

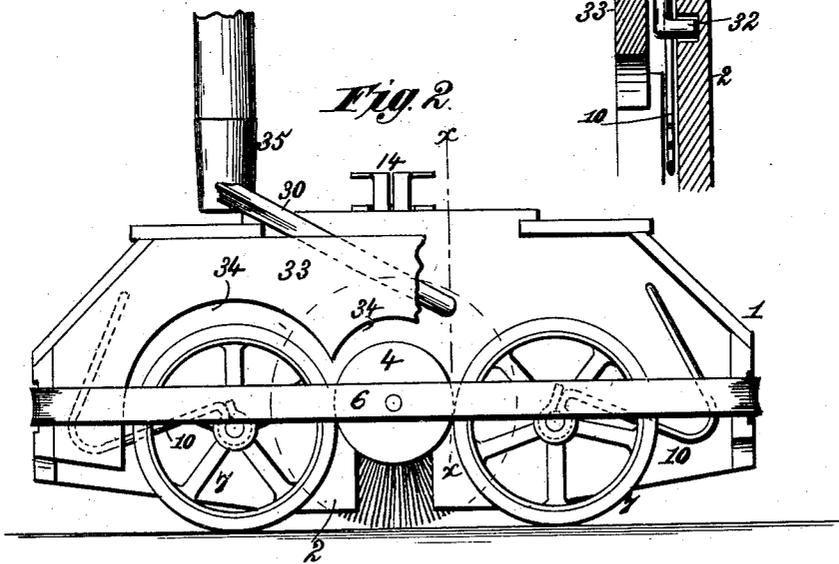
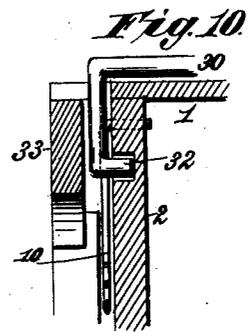
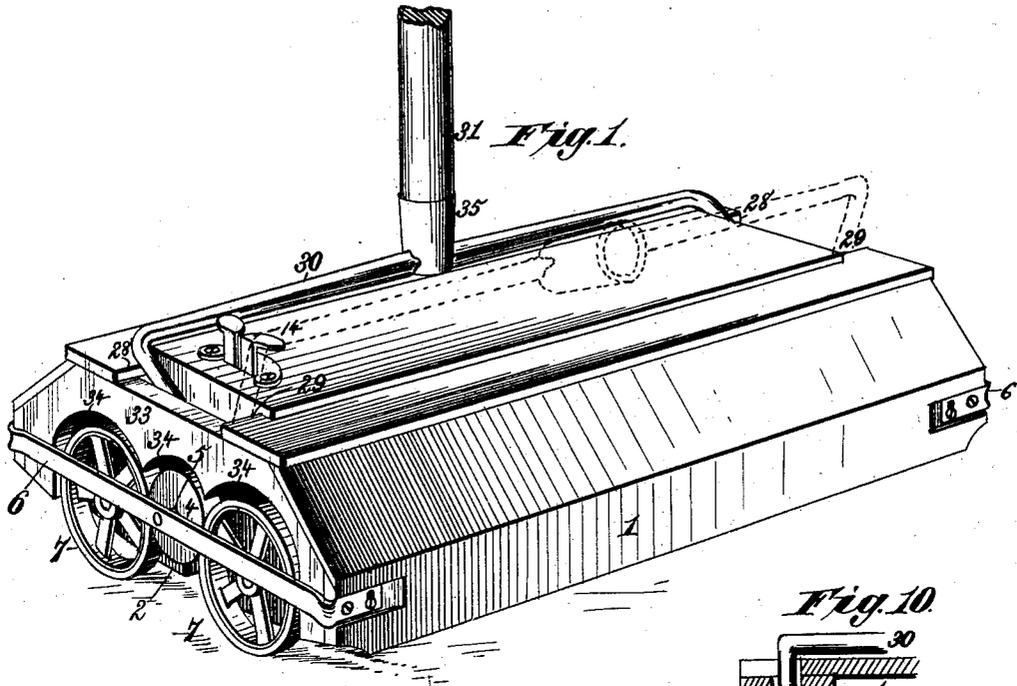
(Model.)

4 Sheets—Sheet 1.

W. J. DREW.
CARPET SWEEPER.

No. 353,294.

