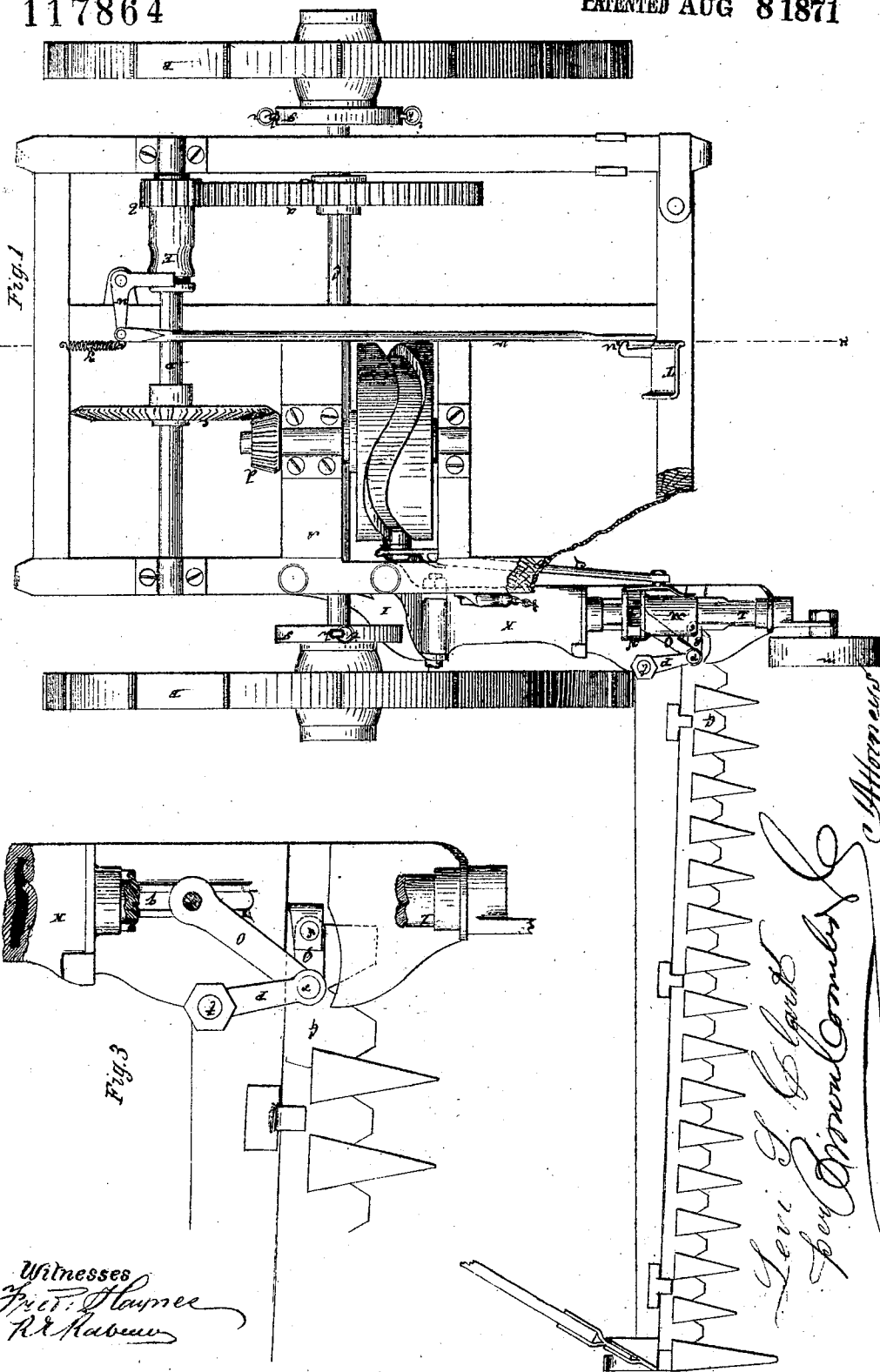


Levi S. Clark Impts. in Mowing Machines

117864

PATENTED AUG 8 1871



Witnesses
J. H. Flower
R. H. H. H.

