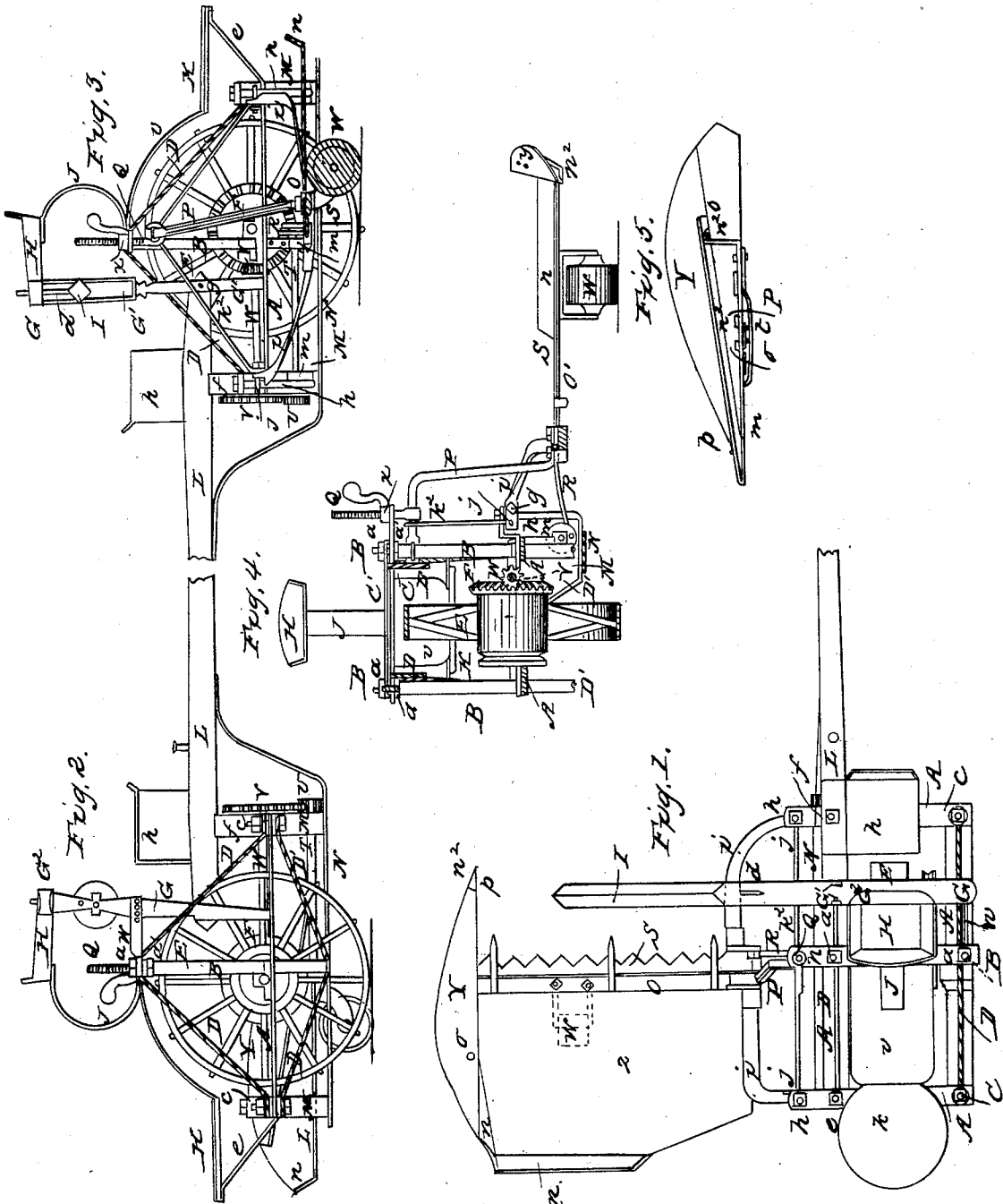


G. ENGLE.

Harvester.

No. 37,813.

Patented March 3, 1863.



Witnesses:  
 Gustave Distenich  
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# UNITED STATES PATENT OFFICE.

GEORGE ENGLE, OF BUNKER HILL, WISCONSIN.

## IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. 37,813, dated March 3, 1863.

*To all whom it may concern:*

Be it known that I, GEORGE ENGLE, of Bunker Hill, in the county of Grant and State of Wisconsin, have invented a new and useful Improvement in Harvesting-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top view, Fig. 2 a side elevation, Fig. 3 a longitudinal section, and Fig. 4 a transverse section, of my machine. Fig. 5 is a side view of the divider.

Similar letters of reference in the several figures indicate corresponding parts.

The frame A, which supports the machine, is constructed with two vertical struts, B B, which extend down through the inner and outer side beams of said frame. These struts have their upper ends screw-threaded and their lower ends grooved. On the screw-threaded ends cross cap-pieces C C' are fitted, nuts *a a'* being above and below the said cap-pieces. From the front and rear ends of the side timbers of the frame, both underneath and above, suspension-cables of wire are extended, as indicated at D D'. These cables pass under the feet of the struts and between the capping-pieces C C', and are fastened at their ends to the frame A by screw-bolts *c c*, which also secure the beams of the frame together. With this construction of side draft-frame, by screwing up the nuts *a a'* a great firmness and rigidity are obtained, and a very light structure is rendered capable of resisting great strain and weight, the cables, which form with the frame a truss, serving to sustain and brace the structure.

