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Harvester.

No. 81,158. Patented Aug. 18, 1868.

Fig. 1

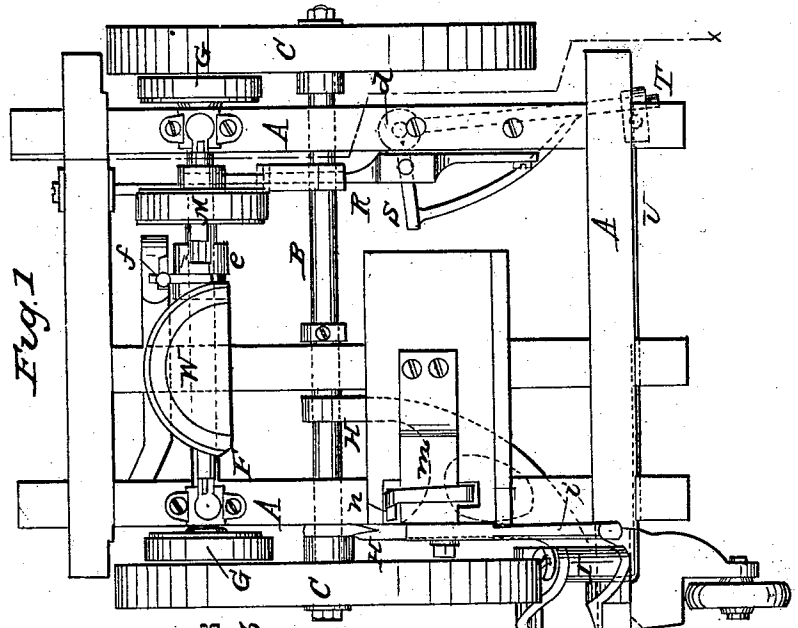
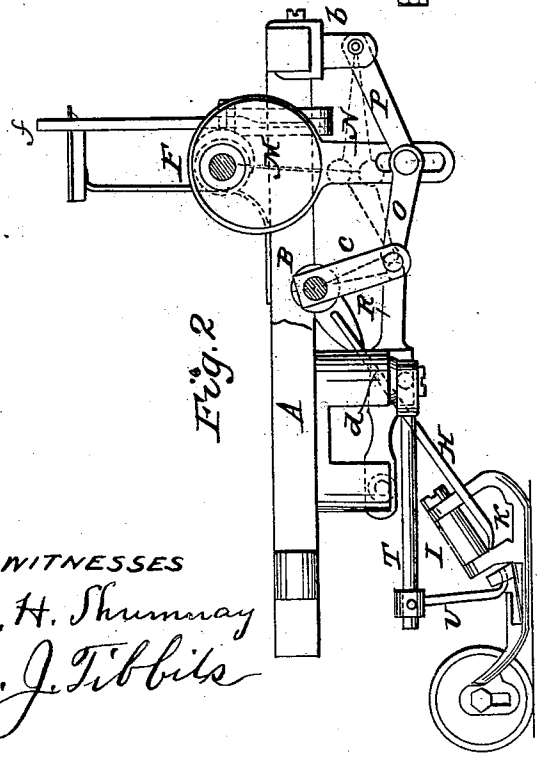


Fig. 2



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2 Sheets—Sheet 2.

