J. H. ELWARD.

Harvesters.

No. 141,863. Patented August 19, 1873.

Fig 1.

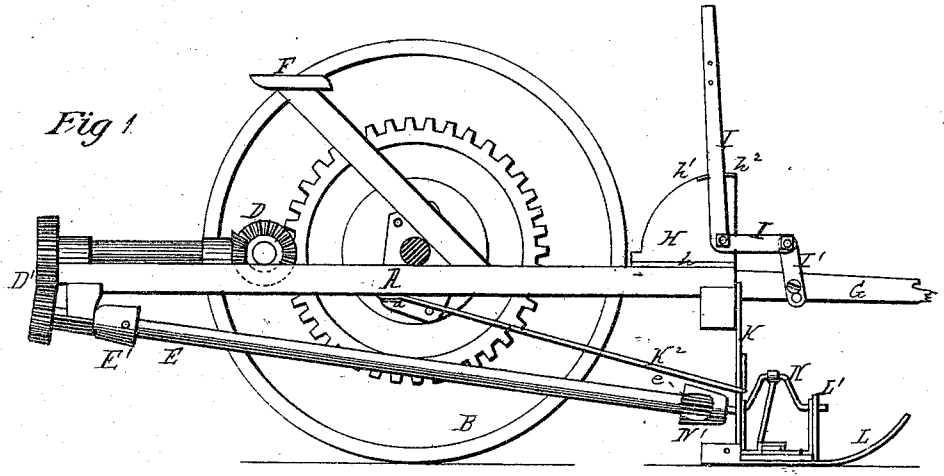


Fig. 2.

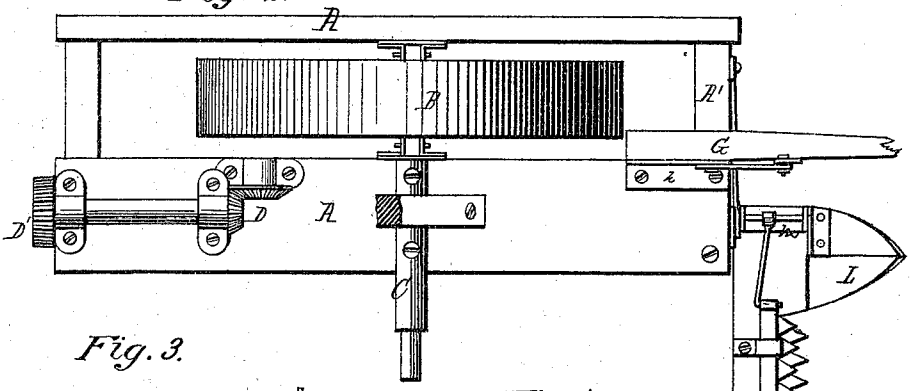


Fig. 3.

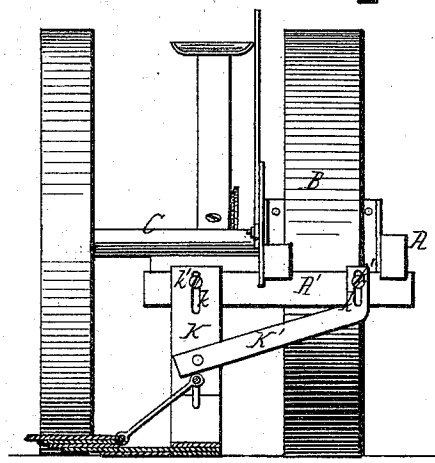
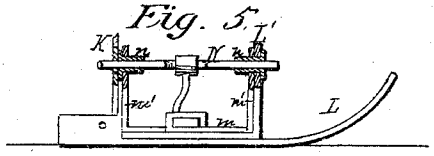


Fig. 4.

Fig. 5.



Attest;

Alex. Spahon

J. F. Flowers

Inventor;

John H. Elward

by Adolphus Smith

Attorney

UNITED STATES PATENT OFFICE.

JOHN H. ELWARD, OF ST. PAUL, MINNESOTA.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. **141,863**, dated August 19, 1873; application filed March 13, 1873.

To all whom it may concern:

Be it known that I, JOHN H. ELWARD, of St. Paul, in the county of Ramsey and State of Minnesota, 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 drawings making part of this specification, in which—

Figure 1 represents a side elevation taken from the grain side of the machine, with the inner carrying-wheel removed. Fig. 2 is a plan or top view, and Fig. 3 is a front elevation, of the same. Fig. 4 is a sectional view through the crank and shaft coupling; and Fig. 5, a similar section through the hinge and shoe at the inner end of the finger-bar.

Similar letters of reference denote corresponding parts in all the figures.

