(No Model.) 2 Sheets—Sheet 1.

R. DUTTON.

MOWING MACHINE.

No. 266,791. Patented Oct. 31, 1882.

Fig. 3.

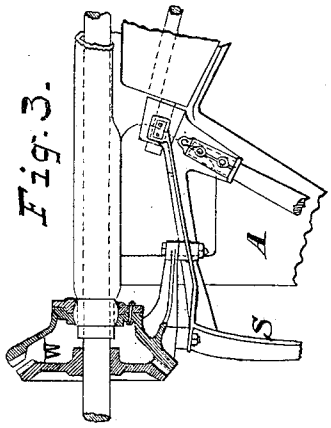


Fig. 4.

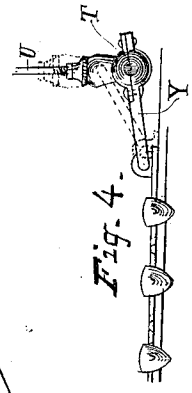
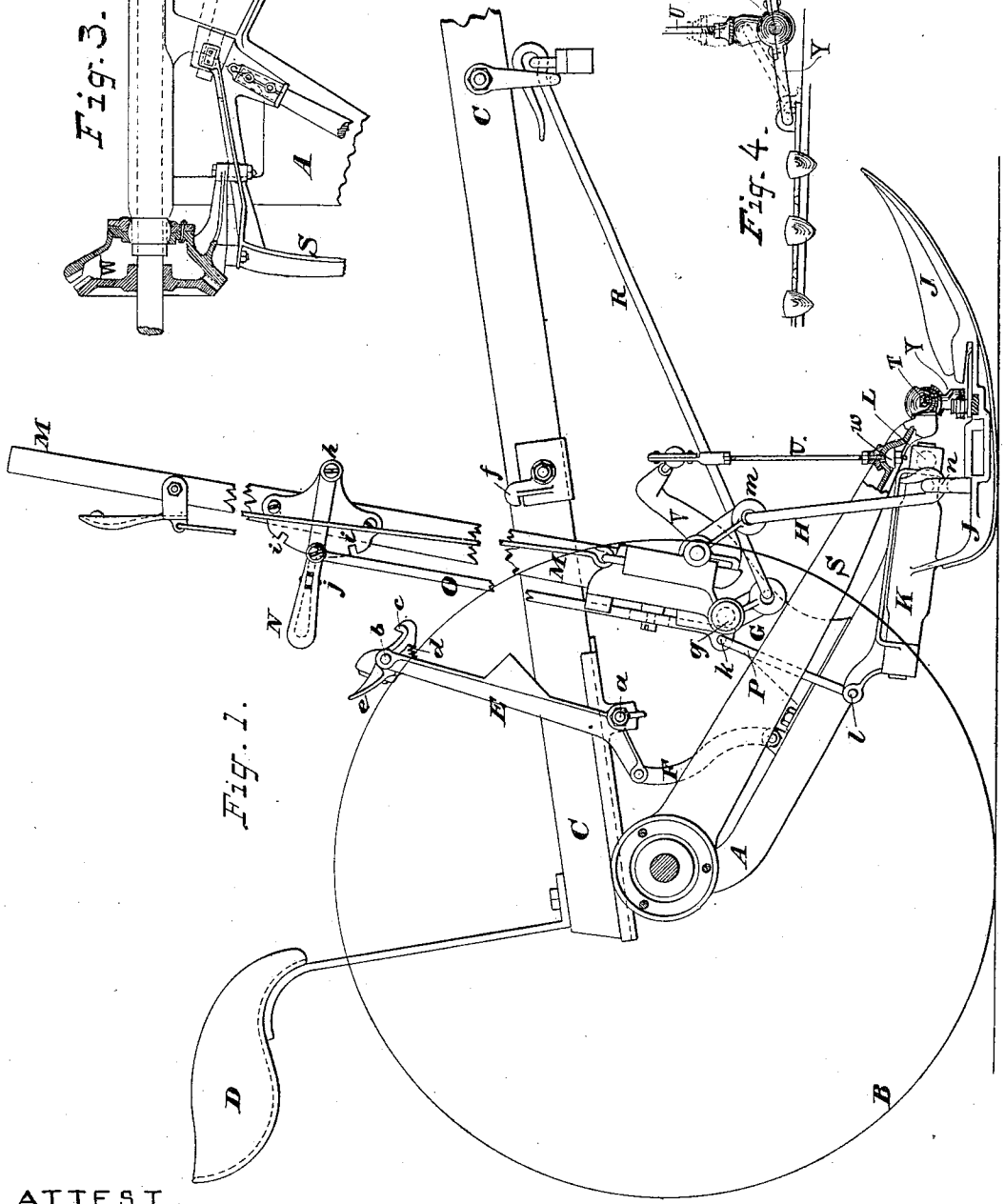