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Fig. 3

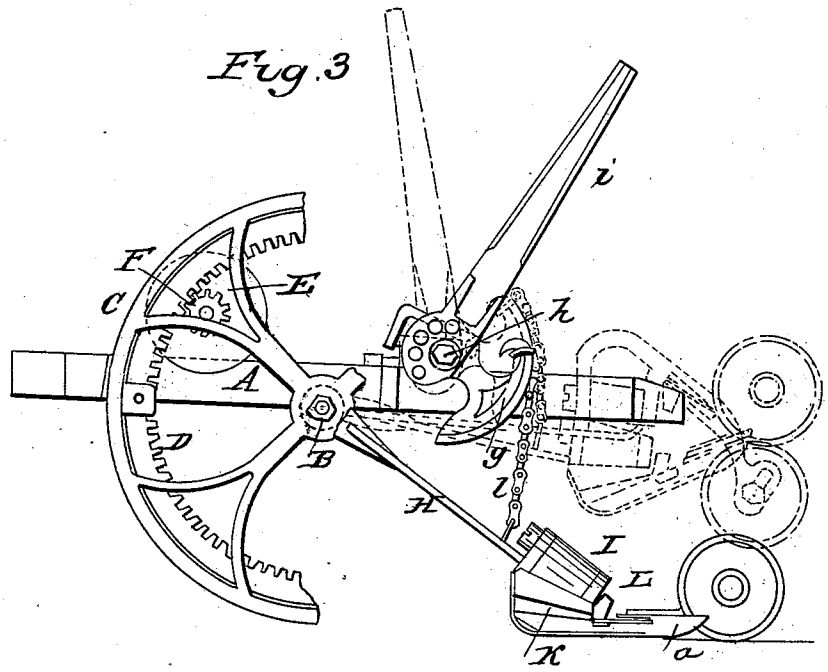


Fig. 4

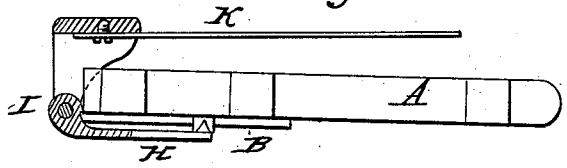
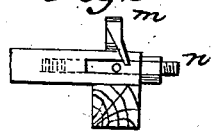


Fig. 5



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UNITED STATES PATENT OFFICE.

HERBERT E. FOWLER, OF NORTH BRANFORD, ASSIGNOR TO HIMSELF, J. W. BISHOP, D. P. CALHOUN, AND L. COWLES, OF NEW HAVEN, CONN.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. **81,158**, dated August 18, 1868.

To all whom it may concern:

Be it known that I, HERBERT E. FOWLER, of North Branford, in the county of New Haven and State of Connecticut, have invented a new Improvement in Reapers; and I do hereby declare the following, when taken in connection with the accompanying drawings, and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a top view; Fig. 2, a sectional side view taken on line *x x;* Fig. 3, an opposite side view, a part of the wheel broken away; and in Figs. 4 and 5, detached views.

This invention relates to an improvement in the common reaping-machine, the object being to reduce the power required for operating the cutter, and to hang the cutter so that it may be more readily raised and folded than in reapers of common construction; and the invention consists in operating the cutters by means of a toggle-joint actuated from the driving-shaft, so that a single revolution of the shaft, or one full operation of the toggle-joint, will cause two operations of the cutters.

To enable others to construct and use my improvement, I will proceed to fully describe the same as illustrated in the accompanying drawings.

A is the frame, supported upon the axle B, to which said axle are fixed the driving-wheels C, so that each wheel revolves independent of the other, and has an internal gear, D, upon the inner surface, working into a pinion, E, on the respective ends of a shaft, F, the said pinion being attached to the shaft through a ratchet-clutch, G, so that only the forward movement of the machine will cause the revolution of the shaft F, the two clutches being independent each of the other, so that different velocities of the wheel do not interfere with the regular movement of the shaft F, the wheel which revolves the fastest governing the revolution of the said shaft.

Upon the axle B is arranged a frame, H, so as to turn freely up and down on the said axle, and, extending down, has formed upon its lower end a joint, I, to which is hinged the finger-bar K, as seen in Figs. 1 and 3, the hinge being constructed so that the pintle of the hinge is axially parallel, or nearly so, to a radial line from the axle, and so that when the cutter-bar is turned down, as to the position in Fig. 3, the lower surface of the cutter-bar will lie flat or level with the earth.

