E. L. GILMAN.

MOWER.

No. 190,025. Patented April 24, 1877.

Fig. 1.

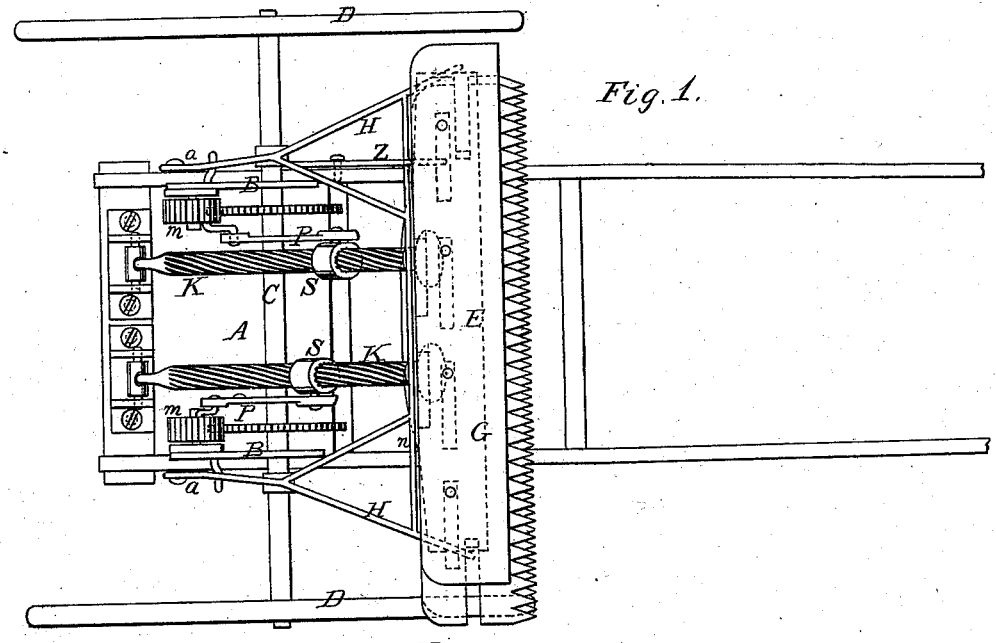


Fig. 3.

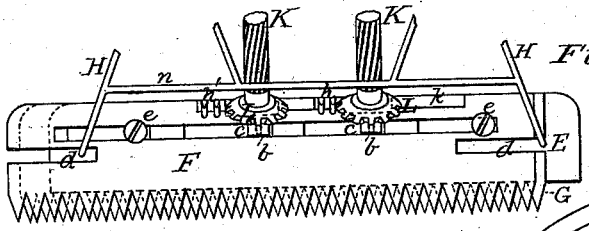
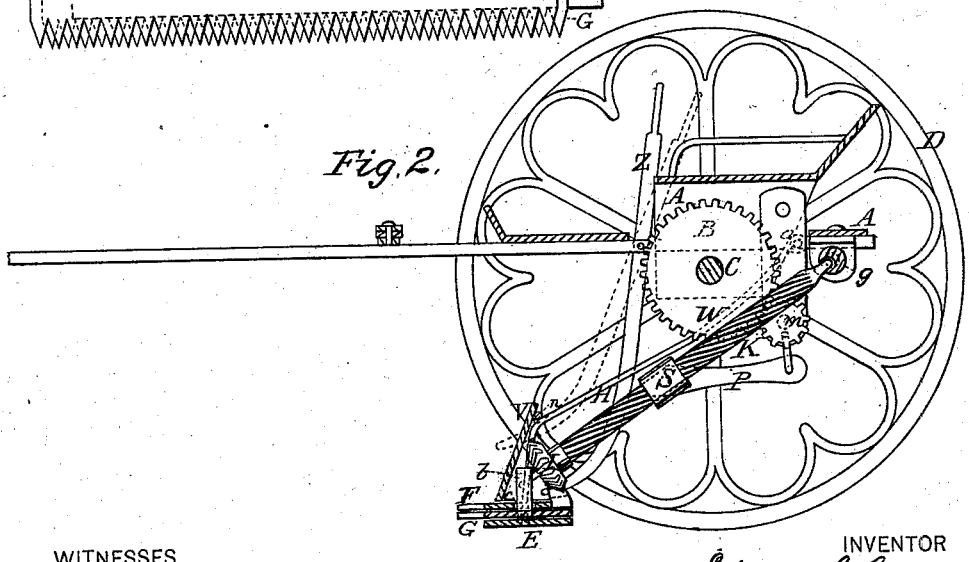


Fig. 2.



WITNESSES

Villette Anderson.

Walter C. Masi

INVENTOR

Edward L. Gilman,

by E. W. Anderson.

ATTORNEY

UNITED STATES PATENT OFFICE.

EDWARD L. GILMAN, OF SOMERVILLE, MASSACHUSETTS.

IMPROVEMENT IN MOWERS.

