(No Model.)

J. H. ELWARD.

MOWING MACHINE.

No. 279,926. Patented June 26, 1883.

Fig. 1

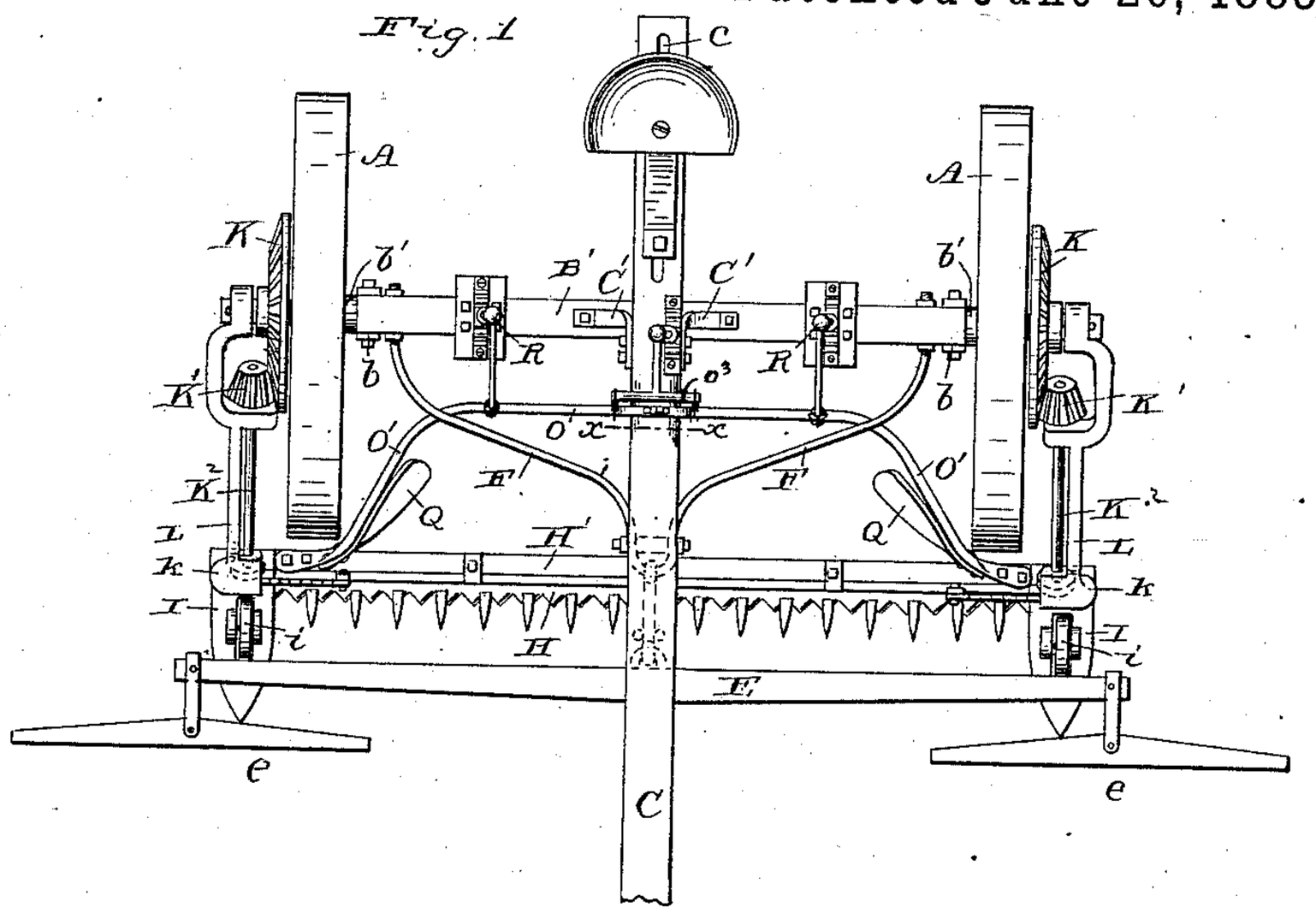


Fig. 3.