The cutters L in the cutter-bar are constructed and arranged in the usual manner to vibrate across the fingers *a*. To operate the cutters, an eccentric, M, or its equivalent, is arranged loosely upon the shaft F, as seen in Fig. 2, from which a connection, N, extends down and connects with the joint of the toggle composed of two levers, O and P, the lever P having a fixed fulcrum at *b*, the other attached to an arm, *c*, which is hung upon the axle B, and from the said arm *c* a bar, R, extends forward and connects with one arm, S, of a bell-crank lever having its fulcrum at *d*. The other arm T, extending forward, connects by a rod, U, to the cutter-bar, which completes the connection between the driving-shaft F and cutter-bar.

On the shaft F a clutch, *e*, is arranged so as to be operated by a lever, *f*, and so that by the movement of the lever the clutch on the shaft will connect with the eccentric, so that when the shaft F revolves the eccentric will also revolve, or when the clutch is disconnected then the shaft will revolve, and the eccentric remain stationary.

Revolving, the operation is as follows: Starting, as denoted in Fig. 3, the eccentric down, the two arms of the toggle are forced below their central points, so as to have drawn the cutters to their extreme point toward the machine. The eccentric, continuing to revolve, draws up the toggle to its greatest extension, and at this point the cutters have been forced to their extreme distance from the machine, and have performed one cut to the right. Continuing the revolution, the toggle is drawn up to its opposite contracted position, (denoted in Fig. 2,) and the cutters have been drawn back to the first position, and made to cut to the left, thus performing two cuts at one-half of a revolution of the eccentric. Continuing its revolution, the eccentric returns the toggle, making two more cuts upon the return to the first position, thus performing twice the labor which is performed by the ordinary connection by a single revolution, and,

as this double cut is forced by the toggle-joint described, the power required to operate the toggle-joint, as is well known, is much less than when applied directly to the cutters, and thus, while I increase the amount of work performed, I diminish the power required.

Upon the frame, at a convenient point, is arranged the driver's seat W, and at proper relative position to the said seat is arranged a segmental lever, *g*, having its fulcrum at *h*, and from which extends up a hand-lever, *i*, in convenient reaching distance from the driver, and from the segmental lever *g* a chain or other suitable connection, *l*, attaches to the frame H, as seen in Fig. 3, so that, by drawing the lever *i* back to the position denoted in Fig. 3, the finger-bar will be raised, swinging from its point of connection with the axle up to the position also denoted in Fig. 3, and is supported in any desired position within the path of such movement by means of a bolt, *n*, (more clearly seen in Fig. 5,) which is forced out by a spring, and enters one of several holes in the lever *g*, so that when the cutter-bar has been raised to the required height, and the bolt *n* has entered the corresponding hole in the lever *g*, the cutter-bar will be supported in that position.

To release the cutter-bar from the hold of the bolt, I arrange a treadle, *m*, in convenient position for the foot of the driver, so that by depressing the said treadle *m* an inclination on the treadle, as seen in Fig. 5, or other suitable device, will withdraw the bolt and permit the cutter-bar to drop, and this may be done without the intervention of the hand of the driver, and the cutter-bar is raised with one hand only, and secured without the intervention of the feet.

When raised to its full height, as denoted in Fig. 3, the cutter-bar, turning upon its hinge on the frame H, may be turned over onto the frame of the machine, as denoted in Fig. 4, the construction of the hinge being such as to permit its being turned close to the frame, and the inclination of the pintle of the hinge relative to the cutters is such that, when turned over, the points of the cutters are inclined downward, as denoted in Fig. 3, out of way from injury or accident of any kind.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The arrangement of the eccentric M, or its equivalent, upon the driving-shaft, in combination with the toggle-joint O and P, lever R, arm C, and bell-crank S, so as to operate substantially in the manner herein set forth.

HERBERT E. FOWLER.

Witnesses:

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