No. 879,977. PATENTED FEB. 25, 1908.

W. A. MORRISON & F. L. BRYANT.

CARPET SWEEPER.

APPLICATION FILED MAR. 20, 1902.

2 SHEETS—SHEET 1.

Fig. 1.

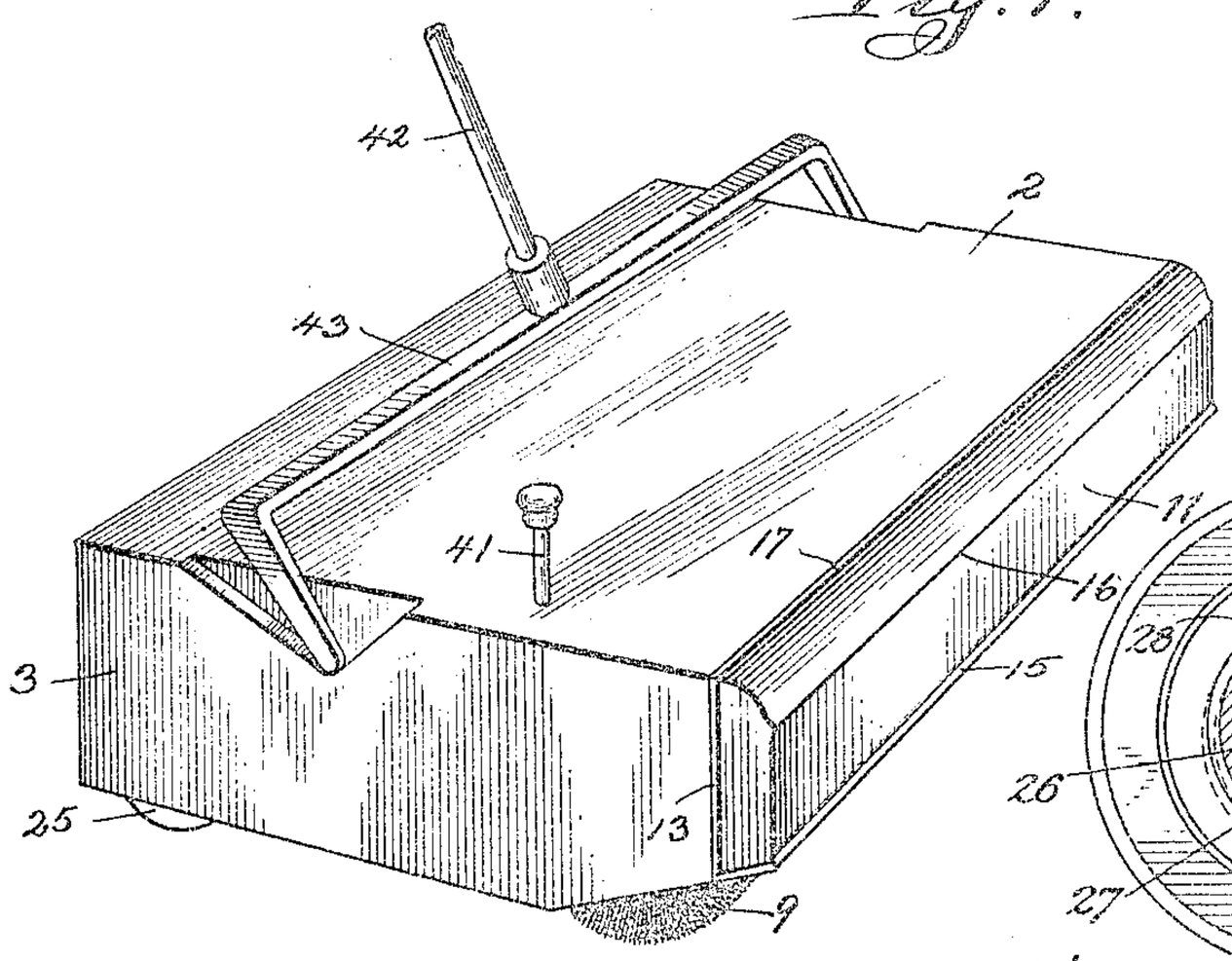


Fig. 6.

