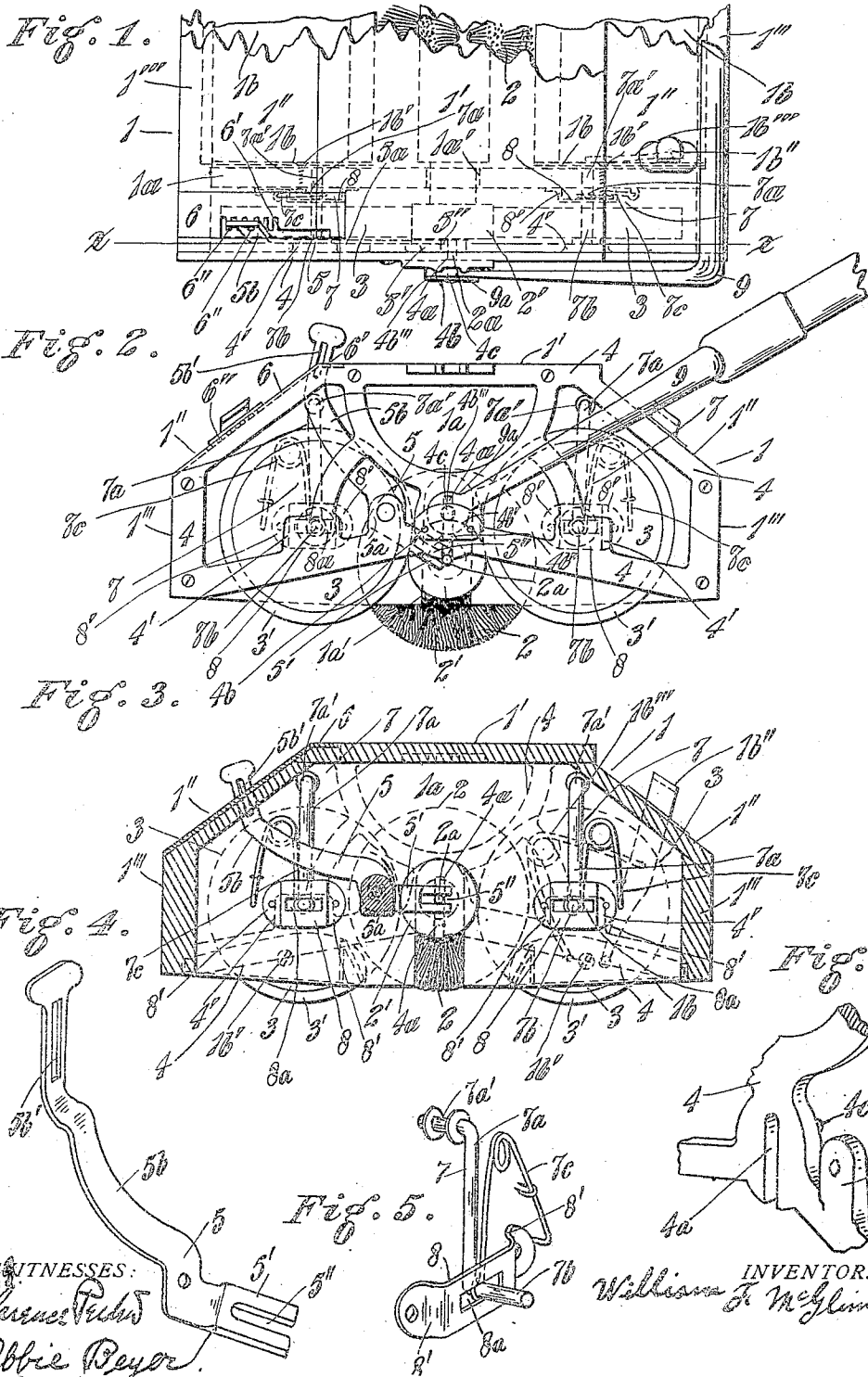


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CARPET SWEEPER.
APPLICATION FILED MAY 28, 1910.

980,875.

Patented Jan. 3, 1911.



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CARPET-SWEEPER.

980,875.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM F. McGLINNEN, a citizen of the United States, residing at Cincinnati, 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.

The object of my invention is to provide a more simply constructed and more efficiently operating running gear and brush-driving mechanism for a carpet sweeper, and to provide means for adjusting the brush to the work and for removably mounting the brush in the sweeper in a more simple and efficient manner.

My invention consists in the combination in a sweeper of the type in which the brush is rotated by direct contact with the peripheries of the wheels of the sweeper, of a brush adjusting mechanism comprising a lever together with novel means for adjustably applying said wheels to said brush, as well as in the other details of construction and arrangement as will hereinafter be more fully described and claimed.