Fig. 1.



ATTEST,

L. King Merrill

Samuel Lea

INVENTOR,

Rufus Dutton

per. A. D. & J. H. Low

Attorneys.

(No Model.) 2 Sheets—Sheet 2.

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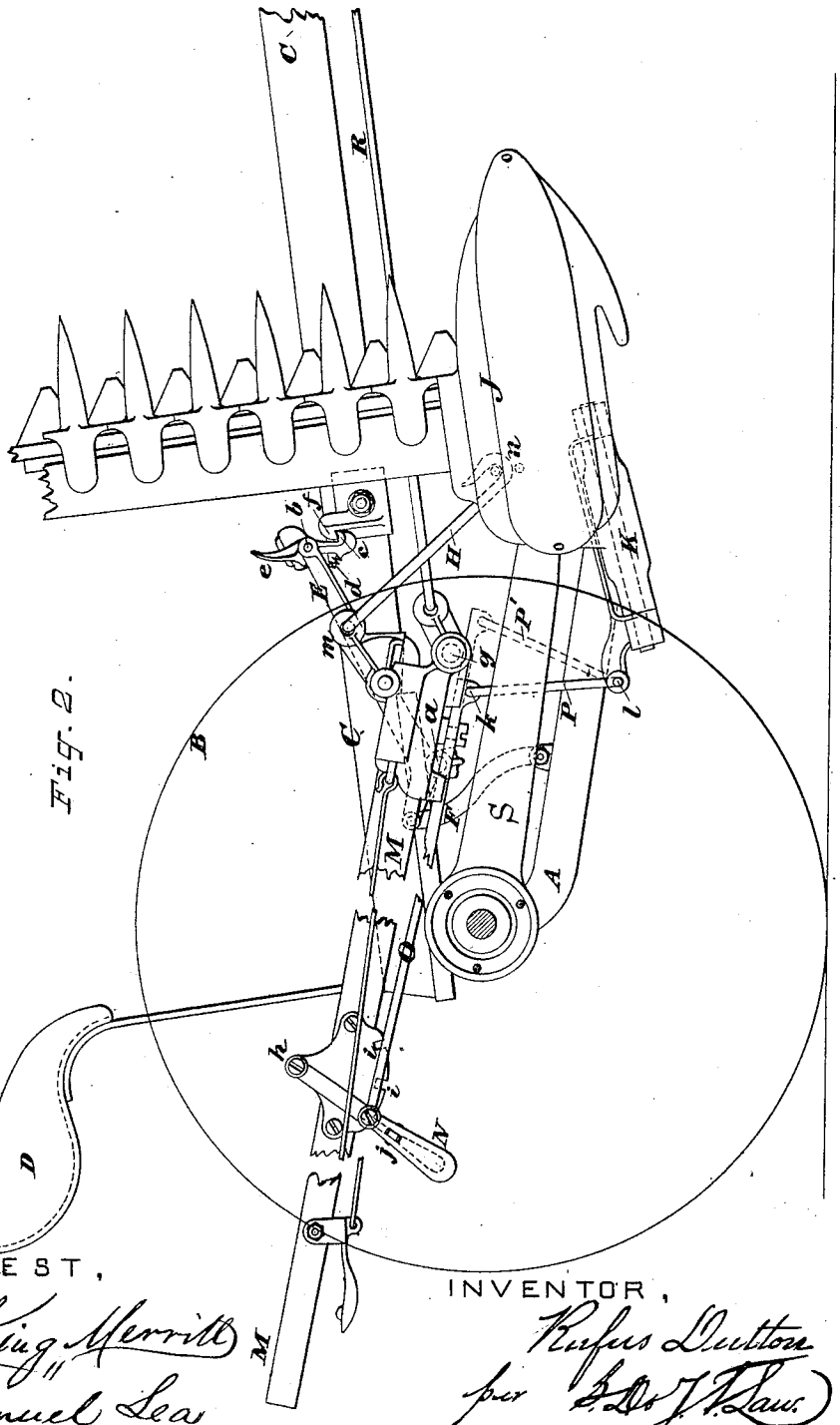