Patented Nov. 30, 1886.



Witnesses.
Robert Swett,
J. A. Rutherford

Inventor:
Walter J. Drew,
 By *James L. Norris,*
 Atty.

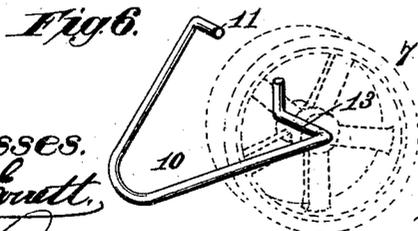
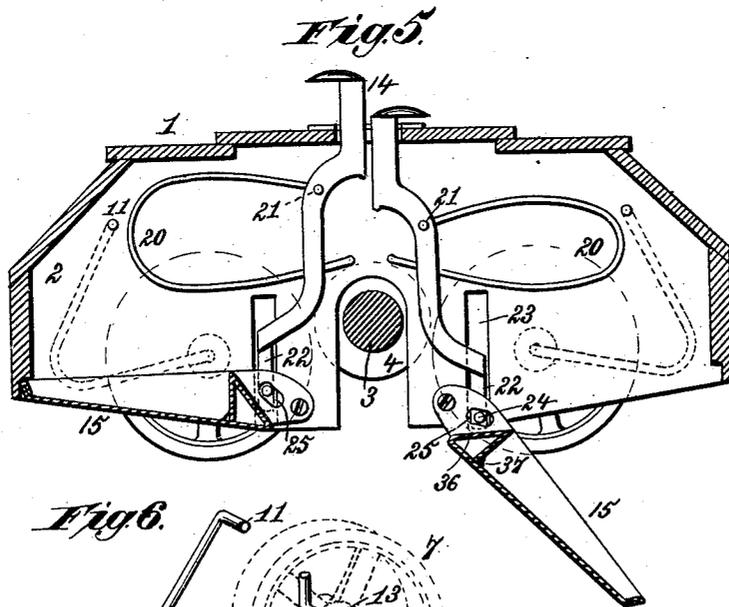
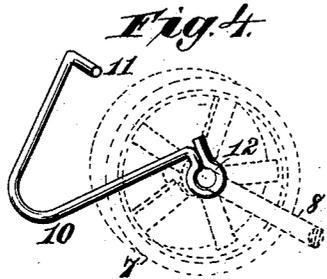
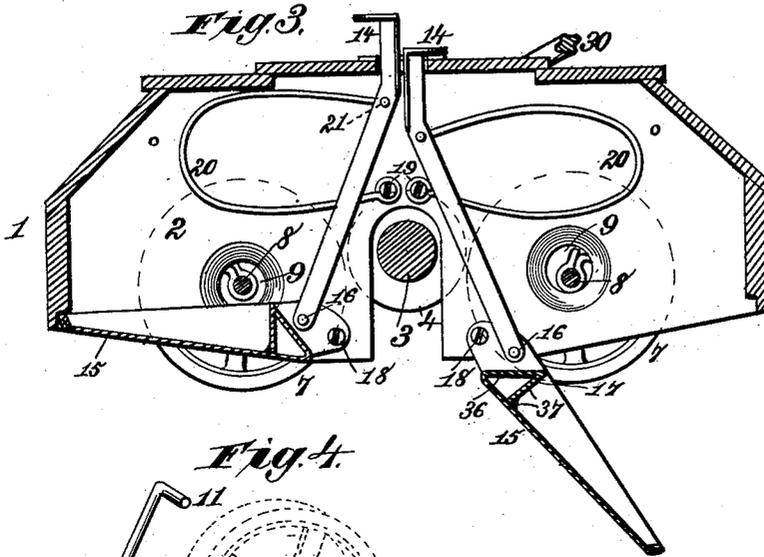
(Model.)

4 Sheets—Sheet 2.

W. J. DREW. CARPET SWEEPER.

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Fig. 7.