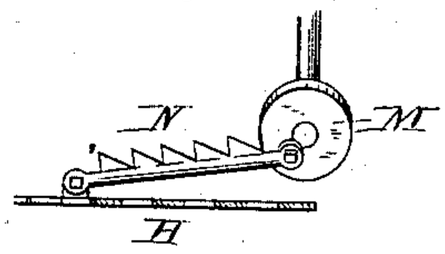


Fig. 4.

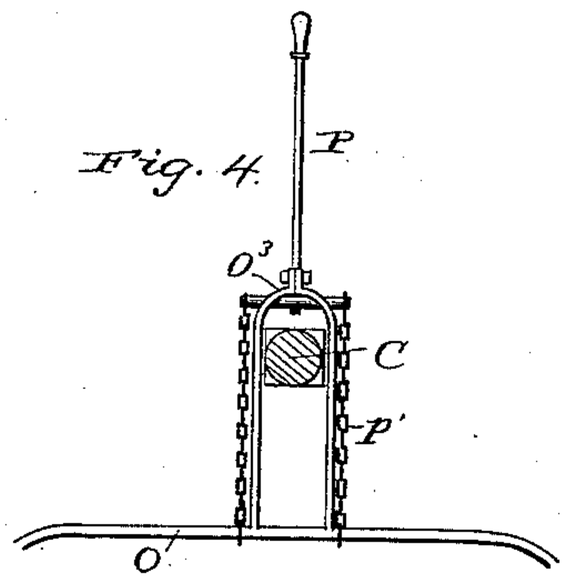
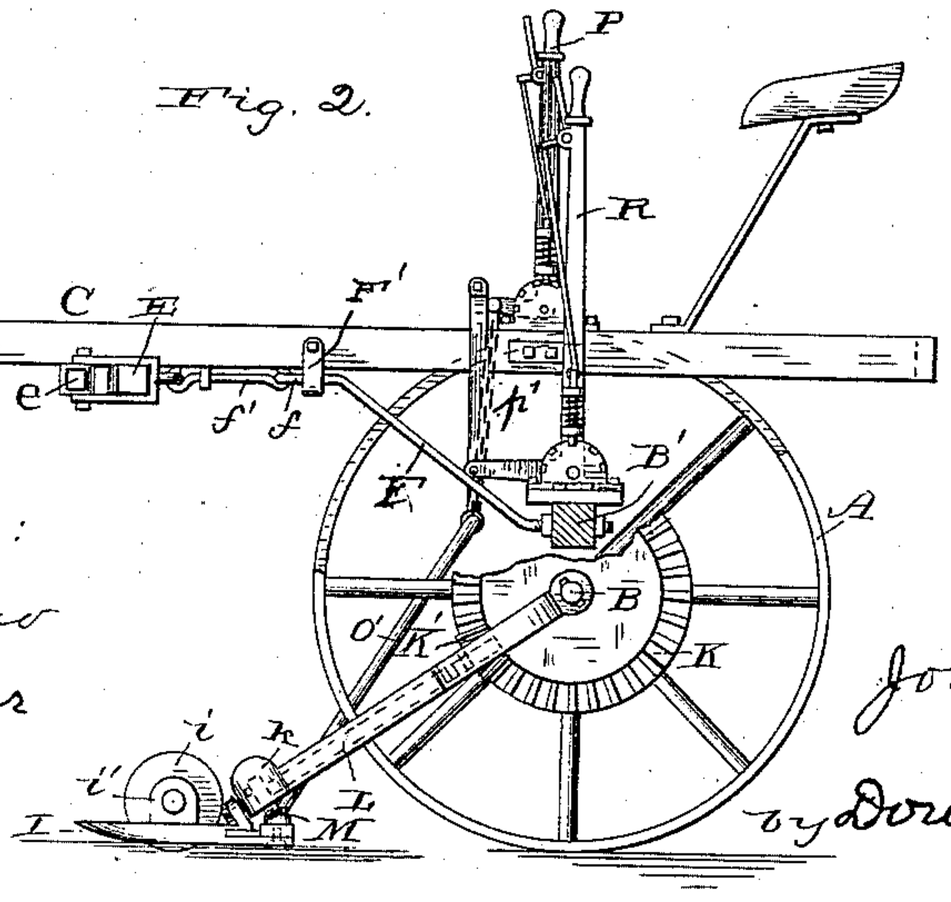


Fig. 2.



