(No Model.)

F. W. BLACKMER.

MOWER.

No. 489,214. Patented Jan. 3, 1893.

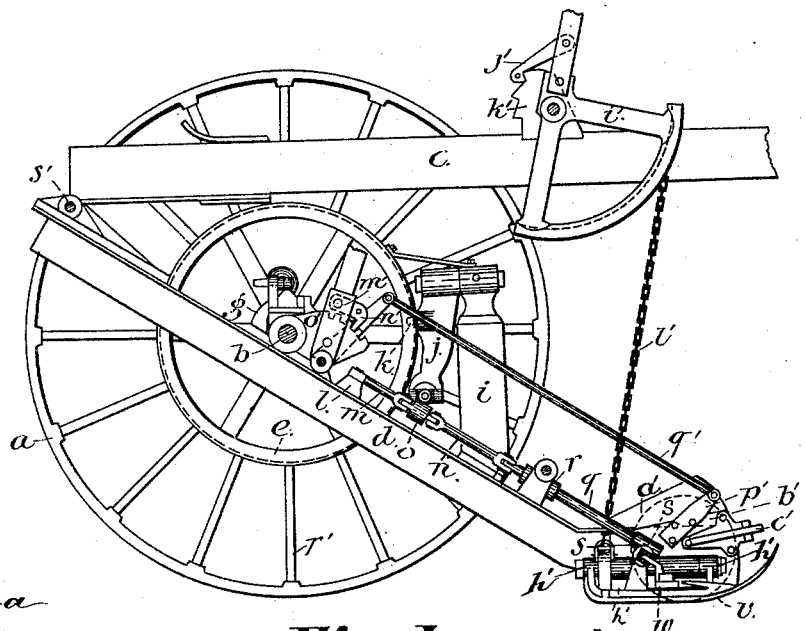

Fig. 1.

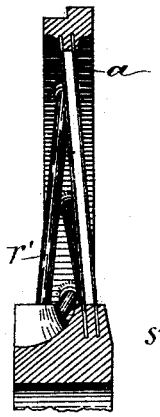

Fig. 4.

Fig. 3.

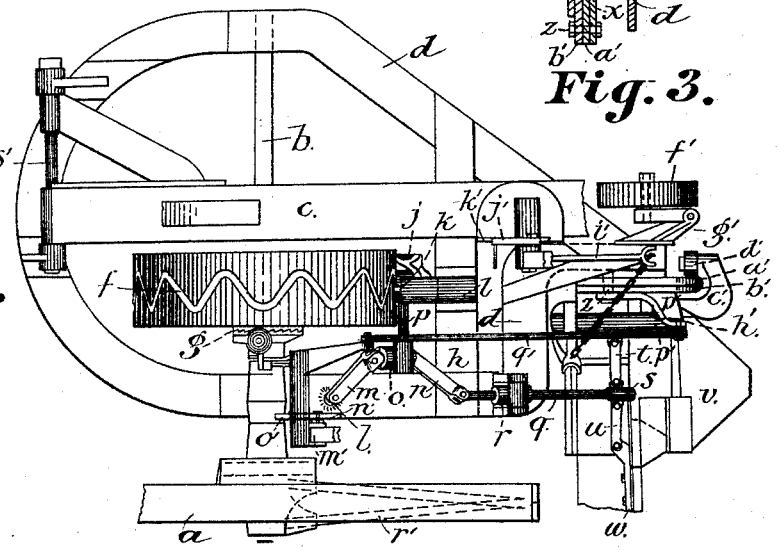

Fig. 2.

Witnesses:

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UNITED STATES PATENT OFFICE.

FREDERICK W. BLACKMER, OF WINDHAM, MAINE.

MOWER.

SPECIFICATION forming part of Letters Patent No. 489,214, dated January 3, 1893.

Application filed January 2, 1891. Serial No. 376,467. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK W. BLACKMER, of Windham, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Mowers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in mowers. It is designed to secure lightness and durability in construction, and ease and steadiness in operation.