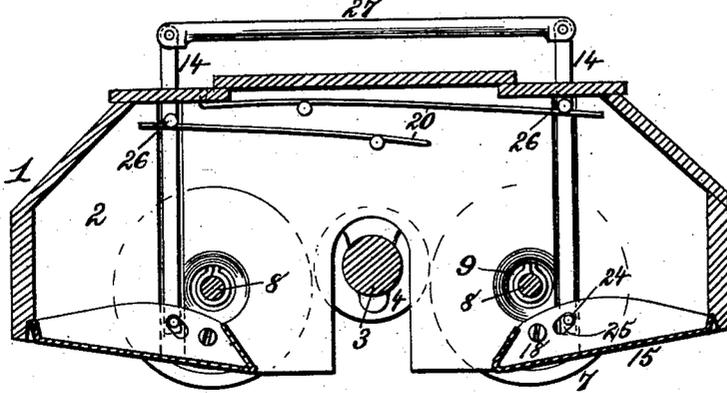


Fig. 8.

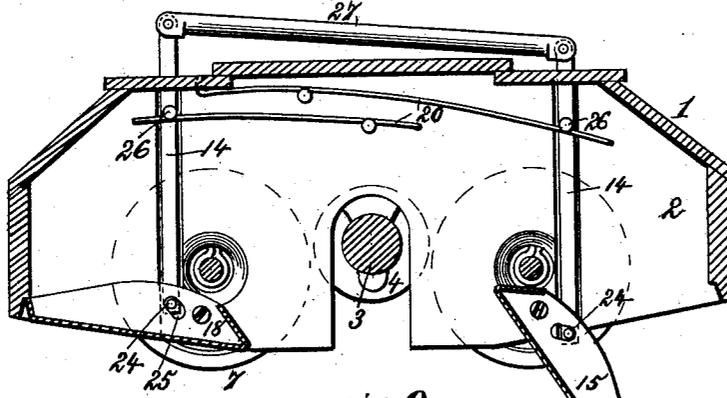
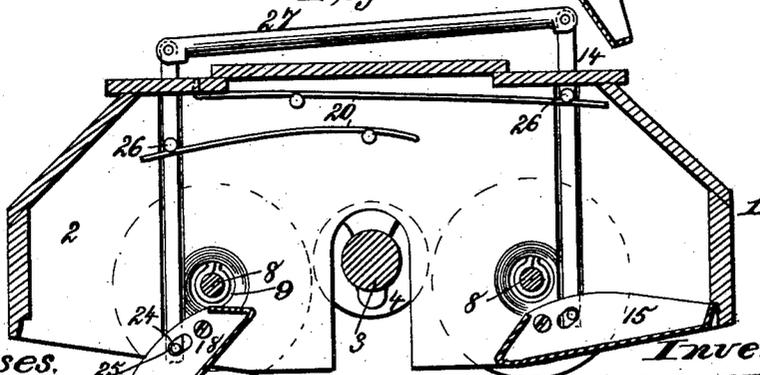


Fig. 9.



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Att'y.

(Model.)

4 Sheets—Sheet 4.

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Fig. 11.

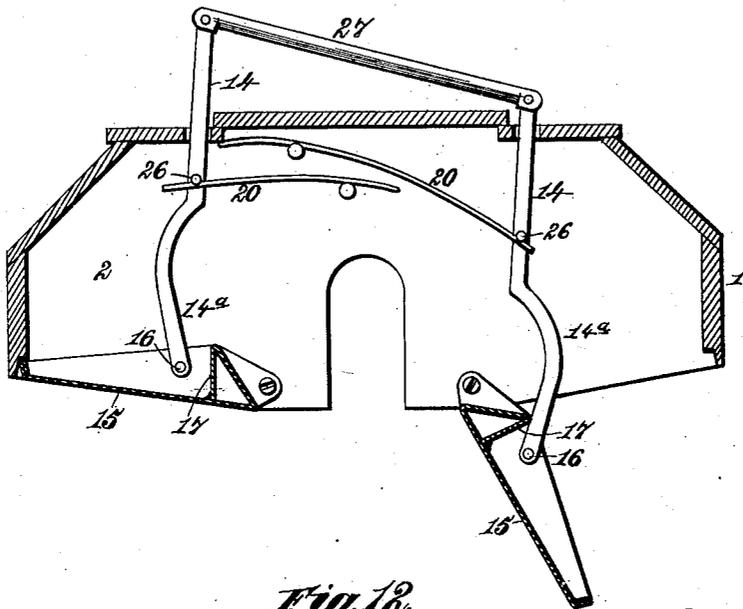
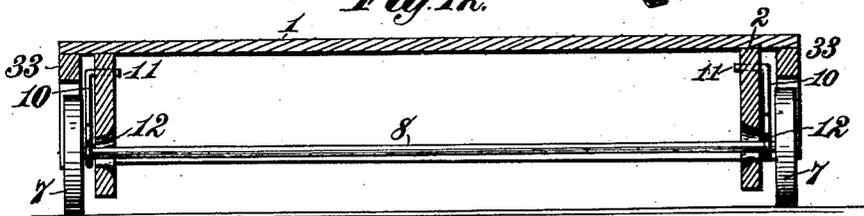


Fig. 12.