In the drawing: Figure 1 is a plan view of one end of a sweeper embodying my invention. Fig. 2 is an end view of the same showing the lever in position for releasing the brush from the sweeper. Fig. 3 is a vertical section on the line $x-x$ of Fig. 1 with the lever holding the brush in position for operation; the wheels being removed from their spindles. Fig. 4 is an enlarged detail perspective view of the lever. Fig. 5 is a detail perspective view, enlarged, of the wheel bracket parts, including the plate to prevent the accumulation of ravelings. Fig. 6 is a detail perspective view of the inside part of the mounting having the slot.

The casing 1 has a flat top 1' and sloping sides 1'' as is usual in the construction of sweepers of this character. This casing also has in-set ends 1^a which, together with said flat top 1', sloping sides 1'', and vertical sides 1''', incloses a space inside the sweeper the bottom of which is formed by pans 1^b hinged at 1^{b'} and tilted by any well known operating device such as the push-rod 1^{b''}, and normally held closed by the spring 1^{b'''}. Lying within the casing and extending downward through a space between the pans 1^b is the brush 2. This brush 2 extends outside the casing through

slots 1^a in the in-set ends 1^a at both ends of the sweeper, and is provided with pulleys 2' to be engaged by the wheels 3 which have tires 3' of rubber or similar material to make effective frictional contact with the pulleys 2' of the brush and rotate the brush when the wheels roll over the floor or other surface to be swept.

The foregoing description sets forth details common to carpet sweepers heretofore disclosed, but it is in the details and in the arrangement of details, in combination with the foregoing details, as hereinafter described, that my invention consists.

Mountings 4 are rigidly secured to the ends of the flat top and the sloping and vertical sides of the casing at both ends of the sweeper, and extend across the extreme outer ends of the sweeper, leaving a space between said mountings and the inset ends 1^a in which space the wheels 3 and the brush pulley 2' are located. The brush 2 has spindles 2^a extending out from both of its ends and the mountings 4 have vertical slots 4^a in their inner sides into which the spindles 2^a of the brush extend, and in which said spindles may rotate and be adjusted vertically to adjust the brush up and down in the sweeper and adapt the sweeper for operating upon surfaces of different characters.

To hold the spindles 2^a of the brush 2 in the slots 4^a and adjust them up and down therein, levers 5 are pivoted on lugs 5^a on the mountings 4 near the slots 4^a therein and laterally displaced therefrom a short distance. Each of these levers 5 has an extension 5' with a slot 5'' therein extending to the end of the extension and open at the end. This extension lies across the vertical slot 4^a in the mounting, and the slot 5'' in the extension also receives the spindle 2^a of the brush 2, so that as the lever is moved the spindle 2^a will be carried up and down in the slot 4^a and will occupy various positions longitudinally of the slot 5'' in the extension of the lever. The lower end of the slot 4^a in the mounting 4 is also open, and the lever 5 and its extension and the slot 5'' therein are so proportioned that the open end of the slot 5'' may coincide with the open end of the slot 4^a in such a manner as to allow the spindle 2^a of the brush 2 to escape from said slots, as is best shown in Fig. 2 of the drawing. The lever 5 has another extension 5^b

upward and in general direction diagonally outward, to the region of one of the sloping sides 1'' of the casing. A plate 6 is rigidly mounted on this sloping side 1'' adjacent to the mounting 4, and has a recess 6' adjacent to this mounting 4 through which the lever 5 extends above the sloping side 1'', as above mentioned. The part of the recess uppermost and adjacent to the flat top 1' of the casing is straight and is occupied by the lever 5 only during the process of inserting and removing the brush from the sweeper by the means above set forth.

The lower part of the slot 6' is widened and is provided with a series of projections 6'', while the part of the lever 5 adapted to pass along this part of the recess 6' has a longitudinal slot 5'', which may receive any one of the projections 6'' in the widened part of the recess 6' in the plate 6, thereby holding the lever 5 stationary in various adjusted positions and providing a corresponding number of adjusted positions of the brush for operation in the sweeper.

The part of the lever 5 comprised by the extension 5^b is made resilient so that it will spring in and automatically admit the projections 6'' into its slots 5'', as the lever is brought in the region of said projections.

From the foregoing description it will be seen that to insert the brush into the sweeper it is only necessary to bring the lever 5 up until the open ends of the slots 5'' and 4^a coincide, then slip the brush into the sweeper, passing the spindle 2^a of the brush through the coinciding open ends of said slots and bear inwardly of the sweeper on the brush, thus bringing the extensions of the levers upward and inward, and bringing the extensions 5^b downward and outward until the slots 5'' therein admit the first projections 6'' of the plates 6, whereupon the brush is held positively in position for operation. Then if it be desired to adjust the brush farther up in the sweeper the adjustment may be accomplished by pressing the extension 5^b outward, releasing the lever and bringing it so that the desired projection 6'' enters the slot of the lever. When the levers have been brought down to hold the brush in operating position they will lie below the surface of the flat top 1' of the casing and thus be out of position to engage with any objects under which the sweeper is passed in sweeping, such as chairs and other articles of furniture, so that the marring of such articles by the engagement of these levers is avoided. This position of the lever is best illustrated in Fig. 3 of the drawing.

