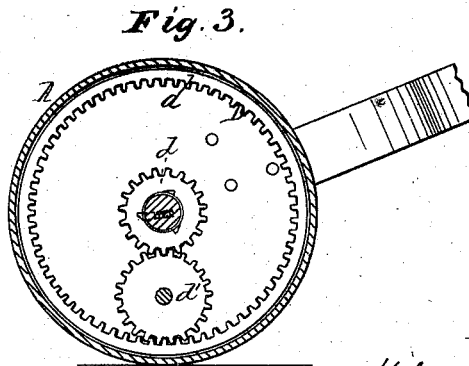
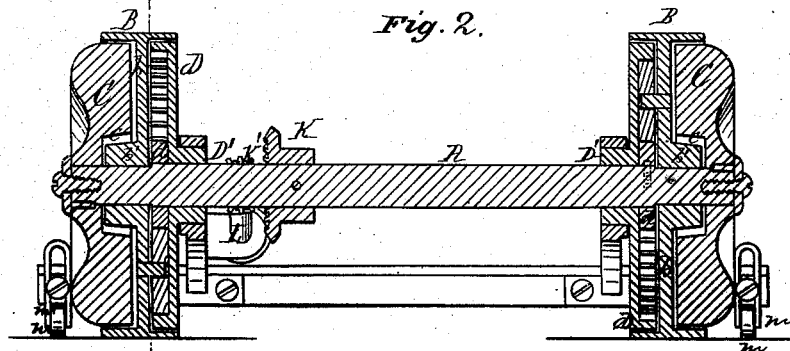
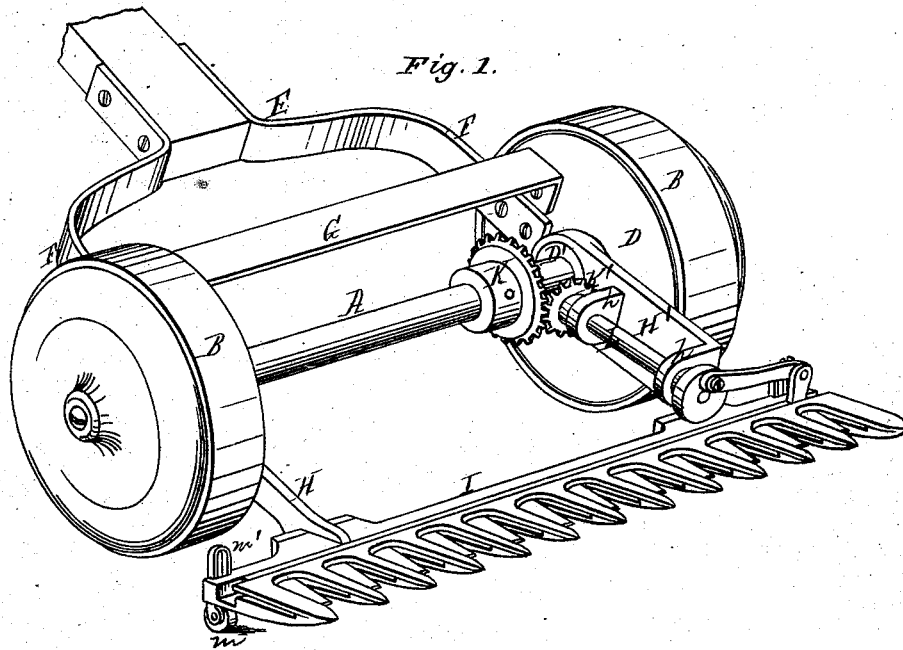


H. C. CROWELL.

Lawn-Mower.

No. 160,882.

Patented March 16, 1875.



Witnesses:  
Alex. Mahon  
H. C. Barclay

Inventor:  
Helen C. Crowell  
by A. L. Smith,  
Attorney

# UNITED STATES PATENT OFFICE.

HILEN C. CROWELL, OF ERIE, PENNSYLVANIA, ASSIGNOR OF TWO-THIRDS HIS RIGHT TO FREDERICH JARECKI, OF SAME PLACE.

## IMPROVEMENT IN LAWN-MOWERS.

Specification forming part of Letters Patent No. 160,882, dated March 16, 1875; application filed February 10, 1875.