Witnesses.

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UNITED STATES PATENT OFFICE.

WALTER J. DREW, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR TO THE
BISSELL CARPET SWEEPER COMPANY, OF SAME PLACE.

CARPET-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 353,294, dated November 30, 1886.

Application filed December 30, 1885. Serial No. 187,146. (Model.)

To all whom it may concern:

Be it known that I, WALTER J. DREW, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented new and useful Improvements in Carpet-Sweepers, of which the following is a specification.

This invention has for its object to provide novel spring-rods for supporting a carpet-sweeper casing on the wheels which drive the brush-shaft in such manner that the sweeper-case can be yieldingly lowered toward the floor or surface traversed by pressure on the pushing and pulling handle, and thereby not only cause the drive-wheels to enter the case, but also press frictionally against the brush-shaft with more or less pressure, according to the force exerted on the case in lowering it toward the surface traversed.

The invention also has for its object to provide novel means for dumping the two dust-pans of a carpet-sweeper, whereby they can be simultaneously or independently dumped without the use of pivoted levers which swing in the arc of a circle, as heretofore.

The invention also has for its object to provide a novel construction of sweeper-case, whereby the bail carrying the handle will be stopped when the handle is perpendicular or in its upright position without the necessity of using spring-catches for such purpose.

The invention also has for its object to provide a novel construction of sweeper-case, whereby the drive-wheels can be located outside the end walls of the casing, and while practically inclosed as regards their circumference they are so exposed as to render it convenient to renew or replace the elastic tires when worn by new ones.

The invention also has for its object to provide novel means whereby the bail pivoted to the end walls of the sweeper-case is prevented from spreading or moving outwardly at its pivoted ends, thereby preventing the pivoted ends of the bail from moving out of their seats, which is liable to occur in carpet-sweepers as ordinarily constructed when extra pressure is exerted on the handle during the sweeping operation.

These objects I accomplish in the manner and by the means hereinafter described and

claimed, reference being made to the accompanying drawings, illustrating my invention, in which—

Figure 1 is a perspective view of a carpet-sweeper constructed in accordance with my invention; Fig. 2, an end elevation showing a portion of one of the end guards or shields broken away; Fig. 3, a transverse sectional view through one end of the sweeper-case, showing the mechanism for simultaneously and also separately dumping the dust-pans; Fig. 4, a detached perspective view of one of the pendulous spring-rods by which the sweeper-case is yieldingly supported on the drive-wheels. Fig. 5 is a view similar to Fig. 3, showing a modification of the mechanism for dumping the dust-pans; Fig. 6, a perspective of one of the pendulous spring-rods having the drive-wheel journaled directly on a bent end thereof; Fig. 7, a transverse sectional view through one end of the sweeper-case, showing another modification of the mechanism for dumping the dust-pans, both of the latter being in closed position; Fig. 8, a similar view to Fig. 7, showing one of the dust-pans tilted to discharge the sweepings; Fig. 9, a similar view showing the opposite dust-pan tilted to discharge the sweepings; Fig. 10, a detail sectional view taken on the line *x x* of Fig. 2; Fig. 11, a view similar to Fig. 7, showing another modification; and Fig. 12, a detail longitudinal sectional view on a reduced scale, showing the drive-wheel axle extending from end to end of the case.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, reference being made to the accompanying drawings, where—

The number 1 indicates the sweeper-case composed of a closed box-like frame having its end walls, 2, provided with central vertical slots for receiving the brush-shaft 3, which latter is provided at one end with a friction-pulley, 4, the ends of the brush-shaft being loosely mounted on journals 5, carried by spring-bars 6, in such manner that the brush-shaft can be detached from the sweeper-case by simply pulling the spring-bars outwardly to remove the journal from the bearings in said shaft. While this manner of mounting the brush-shaft is very efficient in use, I do not wish to

be understood as confining myself to this particular means, as other contrivances for this purpose can be employed, such as devices ordinarily used.