Specification forming part of Letters Patent No. **190,025**, dated April 24, 1877; application filed January 13, 1876.

To all whom it may concern:

Be it known that I, EDWARD L. GILMAN, of Somerville, in the county of Middlesex and State of Massachusetts, have invented a new and valuable improvement in Reaping and Mowing Machines and Cutters; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a bottom view of this invention. Fig. 2 is a vertical longitudinal section of the same; and Fig. 3 is a plan view of the sickle.

This invention has relation to reaping and mowing machines, and others of like character; and it consists in the construction and novel arrangement of the quick-screws, the traveling sleeves, moved in a reciprocating manner thereon by suitable mechanism, the end gear of said screws, and the racks of the cutter-plates engaging therewith, as hereinafter shown and described.

The object of this invention is to provide a light center-draft machine, of simple and economical construction, wherein the friction of the working parts will be comparatively small, and transportation will be facilitated by the height of the wheels in connection with the manner of hanging and operating the cutters, which are designed to be raised and lowered with facility.

In the accompanying drawings, the letter A designates the frame or body of the machine, having arms or bearings B for the shaft C of the wheels D, which are of considerable height, and designed to be keyed or otherwise rigidly secured to said shaft. E represents the base-plate of the sickle, which is centrally located in front of and between the wheels, and upon which are mounted the cutters F and G. The base-plate is provided with arms H, whereby it is connected to the body of the machine, said arms being pivoted, as indicated at *a*. It is also provided with studs or abutment posts *b*, which, extending upward through slots *c* of the cutter-bars, afford bearings for the lower journals of the screws. Slots, *d*, are also provided in the cutter bars for the passage of the arms H. These slots and the arms and studs mentioned, and the bolts *e*, near the ends of the sickle, serve as guides to keep the cutters in position during their rapid reciprocating movements.

K K represent the quick-screws, which are journaled in the line of their axes at each end. Each of these screws has several spiral threads of slow twist extending from end to end, or the length of the path of its traveler. At its upper end it is journaled in a suitable bearing, *g*, which is swiveled or pivoted between arms or hangers from the frame. At its lower end the journal of the screw is seated in the stud or post *b* of the base-plate of the sickle. Pinions L are applied on the lower ends of the screws, and engage with racks *h h'*, which rise from the rear portion of the cutters, the rack *h* of the lower cutter extending through a slot or edge space, *k*, of the upper cutter. The screws are arranged in oblique position, extending forward and downward from their rear bearings.

S indicates a traveler or internally-threaded sleeve, which is applied on each screw, and to which is pivoted a pitman, *p*, which is connected with the wrist pin or crank of a toothed wheel, *m*, which engages with the driving-wheel W, which is keyed or otherwise secured on the shaft C, and turns with the supporting wheel D of the machine.

When operated by the gearing described the travelers have a forward and backward motion on the screws and impart to the latter a rocking movement on their axis. Through this movement the pinions at their lower ends engaging with the racks of the cutters produce the side reciprocating movements of the latter, required in the cutting motions of their teeth.

A transverse rod or bar, *n*, extends from one arm H to the other, forming a kind of sickle-frame, giving to the sickle firmness and security of position. This bar is designed to pass above and in rear of the pinions L, and to its middle portion is attached the apron or guard V, which extends therefrom downward and forward over the sickle in a spreading manner, and serves to keep the cut grass and other articles in the path of the machine from getting in the cutter-slots or becoming

engaged with said pinions. A lever, Z, pivoted at the side of the machine, and engaging under the bar *n*, enables the operator to raise the sickle whenever it is required. In this movement the sickle-arms turn up on their pivoted ends, which are designed to be somewhat in front of the upper bearings of the screws, in order that the latter may, when hung to their upper bearings, disengage their pinions from the cutter-racks, during the raising operation, and re-engage the same as the sickle is lowered. Sometimes the oblique screws may be arranged to extend from the middle of the machine, about the position of the axle, suitable boxes and bearings being provided, and in this case the screws will be shorter than when they extend from the rear of the frame, as shown in the drawings.

It is apparent that the construction and arrangement of the part of these machines may be varied in several ways without departing from the principle which has been set forth. Therefore I do not desire to be confined to the precise mechanism illustrated.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the cutter-bar, of the rock-screw K, its reciprocating traveler S, and the mechanism whereby the latter is operated, substantially as specified.

2. The combination, with the cutter-bars and their racks, of the rock-screws, their pinions and reciprocating travelers, the driving-gear, and the shaft of the driving-wheels, substantially as specified.

3. The combination, with the sickle and its pivoted arms H, of the oblique swiveled driving-screws *k*, and the lifting-lever Z, whereby the sickle is detached from its mechanism and raised simultaneously, substantially as specified.

4. The combination, with the slotted cutter-bars and swiveled driving-screws *k*, of the sickle base-plate, its abutment-bearing *b*, bolts *e*, and arms H, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ELWARD L. GILMAN.

Witnesses:

PEARL MARTIN,

ANNIE G. L. SKILTON.