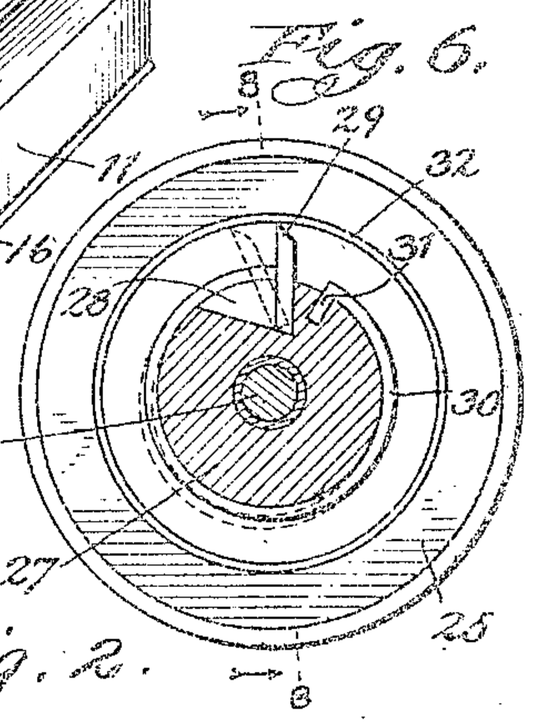
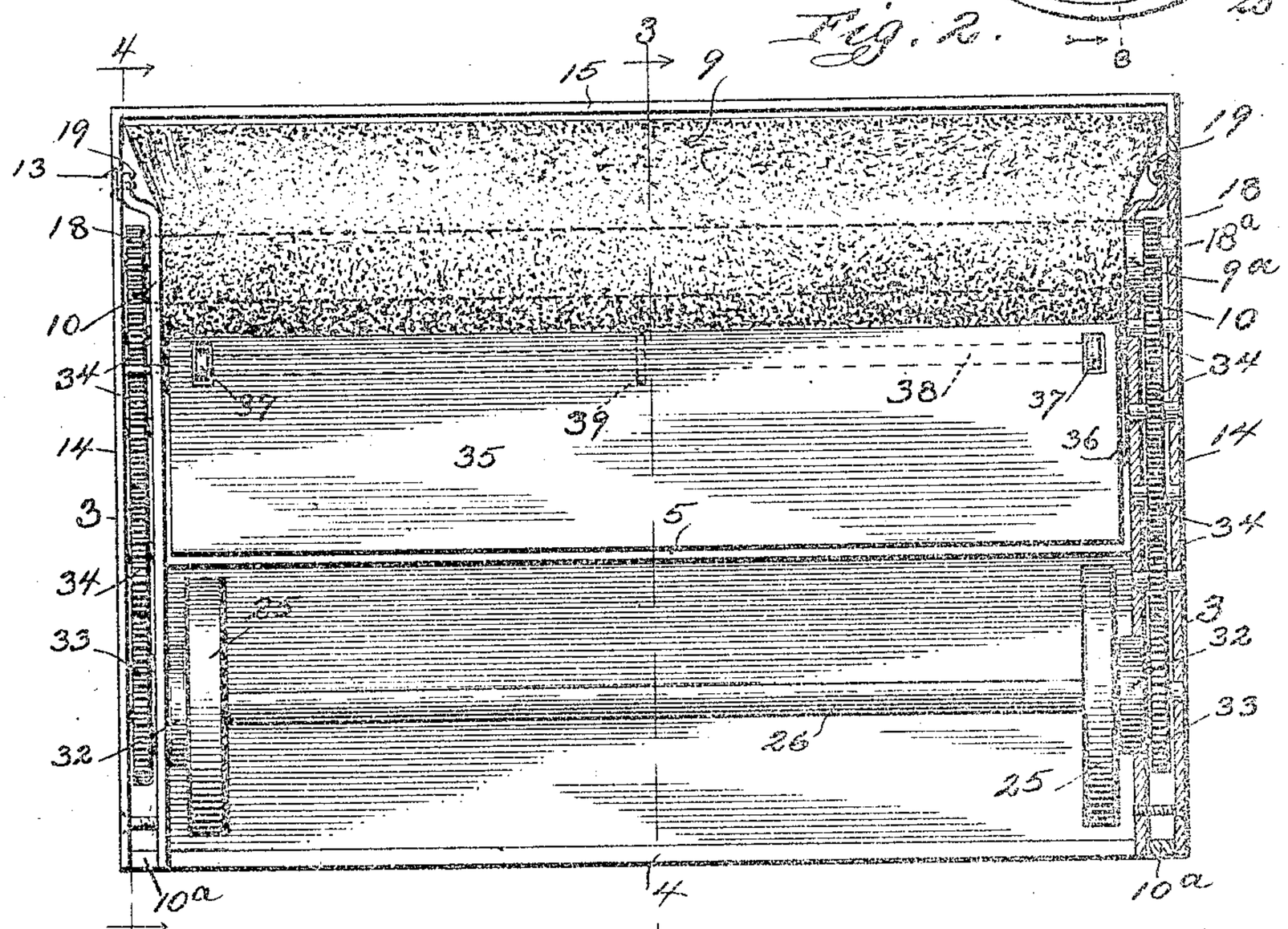