5 The drive-wheels 7 are mounted upon the ends of shafts 8, which extend continuously from end to end of the sweeper-case and pass through openings 9 in the end walls, 2, thereof, so that the wheels are located outside the latter. The said openings are of a size considerably larger than the diameter of the shafts, in order to permit the sweeper-case to be lowered toward the surface traversed independent of any rising or falling movement of the drive-wheel shafts.

15 The sweeper-case is supported by the drive-wheels through the medium of pendulous spring-rods 10, located on the outside or on the inside of the end walls of the casing, and having their upper ends bent to form lateral studs or journals 11, which are inserted into openings in the end walls of the sweeper-case adjacent to the upper edge thereof. These pendulous spring-rods extend downward and are then bent laterally toward the brush-shaft, the extremities of such bent portions being formed into eyes 12, which encircle and support the drive-wheel shafts, as shown in Figs. 2, 3, 4, and 12; but if I do not employ continuous drive-wheel shafts, as above set forth, I construct these pendulous spring-rods as shown in Figs. 5 and 6, by providing the extremities of the bent lower portions with journal-arms 13, on which the drive-wheels are loosely mounted, so as to revolve thereon. In either event, however, it will be obvious that when the drive-wheels are resting upon the floor or other surface the sweeper-case can be bodily lowered toward such surface by pressure exerted through the medium of the pushing-and-pulling handle, thereby causing the drive-wheels to enter into the case and to press with more or less force on the friction-pulley 4 of the brush-shaft, according to the pressure exerted on the case in lowering it toward the surface traversed, thus driving the brush-shaft by frictional contact of the drive-wheels with the friction-pulley.

50 The frictional contact between the pulley and the drive-wheel can be increased according to the force exerted in lowering the sweeper-case. The brush can be lowered by pressure, so that the wheels enter the case and the brush advances toward the floor. The studs or journals at the upper ends of the spring-rods are pivoted in the end walls of the sweeper above and at one side of the centers of the drive-wheels, and by so pivoting the supported ends of the pendulous rods the sweeper-case can be lowered and the drive-wheels not only caused to enter the case, but also caused to move toward the brush-shaft, the construction providing very efficient and durable means for operating the brush of the carpet-sweeper.

65 The employment of the continuous drive-wheel shafts is the most desirable construction,

in that it renders the sweeper more durable and strong.

Various contrivances have heretofore been invented for the purpose of discharging the sweepings by dumping the dust-pans; but in all sweepers of which I am aware wherein it is possible to both simultaneously and independently dump the dust-pans it is necessary to provide levers pivoted between their ends and connected with the dust-pans, so as to swing in the arcs of circles when operated to dump the pans.

I avoid the employment of swinging levers and the pivots rendered necessary for such levers, and in contradistinction thereto I employ two vertically-sliding push-pins connected with the dust-pans and capable of simultaneous or independent movement, as I will now proceed to explain, first referring to the construction illustrated in Figs. 1, 2, and 3.

The push-pins 14 are constructed with straight vertical upper portions guided in a right line through the top wall of the casing and having their lower ends pivoted to the dust-pans 15 at the point 16, between the back surface of the fender 17 of the dust-pans and their pivotal attachment 18 with the inner side of the end wall of the sweeper-case. To the inside of the end walls, 2, of the case are fastened, by screws or otherwise, the ends 19 of two bowed springs, 20, the other ends, 21, of said springs being attached to the vertical sliding push-pins in such manner that by pushing one of the push-pins downwardly one of the springs is placed under increased tension and the dust-pan is turned on its pivotal attachment to dump the sweepings, after which, by removing the hand from the push-pin, the spring will by its resiliency elevate such push-pin, and thereby automatically restore the dust-pan to its normal position.

In Fig. 5 the construction is substantially the same, except that the lower ends of the push-pins are provided with straight vertical portions 22, fitted to slide within the vertical groove 23, formed in the end wall of the casing, such vertical portions carrying lateral projecting lugs 24, which engage inclined slots 25, formed in the ends of the dust-pans between the rear sides of their fenders and their pivotal point of attachment to the end wall of the casing. This construction provides for accurately guiding the upper and lower extremities of the push-pins in their vertical movements in a right line.