117864

Fig. 2

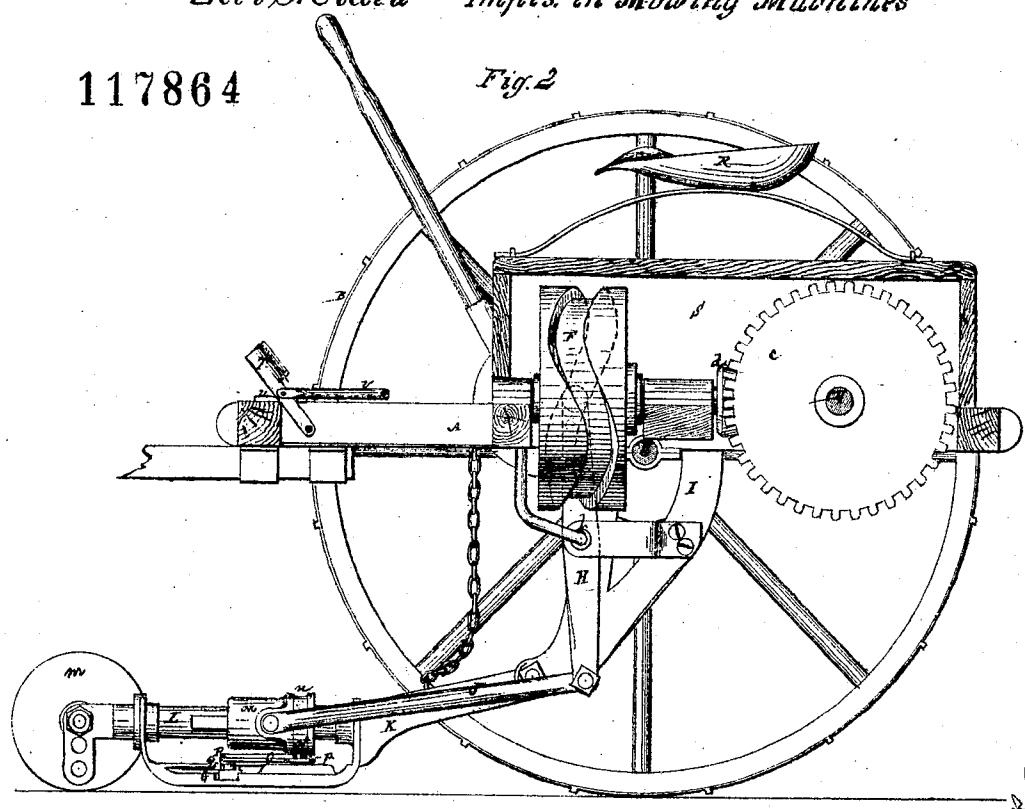


Fig. 4

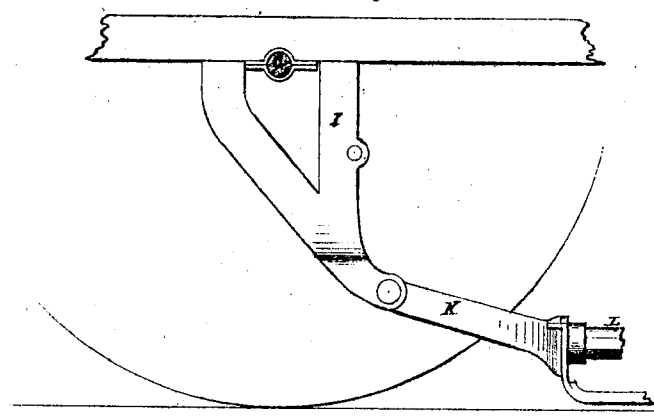
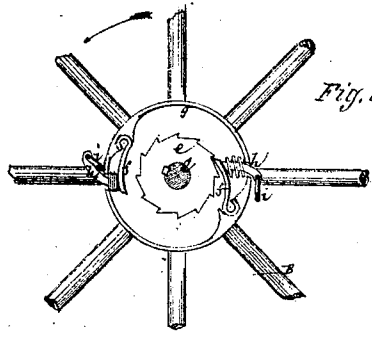


Fig. 5



Witnesses
Frederick Haynes
R. E. Raben

Levi S. Clark
per *Wm. Crosby* *Attorney*

UNITED STATES PATENT OFFICE.

LEVI S. CLARK, OF BETHEL, CONNECTICUT.

IMPROVEMENT IN MOWING-MACHINES.

Specification forming part of Letters Patent No. 117,864, dated August 8, 1871.

To all whom it may concern:

Be it known that I, LEVI S. CLARK, of Bethel, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Mowing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 represents a plan, and Fig. 2 a longitudinal sectional elevation of a mowing-machine constructed in accordance with my invention, the latter view being taken as indicated by the line *x x*, in Fig. 1; Fig. 3, a sectional plan, in part, on an enlarged scale, in illustration of the devices or certain of them, by which the sickle is operated; Fig. 4, a sectional side view, in part, in illustration of a crutched pendent bar or divided brace for transferring the resistance, consequent on the cut, to the frame of the machine at or near the axle. Fig. 5 is an interior view of a ratchet-box arrangement for engaging and liberating the running-wheels with and from the main axle accordingly as it is required to operate or stop the sickle.

Similar letters of reference indicate corresponding parts.

In this improved mower the pitman, which serves to drive the sickle, is arranged to occupy a position in direction of the draft, and on one side of the machine, in combination with a novel mechanical movement or combination of devices, including a sliding sleeve with connecting-rod attached, a lever operated by the latter on or about a fulcrum, the axial line of which lies to one side of and at right angles to the line of the sleeve's travel, and a link pivoted to said lever for operating the sickle in a straight line or path at right angles to the travel of the sleeve and to the fulcrum of the lever, whereby a clear space is left for the vehicle to pass over obstacles, and the sickle may be operated either in a vertical position or in any intermediate one between that and its regular horizontal position, which facilitates the clearing of trees or other obstacles in the path of the sickle. The invention likewise comprises a crutched pendent bar or divided brace for receiving the strain as caused by the draft through the resistance of the sickle, and transferring it to the main frame at or near the axle. The invention also includes a novel combination of pawls with horns, and lifting and locking-rings,

as applied to a box or boxes inclosing ratchets fast to the main axle for facilitating the stopping and starting of the sickle without arresting the motion of the machine.

