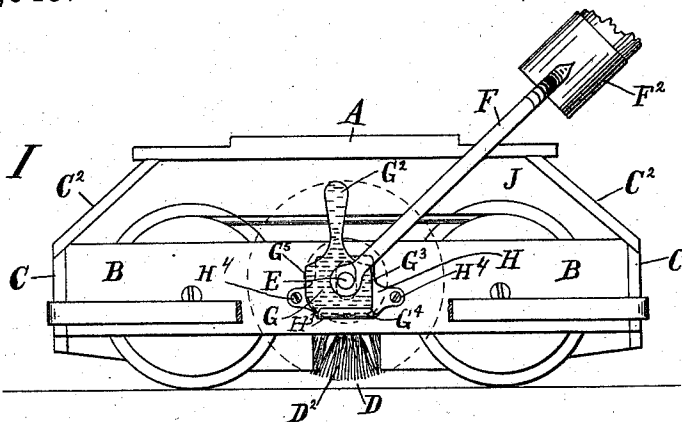


Fig. 2

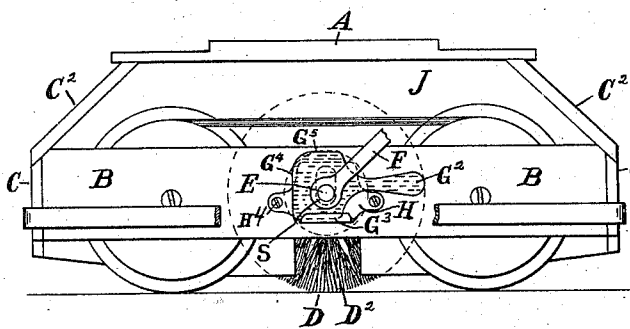
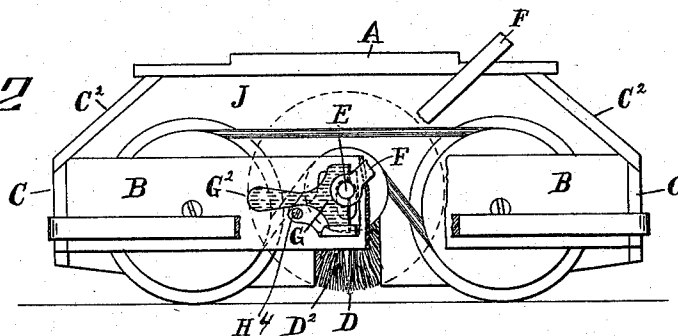


Fig. 3

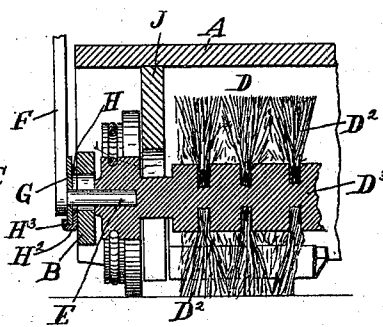


Fig. 4

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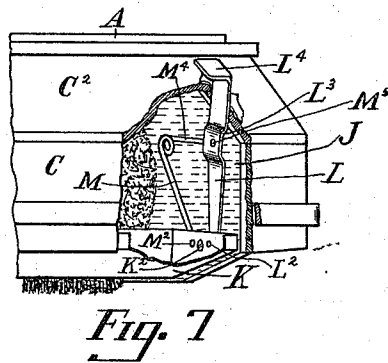
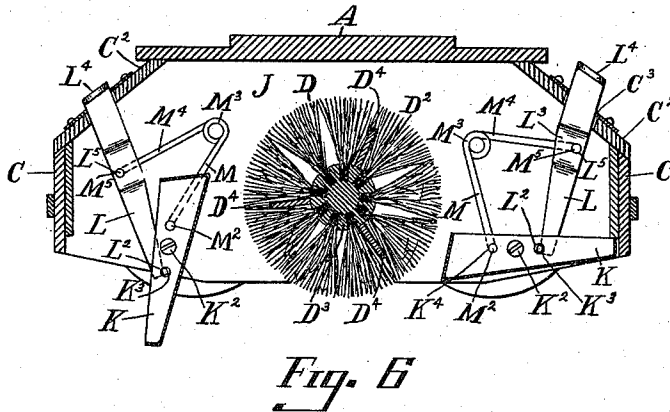
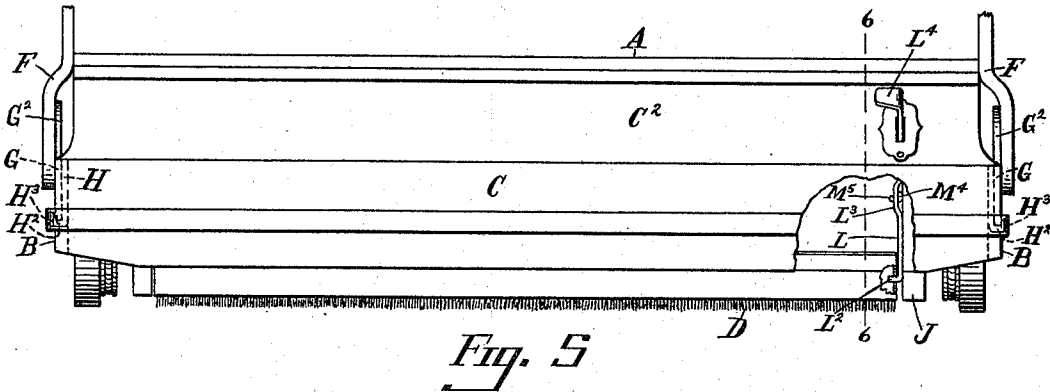
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2 Sheets—Sheet 2.

