(No Model.) 2 Sheets—Sheet 1.

O. D. THOMPSON.

LAWN SWEEPER.

No. 481,269. Patented Aug. 23, 1892.

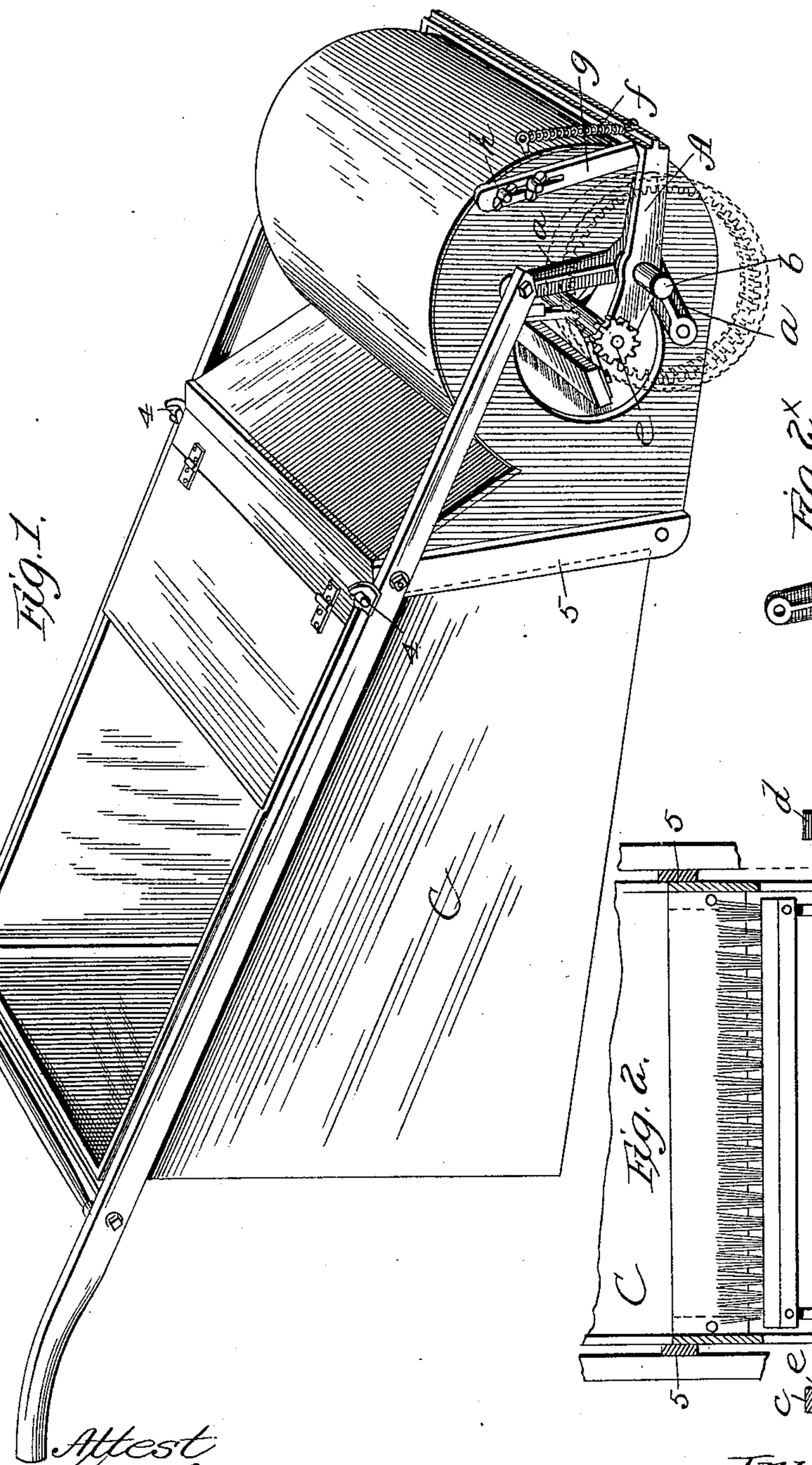

Fig. 1.

