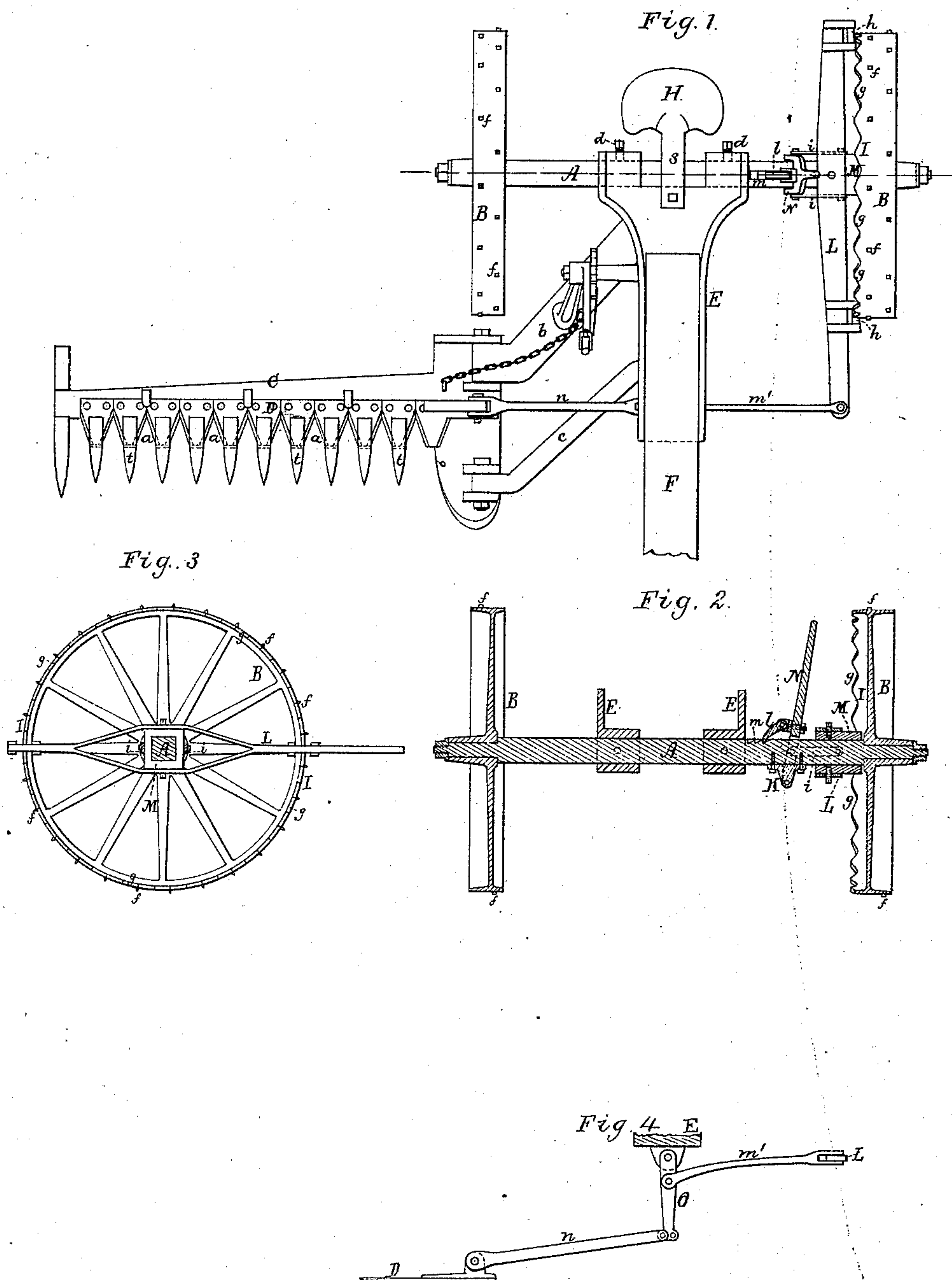


W. R. OTIS.  
Mower.

No. 216,754.

Patented June 24, 1879.



Witnesses

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN MOWERS.

