(No Model.) 2 Sheets—Sheet 1.

O. D. THOMPSON & H. F. SMITH.

SWEEPER.

No. 447,381. Patented Mar. 3, 1891.

Fig. 1.

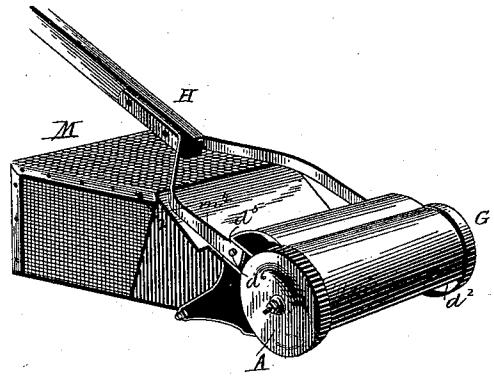


Fig. 2.

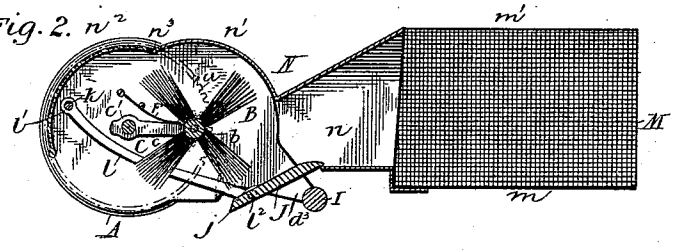
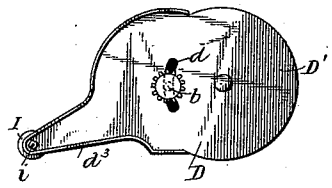


Fig. 3.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

O. D. THOMPSON & H. F. SMITH.

SWEEPER.

No. 447,381. Patented Mar. 3, 1891.

Fig. 4.

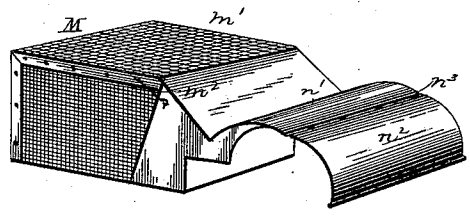


Fig. 5.

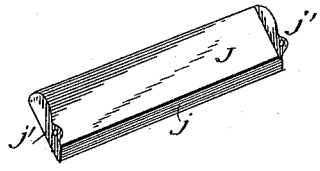
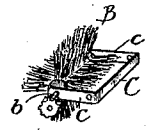


Fig. 6.



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UNITED STATES PATENT OFFICE.

OTIS D. THOMPSON AND HOWARD F. SMITH, OF ELKHART, INDIANA.

SWEEPER.

SPECIFICATION forming part of Letters Patent No. 447,381, dated March 3, 1891.

Application filed May 21, 1890. Serial No. 352,599. (No model.)

To all whom it may concern:

Be it known that we, OTIS D. THOMPSON and HOWARD F. SMITH, citizens of the United States, residing at Elkhart, in the county of Elkhart and State of Indiana, have invented certain new and useful Improvements in Sweepers; and we do hereby 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.

This invention relates to sweepers for lawns, roads, &c., and is an improvement on that patented to Otis D. Thompson, April 29, 1890, and numbered 426,882.

The object of the present invention is to improve the operation of the machine and to provide means whereby it is adapted to follow the surface inequalities of the ground over which it passes, and also to provide means whereby the sweepings are carried to the rear end of a box, basket, or other suitable receptacle to prevent the banking up of the sweepings at the mouth of said receptacle and preclude its filling.

To these ends the invention consists in certain features derived from the former invention in combination with certain new and novel features of construction, all of which will fully appear from the following description and claims, taken in connection with the accompanying drawings, in which—

Figure 1 shows in perspective view a sweeper made according to our present invention; Fig. 2, a central longitudinal vertical section of the same; Fig. 3, a view of a portion of the sweeper, showing the means for adjusting the height of the brushes with relation to the ground; Fig. 4, a detail in perspective of the "sweepings-receptacle" and top casing; Fig. 5, a detail in perspective of the shoe for guiding or deflecting the sweepings into the receptacle; Fig. 6, a detail in perspective of the brushes.