When the brush 2 is adjusted up and down with its pulley 2' lying between the wheels 3, it is necessary that the wheels be allowed to be displaced in a general horizontal direction, moving inward toward each other

when the brush is lowered, and moving outward away from each other when the brush is raised, as will be seen upon inspection of the drawing. To mount the wheels in the sweeper in a simple manner to allow such horizontal displacement and at the same time maintain the wheels in contact with the pulley 2' at all times and at all adjustments, I provide brackets 7 for said wheels which brackets comprise arms 7^a having pivotal connections 7^{a'} with the in-set ends 1^a of the casing near the top of the sweeper and extending downward and provided at their lower ends with horizontal outwardly extending spindles 7^b on which the wheels are rotatably mounted. Said wheels are held on these spindles by the engagement against their outer sides of the mountings 4 that extend across the ends of the sweeper, said mountings having lugs 4' with smooth inner faces to engage with the hubs of the wheels. Thus the arms 7^a may swing on their pivotal connections 7^{a'} and carry the wheels on the spindles 7^b outward or inward along an arc of sufficiently great radius to constitute a substantially horizontal displacement of the wheels. To resist the outward movement of the wheels as carried on the arms 7^a springs 7^c are provided. Each of these springs consists in a part fixed to the in-set end 1^a of the casing and extending upward forming a loop, and then extending downward with another part pivotally attached to the spindle 7^b immediately adjacent to the arm 7^a.

For forming a guide for the arm 7^a its spindle 7^b and the spring 7^c attached thereto, a plate 8 is secured to the in-set end 1^a of the casing by lugs 8' that extend inward, whereby said plate 8 is separated a short distance from the in-set end, leaving a space between it and said end. This plate 8 has a horizontal slot 8^a, and the spindle 7^b of the wheel 3 extends through this slot to receive the wheel 3, which wheel bears inwardly against the outer side of the plate 8. Thus the spindle 7^b may swing inward and outward with the arm 7^a along this slot 8^a in the plate 8, and the wheel bearing thereagainst may slide therealong during such displacement. This plate is comparatively thin, and while serving the purposes of a guide and a bearing for the wheel, also serves to interrupt such ravelings as are taken up by the wheel, the ravelings passing inside the plate and down through the space between it and the in-set end 1^a, being thus separated from the wheel and their accumulation on the wheel and the spindle avoided, so that the clogging and excessive wear on the parts ordinarily caused by the accumulation of such ravelings are eliminated.

The mounting 4 has an outwardly projecting boss 4^b with a recess 4^{b'} in its upper side, and an outwardly projecting lug 4^c is located immediately above this recess. The bail 9

has an eye 9^a that fits onto the lug 4^c and lies in the recess 4^{b'} in the boss 4^b, the sides of said recess 4^{b'} being made to conform to the eye 9^a of the bail 9, so that when the bail 5 pivots on the lug 4^c it will also turn closely against the side of the recess, whereby the boss 4^b may constitute a reinforcement of the lug 4^c as an attachment of the bail to the 10 sweeper. Preferably an opening 4^{b''} is provided in the lower side of the recess 4^{b'} to permit the escape and prevent the accumulation of obstructing matter in the recess around the eye of the bail, and a plate 4^{b'''} may be riveted onto the boss 4^b extending up 15 past the eye of the bail to hold the bail in place. This boss 4^b and the other parts associated therewith for the attachment of the bail, are mounted immediately outside the slot 4^a in the mounting 4, so that the attachment 20 of the bail is closely adjacent to the bearing of the brush in the sweeper. Thus the propelling power of the sweeper is applied thereto at the most effective point to be applied directly to the brush and avoid 25 the tendency to the tilting of the sweeper, as is the case if the bail be attached to the sweeper at a point considerably above the bearing of the brush.

In the combination of a simple mechanism 30 allowing a perfect vertical adjustment of the brush in the sweeper thus maintaining the brush in its position in the middle of the sweeper, and maintaining the distance between the brush and the two pans equal at 35 all adjustments, and effecting such vertical adjustment with the use of a lever having a simple means for holding it positively in its various adjusted positions, while at the same time providing a simple and effective corresponding adjustment of the wheels of the 40 sweeper which bear directly on the brush pulley, and thus transmitting the power in the most simple and effective manner at all adjustments of the brush, the operation of 45 the sweeper is considerably improved while the simplicity of construction with a small number of different parts to be assembled, make the cost of construction small.