Specification forming part of Letters Patent No. **216,754**, dated June 24, 1879; application filed April 9, 1879.

*To all whom it may concern:*

Be it known that I, WILLIAM R. OTIS, of Boston, of the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Mowing-Machines; and do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a top view of a machine with my improvement. Fig. 2 is a vertical section of it, taken through and in line of the axis of the axle. Fig. 3 is a side view of the rocker-lever of the axle and the notched annulus. Fig. 4 is a front view of the lever and rods by which the aforesaid rocker-lever is connected with the cutter-bar.

My invention relates to mechanism for imparting to the collar-bar its reciprocating rectilinear movements; also, to the application of the drag-pole shoe both to the axle and the mechanism for operating the cutter-bar.

In the drawings, A represents the axle; B B, the pair of wheels; C, the comb-bar with its teeth *t*, and D the cutter-bar, with its series of knives or cutters *a*, the comb-bar being connected, in the usual manner, with the pole-shoe E—viz., by oblique bars *b c*, hinged to them.

The draft-pole is shown at F as fixed in the shoe or support-piece E, through the rear portion of which the axle extends, such support-piece being thereby movable on the axle longitudinally thereof, and provided with one or more set-screws, *d*, to fix it in place. The standard *s* of the driver's seat H is fastened to the pole support-piece.

Each of the wheels has teeth *f* projecting from its circumference, and one of such wheels is provided with an annular flange, I, having a series of triangular or approximately triangular notches, *g*, extending around and in it, and arranged as represented, such notches being equal in size, and to operate a rocker-lever, L, provided with two friction-rollers, *h h*, arranged with and applied to it as shown. This lever extends in opposite directions across the axle and spans, and is pivoted to a movable fulcrum-carrier, M, adapted to slide on the axle lengthwise thereof, and connected by means of links *i i* to a forked lever, N.

The lever N embraces the axle, is pivoted to an ear, K, projecting down from it, and is provided with a pawl, *l*, to take into a toothed rack, *m*, applied to or formed in the axle, all being as represented.

By means of the lever N and the fulcrum-carrier M, the rocker-lever may be moved so as to carry its friction-rollers either into or out of engagement with the notched annulus. There is pivoted to and projects down from the pole shoe a short lever, O, which has jointed to it two connection-rods, *m' n*, one of which is jointed to the rocker-lever, and the other to the cutter-bar. When one of the friction-rollers of the rocker-lever may be in and at the middle of a notch of the annulus, the other friction-roller should be at the vertex of the angle of junction of two next adjacent notches in the opposite part of the circumference of the annulus. When the notched annulus is in revolution and in engagement with the friction-rollers of the rocker-lever, it will impart to the lever reciprocating movements, whereby the cutter-bar will be reciprocated on the comb-bar.

The pawl and rack above described serve to keep the rocker-lever in engagement with the notched annulus. On raising the pawl out of the rack, the lever N may be worked so as to cause the rocker-lever to be moved out of engagement with the annulus.

By having the shoe E adjustable on the axle as described, when connected with the adjustable lever L and cutter-bar by means of the lever O and the connecting-rods *m'* and *n*, an advantage is gained.

It will be seen that any movement of the lever L on and lengthwise of the axle, in order to vary the extent of vibratory movements of such lever by the notched wheel, will cause a much greater movement of the cutter-bar—one which will change the positions of the cutters relatively to the fingers, so as to cause the cutters to cut unequally on opposite sides of the fingers; but by having the shoe adjustable on the axle such shoe can be moved and set so as to cause the cutters to operate equally on opposite sides of the fingers. Thus each adjustment of the lever L, to vary the extent of vibration of the cutter-bar, requires an adjustment of the shoe on the axle, in order for each

of the cutters to vibrate like distances across the middle of its finger.

What I claim as my invention in the mowing-machine is as follows, viz:

The pole-shoe E and lever L, applied to the axle so as to be adjustable thereon, and with the notched wheel, in manner as described, and connected with the cutter-bar D by the aux-

iliary-lever O, pivoted to the shoe, and by the two connecting-rods *m' n*, applied to the said lever, and to the lever L and the cutter-bar, as set forth.

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Witnesses:

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