H. HOWE.

Mower.

No. 83,164. Patented Oct. 20, 1868.

Fig. 1.

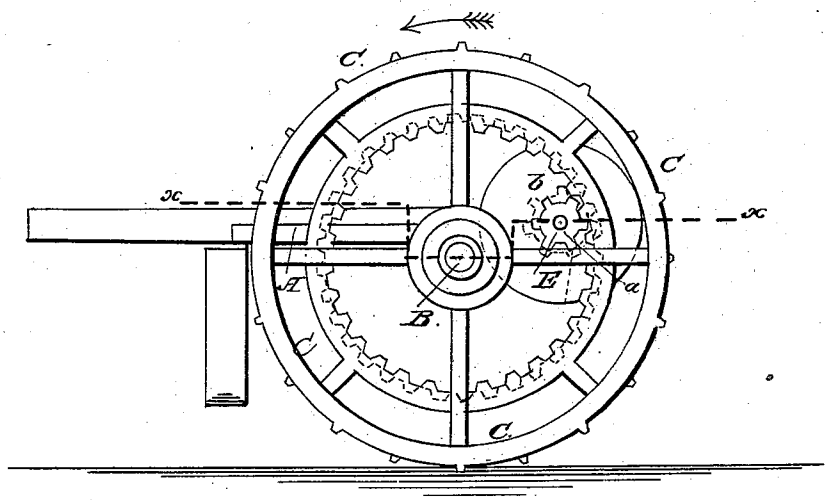
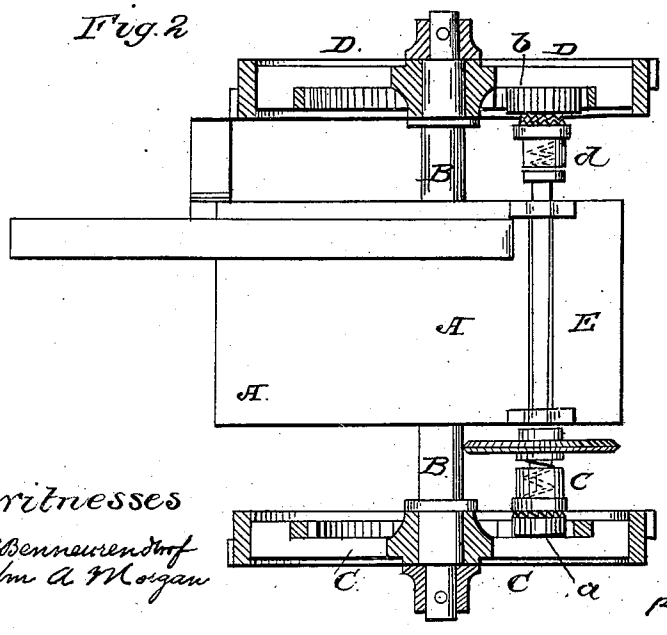


Fig. 2



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United States Patent Office.

HENRY HOWE, OF ONEONTA, NEW YORK.

Letters Patent No. 83,164, *dated October* 20, 1868.

IMPROVEMENT IN HARVESTERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, HENRY HOWE, of Oneonta, in the county of Otsego, and State of New York, have invented a new and improved Mowing and Reaping-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 represents a side elevation of my improved mowing and reaping-machine.

Figure 2 is a horizontal section of the same, taken on the plane of the line *x x*, fig. 1.

Similar letters of reference indicate corresponding parts.

This invention relates to certain improvements on the mowing and reaping-machine for which I made application for Letters Patent on or about the 15th day of July, 1868, the object of which was to equalize the draught, or rather to regulate the action of the draught, on the machine, and to allow the machine to cut while turning.

The present invention has the same object, and refers to those machines in which the motion is transferred from the wheels to a counter-shaft, while the aforesaid application had reference to those machines in which the driving-wheel shaft received and transmitted the motion.

The present invention consists in hanging on each end of the counter-shaft a loose pinion, each pinion being connected with the counter-shaft, by means of a ratchet-spring clutch.

The pinion on the left-hand side is smaller than the other, and it will, as it meshes into internal gear of the left-hand driving-wheel, carry the counter-shaft around, while the other pinion will remain idle, not being able to revolve with the counter-shaft. The strain of the whole machine is thus thrown upon the left-hand side, and consequently taken away from the cutting-side, the machine being thus properly balanced.

When the machine is turned around the left wheel, the right-hand pinion will carry the counter-shaft.

A, in the drawing, represents a suitable frame of the machine.

B is the main axle.

C is the driving-wheel on the left-hand side.

D, that on the right-hand side.

E is the counter-shaft, hung in the frame A, or as desired.

Each wheel C D has internal gearing, as shown, that on the wheel D being larger in diameter than that on C.

Upon the ends of the counter-shaft are hung, respectively, the pinions *a* and *b*, *a* meshing into C, and *b* into D, as shown.

The pinion *a* is necessarily smaller in diameter than *b*, as it meshes into the smaller internal gear of C, its axis being as far from that of C as that of the wheel *b* is from the axis of the larger internal gear of D.

The pinions *a b* turn quite loose on the respective ends of the shaft, and each pinion meshes, with ratchet-teeth on its inner edge, into a sliding clutch, of which one, *c*, is arranged near *a*, and one, *d*, near *b*, on the shaft E.

These clutches are, by means of springs, held against their respective pinions, so that, when, by either of the pinions, the clutch is turned in the direction of the arrow in fig. 1, the counter-shaft will also be turned, and will convey its motion, by means of suitable mechanism, to the cutter-bar and other machinery of the harvester. Instead of the clutches *c d*, other equivalent devices may be used.

When the machine is drawn straight ahead, both wheels C D revolve, with equal velocities, and still independent of each other, on the fixed axle B.

Each wheel C D turns, also, its pinions *a b*. But it is evident that, owing to the smaller diameter of *a*, it should turn quicker than its larger opponent, *b*; consequently the counter-shaft will be revolved by the action of C on *a*, and *b* will slip loose on it, and on its clutch *d*. The strain on the cutter-bar is thus balanced by throwing all working power upon the left-hand wheel C.

When the machine is not in operation, but in motion, the clutches *c d* should, or may be, disengaged from their respective pinions by suitable mechanism.

When the machine turns a corner around the wheel C, the wheel D will revolve more than C, and will cause its pinion *b* to drive the shaft E, while C and *a* are almost stationary. The cutting-apparatus will thus remain active, even when the machine turns corners.

The internal gearing of the wheels C D need not be as different as described; the axle E may be oblique, to bring the pinions *a b* against the toothed edge, the difference in size of *a* and *b* being important.

The wheel C is described as being on the left-hand side of the machine. This refers only to those machines that have their cutting-apparatus on the right-hand side, the wheel C, with the small pinion *a*, being on the side opposite to the cutter-bar.

Having thus described my invention,

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

The pinions *a b*, hung loosely on the ends of the counter-shaft E, and connected respectively with sliding spring-clutches *c d*, or their equivalents, and meshing into the internal gearing of the driving-wheels C and D, respectively, the pinion *a*, on the opposite side of the cutting-apparatus, being smaller than *b*, substantially as described, for the purpose of balancing the strain of the machine, and for allowing it to cut when it turns a corner, as specified.

Witnesses: HENRY HOWE.

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