Witnesses:

N. N. Lowe

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UNITED STATES PATENT OFFICE.

JOHN H. ELWARD, OF POLO, ILLINOIS, ASSIGNOR TO MARY ELWARD, OF SAME PLACE.

MOWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 279,926, dated June 26, 1883.

Application filed October 31, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. ELWARD, a citizen of the United States, residing at Polo, in the county of Ogle and State of Illinois, have invented certain new and useful Improvements in Mowing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a top plan view of a mower embodying my improvements. Fig. 2 is a side elevation, partly in section. Fig. 3 shows one of the crank-wheels detached. Fig. 4 is a cross-section on the line *x x*.

In the drawings, A A represent the main drive-wheels. They are loosely mounted on the axle B, being provided with backing-ratchets of any preferred character for joining them to the axle when moving forward. The axle extends to points sufficiently far outside of the wheels to accomplish the purposes to be hereinafter described.

C is the draft-tongue. It is situated transversely to the axle, and supported thereon by means of an intermediate beam, B′, which is fastened upon and parallel to the axle. The beam is secured to the axle by means of ears or bars *b b*, fastened to the beam B′, and to loose collars *b′* around the axle. The tongue C is supported upon the beam B′ by means of braces or standards C′, each having its ends respectively bolted to the beam and to the side of the tongue. Upon the tongue, and in the rear of the axle, is mounted the driver's seat D, it being adjustable longitudinally on the tongue, so as to be readily put into the necessary position to have the weight of the driver assist in counterbalancing the weight at the forward end of the tongue. This adjustment is permitted by means of a longitudinal slot, *c*, wherein the through-bolt which holds the seat-standard can be slipped forward or back.

E represents the double-tree, to which the draft of the horses is directly applied through the single-trees *e e*. The double-tree is supported upon the under side of the tongue, and has a flexible direct connection with the axle or the beam by means of the draw-rods F F, the latter being preferably formed of one piece of metal, bent at the center to provide a U-shaped stirrup-piece, *f*, which is supported in the loop F′, and which is connected to the whiffletree by means of a link, *f′*.

With the supporting-frame and the draft-frame thus constructed is connected the cutting apparatus, which consists of the cutter-bar H, with knives attached, the finger-beam H′, and the shoes I I. The shoes I I are situated on lines outside of the drive-wheels, and are each provided with a wheel, *i*, mounted in a slot in the shoe, there being upwardly-projecting ears or standards *i′* to support the caster pin or shaft. The cutting apparatus is connected with and supported upon and pushed forward by means of the connecting-frames L L. There is one of these at each end of the machine, each being loosely supported at one end upon the axle by means of a collar, and the other being rigidly attached to the corresponding shoe, I. These frames permit the cutting apparatus to be swung up or down about the axle as a center.

K K are bevel-wheels secured to the axle at points outside of the drive-wheels A A, and are arranged to mesh with pinions K′ K′. These pinions are on the upper ends of the crank-shafts K^2 K^2, which latter are mounted in the inclined frames L L, by the sides of and preferably parallel to the drive-wheels. At the lower ends these shafts K^2 carry the crank-wheels M, said wheels being situated in proper position relatively to the cutter-bar to properly reciprocate it.

N N represent the pitmen by which the crank-wheels are connected with the cutter-bar at points suitably near both ends of the latter, and by which the reciprocating motion is imparted thereto.