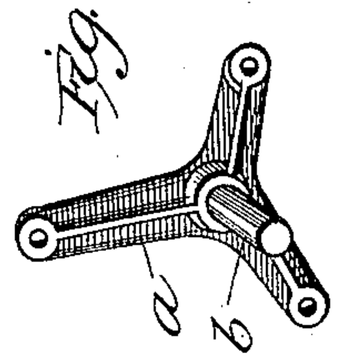

Fig. 2x

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

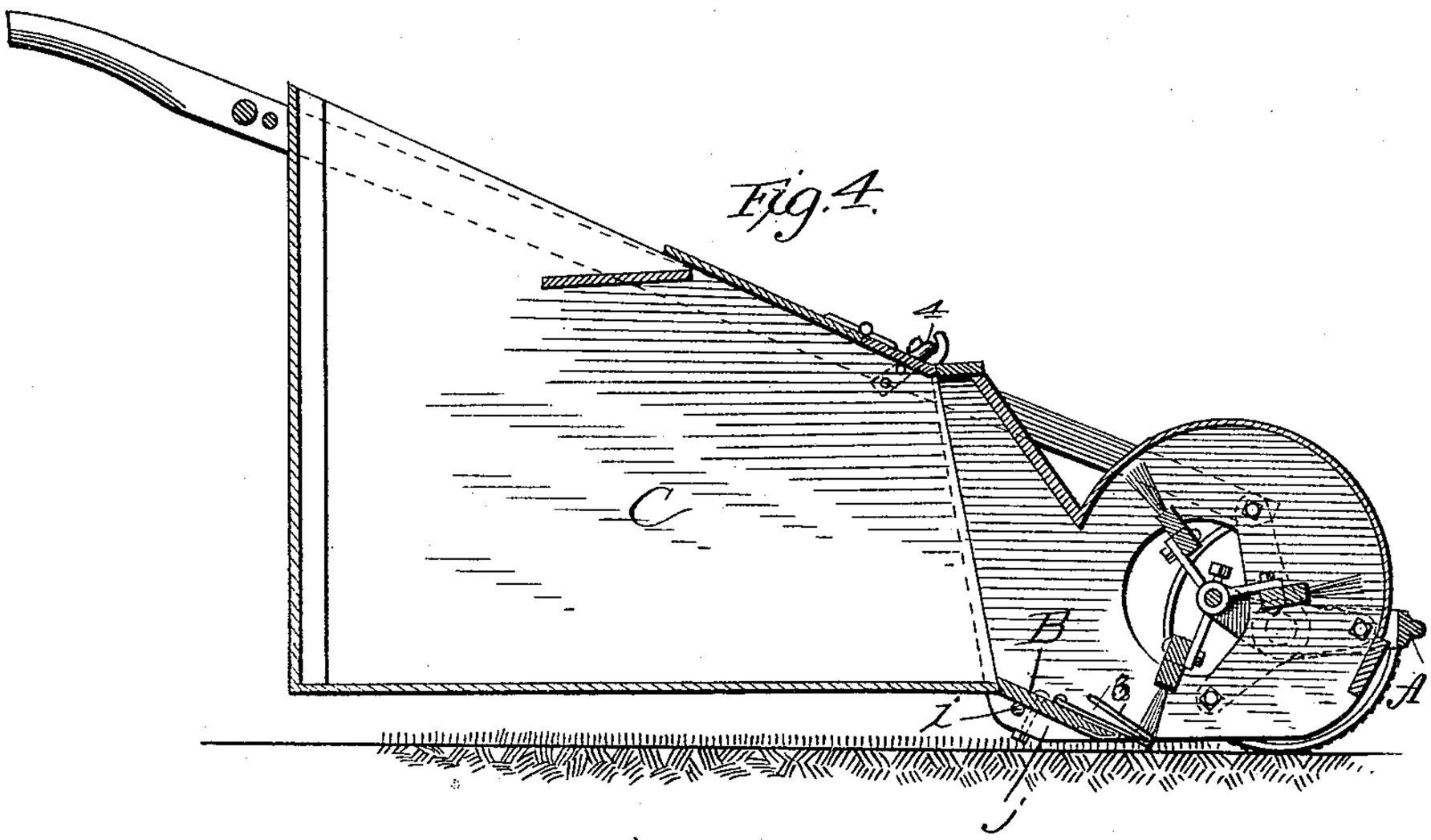


Fig. 3.