Fig. 2.



Witnesses
W. J. Jacker
Robert Lewis Ames

Inventors:
Willard A. Morrison and
Fred L. Bryant.
By Jones & Addington
Attorneys.

No. 879,977. PATENTED FEB. 25, 1908.

W. A. MORRISON & F. L. BRYANT.

CARPET SWEEPER.

APPLICATION FILED MAR. 20, 1902.

2 SHEETS—SHEET 2.

Fig. 3.

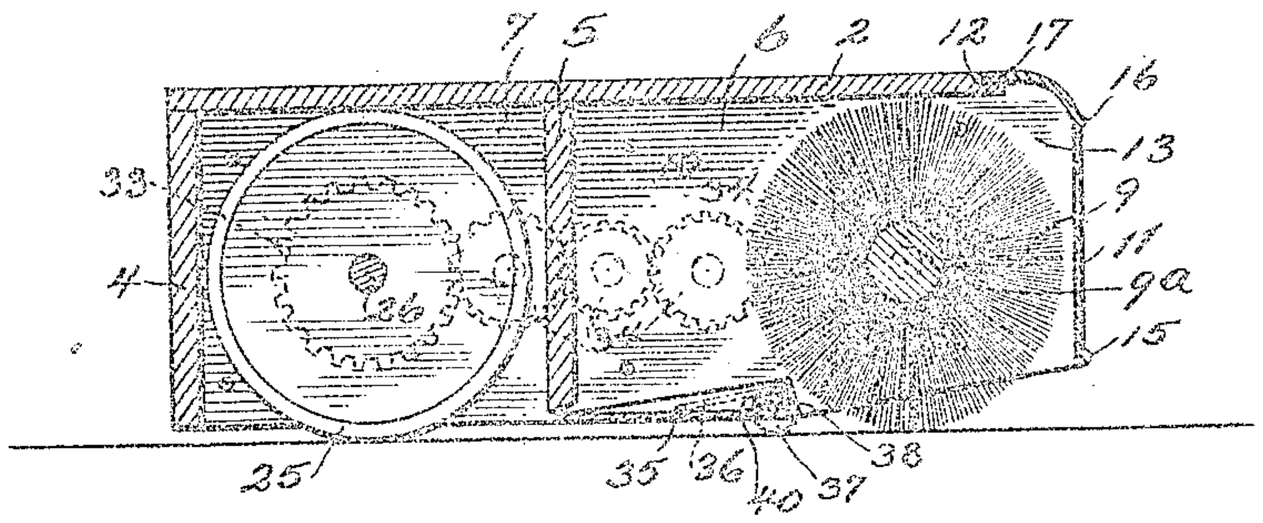


Fig. 4.