In Figs. 7, 8, and 9 the push-pins 14 are located in vertical grooves in the end wall of the case, and are provided at their lower ends with lateral projecting lugs 24, which engage inclined slots 25 in the ends of the dust-pans, which slots are in this instance located between the front edge of the dust-pan and the front side of the fender thereof. The upper end portions of the push-pins are provided with lateral lugs 26 to bear upon the free ends of the springs 20, which are fastened at

their opposite end portions to the sweeper-casing. The ends of the push-pins project upwardly through the top wall of the sweeper-casing, and are connected by a rod, 27, pivoted at its ends, respectively, to the push-pins, so that by pressing on such connecting-bar at or near a point midway of its length both push-pins will be simultaneously depressed, and by pressing on one or the other ends of the connecting-bar the push-pins can be independently moved downward. This connecting-rod, however, may be dispensed with, in which event the outer projecting ends of the push-pins will be suitably constructed to receive direct pressure from the hand of the person using the sweeper.

In Fig. 11 the construction and arrangement of parts are similar to those in Fig. 7, but the push-pins 14 are provided with curved lower ends, 14^a, the extremities of which are pivoted to the insides of the pans. The dust-pan may be pivoted to the sweeper at points either in front or in rear of their fenders 17, and when the pans are dumped the top edges of the fenders strike the curved portions 14^a of the push-pins, thereby stopping the swinging of the pans at the proper position required to dump the sweeper. The push-pins, Figs. 1, 2, 3, and 5, at their upper ends are turned at right angles to the body portion, so as to form lateral finger-pieces that come in contact with the top of the sweeper-case or with a guide plate attached thereto and act as stops to prevent the pans from turning past their centers.

In all the constructions shown, it will be evident that the pivoted dust-pans cannot only be simultaneously tilted or dumped, but they can also be separately or independently tilted or dumped, which is of considerable advantage, and this is accomplished without the necessity of using pivoted swing-levers, as heretofore.

The top wall of the sweeper case is provided at each end with two longitudinally-projecting front and rear shoulders, 28 and 29, and the bail 30, which carries the handle 31, is provided at its extremities with inwardly-bent journals 32, fitted into correspondingly-shaped seats in the end walls, 2, of the case, so that the bail can be swung back and forth for the purpose of bringing the handle to an inclined position, as when using the carpet-sweeper, or to bring the handle to a perpendicular or upright position, as when the sweeper is not in use. When the handle is brought to the latter position, the arms of the bail rest upon the shoulders 28, to maintain the bail in proper position to hold the handle in its perpendicular or upright position, whereby the handle will not accidentally strike the walls of a room or articles of furniture therein.

It frequently occurs in ordinary sweepers that when undue pressure is imparted to the handle during the sweeping operation the longitudinal part of the bail bends or yields and the pivoted ends of the bail are thereby caused to spread and disconnect themselves from the

sweeper-case. In order to obviate this difficulty and to securely confine the pivoted ends of the bail in their seats in the end walls of the case, I locate outside the end walls of the case a transverse guard or shield, 33, the inner surface of which lies sufficiently close to the ends of the bail to absolutely prevent the pivoted ends of the bail from spreading outward, no matter what pressure may be exerted on the handle. These guards or shields are secured to the ends of the case, which project longitudinally beyond the end walls thereof, and the lower edges of the shields or guards are provided with concavities 34, shaped to correspond to the circular form of the drive-wheels and the friction-wheel on the brush-shaft in such manner that the shields or guards practically inclose the wheels and permit free access to the latter for the purpose of removing the rubber tires when worn and replacing them by new ones. These end shields or guards fill the spaces formed by the extension of the case beyond its end walls, and they are capable of being detached by removing the screws by which they may be held in place. The guards or shields also subserve the further function of preventing displacement of the supported ends, and also the body of the pendulous spring-rods, but do not interfere with the movements of such rods which are requisite to permit the sweeper-case to be lowered and the drive-wheels pressed upon the friction-wheel on the brush-shaft, as hereinbefore explained. The socket 35, which receives the pushing-and-pulling handle, is formed at an obtuse angle to the longitudinal part of the bail, so that when the bail-arm stands vertical the handle will be inclined, to place it in the required convenient position for the operator, and when the bail is swung so that it rests against the shoulders 28 of the sweeper-case the socket will stand vertical, thereby holding the handle in a perpendicular position.

