A. P. OSBORNE.

Lawn-Mower.

No. 204,242. Patented May 28, 1878.

Fig 1.

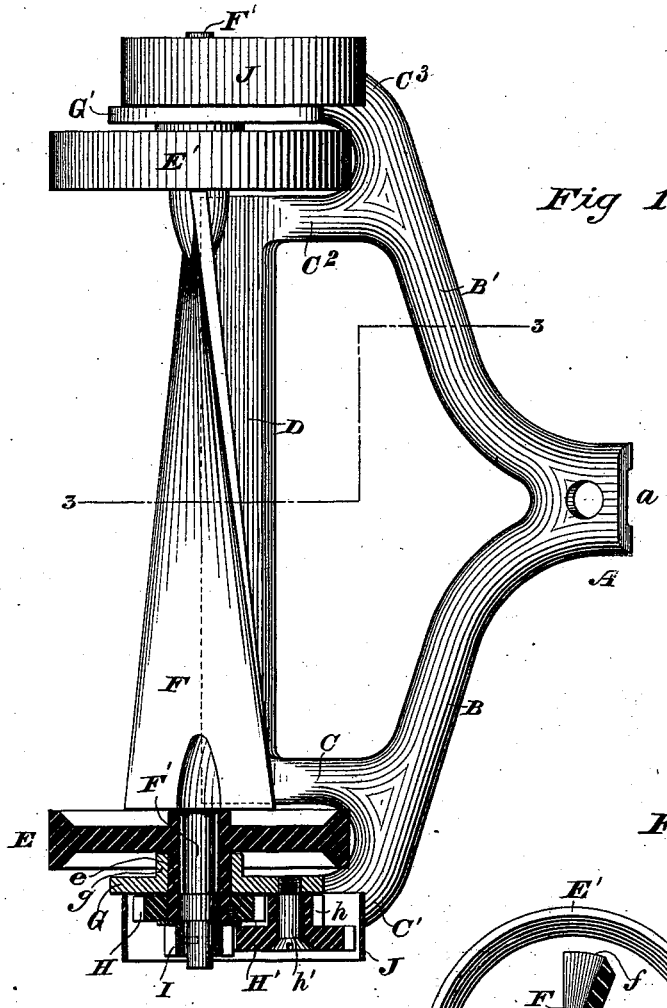


Fig 3.

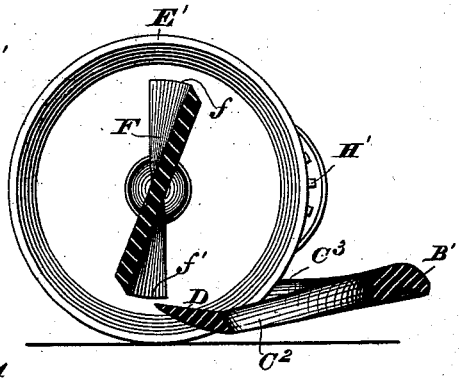
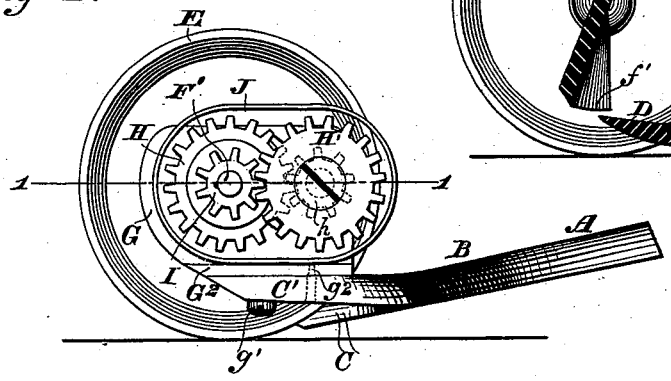


Fig 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

ALVAH P. OSBORNE, OF TRUMANSBURG, NEW YORK, ASSIGNOR TO ORNAN OSBORNE, OF SAME PLACE.

IMPROVEMENT IN LAWN-MOWERS.

Specification forming part of Letters Patent No. **204,242**, dated May 28, 1878; application filed May 1, 1878.

To all whom it may concern:

Be it known that I, ALVAH P. OSBORNE, of Trumansburg, in the county of Tompkins and State of New York, have invented certain new and useful Improvements in Lawn-Mowers, of which the following is a specification:

My invention relates to improvements in that class of lawn-mowers having curled or twisted knives or spiral-edged cutters revolving above and acting in connection with stationary straight-edged bed-knives or fixed cutting-blades.

My objects are to produce a strong, easy-running, simple, cheap, and efficient machine; and to these ends my improvements consist in certain novel organizations of parts, and in combinations of devices hereinafter first fully described, and then specifically designated by the claims.