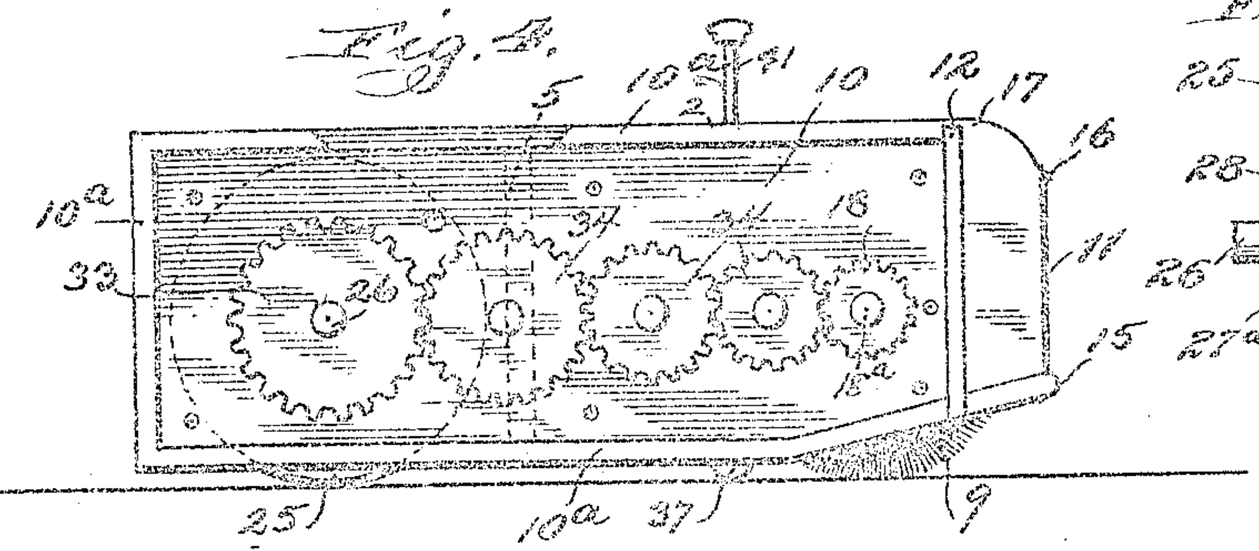


Fig. 6.

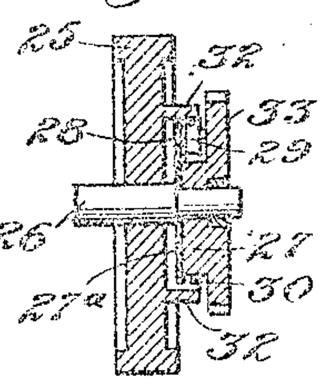


Fig. 7.

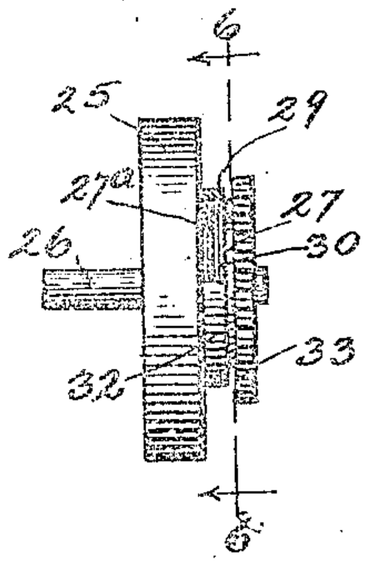


Fig. 5.

Witnesses:
R. J. Jaeker
Robert Lewis Evans

Inventors:
Willard A. Morrison &
Fred L. Bryant,
By Jones & Addington
Attorneys

UNITED STATES PATENT OFFICE.

WILLARD A. MORRISON AND FRED L. BRYANT, OF CHICAGO, ILLINOIS.

CARPET-SWEEPER.

No. 879,977. Specification of Letters Patent. Patented Feb. 25, 1908.

Application filed March 20, 1902. Serial No. 99,109.

To all whom it may concern:

Be it known that we, WILLARD A. MORRISON and FRED L. BRYANT, citizens of the United States, and residents of the city of Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Carpet-Sweepers, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

Our invention relates to improvements in carpet sweepers, the object being to provide a sweeper that is handy and efficient; that is simple and cheap to manufacture, and one that is durable under conditions of actual use.

The invention in its preferred embodiment consists of certain details of construction, arrangement and combination of parts, hereinafter described and particularly pointed out in the claims.