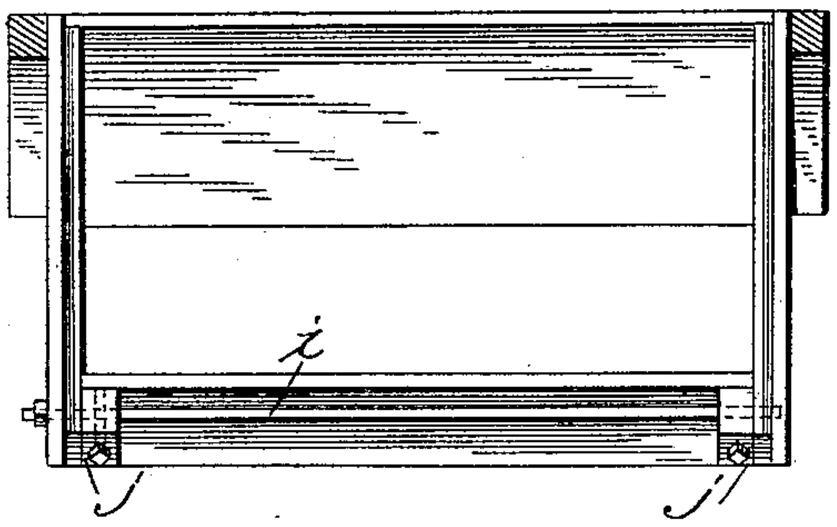


Fig. 5.

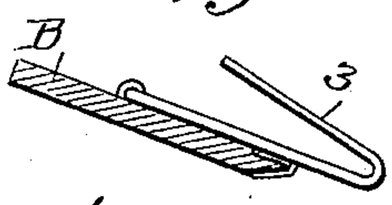
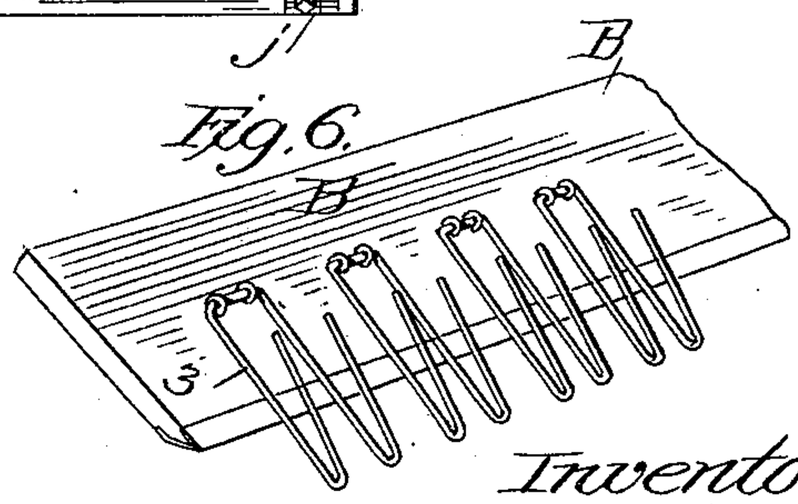


Fig. 6.



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UNITED STATES PATENT OFFICE.

OTIS D. THOMPSON, OF ELKHART, INDIANA.

LAWN-SWEEPER.

SPECIFICATION forming part of Letters Patent No. 481,269, dated August 23, 1892.

Application filed October 2, 1891. Serial No. 407,500. (No model.)