In carpet-sweepers having tilting pans I have found it essential that the pans should be stiffened and strengthened to render them durable, and to accomplish this object I construct the pans by turning the metal forming the fender 17 downward and forward, to form the inclined brace 36, and solder the lower edge, 37, of such brace to the bottom wall of the pan, whereby the fender comprises two plates of metal standing at an angle to each other, with the upper edge smooth and rounded.

Having thus described my invention, what I claim is--

1. The combination, with a carpet-sweeper case, its brush-shaft and drive-wheels, of the pendulous wheel-supports, each consisting of a single continuous rod of spring metal bent into angular form, with its upper supported end attached to the end wall of the case and extending downward therefrom and then laterally toward the brush-shaft, with its lower extremity supporting the drive-wheel, so that the case can yield toward the surface traversed,

and thereby cause the drive-wheels to enter the case and press toward the brush-shaft, substantially as shown and described.

2. The combination, with a carpet-sweeper case, its brush-shaft and drive-wheels, of the pendulous wheel-supports, each consisting of a single continuous rod of spring metal having its upper end provided with a lateral stud pivoted to the end wall of the case and extending downward therefrom and then laterally toward the brush-shaft, said pendulous wires at their lower ends supporting the drive-wheels, so that pressure on the sweeper-case forces the drive-wheels toward the brush-shaft, substantially as described.

3. The combination, with a carpet-sweeper case and its brush-shaft, of drive-wheel shafts extending continuously through the case and through openings in the end walls thereof, which are larger than the diameter of said shafts, drive-wheels mounted on the projecting ends of said shafts, and pendulous spring-rods connected at their lower ends with the shafts, said sweeper-case being capable of yielding downward toward the surface traversed to force the wheels into the case and upon the brush-shaft, substantially as described.

4. The combination, with the sweeper-case and its brush-shaft, of drive-wheel shafts which extend continuously through the case and through openings in the end walls thereof, which are larger than the diameter of the said shafts, drive-wheels mounted on the projecting ends of said shafts, and pendulous spring-rods pivoted at their supported ends outside the end walls of the case, and connected at their lower ends with the drive-wheel shafts, said sweeper-case being capable of yielding downward toward the surface traversed to force the wheels into the case and upon the brush-shaft, substantially as described.

5. The combination, with a carpet-sweeper having pivoted dust-pans, of two vertically-sliding push-pins guided by the sweeper-case and connected with the dust-pans, and capable of being simultaneously or independently moved to simultaneously or independently tilt the dust-pans, substantially as described.

6. The combination, with a carpet-sweeper having pivoted dust-pans, of two push-pins

sliding in right lines and connected with the dust-pans, and two independent springs connected with the push-pins for throwing the push-pins upward after they have been pushed downward to tilt the dust-pans, substantially as described.

7. The combination, with a carpet-sweeper case having its side and top walls extended longitudinally beyond its end walls, of the shields or guards extending across the width of the case in the spaces formed by the said extensions of the case and secured at their ends to the side walls of the case, said shields being separated from the end walls of the case, and having their lower edges provided with concave recesses located directly over and conforming to the circular shape of the drive-wheels, substantially as described.

8. The combination, with the carpet sweeper case and a handle-carrying bail pivoted to the end walls thereof, of shields or guards secured to the sweeper-case outside the said end walls of the case, and also outside the arms of the bail for preventing the pivoted ends of the bail from spreading outward, substantially as described.

9. The combination, with a carpet-sweeper case having its side and top walls extended longitudinally beyond its end walls, and the extended ends of the top wall recessed to provide front and rear shoulders, of a handle-carrying bail pivoted to the end walls of the case, and shields or guards fitting the spaces formed by the said extensions of the case and located outside the said end walls and the pivoted ends of the bail to prevent such pivoted ends from moving outwardly from their seats, substantially as described.

10. The combination, with a sweeper-casing, the brush-shaft, and pivoted dust-pans having suitable fenders, of push-pins having curved lower ends pivoted to the dust-pans, against which curved portions of the push-pins the fenders strike when the push-pins are depressed, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WALTER J. DREW.

Witnesses:

C. WHITAKER,
WHIT M. GRANT.