In the accompanying drawing, in which the same reference characters designate like parts throughout the several views, Figure 1 is a perspective view of a carpet sweeper embodying our invention; Fig. 2 is a bottom plan view thereof, portions being in section; Fig. 3 is a transverse sectional view on the line 3—3 of Fig. 2, looking in the direction of the arrows; Fig. 4 is a sectional view of the line 4—4 of Fig. 2, and showing the outer plate of the end wall removed; Fig. 5 is a detail view showing the means for raising and lowering the dust pan and the rollers supporting the same at the forward edge; Figs. 6 and 7 are detail views of the clutch connected with the drive wheels; and Fig. 8 is a sectional view on the line 8—8 of Fig. 6, looking in the direction of the arrows.

In these figures, 2, designates the top of the casing or box of the sweeper; 3, the ends thereof, and 4 the rear wall of the same. A partition, 5, is placed midway between the front and back walls of the casing to support and strengthen the same and separate the dust box, 6, from the back portion, 7 of the casing, these parts being secured together in any desired manner. The brush 9 is mounted in the forward portion of the casing, the axle 9^a of which consists of a wooden roller, into which the bristles of the brush are set, and which is journaled in the outer plates, 14, 14, of the end walls, 3, of the casing upon pins 18^a. The front of the casing is formed of a flexible member, 11, preferably of india-rubber and secured at its upper edge in a groove, 12, formed in the front edge of the top plate, 2, and at its side edges, 13, by being clamped between the inner plates 10 and the outer plates, 14, of the end walls, as shown in Fig. 2. This flexible front is preferably provided with thickened portions, 15 and 16, forming strengthening ribs for the same, the upper edge being also thickened as at 17 to provide a more stable construction. Owing to the flexibility of this front piece, 11, the sweeper may be pushed against any article of furniture without injuring the same. It moreover permits the same to sweep closely to the wall and about the legs of tables, chairs, or other furniture, since when pushed against any object it will be indented and allow the bristles of the brush to extend up to the same. Of course, any desired means may be employed to secure this flexible portion to the remainder of the casing and any suitable shape or contour may be imparted to the same, but we prefer at present those shown and described.

The brush 9 is so connected as to rotate in the same direction whether the sweeper is moved backward or forward. The mechanism for carrying this into effect comprises a train of gears mounted between the plates, 10 and 14, of each of the end walls 3 of the casing. Upon each end of the roller 9 is mounted a pinion, 18, between the said two plates of the ends. These end walls, 3, preferably comprise the plain outer plate 14, forming a smooth flat exterior to the end of the casing, and the inner plate, 10, which is preferably of stamped sheet steel or other suitable material, having its main body portion spaced far enough away from the plate, 14, to provide room between them for the gear wheels connecting the drive wheels and the brush. In order to accomplish this the forward edge, 19, of the inner plate, 10, is stamped outwardly, and suitable spacing blocks and strips such as 10^a are placed at the outer edges of the plates and wherever necessary to hold them firmly in place without bending. The two plates are held together by suitable screws, rivets, or other suitable means passing through the outer plate into the inner. The forward edge, 19 provides room to enable the bristles of the brush to be set at an angle as shown in Fig. 2, whereby it sweeps the full width of the casing.

The drive wheels, 25, are mounted upon

an axle, 26, journaled in the outer plates, 14, and are provided with circular flanges 32 projecting from their outer faces through the inner plates 10. Upon the inner face of each gear or pinion, 33, mounted upon the end of the axle, 26, between the inner and outer plates of the ends of the casing, a circular boss, 27 is formed which projects into the flange, 32, upon the drive wheel. A notch 28 is formed in said boss, and a friction pawl, 29, is located therein and is normally pressed against the inner periphery of the flange, 32, by the free end of a circular spring, 30, extending about said boss and secured thereto at one end as shown at 31. A washer 27ª is placed outside the boss 27 to secure the pawl and spring in place.

