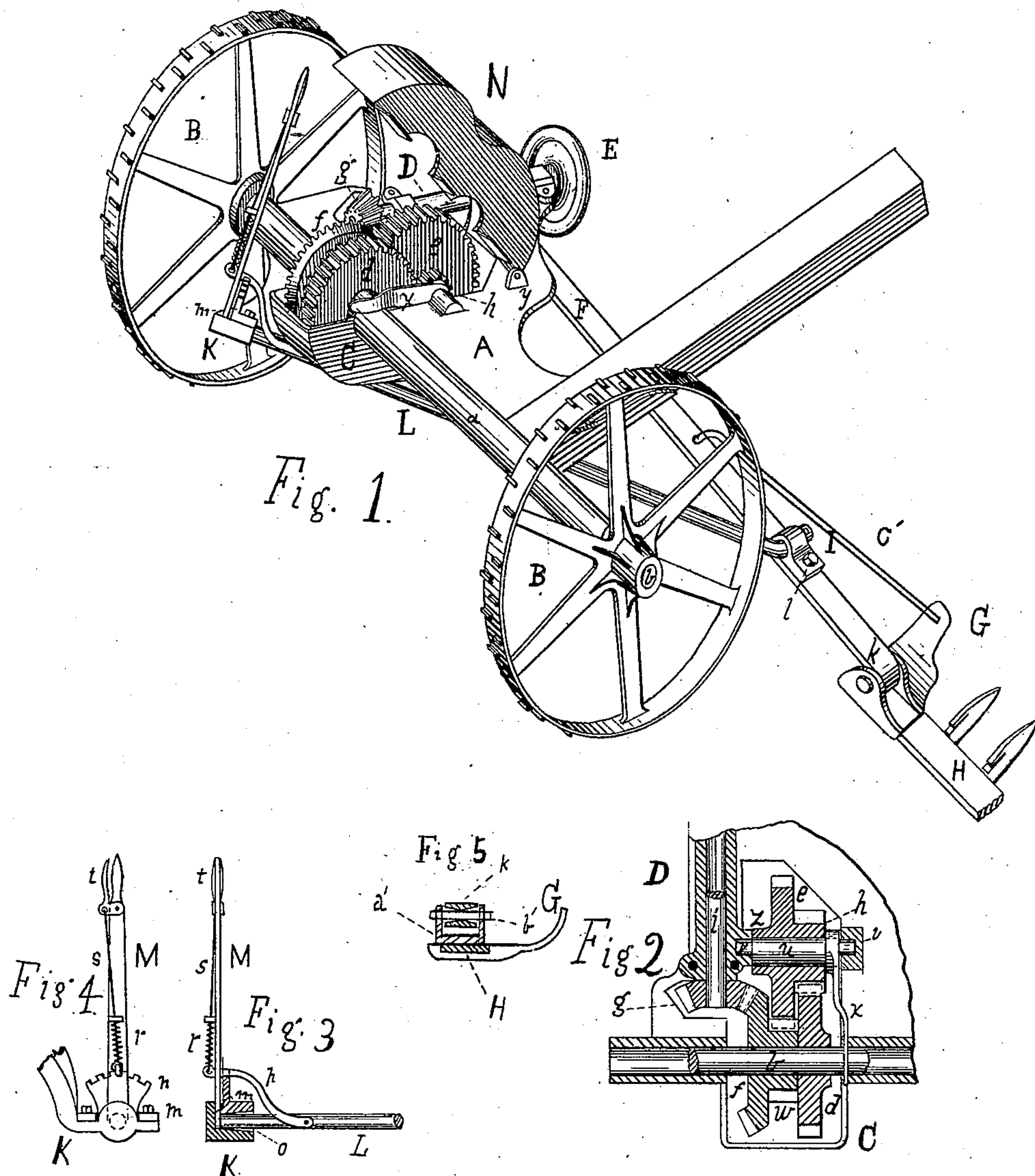


J. F. STEWARD.
Mowing-Machine.

No. 226,683.

Patented April 20, 1880.



Witnesses.
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JOHN F. STEWARD, OF PLANO, ILLINOIS.

MOWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 226,683, dated April 20, 1880.

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To all whom it may concern:

Be it known that I, JNO. F. STEWARD, of Plano, county of Kendall, and State of Illinois, have invented new and useful Improvements in Mowing-Machines, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 shows the machine as if viewed from a position to the right and rear. Fig. 2 is a top view, showing the arrangement of the gearing. Figs. 3 and 4 are details of the device for rocking the cutter-bar. Fig. 5 shows the manner of connecting the rod F with the shoe, which is done by providing at *k* a universal joint, so that the shoe is permitted to rock to a limited extent independent of the bar F.

The brace *c'* is provided to give stiffness to the joint in the direction of draft of the mower.

The object of my invention is to simplify the construction of mowers; and its nature consists in so adapting the push-bar of a front-cut mower or its equivalent in a rear-cut mower that a rocking motion given it will be imparted to the bar capable of being vibrated, to which the cutter-bar is hinged.

In the drawings, A represents the frame, its sleeve *a* being cored out for the reception of the axle *b*, the said axle terminating in the wheels B B.

Within the frame A is cast the trough C, in which provision is made for the mounting of the gears *d*, *e*, and *f* and the pinions *h*, *w*, and *g*.

D is a sleeve, in which is journaled the crank-shaft *i*. The trough C is so extended to the left as to make room for the bevel-pinion *g*.

The crank-wheel E is mounted upon the crank-shaft, as in ordinary mowers.