*To all whom it may concern:*

Be it known that I, HILEN C. CROWELL, of Erie, county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Lawn-Mowers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a perspective view of the improved machine. Fig. 2 is a vertical transverse section through the same, taken through the main axle; and Fig. 3 is a vertical section through one of the drive-wheels, showing the gear-plate and part of the gearing in elevation.

Similar letters of reference denote corresponding parts in all the figures.

The invention relates to a novel arrangement of inclosed gearing and of the balance or fly wheel relatively to the main axle and ground-wheels, whereby they are brought into compact shape and within the compass or periphery of the drive-wheel, as will be explained.

In the accompanying drawings, A represents the main drive-wheel axle, and B B the main ground or drive wheels mounted and turning freely thereon. These drive-wheels are made in the form of a central disk or web, *b*, or it may be in the form of a series of spokes radiating from a central hub, *b'*, and are provided at the periphery with a broad flange projecting on both sides of the central disk, as shown. Outside the disk *b*, at each end of the axle, is a fly-wheel, C, recessed at *c*, to accommodate the hub *b'* of the drive-wheel, and keyed to the axle A, so as to rotate therewith. These fly-wheels are, by preference, made of a diameter to fill within the projecting flange of wheel B, which thereby serves as a cover to protect it. Inside of the disk *b* is a pinion, *d*, which is keyed to the axle, or, if preferred, it may be connected with the axle by backing-atchets, so that motion will be imparted to the axle only in the forward movement of the machine. *d'* is a transmitting-pinion, mounted upon a pin or stud secured to the inner face of the drive-wheel B, and traveling therewith, its teeth engaging with the teeth of pinion *d*,

and also with those of an internally-cogged rim formed upon or attached to a stationary gear-plate, D, from which, by the revolution of the drive-wheels, a rotation is imparted to the pinions *d'*, and thence to the pinions *d*, and to the main axle and balance-wheels C. The gear-plates D are made in the form of disks, fitting closely within the flanges of the wheels B, and serving, in connection with said wheels, to inclose and protect the gearing above described. These plates or disks are provided with hubs or sleeves *D'*, mounted loosely on the axle A, so as to leave the latter free to rotate therein, and the disks themselves are prevented from rotating with the axle by being connected with and made to form a part of the draft or propelling frame E through the straps or hounds F, as shown, or in any other convenient manner. The gear-plates D may be connected by a transverse bar or plate, G, which will further serve to stiffen them and to maintain them in proper working relation. The hubs or sleeves *D'* of the gear-plates form a stationary bearing or support for the longitudinal bars or plates H H' of the cutter-frame, which are mounted thereon by means of sleeves, which permit the free vibration of the cutter-frame on said sleeves *D'* as a center. The finger-bar I and the cutting apparatus, which may be of any usual or preferred construction, are connected with the forward ends of the bars H H', and motion is imparted to the sickle from the gearing above described by any convenient arrangement of connecting devices. A simple arrangement for this purpose is shown in the drawings, consisting of a bevel-wheel, K, keyed to the rotating axle A, from which motion is imparted to a bevel-pinion, K', on the rear end of a crank-shaft, L, mounted in suitable bearing-brackets *h* on the frame-bar H', and from said crank-shaft, through the usual crank-wheel or wrist-pin and connecting-rod, to the sickle. The finger-bar has wheels *m* connected with it, for causing it to run lightly over the surface of the ground, these wheels being supported in the lower ends of adjustable standards *m'*, by means of which the height of cut may be regulated as desired.

By the arrangement of gearing shown and

described it will be seen that the gear-plates and the planetary gear for driving the axle, and also the fly-wheels, are brought within the space ordinarily occupied by the ground or driving wheels only, and thus a material economy of space is effected, while at the same time it permits the employment of heavy fly-wheels, which are essential for giving a steady movement to the sickle; and, further, the weight of these fly-wheels is located just where it is most efficient in giving increased traction to the driving-wheels—an important feature in this class of machines when employing a reciprocating sickle.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a lawn-mower, the combination of the fly wheel or wheels with the main axle in the described relation to the flanged driving-wheel, substantially as and for the purpose set forth.

2. The flanged driving-wheel B, in combination with the fly-wheel C, gear-disk D, and the planetary gearing, all inclosed within and protected by the flanges of the wheel, substantially as shown and described.

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Witnesses:

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