Having fully described my invention 50 what I claim as new and desire to secure by Letters Patent is:

1. In a carpet sweeper, the combination 55 with a casing, wheels, and a brush rotated through engagement with said wheels, of a mounting for said brush having a vertical slot, and a spindle for said brush bearing in and held against horizontal displacement by the sides of said vertical slot, and a lever 60 with a slot extending at an angle to said vertical slot in the mounting and receiving said spindle to hold it against vertical movement in said vertical slot, or to move said spindle vertically in said vertical slot, the 65 sides of the slot in the lever and the sides of the vertical slot in the mounting, within the

region where said slots are adjacent, forming the journal bearing for said spindle, substantially as specified.

2. In a carpet sweeper, the combination 70 with a casing, wheels, a brush rotated by direct contact with the peripheries of said wheels, a mounting for said brush having a vertical slot, and a spindle on said brush vertically adjustable in said slot and rotatable therein, of a lever with a slot extending 75 at an angle to the vertical slot in the mounting and receiving said spindle, whereby the spindle is retained in the vertical slot and is adjusted up and down therein, the lower end of the vertical slot being open and the 80 lower end of the slot in the lever being open and said open end of the slot in the lever being adapted to coincide with the open end of the vertical slot to allow the brush to be removed from the sweeper, substantially as 85 specified.

3. In a carpet sweeper the combination 90 with a casing having a flat top and a sloping end, of a mounting on the end of the casing conforming to said flat top and said sloping end, and a plate on said sloping end adjacent to said mounting, having a recess and a series of projections therealong, said 95 sweeper having wheels inside said mounting at the end of the casing, and a brush contained in the casing with a projection and means for engagement with the projection, whereby the wheels may rotate the brush, a 100 spindle on said brush, said mounting having a vertical slot in which the spindle rotates and is vertically adjustable, a lever pivoted on said mounting adjacent to the vertical slot therein between the mounting and one of said wheels, having an arm extended across the vertical slot and having a 105 slot in said arm to also receive the spindle of the brush and retain and adjust it in the vertical slot in the mounting, the end of the vertical slot and the end of the slot in the lever being open and adapted to coincide 110 upon the movement of said lever to allow the spindle of the brush to be removed from said slots, the other arm of said lever extending upward and inward over one of said 115 wheels through the recess in said plate adjacent to said mounting, and having a longitudinal slot, whereby at various stages in the movement of the lever different projections along the recess in the plate may enter said slot and hold said lever stationary to 120 retain the brush in adjusted position for operation, and said arm of said lever which projects through the recess in the plate adjacent to the mounting being yieldable, whereby said lever may be removed from 125 the engagement of the projection in the slot in the lever, substantially as specified.

4. In a carpet sweeper the combination 130 with a casing having an in-set end and a mounting outside its end whereby there is

a space between the mounting and the in-set end, a brush within the casing, and wheels in the space between the mounting and the in-set end, the brush having a means for engagement whereby it may be rotated by the wheels, of a bracket for one of said wheels comprising an arm pivotally mounted in the in-set end and extending downward, and a spindle extending outward on the arm on which the wheel rotates, said mounting bearing against the wheel to hold it on the spindle, but to allow the arm to move with the spindle, whereby the wheel may be displaced horizontally, and a plate secured to the in-set end with a space between the plate and the in-set end, and a horizontal slot through which the spindle extends, said arm lying in the space between the plate and the in-set end, and the wheel bearing against said plate, whereby ravelings from the wheel may pass through said space, substantially as and for the purposes set forth.

5. In a carpet sweeper, the combination with a casing having a flat top and a sloping end, of a mounting on the end of the casing conforming to said flat top and said sloping end, and a plate on said sloping end adjacent to said mounting, having a recess and a series of projections therealong, said sweeper having wheels inside said mounting at the end of the casing, and a brush contained in the casing with a projection and means for engagement with the projec-

tion, whereby the wheels may rotate the brush, a spindle on said brush, said mounting having a vertical slot in which the spindle rotates and is vertically adjustable, a lever pivoted on said mounting adjacent to the vertical slot therein, between the mounting and one of said wheels, having an arm extended across the vertical slot and having a slot in said arm to also receive the spindle of the brush and retain and adjust it in the vertical slot in the mounting, the sides of said vertical slot in the mounting and the sides of said slot in said arm of said lever, in the region where they are adjacent, forming the journal bearing for said spindle, the other arm of said lever extending upward and inward over one of said wheels through the recess in said plate adjacent to said mounting, and having a longitudinal slot, whereby at various stages in the movement of the lever different projections along the recess in the plate may enter said slot and hold said lever stationary to retain the brush in adjusted position for operation, and said arm of said lever which projects through the recess in the plate adjacent to the mounting being yieldable, whereby said lever may be removed from the engagement of the projection in the slot in the lever, substantially as specified.

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Witnesses:

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