G. A. WORZ.
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No. 571,549.

Patented Nov. 17, 1896.



WITNESSES

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UNITED STATES PATENT OFFICE.

GUSTAV A. WORZ, OF MILFORD, OHIO, ASSIGNOR TO THE MILFORD MANUFACTURING COMPANY, OF SAME PLACE.

CARPET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 571,549, dated November 17, 1896.

Application filed April 13, 1896. Serial No. 587,327. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV A. WORZ, a citizen of the United States, and a resident of the town of Milford, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Carpet-Sweepers, of which the following is a specification.

One object of one of the main features of my invention is to furnish an improvement in the mechanism for elevating and lowering the brush.

Another of the principal features of the invention relates to a novel and exceedingly useful mechanism for manipulating the dust-receptacles, that is, the dust-pans.

The several features of my invention and the various advantages resulting from their use conjointly or otherwise will be fully set forth in the following description and claims.

In the accompanying drawings, making part of this specification, Figure 1, Sheet 1, represents an end elevation of a sweeper, illustrating my improved mechanism for elevating and lowering the brush. The brush is here shown in the middle one of the three vertical positions in which it is capable of being located. Figs. 2 and 3, same sheet, are similar views. Fig. 2 shows the brush at its highest point of elevation, and Fig. 3 shows the brush at its lowest point of depression. The mechanism in these three views is shown in the positions it relatively occupies when the brush occupies the position named. In Fig. 1 the bail and an adjacent portion of the handle is shown. In Fig. 2 two parts of the bail are shown, the bail being broken away to enable the part behind to be seen. In Fig. 3 a part of the bail is broken away for a similar reason. Fig. 4, same sheet, is a vertical longitudinal central section through one end portion of the sweeper, the bail-pivot and a part of the bail being shown in elevation. In this figure the parts are in the same position shown in Fig. 3. Fig. 5, Sheet 2, represents a front elevation of a sweeper, a part of the front being broken away and the figure illustrating the mechanism for operating the dust-pan. Fig. 6, Sheet 2, is a transverse vertical section of the sweeper, taken in the plane of the dotted line 6 6 of Fig. 5. Fig. 7, same sheet, represents a front elevation of

one end of the carpet-sweeper, a portion of the front being broken away to still further illustrate the mechanism for operating the dust-pan and showing the construction of the parts of said pan and their formation and relation as viewed from another point of view.

The groups of operative mechanism which are the subject of this specification and of the following claims are located at the respective end portions of the sweeper and are in duplicate, the mechanism at one end being a repetition of that which is found at the other end.

The sweeper has a suitable frame consisting of a top A and ends B B and sides C C, these parts being united. Between each vertical side C and the adjacent side of the top A is an intervening inclined piece C², connecting the side C and the top A, thus presenting a sweeper of a symmetrical and useful shape.

D indicates the brush as a whole, of which D² represents the individual brushes and D³ the axle in which the brushes are fixed. This axle is supported at each end as follows: A pivoted pin E enters the adjacent end of the axle, and the latter is thereby thus held in place and rotates thereon. This pivot-pin E is at its outer end connected to the adjacent end of the bail F, and a suitable handle F² is connected to the bail, usually at the mid-length.

The pivot-pin E is upheld by a device whereby this pin is raised and lowered. This device consists as follows: A wide and high block-plate G is provided with a handle G². The pivot-pin E is journaled in this block G, that is to say, the pin E passes through it, and the block G is free to rotate thereon. The block is preferably located between the bail and the adjacent end B of the sweeper and close to the said end. The support for this block consists of a suitable abutment, the one shown being of the preferred form and consisting of a sheet H of metal duly secured to the side of the end B of the sweeper. The preferred means for securing this plate H to the end B are the bolts or screws H². The lower end of this plate is first bent outward laterally—viz., away from the end B—thus

forming the part H^2 , and then bent upwardly, as shown, forming the part H^3 . Thus there is formed a trough, and this trough receives that edge of the block which is adjacent.