Fig. 2.

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UNITED STATES PATENT OFFICE.

RUFUS DUTTON, OF YONKERS, NEW YORK, ASSIGNOR TO WHITELEY, FASSLER & KELLY, OF SPRINGFIELD, OHIO.

MOWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 266,791, dated October 31, 1882.

Application filed August 26, 1880. (No model.)

To all whom it may concern:

Be it known that I, RUFUS DUTTON, of Yonkers, in the county of Westchester and State of New York, have invented a new and useful Improvement in Mowing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof and of the mode or manner of operation, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

My invention relates to an improved method of lifting and tilting the cutting mechanism of mowing-machines.

My invention consists in so combining the lifting and tilting devices that the finger-bar, when raised to a vertical position for transportation, will automatically assume nearly the same position relative to the driving-wheel, in whatever position the tilting mechanism may be when such lift is made; and it further consists in a laterally-flexible and vertically-adjustable suspension-rod for the outer end of the vibrating arm.

I will now proceed to describe my invention.

In the accompanying drawings, Figure 1 is an elevation of a mowing-machine with the cutting mechanism in position for use in the field. Fig. 2 is an elevation with the finger-bar raised to a vertical position for transportation. Fig. 3 is a plan showing the differential gear in section, and in plan the connection of the same with the vibrating arm. Fig. 4 is a front elevation, showing the manner of adjusting the register of the cutters.

Similar letters of reference indicate like parts.

Only so much of the machine as relates to my invention is illustrated in the drawings.

A is the frame of the machine; B, the driving or carrying wheels.

C is the pole, and D the seat for the driver.

M is a lifting-lever, pivoted at *g* upon the stand G, which is mounted upon the frame A.

H is a link, which connects the lifting-lever M with the shoe J. This lever M may be provided with any suitable device for retaining it in any desired position.

N is a tilting lever, pivoted at *h* upon the lifting-lever M, and provided with a catch, pivoted at *j*, which engages with the notches *i i* on lever M.

To the lever N is pivoted the bar or rod O, which works in a suitable guide on the lower end of lever M, near the point at which it is pivoted to the stand G. The lower end, *k*, of rod O is connected by the link P to the hinge K at the point *l*, and through such hinge to the shoe J. The shoe J is hinged to the frame by two hinges, upon one of which, K, it turns when the finger bar is lifted, while upon the other, L, it turns when the fingers are tilted.

E is a foot-lever, pivoted to the under side of the pole at *a* and connected to the frame A by the link F.

To the upper end, *b*, of the foot-lever E is pivoted the latch *c*, which is kept in position to engage with the catch *f* on the pole by the spring *d*.

The latch *c* is provided with a horn or extension, *e*, which projects above the end of foot-lever E.

The draft-rod R is connected to the lifting-lever M below the point *g*, at which it is pivoted to the stand G.

S is the vibrating arm, connected at one end to the frame by a suitable joint, which permits said arm to vibrate in a horizontal plane and receive motion from the main wheel B by means of a suitable connecting mechanism, whereby the rotary motion of said wheel B is transmitted into a vibrating motion of said arm S.