In the drawings herewith accompanying and making a part of this application, Figure 1 is an elevation of my improved mower, one wheel being removed, Fig. 2 is a plan of the same, Fig. 3 is a detail in section showing manner of attaching the shoe to the frame, Fig. 4 is a section of part of a wheel, and same letters refer to like parts.

In said drawings *a* represents the wheels, *b* the axle, *c* the pole and *d* the frame. Loosely set on said axle is a cam-wheel *e* having a zig-zag groove *f* in its face. The cam-wheel is adapted to be fastened to and turned with said axle when desired by having a clutch *g* brought into engagement therewith. Erected upon the cross-bar *h* is a post *i*, in which is pivoted a swinging lever *j* carrying a cam-roll *k* adapted to run in said zig-zag groove, whereby a swinging motion is imparted to the lower end of said lever. At some point as at *l* on said frame is pivoted one end of a system of lever purchase multipliers adapted to drive the knife-bar. This system of levers consists of the toggle-arms *m* and *n*, universal joint connection *o*, link *p* connecting said joint *o* with the lower end of the swinging lever *j*, plunger *q* passing through the universal joint *r* and connected at one end to the toggle-arm *n* and at the other to a universal joint connection *s* between the toggle arms *t* and *u*, one of which is pivoted to the finger bar frame and the other *u* to the knife-bar *w*.

To secure lightness and strength the frame *d* is made of T-iron, except that the forward extremity of one side has the under side removed so as to allow it to be bolted to the top of the other, which it overlaps. Between the overlapping parts of the frame is inserted an angle-iron *x*. Securely bolted to said angle-iron is a plate *a'*. The finger-bar is pivoted to said plate *a'* by a bolt *z* passing through a flange *b'* turned up at the inner end thereof and the plate *a'*. To said flange is attached a curved beam *c'* having on its end a friction roll *d'* adapted to hold the finger bar against said angle-iron and yet allow it to turn readily on pivot *z*. Pivoted to the main frame is a lever *m'* carrying a pivoted dog *n'* adapted to engage with notches in a block *o'* and connecting lever *m'* and lug *p'* attached to plate *b'* is a link *q'*, whereby the forward edge of the shoe may be raised or depressed at will. That part of the finger-bar which carries the knives is pivoted at *h'* in such manner that it can be raised entirely from the ground when not in use, to accomplish which a bell-crank lever *i'* is attached to the pole, said lever carrying a pivoted dog *j'* adapted to engage with notches on a block *k'* and a chain *l'* connecting it with said finger-bar at any convenient point.

The knife-bar *w*, shoe *v* and lead roll *f'* may be of the usual description in use on machines of this class. The main frame extends rearwardly beyond the axle and has the pole pivotally attached thereto at or near the rear as at *s'*. The wheels have hollow pipe spokes *r'*, which are cast solidly into the hubs and rims as shown in Fig. 4.

In operation great speed of the knife-bar is obtained by means of the lever purchase multipliers, inasmuch as every time the cam-roll passes from one side of the cam-wheel to the other, the knife bar makes two motions out and two back, whereby great speed is imparted to the knife bar by a comparatively slow motion of the cam-wheel, insomuch that the shock and strain on the machine are reduced to a minimum, as well as the power required to run the machine. Making the finger bar capable of being turned up at its forward edge enables the driver to avoid many obstructions in that way without raising the entire cutter-bar.

Attaching the pole to the frame behind the axle serve to more evenly balance the machine.

The weight of the machine is greatly lessened by making the spokes of the wheels hollow as described.

Having thus described my invention and its use, what I claim and desire to secure by Letters Patent of the United States is:—

In a mower having wheels and a suitable frame mounted thereon, the combination with a cam-wheel mounted on the axle, of a pendulum lever operated by said cam having its free end connected by a link to a toggle, one arm of which is pivoted to said frame and the other to a plunger passing through a universal joint and a second toggle, one arm of which is pivotally attached to the frame and the other carrying on its free end the knife-bar, said last named toggle being connected at the joint to said plunger and being operated thereby, substantially as and for the purposes set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

FREDERICK W. BLACKMER.

Witnesses:
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