5 The bottom H^2 of this trough is primarily essential as it supports the block G and in turn supports the bail, and handle and bail, pin or pivot E and the brush D, in conjunction with the similar support at the other end
10 of the sweeper. The edge H^3 secures the block G from possible lateral deflection. The plate H serves the purpose of a support and a valuable bearing, against which the block G can rotate smoothly, easily, and without
15 injuring the surface of the wooden end. The block has three edges for contact with the abutment H^2 H^3 , and these are respectively indicated by the characters G^3 , G^4 , and G^5 . The edge G^3 is nearest the spot S where the
20 bail pivot-pin is journaled in the block. The edge G^4 is farther off from this spot S than is the edge G^3 . The edge G^5 is farther off from this spot S than is the edge G^4 . This block G is rotated by its handle G^2 . Thus rotation
25 of the block G to the position shown in Fig. 2 brings the edge G^5 in contact with the abutment H^3 and raises the pivot-pin E and the brush D to their highest point of elevation. Then the brush is capacitated for doing the
30 lightest kind of brushing.

Rotation of the block G to the position indicated in Fig. 1 places the edge G^4 of the block on the abutment H^3 and locates the brush D lower down, namely, at its middle
35 position. When the block G is still farther rotated and the edge G^3 brought into contact with the abutment H^3 , as depicted in Fig. 3, the brush D is still farther lowered and now occupies its lowest position.

40 Provision is respectively made in the end piece B and in the diaphragmatic dust-partition J, hereinafter named, for the vertical movement of the pivot-pin E and the axle D^3 by vertically elongating the openings respectively occupied by said pin and axle.

45 This device for adjusting and regulating the height of the brush in relation to the bottom of the sweeper is a very compact one, simple in construction and operation, durable, and economical of cost.

50 It will be observed that the device, when set, holds its position by the ever-present weight of the brush and bail, &c. This is an important advantage, as when once set there is no danger that its position will be altered,
55 unless changed by human agency.

It will be understood that the primary object of adjusting the height of the brush is to adapt it to best sweep different kinds of
60 pets. For example, for sweeping a carpet with a high pile, like velvet, the brush is raised to its highest position. For Brussels carpet, with a less high pile, the brush is set at its mid-high position, and for ingrain carpets,
65 which have little or no pile, or for a bare floor, the brush is set at its lowest position.

In the construction of the block G the cor-

ners connecting the operative edges G^3 , G^4 , and G^5 are more or less rounded to enable the block to be more readily rotated. 70

In connection with the brushes I prefer to use longitudinal wings or suction-bars D^4 between the lines of brushes D^2 , as shown. These wings create suction and aid the revolving brush D in moving the dust, &c., on
75 the carpet or floor into the dust-pans.

The diaphragmatic dust-partition J extends across the interior space of the sweeper in a plane preferably substantially parallel to the adjacent end of the sweeper and lies between
80 the end of the bristle portion of the brush on the one side and the wheel for supporting the sweeper and mechanism for rotating the brush, &c., on the other.

I have conceived a novel and exceedingly
85 simple, strong, economical, and durable device for operating the dust-pans K K, and this device I will now describe, premising that the device for operating the one dust-pan K is like the device for operating the
90 other. Hence a description of the one device will describe the other. Both ends of the dust-pan K are pivoted at K^2 to the frame of the sweeper, preferably to their adjacent partitions J aforementioned. The formation of
95 the dust-pan is preferably such that when the dust-pan is in its working position for receiving dust the bottom of the outer side is higher than its inner side, and the bottom inclines
100 downward from the outer side to the inner side. The pan has greater depth in the vicinity of the brushes and is shaped so that the sweeper has in this way an inclined bottom, enabling it better to ride over small ob-
105 stacles.

L indicates a push strip or piece at its lower end pivoted at L^2 to an end of the pan. This push-rod extends up through a slot C^3 in the top side C^2 and terminates in a push-button
110 L^4 . This rod is preferably for the purpose of compactness in connection with the spring provided with a recess L^3 . Such recess enables the push-piece to lie for the most part close against the partition or supporting-wall J and yet receive the end of the rod of the
115 spring and hold the latter to place. The spring consists of the arm M. The free end of the latter is pivoted at M^2 to the dust-pan. The spring has a coil M^3 and a second arm
120 M^4 , and the free end of the latter is pivoted at M^5 to the push-rod. The whole construction is remarkably simple and efficient. Thus the bent lower end L^2 of the push-piece rests in the opening K^3 of the end of the pan and is not headed, but is kept there by its position
125 between the outer end of the pan and the partition J.

