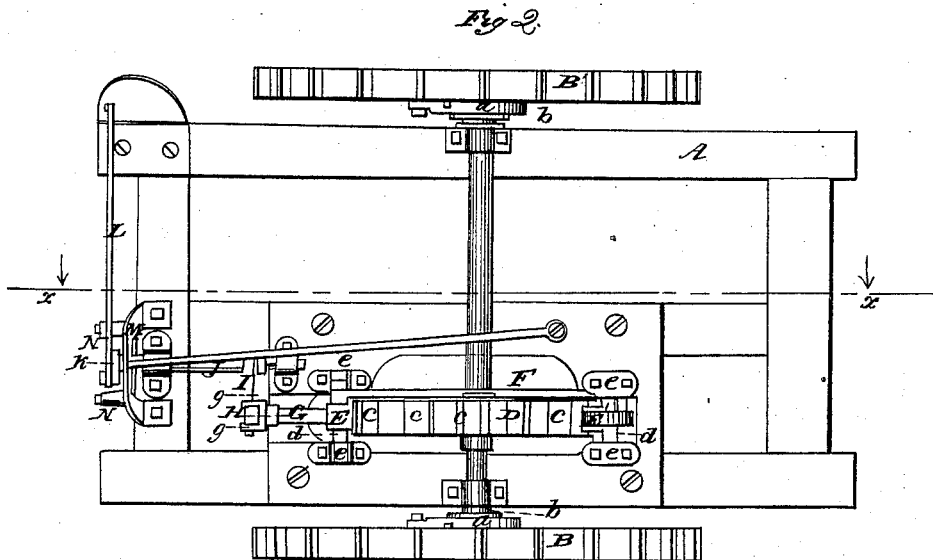
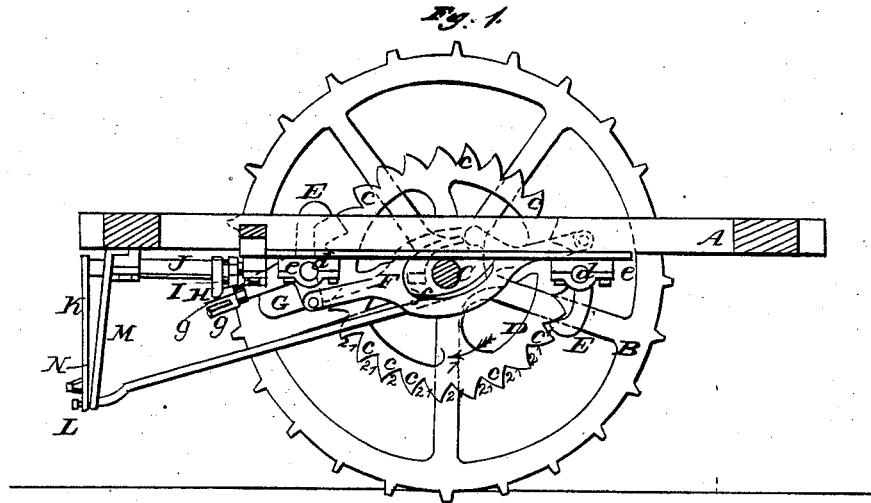


T. SWAN.

Mower.

No. 45,798.

Patented Jan. 3, 1865.



Witnesses  
A. E. Beach  
C. S. Topliff

Inventor  
Thomas Swan.  
By *James C. [unclear]*

# UNITED STATES PATENT OFFICE.

THOMAS SWAN, OF MANLIUS, ASSIGNOR TO HIMSELF, E. B. ALVORD, A. W. FIELD, AND JAMES COBURN, OF SYRACUSE, NEW YORK.

## IMPROVEMENT IN REAPING AND MOWING MACHINES.

Specification forming part of Letters Patent No. 45,798, dated January 3, 1865.

*To all whom it may concern:*

Be it known that I, THOMAS SWAN, of Manlius, in the county of Onondaga and State of New York, have invented a new and useful Improvement in Reaping and Mowing Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side sectional view of a mowing-machine having my invention applied to it, *x x*, Fig. 2, indicating the line of section. Fig. 2 is an inverted plan of the same; Fig. 3, a section of a portion of the same taken in the line *y y*, Fig. 2.

Similar letters of reference indicate like parts.

This invention relates to a new and improved means for operating the sickle, whereby a rapid movement or stroke is given the latter, and an even or uniform motion obtained, without the jars and concussions and consequent wear and tear which attend the use of the ordinary crank.

The invention also possesses the advantage of being very compact and capable of being applied at a small expense, it being composed of but few parts, as hereinafter fully described.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents the main frame of a mowing-machine, which may be of rectangular form, and mounted on two wheels, B B', the latter being placed loosely on their axle C, and connected therewith when moving in a forward direction by means of pawls *a* on the wheels engaging with ratchets *b* on the axle, the pawls *a* slipping over the teeth of the ratchets when the wheels are turned backward, as in backing the machine.

On the axle C there is keyed a toothed wheel, D, the teeth *c* of which are curved at one edge, as shown at 1, the opposite edges being straight, as shown at 2. The wheel D rotates in the direction indicated by arrow 1 when the machine is being drawn forward. It does not rotate when the machine is backed,

for the reason previously explained in referring to the pawls and ratchets.

E E' represent two pallets which are hung on axes or shafts *d*, the latter working in bearings *e*, attached to the main frame A. These pallets are placed at opposite sides of the wheel D, the teeth *c* of the latter working against the pallet E in line above the axle C, and working against the pallet E' in a line below the axle C', as shown clearly in Fig. 1. The ends of the pallets E E' opposite to the ends against which the teeth *c* work are connected by a rod, F, the latter being formed by a loop, *f*, at its center, for the axle C to pass through. The pallet E has an arm, G, projecting from it, on the outer end of which there is fitted a swivel, H, provided with two parallel lips, *g g*, to receive an arbor, I, which is attached to a shaft, J, placed longitudinally in the back part of the frame A, and having a pendent arm, K, attached to its rear end, the lower end of the arm K being connected by a rod, L, to the sickle.

To the back end of the frame A there is secured a pendent bow-shaped bar, M, having two bumpers, N N, attached to it. These bumpers may be constructed of india-rubber or other suitable elastic material, and they are placed one at each side of the lower part of the arm K, the latter striking the same at the termination of each vibration.

From the above description it will be seen that as the machine is drawn along the toothed wheel D will vibrate the pallets E E', the teeth *c*, acting alternately against them, while the rod F, which connects the two pallets, insures a proper simultaneous movement of the same, by which a rocking movement is communicated to the shaft J through the medium of the arm G and arbor I, the pendent arm K communicating a reciprocating movement to the sickle. The bumpers N N greatly aid in equalizing the movement of the sickle, causing the operating or driving parts of the same to work smoothly by preventing concussions at the termination of each stroke of K, and giving an impetus to the same at the commencement of each stroke.

I claim as new and desire to secure by Letters Patent—

1. The wheel D, provided with teeth *c*, curved at one side, as shown at 1, in combination with the two pallets, E E', connected by the rod F, all arranged to operate substantially as and for the purpose herein set forth.

2. The rock-shaft J, provided with the pendent arm K, and operated through the medium of the arbor I and arm G when said parts are used, in combination with the wheel D, pallets E E', and rod F, and all arranged in the

manner substantially as and for the purpose set forth.

3. The elastic bumpers N N, in connection with the vibrating arm K, substantially as and for the purpose herein specified.

THOMAS SWAN.

Witnesses:

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