In Fig. 3 I have shown a differential oscillating gear, W, to transmit motion from the driving-wheel B to the vibrating arm S. This device is well known, and is only introduced herein to show a practicable mode of transmitting said motion.

At the outer end of the vibrating arm S the pitman Y is connected by a suitable joint—in the drawings shown as a ball-and-socket joint, with the ball T as one of its members.

In order to support the outer end of the vibrating arm, a pendulum rod or link, U, is employed, the upper end of said rod being supported by a post, V, which is mounted upon the frame A. At its lower end the rod U is connected with the vibrating arm by a joint which will permit the necessary relative motion, and said rod is made longitudinally ad-

justable, so that the vibrating arm may be raised or lowered and the cutters be thereby registered or adjusted with reference to the guard-fingers. This longitudinal adjustment of the rod is conveniently effected by a nut, *w*, at its lower end, as shown, although I do not propose to confine myself to that method. The method of adjusting the register of the cutters is shown in Fig. 4.

The operation of my invention is as follows: When it is desired to raise the inner end of the finger-bar the lever E is depressed by the foot of the driver until the latch *c* engages with the catch *f* on the pole, which holds it in that position until released by pressing on the horn or extension *e* of the latch *c*, which action compresses the spring *d* and releases the latch *c* from the catch *f* and allows the lever E to resume its former position. The lever E being connected to the frame A by the link F, when E is depressed the frame A is raised and brings with it the shoe J, with its attached finger-bar.

When it is desired to tilt the fingers down the lever N is raised from the position shown in Fig. 1 to that shown in Fig. 2, thus raising the rod O and lifting the rear end of hinge K, which, turning on hinge L, tilts the shoe J up behind and depresses the points of the fingers. A contrary motion of lever N would cause the points of the fingers to be raised.

When it is desired to raise the outer end of the finger-bar the lever M is drawn backward and downward, which motion may be continued until the finger-bar is in a vertical or nearly vertical position, the finger-bar being raised by reason of the link H operating to turn the shoe J, with its attached finger-bar, around the hinge K as a center, the link H connecting with the shoe J outside of the hinge K.

The rod O, being attached to the lever M, partakes of its motion, and thus brings the lower end, *k*, into such a position with reference to the point *l* that little or no motion would be imparted to the point *l* by operating the lever M, while lever N remains in its extreme position, as shown by the dotted line P′, Fig. 2, which would be the position of link P if lever N were engaged in the lowest of the notches *i i*. It is obvious that when lever M is in a vertical position any movement of lever N would be directly communicated to *l*.

The path of the lower end, *k*, of the rod O, when lever M is in the position shown in Fig. 2, must be at right angles to a line drawn from *l* to the center *g*, upon which lever M turns, and when its extreme positions will be at equal distances on either side of such line.

It is obvious that since the point *l* assumes automatically nearly the same position with reference to the center *g* when the finger-bar is lifted without reference to the position of lever N the distance from *m* to *n* will be always the same, or nearly so, and in consequence the finger-bar will always be raised to the same position.

What is claimed is—

1. The combination, in a mowing-machine, of a device for lifting the outer end of the finger-bar, and connected to and moving therewith a device capable of independently tilting the points of the fingers, whereby when the finger-bar is raised to a vertical position it will assume substantially the same position relative to the rim of the wheel, whatever may be the position of the tilting device.

2. The tilting-lever N, pivoted upon the lifting-lever M, in combination with the rod O, link P, and shoe J, all arranged to operate as and for the purpose specified.

3. In combination with a differential oscillating gear and its rigidly-attached vibrating arm, a laterally-flexible and longitudinally-adjustable supporting-rod, which permits vibration of said arm while preventing rotation of said oscillating gear, and enables registration of the sickle mechanism.

4. A reciprocating cutter-bar and a vibrating arm and connecting-pitman, whereby said cutter-bar is actuated, combined with a laterally-movable and longitudinally-adjustable support for the outer end of said vibrating arm, whereby the position of said vibrating arm as to the supporting-frame and plane of the cutters may be adjusted.

RUFUS DUTTON.

Witnesses:
SAMUEL LEA,
J. KING MERRILL.