To all whom it may concern:

Be it known that I, OTIS D. THOMPSON, a citizen of the United States of America, residing at Elkhart, in the county of Elkhart and State of Indiana, have invented certain new and useful Improvements in Lawn-Sweepers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention is a machine for sweeping lawns and is an improvement upon the class of sweepers shown in Letters Patent Nos. 426,882 and 447,381.

The object of the present invention is to simplify and improve the general structure of the machine.

The invention includes improved arrangement of the pivoted frame supporting the brush and details connected therewith, castings secured to the ends of the box or casing inclosing the brush for adding to the general strength of the structure, providing journals for the wheels and adapted to support the lower ends of the handles, and an improved form of shoe.

In the accompanying drawings, Figure 1 represents in perspective the complete machine with one of the wheels removed to show the pivoted frame carrying the brush. Fig. 2 is a horizontal sectional view through the brush-casing. Fig. $2^{\times}$ is a detail view of the wheel-bracket. Fig. 3 is a rear view of the brush-casing and shoe with the receptacle for the sweepings removed. Fig. 4 is a vertical sectional view through the sweeper. Fig. 5 is a detail view of an improved form of shoe. Fig. 6 is a further detail view of the shoe.

In the drawings the machine is shown as supported upon a single pair of wheels, which preferably have roughened or corrugated peripheries, so as to secure sufficient traction to provide for the rotation of the brush-shaft. Ordinarily this shaft is in connection through a small cog-wheel on its end with teeth formed on the inner periphery of one of the drive-wheels, and when such a connection is made with the one wheel it may not be necessary to corrugate or roughen the tread of the second wheel, which may be an ordinary open wheel. The driving-wheel, however, should be closed, so as to prevent the teeth from becoming clogged. These wheels have their bearings on journals which are formed with brackets or castings having radiating arms which are securely bolted to the casing, these arms serving to strengthen the structure generally, to provide a very simple form of journal for the wheels, and the journals in turn form a bearing for the pivoted frame supporting the brush-shaft. These castings are indicated at *a*, the journals at *b*, the closed wheel at *c*, and the open wheel at *d*.

The brush, which is made up of a series of longitudinal strips carrying the brush material and secured to the radial extensions of two castings *y*, is carried upon a shaft which is located within a semi-cylindrical casing which entirely covers and conceals the brush, except where it passes through an opening in the bottom of the casing to come in contact with the grass, and at the rear, where a discharge-opening is formed and through which the sweepings pass to the receptacle in the rear. This shaft is adjustably supported by means of a frame A, which includes a bar extending across the front of the casing, on the outside thereof, and two rearwardly-extending arms, these arms being pivoted upon the wheel-journal, and upon the rear ends of these arms the brush-shaft is carried. One end of the shaft has secured to it a cog-wheel *e*, which meshes with the teeth on the inner periphery of the wheel referred to, and thus the traction of the wheel is communicated to the shaft to rotate the same. The frame A is under spring tension by means of a coiled spring *f*, secured to the front bar of the frame at one end and to the casing at the other end, and this puts the brush under tension, tending constantly to force it downward in contact with the grass to be swept. This tension is adjusted and regulated by an adjustable stop *g*, connected to the casing by means of a screw passing through a slot therein and provided with a thumb-nut, the end of the stop bearing against the edge of the cross-bar of the frame A. The slot in the stop enables any adjustment of the stop to be made, and thus any amount of tension may be put upon the brush. In order to hold the stop securely, a jam-nut *h* is used in addition to the first bolt and nut.

It will be seen that the location of the frame A enables me to put together all the casing

and to finish all the parts, which are of wood, and after this is done the end castings may be attached with the frame and this part of the machine is then complete. This construction adds very greatly to the setting up of the machine—that is, to the rapidity with which the parts may be assembled. The cross-bar of the frame, extending entirely across in front of the casing, also serves as a guard to protect the casing from abrasion in case the machine collides with any object.