F is a vibratable bar, to which is hinged, at *k*, the shoe G, to which the cutter-bar H is secured.

Beneath the forward left-hand corner of the frame A is provided an eye, (not shown,) into which is placed a hook formed upon the left end of the vibratable link F.

A universal joint is thus formed which admits of the link F being rocked, and also admits of a rising-and-falling motion.

No arrangement of devices is shown for raising the bar, none being necessary for a proper

understanding of the features which I claim as my invention.

Near the right end of the vibratable link F is mounted the box I, there secured by the bolt *l*, the said bolt forming a pivot on which the box may vibrate.

Beneath the rear left-hand corner of the frame A, and projecting therefrom, is the support K. Within this support is a recess for the reception of the rear end of the push-bar L, the front end of which is bent to the left and journaled in the box I.

The rear end of the push-bar is held in the recess in the support K by the cap *m*, which is there secured by bolts.

Integral with the cap *m* is made the sector *n*. The recess *o* in the support K is made flaring in its forward direction, so as to admit of a rising-and-falling movement of the push-bar L. The rear end of the push-bar, being thus loosely journaled, admits of both a vertical vibration and a rocking motion.

The recess *o* at the rear or right is closed by a part of the support K extending upward so as to form an abutment for the push-bar. This bar at its rear is bent upward to form the lever M, by means of which it may be rocked. The lever also, in combination with the cap *m*, prevents the bar being drawn forward out of the recess.

The forward end of the push-bar being bent, as shown in Fig. 1, it will be readily understood that a rocking motion imparted to it will, in turn, impart a rocking motion to the link F, capable also of being vibrated.

The swinging of the lever M in a rearward direction, it will be seen, will increase the upward angle of the guards, while a reverse motion will pitch them downward.

For the retention of the lever M in any position in which it may be placed, a latch, *p*, is provided to engage in the notches of the segment *n*. This latch may be operated in any manner, the one shown being, perhaps, preferable, consisting of the spring *r*, the rod *s*, and thumb-lever *t*.

The gear *d* is secured permanently on the axle *b*, and the bevel-gear *f* is journaled loosely thereon.

In operation the gear *d* imparts its motion to the pinion *h* and it gives motion to the

bevel-gear *f* through the gear *e* and pinion *w*, the last, in turn, engaging with the bevel-pin-
ion *g*, thereby giving motion to the crank-shaft.

I provide for unshipping the gearing by
5 mounting the pinion *h*, and gear *e* upon the shaft *u*, furnished at each end with journals *v v* eccentric thereto, supported in bearings at either end of the trough *C*.

Secured to the shaft *u* is the lever *x*. It
10 will be seen that a movement of the lever *x* over forward will carry the pinion *h* and gear *e* out of engagement with those mounted on the axle *b*.

Near the front of the frame *A* is placed the
15 lug *y*, to which is hinged the gear-cover *N*. A corresponding hinge is furnished by a hood on the sleeve. (Not shown.)

In addition to the desirability of permitting the cutter-bar to rise and fall, it is well to pro-
20 vide a joint at *k* that will admit of said bar having a rocking motion independent of the bar *F*, so that in passing across furrows or over bogs the points of the guards will be allowed to rise.

To attain this end I construct the joint as
25 shown in Fig. 5, in which *k* is a longitudinal section of the eye formed in the end of the bar *F*. This eye is made flaring in each direction from the center in order that the finger-
30 bar may rock to a limited extent upon the pin *b* passing through it and the lugs *a'* of the shoe *G*.

It will be readily understood that while the vibrations of the push-bar are being imparted
35 to the bar *F* it will be given a rocking motion, and that the box *I* will be moved slightly on its pivot formed by the bolt *l*. This box *I* may be permanently attached to the bar *F*, but in such a case the bearing for the front
40 end of the push-bar must be slightly slotted horizontally.

I do not confine myself to the arrangement herein described of the bar capable of being vibrated and push-bar, as the devices would
45 be equally operative in a rear-cut mower, where the push-bar would be the equivalent of the draft-rod.

Let it be understood that the rising-and-fall-
ing motion of the cutter-bar may take place independently of any movement in the joint *I*, 50 which may be distinguished from a universal joint by the fact that the bar *F* is incapable of any rocking motion independent of the bar *L*.

It will be seen that if the forward extrem- 55
ity of the bar *L* were firmly united to the bar *F* the frame-work thus formed would still be capable of the rising-and-falling motion necessary to admit of the cutter-bar conforming to inequalities of the ground, or permit of the 60
said cutter-bar being elevated to pass over obstructions.

Viewed, then, in the light of the fact that the cutter-bar *H* is susceptible of all movements
65 necessary to admit of a perfect conformity to the inequalities of the ground over which it passes independently of the joint *I*, the purpose of giving the bar *L* a rocking motion will be seen to be to move the bar *F* so as to regulate the pitch of the guards, and it will 70
be further seen that if the push-bar is retained in any position to which it may be rocked by the ratchet and pawl upon the lever the bar *F* will be thoroughly locked from being rocked.

What I claim as my invention, and desire 75
to secure by Letters Patent, is—

1. In a mower or reaper, the push-bar *L*, capable of a rocking motion, and provided with a bent arm at its forward end, journaled in the bar *F* or some fixed part thereof, so that 80
the rocking motion of the former will be imparted to the latter, as described.

2. In a mower, the combination, with the frame *A*, of the bar *F*, capable of being rocked and vibrated, jointed to the rocking push-bar 85
L, angled at its forward extremity, as shown and described.

JOHN F. STEWARD.

Witnesses:

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