In addition to the supporting-frame for the cutting apparatus which I have above described, I employ a stiffening and bracing mechanism, consisting, mainly, of a cross-bar, O, having downwardly-drooping end portions O′, firmly bolted or otherwise fastened to the ends of the finger-beam. By means of this frame not only is the cutting apparatus strengthened and held in proper position, but also said apparatus can be adjusted and elevated either entirely or at one end.

To effect the adjustment or elevating of the cutting apparatus, I employ a lever, P, at the

center, mounted on the top of the tongue, and connected by means of a short arm, *p*, and a chain or chains, *p'*, with the cross-bar O on the last-described frame. With the lever may be combined a ratchet and pawl or dog of any approved character, for holding the lever in the necessary position. By these means the whole cutting apparatus can be lifted. When it is desired to lift only one end of the same, it can be accomplished by means of one of the levers, R, which are mounted at suitable points between the driving-wheels and the tongue, and are connected with the cross-bar or frame O by chains, or in any other preferred way. The tongue is made to assist in bracing and steadying the movable parts of the machine by means of a stirrup or yoke, O^3, the legs of which are situated comparatively close to the tongue, and are fastened at their lower ends to the cross-bar O. When it is made in two pieces, the upper ends are fastened rigidly together, though the whole may be, if preferred, formed in one piece. The tongue is somewhat rounded at the point where this bracing-yoke is situated, in order to permit more or less of a rolling action of the cutting apparatus, which action results, to a greater or less degree, when one end is elevated by the lifting devices hereinbefore described.

The pitman at each side of the machine is provided with serrated projections *m'*, so shaped as to catch the falling grass and throw the upper ends thereof inward, so that it shall not fall upon the outside of the shields or guides Q to come in the path of the drive-wheels. At *k* the frame-piece L is expanded to provide both a covering or shield for the crank-wheel, and also a strong connection between the upper path of the shaft-frame and the shoe. By applying the reciprocating motion at both ends the bar is kept under proper tension and the motion is distributed throughout the whole length of the bar, one end being pushed while the other is being pulled, obviating the difficulty heretofore experienced in using the cutter-bars driven at one end only, especially when the grass is thick and heavy.

What I claim is—

1. In a mower, the combination of the bevel-wheels K, the axle rigidly connected thereto and projecting to the outside thereof, the beam B', above and parallel to the axle, the tongue supported above the beam by means of braces or standards, the crank-shafts, one upon each side of the machine, and the frames for supporting said shaft, attached to the outer end of the axle, substantially as set forth.

2. In combination with the bevel-wheels, the axle rigidly connected thereto, the cutting apparatus in front of the drive-wheels, the means for driving both ends of the cutter-bar, the tongue supported by brackets above the beam B', the bracing-frame O O', rigidly secured to the ends of the finger-beam, and the lifting apparatus, substantially as set forth.

3. In combination with the bevel-wheels, the axle secured thereto, the finger-beam in front of the driving-wheels, the shoes at the ends of the finger-beam, the inclined crank-shafts, and the supporting frame-pieces L, having the expanded shield portion *k*, which cover the crank-wheels, and also provide a connection for the frame-pieces with the shoes, substantially as set forth.

4. The combination, with the drive-wheels, and the cutting apparatus arranged in front of the drive-wheels, of the pitmen provided with projections which engage with the grass and throw it inward, substantially as set forth.

5. The combination, with the drive-wheels, of the cutting apparatus mounted in front of said wheels, the gearing at the sides of the machine for transmitting power to the cutter-bar, the tongue, the bracing-frame O O', the lifting-lever at the center for elevating the whole cutting apparatus, and the lifting-levers at the sides for lifting either end at will, substantially as set forth.

6. In combination with the drive-wheels, the cutting apparatus mounted in front of said wheels, the cross-frame O O', rigidly connected with the finger-beam, the tongue situated above the cutting apparatus, and the braces, a steadying device situated by the sides of the tongue and rigidly secured to the frame O O', substantially as set forth.

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

JOHN H. ELWARD.

Witnesses:

H. H. BLISS,

M. P. CALLAN.