In the accompanying drawings, Figure 1 is a plan or top view, partly in section on the line 1 1 of Fig. 2, of my improved machine, the draft-pole or pushing-handle being omitted; Fig. 2, an elevation of the same, and Fig. 3 a vertical section on the line 3 3 of Fig. 1.

A skeleton draft, supporting a main frame, A, has a socket, *a*, and bolt-hole for the attachment of a pole or handle by which to propel the machine. This frame is composed of two main parts or branches, B B′, curved or diverging outward from the center or socket *a*, (where they unite,) and forked or bifurcated at their outer ends. The arms or inner forks C C^2 of the respective branches of the main frame support a stationary cutter or bed-knife, D, at its opposite ends, while the outer forks or arms C^1 C^3 serve to support the carrying or supporting and driving wheels E E′ and the gearing for operating a revolving curled-edged or spirally-twisted cutter-blade F. This cutter is shown as composed of a single plate, having but two knife-edges, *f f′*. Obviously the knives may be duplicated; but two formed on a single blade are preferable.

The supporting and driving wheels are mounted between the forks of the main frame ends, and the axis of revolution of the cutter F is in the vertical plane of or directly over the bed-knife cutting-edge. The journals or stud-shafts F′ of the revolving cutter are mounted loosely so as to turn freely in the long hubs or sleeve-bearings *e* of the wheels E E′, and the hubs of these wheels are loosely mounted and turn freely in bearings *g* provided in auxiliary frames, boxes, or housings G G^1, detachably secured by means of their flanged bases G^2 and screws or bolts to the main frame forks C^1 and C^3, respectively. A single screw or bolt, g^1, and a steady or dowel pin, g^2, will serve to make the connection between the respective supplemental frames and gearing-boxes G G^1 and the forked ends of the main frame, by which they are respectively sustained.

The long hubs or sleeves of the wheels E E′ extend through and project outside of their respective bearings *g*, and each hub has keyed to its end a spur-pinion, H, meshing into and driving a loosely-mounted pinion, *h*, on a stud-shaft, *h′*, in the detachable gearing, housing, or supplemental frame G or G^1. This pinion *h* is formed with or rigidly secured to another and larger outside pinion, H′, which meshes with and drives a smaller pinion, I, on the end of the shaft F′ of the revolving cutter.

From the above description it will be understood that the supporting-wheels revolve in the spaces between the forks of the main frame; that both said wheels are driving-wheels; that the gearing is mounted outside and independently of the driving-wheels; that the cutter and the wheels revolve about a common axis; and that no friction whatever, other than that produced by its own weight and the resistance to be overcome in cutting the grass, is brought to bear upon the cutter-shaft, as the propelling-handle acts directly upon the wheel-hubs, and the wheels sustain the weight of the machine.

By the peculiar construction of the main frame, I am enabled firmly to support the fixed cutter, and to cut a swath the full width of the space between the wheels, and also to mount the gearing in supplemental frames outside of the wheels, instead of within flanges or widened treads thereof, as is customary.

The gearing may be protected from the cut grass and other clogging matter by casings J on the gearing-housings or supplemental frames. In this instance the casing for each

train of gearing is shown as composed of an oval encircling-band fast to the flange of the gearing or supplemental frame. This encircling-band may be detachably secured in place. A vertical or outside face-plate may be employed, if desired, to more thoroughly protect the gearing, and such plate may be hinged to the band-casing, so that it may be opened to inspect or remove the gearing, and when closed secured by a suitable catch. The vertical plate or upright of the gearing-frame is interposed between the driving-wheel and gearing, and protects the gearing on the inside.

I claim as of my own invention—

1. The lawn-mower skeleton main frame, constructed with diverging branches, terminating in forked ends, the inner forks of which support a fixed cutter between the driving-wheels and in the plane of their axis of revolution, while the outer forks sustain the gearing outside of the driving-wheels, and are provided with bearings for said wheels, substantially as hereinbefore set forth.

2. The combination, substantially as hereinbefore set forth, of the main frame having forked ends, the long-hubbed driving-wheels rotating in the forks of the frame, the combined journal-boxes and supplementary or gearing frames mounted upon the outer forks of the frame, the rotating cutter, the shaft of which projects at its ends through and turns loosely in the driving-wheel hubs, and the gearing connecting the wheel-hubs and cutter-shaft outside of the driving-wheels.

3. The combination of the main frame, the long-hubbed driving-wheels, the shaft of the rotating cutter, gearing connecting the wheel-hubs and said shaft, and the supplementary or gearing-frame between the wheels and gearing, substantially as and for the purpose set forth.

In testimony whereof I have hereunto subscribed my name.

ALVAH P. OSBORNE.

Witnesses:
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ARTHUR S. GREGG.