Referring to the accompanying drawing, A represents the main frame of the machine, and B B its running wheels. C is the main axle, and D a countershaft or axle receiving its motion by gears *a b*, and a clutch, E, from the main axle, and transferring the same by bevel-gears *c* and *d* to the grooved driving-cam F, by which the sickle G is operated. The wheels B B are fitted loose on the main axle, but are made to rotate in common therewith when required to provide for arresting the motion of the sickle when running the machine to and from the field by means of ratchets *e* fast on said axle, and spring-borne pawls *f* fitted within boxes *g*, (fast to the wheels,) and provided with horns *h h* which project through slots in the periphery of the boxes, and which have rings *i i* at their outer ends to allow of lifting the pawls out of gear with the ratchets and of locking them by simply turning the rings *i i* over or under against the periphery of the box when it is required to hold the wheels B B out of driving connection with their axle, as clearly represented for the one pawl at the left hand in Fig. 5. On merely releasing the rings *i i* from such grip or hold the pawls readily fly into gear with their ratchets, which is the position shown for the pawl at the right hand in Fig. 5. The grooved cam F is arranged in proximity to the main axle with its axis at right angles to that of the latter. It serves to give motion to a lever, H, which has its fulcrum, as at *k*, on a crutched pendent bar or divided brace, I, that is arranged so that it throws the strain or weight consequent on the draft as produced by the cutter, which the lever H, through a pitman, J, serves to operate on the machine near the main axle. This produces increased steadiness, and, by the arrangement of the pitman J on one side of the machine and in transverse relation with the sickle G, lateral shake or twist of the machine consequent on the reciprocating action of the sickle is reduced, the racking of the frame avoided, and a clear space afforded for escaping obstacles in the path of the vehicle between the wheels, also doing away with the raising of the sickle in order to clear the pitman of obstacles in its path, as where the pitman is arranged in line with the sickle.

Pivoted to the crutched pendent bar I, as at *l*, is an arm, K, that supports the inner end of the sickle and guard or finger-bar by a wheel, *m*, at the outer end of a wrist, L, attached to and projecting in front of the arm. Said crutched pendent bar, arm, and wrist are all, preferably, made hollow. M is a sleeve arranged to reciprocate on and along the wrist L by means of the pitman J. This sleeve M is formed with an annular groove, *n*, to establish gear by means of a strap or clip, N, with a rod or bar, *o*, the joint-pin *p* of which is formed by a projection from the strap working in and along a slot, *q*, in the frame of the finger-bar and sickle, which are free to rise and fall on or around the wrist L as a center of motion. The opposite or outer end of the bar *o* is pivoted, as at *r*, to a lever, P, which is connected by a link, Q, as at *s*, to the sickle G. The lever P works on a fulcrum, *t*, in the rear. By the arrangement of those several parts the sickle G receives a straight reciprocating travel at right angles to the motion of the sleeve M, free from all lateral strain or binding, and provision is made for continuing the motion of the sickle not only when the latter is down but also when it is thrown up or back, and in any intermediate position, so that, when raising the sickle to clear a tree, or for any other purpose, there is no necessity to stop its motion. R is the driver's seat, mounted by springs on a box or cover, S, which serves to inclose the driving mechanism, and which is removable to allow of access to said mechanism. Such accessibility is greatly facilitated by having the driver's seat attached to the box or cover, as in taking off the one both devices are removed simultaneously and a clear

open space is exposed. T is a foot-rest, pivoted as at *u*, and connected with the clutch E by means of a rod, *v*, bell-crank *w*, and spring *y*, so that when pressure is applied to said rest, as by the driver when on his seat through the natural position of his feet, the clutch E is thrown into and held in driving gear; but on the driver removing his feet from the rest T, or in case of being thrown from his seat then the spring *y* serves to throw out the clutch and the sickle ceases to operate. The foot-rest T may be locked or fastened by a catch when it is desired to hold the driving mechanism in gear independently of any action of the driver's feet.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The arrangement, relatively with the sickle G and lever H, of the pitman J and reciprocating sleeve M for operation of the sickle, substantially as specified.

2. The spring-borne pawls *f f*, arranged within the boxes *g* and provided with horns *h* and rings *i*, for operation substantially as shown and described.

3. The crutched pendent bar I, in combination with the lever H, pitman J, and the axle C of the main frame, substantially as specified.

4. The combination, with the sickle G, of the the reciprocating sleeve M, the strap or clip N, the connecting-rod O, the lever P, and the link Q, essentially as herein set forth.

LEVI S. CLARK.

Witnesses:

GEO. M. LYON,
G. A. PECK.