Directly in rear of the brush and at the bottom of the side walls of the casing I place a shoe B, which is set inclined to the surface of the ground, having its lower end made tapering and preferably shod with metal. This shoe is supported on blocks *j*, projecting from the side walls, and the shoe is further sustained by a rod *i*, which extends between the side walls beneath the shoe. The shoe is connected to the blocks by means of bolts having threaded ends and nuts thereon, so as to be removable at will.

In place of the ordinary form of shoe just described I have devised an improved form. (Shown in the detailed Figs. 5 and 6.) It consists of a base portion, which rests upon the block and rods described and has a beveled front portion, as in the case of the other form. Upon its upper surface I provide a series of independently-pivoted fingers 3, arranged in pairs and being made, preferably, out of wire pivoted at the looped portion with parallel portions extending toward the front beyond the edge of the base-plate, the ends being bent rearwardly, thus providing projecting points over the edge of the base-plate. These fingers are particularly adapted when the machine is to be used upon a lawn where there are leaves to be gathered or like material and which with the ordinary form of shoe is very likely to be passed over. With my improved form the fingers pass in between the blades of grass, loosening up the leaves, which are swept into the receptacle. As the fingers are pivoted they will lift when they meet with an obstruction, and the ends which project to the rear tend to prevent the sweepings from falling back upon the swept-surface. The handles are rigidly secured to the front casing, a bolt passing through the extreme lower end of each handle and through one of the radial arms of the casting, and the handle is still further supported by bolts connecting it with the rear extension of the brush-casing.

In order to collect the sweepings, a receptacle C is hung upon the handles by means of projecting studs 4, secured to the upper end of the front portion of the receptacle, these studs having bearings in clips securely fastened to the handle-bars in proximity to the rear extension of the brush-casing. This is the only connection necessary between the receptacle and the rest of the machine, as being hung at the top the side walls and bottom of the receptacle find a bearing against the rear extension of the brush-casing and the weight of the receptacle tends to keep the parts snugly in place. The edges of the receptacle fit within the battens 5 5, Figs. 1 and 2.

In order to prevent the rising of dust, I arrange the receptacle at its forward part with a cover, which fits down over a cross-piece. The extreme rear upper part of the receptacle may be provided with a cover; but this ordinarily will not become necessary. The forward lower edge of the receptacle fits directly under the rear edge of the shoe, and thus there is no danger of any of the sweepings dropping to the ground.

By reason of the construction of the brush with the sweeping-sections arranged at a distance from the center a fan-like action is secured, and as the ends of the casing are provided with circular openings a current of air is drawn in through these openings and the centrifugal action of the fan forces a current of air over the shoe, thus creating a current that has a strong tendency to draw in all the light sweepings and litter. The sweeping-sections of the brush thus act directly upon the surface to be swept and indirectly also by the current created. As the brush-casing fits close to the surface of the ground, it aids to increase the force of the current drawn in through the side openings and back over the shoe.

I claim as my invention—

1. In a sweeping-machine, a casing, wheels supporting the same, a frame pivotally supported, and the brush-shaft supported upon said frame, said frame passing around the front and sides of the casing outside thereof, substantially as described.

2. In a sweeper, a casing, a pivotally-supported frame passing across the front and around the sides of said casing, a sweeper supported upon said frame, a spring connecting said frame at its front end with the casing, and means for limiting the movement of said frame.

3. In a sweeper, a casing, wheels supporting said casing, castings secured to said casing and providing journals for the wheels, a frame pivoted on said journals, with a brush carried on the arms of said frame, and a cross-bar on said frame extending in front of said casing, substantially as described.

4. In combination with a casing, a brush-shaft suitably supported, castings secured to each end of the casing, having radial arms, and a central journal and wheels on said journals, substantially as described.

5. A shoe for a sweeper, having fingers made of wire pivoted at their rear ends, with parallel forward extensions and turned-up rear extensions, substantially as described.

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

OTIS D. THOMPSON.

Witnesses:
FRANK M. FOSTER,
GEO. W. MORELL.