L. M. BATTY.

Mowing Machine.

No. 49,962. Patented Sept. 19, 1865.

Fig: 1.

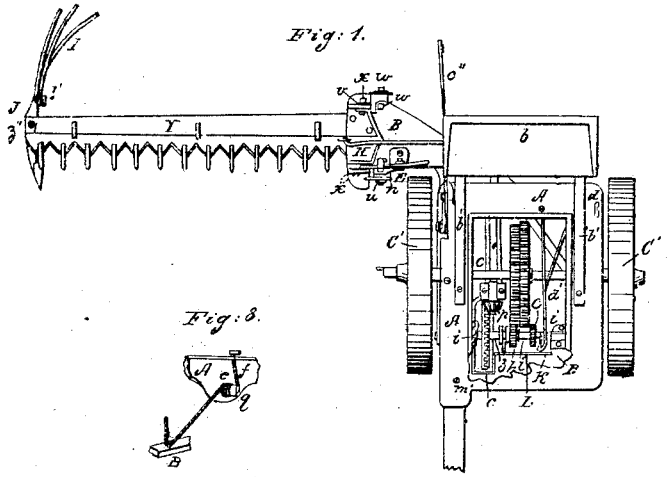


Fig: 8.

Fig: 7.

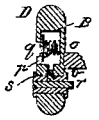


Fig: 2.

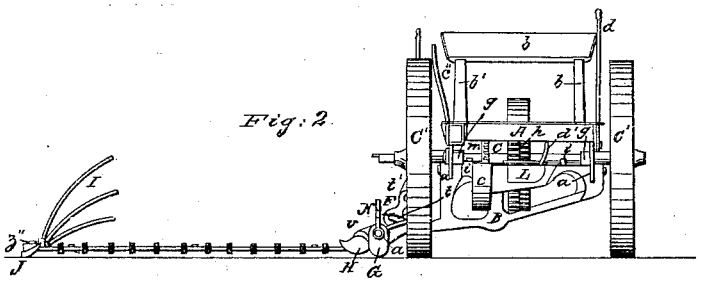


Fig: 5.

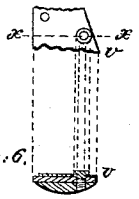


Fig: 6.

Fig: 3.

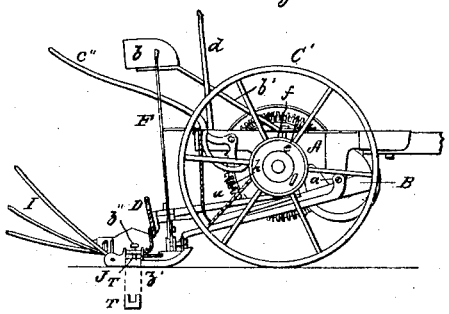
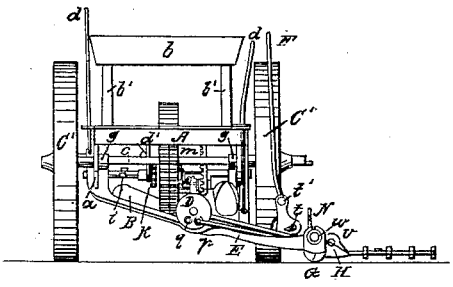


Fig: 4.



Witnesses:
W. H. Burridge.
J. Holmes.

Inventor:
L. M. Batty.

UNITED STATES PATENT OFFICE.

L. M. BATTY, OF CANTON, OHIO.

IMPROVEMENT IN MOWING-MACHINES.

Specification forming part of Letters Patent No. **49,962**, dated September 19, 1865.

To all whom it may concern:

Be it known that I, L. M. BATTY, of Canton, in the county of Stark and State of Ohio, have invented certain new and useful Improvements in Mowers; and I do hereby declare that the following is a full and complete description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a top view of the mower. Fig. 2 is a front view. Fig. 3 is a side view. Fig. 4 is a view of the rear end. Figs. 5, 6, 7, and 8 are sectional views that will be referred to in the description.

Like letters of reference indicate the same parts in the different views.

A represents the main cast frame, hung to the driving-shaft C of the wheels C′ by two tubular boxes, *g g*, (seen in Figs. 2 and 4,) on the shaft driven through holes in pieces extending down from the frame A.

B is a flexible frame, formed of a single casting, having a concave bar across the front end, for the purpose of adding strength to it and of forming boxes *i i* for the shaft *z*, and to protect the shaft and cog-wheels on it from injury. There is also a bar, *c*, running at right angles to this under the crank-shaft *o* and cog-wheel *m* for the same purpose. The flexible frame B is hung to the main frame A, at a point concentric with the shaft *z*, by means of perpendicular slots in the front corners of the frame B, into which the projections extending down from the frame A enter, which, together with the inserted pins shown in the drawings, form the two hinge-joints *a a*. The frame B is partly supported by a coiled spring, *e*, (seen in Figs. 3 and 8,) which is on one of the tubular boxes *g* of the driving-shaft, and is connected with the flexible frame by passing through a loop-hole, as represented in Fig. 8. The tension of this spring is regulated by a set-screw, *f*.

The object of the spring *e* is to regulate the balance of the machine and to throw a larger portion of the weight of the frame B upon the driving-wheels.

About the center of the driving-shaft is a spur-wheel, *h*, that has two concentric circles of cogs of different diameters, which, together with the sliding pinions *k* and *k′*, can be made to impart two different speeds to the sickle through the medium of the hand-lever *d*, the intermediate lever *d′*, and the sliding shifter L. The shifter is connected to the pinions by clutches that fit in grooves in the hubs *c′* of the pinions. Both pinions are thrown out of gear by placing the hand-lever *d* erect in its central position. The pinion *k* is thrown in gear by moving the hand-lever over to the rear end of the machine, and the pinion *k′* is put in gear by throwing the hand-lever over to the front of the machine.