The free end M^2 of the arm M is angulated and passed at K^4 through the end of the pan and is not headed, but simply rests therein,
130 and is held from withdrawing by means of the partition J immediately behind it. The free end M^3 of the other arm M^4 is angulated and passed into the opening at L^5 , and simply

rests therein without being headed. The recess L^3 of the push-piece allows the rod-arm M^4 of the spring to pass behind it and between it and the spring without frictionizing it or the partition J. The presence of the partition or transverse wall of the frame prevents the arm M^4 M^5 slipping from connection with push-piece L. The coil M^3 is not fastened at all, but by the aid of the end of the pan and the side of the push-piece and the wall J keeps close to the latter and in working position, and this whether the pan is in position to receive the dust, as in the right-hand side of Fig. 6, or in a position for dumping the dust, as in the left-hand side of Fig. 6.

The mode in which my improved dust-pan-dumping mechanism operates is as follows: When the dust-pan has dust therein and the operator desires to empty the pan, he lifts the sweeper, and, pressing on top L^4 of the push-piece L, depresses the latter. In this way he pushes directly against the pan at the point K^3 and depresses the adjacent—viz., the outer—edge of the pan, substantially as shown at the left-hand side of Fig. 6. The pan while in this position will dump substantially all of its contents. In putting the pan in this position the push-piece has overcome the elasticity of the spring. When the contents of the pan have been dumped, the operator releases pressure on the push-piece. Then the elasticity of the spring returns the pan to its receptive position at the right hand of Fig. 6, and of course at the same time returns the push-piece to its first position.

One great advantage of this construction is its simplicity. It will be noted that the push-piece acts directly upon the pan and does not have to reach the pan through the intermediate agency. The mechanism promptly responds to a push on the push-piece and throws the pan and automatically returns the same to its first position.

It will be observed that the upper portion of the push-piece, as heretofore suggestively indicated, is supported from lateral and edge deflection by the sides of the slot C^3 through which it, the push-piece, passes.

The push-piece is constructed in a new and advantageous manner out of a single piece of sheet metal, whose top at L^4 is bent to form the button, and lower down is angulated back and forth, forming the recess L^3 , and at its lower end bent to form the arm M^5 , the whole forming a cheap and efficacious device.

What I claim as new and of my invention, and desire to secure by Letters Patent, is—

1. In a sweeper, the combination of the case, the brush and its axle D^3 , bail F and pin E forming the pivot upon which the end of the

axle rotates, and the block G pivoted at S on pin E and having three successive edges or portions as G^3 , G^4 and G^5 , the two latter respectively at increased distances from the pin E, and the frame as B, plate H and an abutment H^2 supported thereby, substantially as and for the purposes specified.

2. In a sweeper, the combination of the case, the brush and its axle D^3 , bail F and pin E forming the pivot upon which the end of the axle rotates, and the block G pivoted at S on pin E and having three successive edges or portions as G^3 , G^4 and G^5 , the two latter respectively at increased distances from the pin E, and the frame as B, and an abutment H^2 , flange H^3 , the edge of the block being received behind the flange and resting on the abutment, and plate H upholding the abutment H^2 substantially as and for the purposes specified.

3. In a sweeper, the combination of the case, the dust-pan K, and the end or transverse wall, pivot K^2 , enabling the pan to swing, direct-acting push-piece L, extending through slot L^3 in the frame of the sweeper, and down to pan, and there pivoted thereto, at K^3 , and the angulated spring M, M^3 , M^4 connected at one end M^2 to pan K, and at the other end to push-piece L, substantially as and for the purposes specified.

4. In a sweeper, the combination of the case, the wall-frame J, pan K, pivoted at K^2 to the frame, push-piece recessed at L^3 , spring M, M^3 , M^4 , pivotally connected to the pan at K^4 , and within recess L^3 to the push-piece at L, the latter being pivoted to the pan substantially as and for the purposes specified.

5. In a sweeper, the combination of the case, the wall-frame J, pan K, pivoted at K^2 to the frame, push-piece L having a recess at L^3 formed by bending the push-piece to such shape, the push-piece being bent at its lower end and forming a pivot-piece L^2 received into opening K^3 in the pan, angulated spring M, M^3 , M^4 , whose arm M bent at its free end forms the pivot M^2 received in opening K^4 of the dust-pan, the free end of arm M^4 being bent and forming the pivot-pin M^5 , received into opening L^5 of the push-piece, the arm M^4 in part lying in the recess L^3 , and the pivots L^2 , M^2 , M^5 being all held in place by the wall J, in connection with the pan and push-piece, the latter above being held in position by the frame of the sweeper, substantially as and for the purposes specified.

GUSTAV A. WORZ.

Attest:

WM. E. JONES,
K. SMITH.