My invention relates to the construction of the coupling-frame, shoe, and brace, and the manner of uniting them with the main frame, whereby the shoe may be adjusted or set at any desired height relatively to the frame, but at the same time will be rigidly connected therewith when in use, as hereinafter explained; and, secondly, my invention relates to the manner of combining the crank, jointed tumbling-shaft, and hinged finger-bar head with the shoe, constructed and applied as above, and as hereinafter more fully explained.

In the drawing, A A′ represent a rectangular frame surrounding the driving or outer wheel B; C, the main axle, mounted in bearings thereon; D D′, any suitable arrangement of gearing for operating the crank-shaft E; and F, the driver's seat, all constructed and arranged in any usual or desired manner. G is the tongue, pivoted at its rear end to the frame A A′, at a point in rear of and above the front frame-bar A′, and in such relation thereto that when the tongue and frame are adjusted to a horizontal or nearly horizontal position, as shown in Fig. 1, the tongue will rest firmly upon the frame-bar A′. H is a sector or quadrant plate, secured to the frame by means of a suitable flange or foot, *h;* and I is an elbow-lever, pivoted to the inner angle or corner of the quadrant-plate, as shown, and connected at the vibrating end of its horizontal arm with the pivoted tongue by means of a pivoted link, I′, the vertical arm of the lever resting against the vertical face of the plate H, which, at its upper forward angle, is provided with two spurs or lugs, h^1 h^2, which serve, when the lever is placed between them, to lock the pivoted tongue in a line parallel, or thereabout, with the frame, and in which it rests upon the bar A, locking the tongue and making its connection with the frame rigid, when it is desired to move it from one point or field to another.

When the machine is in operation, the lever is released from the spurs h^1 h^2, with its vertical arm placed in rear of spur h^1, plays freely on its pivot, leaving the tongue free to vibrate upon its pivoted connection with the frame, and consequently leaving the cutting apparatus connected with the forward end of said frame free to follow the surface of the ground.

K K^1 K^2 represent the coupling or sickle bar frame, composed of the vertical slotted plate K, a lateral arm or brace, K^1, also slotted, and a rear supporting thrust-brace, K^2. The plate K and brace K^1 are each provided with a vertical slot, *k*, through which they are fastened to the front frame-bar A′ by means of set-screws or bolts *k′*, (see Fig. 3,) and the rear brace made either elastic or provided with a flexible slotted joint or connection with the frame A at *a*, to permit the vertical adjustment of the plate K and brace or arm K^1, for setting the cutting apparatus higher or lower, relatively to the frame A A′. L is a shoe, cast with or rigidly connected to the lower end of plate K, and forming a permanent support for the forward end of the frame when the machine is in operation, but which, when the tongue is made rigid for transportation, will be raised off the ground, leaving the frame to be supported by the wheels and pole or tongue. In rear of the upward curve of the shoe is an upright lug or standard, L′, between which and the vertical plate K I locate the pivoted finger-bar head or plate *m*, said plate or head being provided with a horizontal central portion, to which the finger-bar is secured, and at its front and rear with perforated vertical ears or lugs *m′*, fitting within and between plate K and standard L′, and resting upon and supported by tubular crank-shaft boxes *n*, mounted in plate K and stand-

ard L′, as shown in Fig. 5, in such manner as to permit the finger-bar connected therewith to vibrate freely relatively to, and to follow the surface of the ground at its outer end independently of, the movements of the shoe L. M is the crank, supported in front and rear by the sleeves or boxes *n*, and provided at its rear end with a grooved hood or socket-piece, N′, within which the forward ribbed or feathered end *e* of the crank-shaft rests or slides, for operating the crank N, the connection being such as to permit the shortening or lengthening of the shaft moving in the arc of a circle, as the cutter or coupling frame is adjusted higher or lower in a vertical plane, and also to permit a slight deflection from a right line between the crank and crank-shaft. The vibration of the forward or crank end of the shaft E, to permit the vertical adjustment of the cutter-frame, is provided for by means of a universal or tumbling joint, E′, at or near its rear end, said joint being of any usual or desired construction.

Parts of the machine not particularly described may be of any usual construction.

Having thus described my invention, I would have it understood that what I claim as new, and desire to secure by Letters Patent, is—

1. The cutter or coupling frame K K^1, provided with the brace K^2 and shoe L, rigidly connected with the frame A A′, but made capable of vertical adjustment, substantially as described.

2. The fixed or stationary shoe L, provided with boxes or bearings for the crank-shaft N, and made capable of adjustment, as described, in combination with the jointed tumbling-shaft E and finger bar or head *m*, hinged to and turning upon the journals of the crank-shaft, as described.

JOHN H. ELWARD.

Witnesses:
EDM. F. BROWN,
ALEXR. MAHON.