The inner end of the crank-shaft *o* is fitted to a conical hole in the pinion *p*, Fig. 1, which, together with the nut and washer to secure the pinion on the end of the shaft, forms a friction-clutch for the purpose of preventing the sickle from being broken when it meets an obstruction.

D is the crank-wheel, a vertical section of which, enlarged, is shown in Fig. 7. It has an oil-cavity, P, the orifice *q* of which is closed by means of the valve-plate and the spring R, the spring bearing against the back surface of the oil-cavity.

The plate can be pressed back by the point of an oil-can, or otherwise, when it is desired to fill the cavity.

From the oil-cavity to the pitman-journal U there is a small hole, S, through which the oil flows to lubricate the bearings.

The journal U of the pitman *r* consists of a tube having a flange extending out around the inner end of it. The upper end of the pitman is bent at right angles and driven tightly through the tube and fastened to it by a pin. The object of this is to get a larger bearing for the pitman-journal, which can be easily renewed when worn out. In using this oiling apparatus with the ordinary wrist of a crank or crank-wheel the cavity will be placed in the center of the wrist, and will be made in a conical shape, with its apex at the back end, in order to preserve the full strength of the wrist. The inner shoe, H, is attached to the frame B at its rear end by a swivel, *v*, which has a solid bearing within a socket in the rear extremity of the frame B, in which it is secured by a nut and washer, *w*. It is also secured to the shoe by a pin, *x′*, the whole being arranged so that the cutter-bar may be turned up back-

ward and laterally. The shoe H is also attached at its front end to the frame B by the stay-rod E, having a swivel on its inner end, the same as the one described above, and is connected with the shoe by a pin, x'. This stay-rod may be fastened at any point of elevation to the upright guide N by tightening the set nut and bolt n. The whole is so arranged that the cutter-bar y may be folded up or the points of the cutter-guards set to any desired point of elevation, or left unfastened to follow the ground by an independent motion, and thus adapted to mowing all kinds of standing or lodged grass.

c'' is the lifting-lever to raise the cutter bar.

The adjustable runner G, Figs. 3 and 4, is made of sheet-steel, and so formed that it may be raised or lowered and set at any desired point of elevation by set-bolts u u. The advantages of this over a spring runner are that its under surface may be kept level with the ground, and it can so readily be removed when not needed. The stay-rod E is provided with a short pin which enters a cam-hole, t, in the bottom of the cam-lever F, which is secured to the standard t' by a flexible joint. As the standard t' is bolted to the frame B, it can be removed when not needed. By working the cam-lever F laterally the driver can raise and lower the points of the cutter-guards while the machine is in motion. The principal advantage of this arrangement is that the cutter-guards may be thrown down to pick up patches of lodged grass without stopping the machine, and that it is not necessary to encumber the machine with the cam-lever and standard when they are not needed.

The outer shoe, J, is made of a solid casting alone, or of a casting and wrought-iron plate extending lengthwise with and secured to the top of the cast part by rivets or screws. The outer end of the cutter-bar y enters an opening, z', in the shoe J, (seen in Fig. 3,) and the points of the cutter-guards enter a corresponding perpendicular slot in the front end of the shoe J.

The cutter-bar can be raised or lowered in the shoe J by turning the set-screw z'' and inserting one or more blocks, T, over the end of the cutter-bar and then tightening up the screw. The advantages of this shoe are the same as those before stated of the adjustable runner.

The track-clearer I is made of two pieces of steel or other elastic wire. The ends of the first piece are bent near enough together to form the upper and under branches. The bent part forms a small semicircle, which is inserted in a circular slot in the inside of the heel of the shoe. The center or middle branch is of a separate piece of wire, and has a hole formed on its inner end, which is underlaid by a washer, there being through both a set screw or bolt, l', by which the track-clearer is secured to the shoe at any desired point of elevation. The advantages of this track-clearer are that it is so simple of construction, very light, and being so elastic it is not easily broken.

Figs. 5 and 6 represent the manner of fastening the cutter-bar to the shoe H, which is done by elevating a portion of the cast shoe around the outer bolt-hole, forming a collar, V, about an inch and a half in diameter, and by having a corresponding hole in the extreme butt-end of the cutter-bar large enough to fit on over it, and using a plate or washer under the nut or screw, which holds the cutter-bar to the shoe at that point.

The object of this improved mode of attaching the cutter-bar to the shoe is to obviate the ordinary method of cutting away a portion of the front edge of the butt-end of the cutter-bar to get a bearing against the cast-iron, and thereby materially weakening it.

l is a double clutch on the shaft z between the pinions k k'. b is the seat on springs b' b', secured to the frame A.

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

1. The sliding shifter L, in combination with the hand-lever d and the intermediate lever, d', the pinions k and k', the double clutch l, and the shaft z, as herein described, for the purposes set forth.

2. The swivel-jointed stay-rod E, the upright guide-rod N, with the set bolt and nut n, and the shoe H, in combination with the swivel-joint v, when operating conjointly as and for the purposes set forth.

3. The cam-lever F, with the standard and flexible joint t', as herein set forth.

4. The arrangement of the outer shoe, J, block T, and set-screw z'', for raising and lowering the shoe independently of the cutter-guard, substantially as set forth.

5. The coiled supporting-spring e, with the set-screw f, in combination with the frame B, as herein described, for the purpose set forth.

L. M. BATTY.

Witnesses:
W. H. BURRIDGE,
J. HOLMES.