Similar letters in all the views indicate similar parts.

A indicates the drive-wheel, which is formed with the peripheral rack *a*, adapted to engage a pinion mounted upon the journal *b* of the brush B, said brush being supported in bearings on a bracket C. This bracket is formed of a bar having its ends bent at right angles to form arms *c c*, the ends of said arms serving as the bearings for the journal of the brush. The bracket is pivotally connected at *c'* to the spindles of the drive and companion wheels, which allows of that portion carrying the brush to rise and fall, this movement being limited by the length of the slot *d* in the side piece D, through which one end of the journal *b* passes.

F is a spring, connected at one end to the side piece D, and its other free end bears upon the journal bearing on frame or bracket C, and forces the said bracket to the bottom of the curved slot. When a strong resistance—such, for instance, as rough ground or heavy grass may give—is met, the upward pressure will force the brush and its spring up until the resistance is passed, when the brush will instantly assume its former or normal position.

The side pieces or frames D D are connected at their outer ends by rod *k*, and are made with the circular portions d' d^2, which act as faces for the inner sides of the drive-wheel A and the companion wheel G. The circular portion for the wheel A also serves as a dust guard or screen to protect the gearing, while the portion d^2, having no such function with relation to the wheel G, is partly cut away to reduce weight. The side pieces D D' are provided with the extensions d^3, which are recessed, as at d^5, and provided with pins or lugs d^6, to which are pivotally secured the lower ends of handle H. The outer ends of the extensions d^3 serve as bearing-points for the journal *i* of the roller I.

J is a shoe formed with the knife-edge *j* and the side flanges *j'*. This shoe is hung from the rod *k* by curved arms *l*, passing under the journal *b*, and which arms are provided, respectively, with the eyes l' l^2 at each end, the eyes l' encircling the rod *k*, and the eyes l^2 being connected to the lower part of the flanges *j'* by bolts or other suitable connections. The upper edge of the shoe rests on and is supported by the hopper portion *n* of a sheet-iron or other casing N, which opens into a receptacle M, said receptacle being composed of wood, wire-netting, or other suitable material, and formed of the floor *m* and cover *m'*. The receptacle is connected to the casing N by hooks and pins m^2, or other suitable connec-

tions. Upon releasing the hooks the receptacle may be removed and the contained grass or other sweepings emptied.

By reason of the connections of the shoe with the frame, it will be readily seen that the shoe is permitted to rise and fall to adapt itself to the inequalities of the ground over which the machine passes.

The casing N is formed with the mouth or hopper n and the inclined and curved portions n' n^2, the portion n^2 being hinged, as shown at n^3, and adapted to be sprung over a portion of the periphery of the circular parts d' d^2 of the side frames. It will now be seen that by reason of the casing N and side pieces D D' a chamber is formed, which admits air from beneath and allows it to pass through the hopper into the receptacle. The rapid revolution of the brush creates a strong current of air, which carries the sweepings to the rear of the receptacle, and thus enables the receptacle to be entirely filled and prevents the banking up at the mouth of the hopper.

It will be seen that the manner of connecting the brush by means of the arms c to the spindles of the drive and companion wheels not only allows of the substantially vertical adjustment of the brush with relation to the ground, but also preserves the gearing contact of the rack and pinion in all the positions of the adjustment.

We have shown and described our invention as applicable to that class of sweepers designed to be used for lawns and for light work generally; but it is evident that the same principle can be applied to a larger and heavier class of machines adapted for sweeping roads, &c.

We claim—

1. In a machine of the class described, the combination, with the spindles of the driving and companion wheels, of a revoluble brush connected by gearing with the driving-wheel and having a central spindle, arms connecting the spindles of the wheels and brush, and springs adapted to bear on these arms and keep the brush in contact with the ground, as set forth.

2. In a machine of the class described, the combination, with the spindles of the driving and companion wheels, of the revoluble brush connected by gearing with the driving-wheel and having a central spindle, arms connecting the spindles of the wheels and brush, springs adapted to bear on these arms, and a shoe connected by arms to the frame, all substantially as and for the purposes set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

OTIS D. THOMPSON.
HOWARD F. SMITH.

Witnesses:
WILLIAM FLEMING,
D. E. BIGAN.