When the parts are assembled the flange, 32, is concentric with the boss, 7, and the pawl, 29, presses against the inner periphery of the flange. These parts form a clutch between the drive wheels and the gear wheel 33. In operation, as shown in Fig. 6, in event the drive wheel 25 is moved to the right, the friction pawl 29 will be permitted to be moved to a vertical position by the spring 30 and the outer end of the pawl will engage the inner periphery of the flange 32, causing the circular boss 27 and the gear wheel 33 to rotate with the drive wheel 25. If the wheel 25 be moved to the left, then the pawl 29 will disengage from the inner periphery of the flange 32 and the wheel 25 will revolve without operating the gear wheel 33. By using two of such clutch members, one for each drive wheel, and by arranging one clutch member to operate in a direction opposite to that of the other, it will be seen that the brush will always be rotated in the same direction no matter in what direction the sweeper is turned.

In the train of gears at one end of the casing as shown in Fig. 3, there are four intermediate gears, 34, each mounted upon a suitable axle carried by the plates, 10 and 14, while in the train shown at the opposite end there are three similarly mounted intermediate gears. The result of this arrangement is that the brush in one movement of the casing is rotated in the proper direction by one set of gears, and when moved in the opposite direction, the brush is rotated in the same direction by the opposite set of gears, the friction clutches being connected with the gears, 33, as stated. By this arrangement, the mechanism for operating the brush is entirely inclosed and protected from dust and injury and the brush is not divided and therefore weakened.

The dust pan, 35, is pivoted at its forward edge between the end walls of the casing and is supported at its forward end by means of a spring, 36, as shown in Figs. 3 and 5. Rollers, 37 are provided in the forward edge of the dust pan and carried upon opposite ends of a spring rod, 38, pivoted at its center upon a pin, 39, a casing, 40, of tin being formed over this rod to prevent dust from reaching it. The spring rod permits the sweeper to press more closely than usual to the floor when desired and the pivot, 39, permits the rollers to rock to accommodate themselves to any unevenness of the floor. A pin or rod, 41 is connected with one end of the dust pan near its forward edge and passes through the top plate, 2, by means of which the pan may be depressed in order to empty the collected dust and dirt from the same.

A handle, 42, is provided for the sweeper in the usual manner and carries a fork, 43, the side members of which have inwardly extending lugs adapted to enter suitable apertures in the ends, 3, of the casing. The said ends are suitably depressed as shown so that the said members of the fork 43 will not extend beyond the faces of the ends.

We claim as new and desire to secure by Letters Patent:

1. In a carpet sweeper, the combination with, a casing of inner walls secured to the ends of said casing, a transverse wall connecting the inner walls at the middle of the casing to divide the casing into two compartments, a rotary brush disposed in one of said compartments, rollers operatively connected with said brush disposed in the other of said compartments; a dust pan disposed proximate to said brush and, pivoted in the outer end walls, springs secured to the outer end walls of the casing to support said dust pan, and means for depressing said dust pan to remove the sweepings from the same.

2. In a carpet sweeper, the combination with a casing, of inner walls secured to the ends of said casing, a transverse wall connecting the inner walls at the middle of the casing, a brush mounted in the front part of said casing, a dust pan at the bottom of said casing pivoted in the outer end walls, springs secured to the outer end walls of the casing to support said dust pan, means for depressing said dust pan, and rollers mounted on a spring rod whereby the brush may be pressed closer to the floor when desired, said spring rod being pivoted to permit said rollers to rock on an uneven floor.

3. In a carpet sweeper, in combination, a casing, inner walls secured to the ends of said casing, a brush having pinions at each end and mounted in the fore part of the casing, drive wheels secured to an axle bearing in the end walls at the back part of the casing, spur gear wheels mounted loosely on said axle between each of the end walls of the casing and the adjacent inner wall and having bosses extending through the inner wall, wheel trains connecting the spur gear wheels with the pinions on the brush, one of said trains having an even, and the other an odd number of wheels, springs reversely dis-

posed on each of the aforesaid bosses, friction pawls disposed in peripheral notches in the bosses, said springs operating reversely with the flange of each of the drive wheels to jam the friction pawl between the spur gear wheel and flange on the driving wheel to lock the driving wheel and spur wheel together, to drive the brush continuously in one direction.

In witness whereof, we have hereunto subscribed our names in the presence of two witnesses.

WILLARD A. MORRISON.
FRED L. BRYANT.

Witnesses:
W. CLYDE JONES
M. R. ROCHFORD.