Within the frame A, I arrange a large drive-wheel, E, which has a bevel-gear, F, on the inner end of its hub. I also extend up from the side beams, forward of the struts B B, supports G G', for a seat, H, and for a reel, I, as shown. One of these supports is perforated and the other forked, so that the reel, when fitted to the two, may be adjusted higher or lower with respect to the ground, as occasion may require. The seat H, which is designed for the driver, is fastened by its front edge to a top cross-tie, G<sup>2</sup>, of the supports G G', and has its back end fastened to a spring, J, extended up from the cap of the truss-frame, as shown. The cross-tie G<sup>2</sup> just mentioned has

an inner extension beyond the forked support G', and from this extension an adjustable hanger, *d*, projects downward, so as to receive the reel-shaft through its eye, and thus sustain the reel firmly.

In rear of the drive-wheel, and on a plane lower than the capping-pieces of the truss-frame, I arrange a seat, K, for the raker. This seat has its support at rear from a standard, *e*, extended up from the rear beam of the truss-frame, and it has a further support, at front, from a curved extension, *v*, of itself, resting on the lower capping-piece of the truss-frame. The driver's seat faces the path of the machine, while the raker's seat faces the grain on the platform. It will be observed that the raker's seat and the driver's seat are located so as to transmit the weight that comes upon them to the trusses of the frame, and thus such weight is equally distributed throughout the structure. The same is true as respects the weight of the reel. W is a bracket for staying and also adjusting the reel back or forward.

The draft-pole or tongue L of the machine is rigidly fastened to the inner corner of the truss-frame and to the forked standard G', by means of an angle-bracket, *f*, and bolt *g*, as shown. On this tongue a foot-piece, *h*, for the driver, is arranged, said foot-piece being of angular form and rising high enough for the purpose intended.

From the under side of the front and back beams of the truss-frame A, at the inner corners, I extend supporting and guide hangers M M, and connect the same longitudinally by means of a light bar, N, which is fastened to the under side of the tongue and bolted to the bottom of the hangers, as shown. The hangers are angular in form, and there inner vertical portions, *h h*, are cylindric, so as to serve as guides. To these vertical portions of the hangers the finger-beam O is connected by means of bent arms *i i*, which extend from the under side of the finger-beam in the form represented, and are fastened loosely to the hangers by loops *j j*, which encircle the portions *h h* of the hangers, as shown.

It will be observed from the drawings that the arms *i i* incline toward the ground from the loops to the point where they attach to the finger-beam. The front arm serves as a guard to prevent the grain falling upon the draft or truss frame and gearing. Thus far

the connection is such that the finger-beam can be adjusted higher or lower, with respect to the ground, on the guiding portions *h h* of the hangers. Now, to further support and suspend the finger-beam and its attachments on the side of the truss-frame, and nearly or directly opposite the drive-wheel, I extend up from the top of the finger-beam an angular bracket, P, and connect the horizontal portion of said bracket to the inner strut of the truss-frame by means of a loop, *k*, the loop fitting loosely around the strut. This angular bracket I suspend upon a vertical screw, Q, which extends up through an extension of the lower capping-piece of the truss-frame, and receives on it a nut, *x*, with a lever-arm for turning it. With this arrangement the driver can readily raise or lower the finger-beam while sitting upon his seat, and the adjustment will not change the angle of the sickle with respect to the grain or ground. In order to further brace the frame at the points where the cutting apparatus is hung, I stretch a cable, *k*<sup>2</sup>, across the bracket P and attach its ends to the loops of the arms *i i*, as shown.

The pitman R is arranged in line with the sickle S, and connects to an eccentric or crank pin of a shaft, T, said shaft being at right angles to the pitman or running longitudinally with the frame A. Its location is under the inner side beam of said frame, and its supports or bearings *m m* are on one of the hangers M and one of the struts B, as shown. This shaft has a pinion, *u*, on its front end, and this pinion gears with a spur-wheel, V, of a longitudinal shaft, W, which is arranged on top of the truss-frame A, and has a bevel-pinion, V', on its rear end, said pinion gearing into the large bevel-wheel F of the drive-wheel E, as shown. It will be observed that a reciprocating motion is produced in the sickle by this arrangement of gearing. It will also be observed that the gearing is very compactly arranged on the inner side of the truss-frame and the attachments thereto, and while this is so the cutting apparatus is located opposite the axle of the drive-wheel, but on a lower plane.

The platform Z of the harvester may be hinged to the back of the finger-beam, so as to be removable when it is designed to use the machine for mowing. It is constructed with an angular guard at its rear off side corner, as indicated at *n n*. The transverse portion of this guard extends far enough toward the inner edge of the platform to give a contracted discharge for the grain. The discharge portion of the platform is formed by cutting off the inner rear corner of the same on an oblique line, as shown. My platform is very short between its front and back edge, and thus discharges the grain readily and greatly lessens the labor of the raker.

The divider *n*<sup>2</sup> *n*<sup>2</sup> *n*<sup>2</sup>, which I employ, is of skeleton construction, in form of a triangle, the base thereof being horizontal with the platform. This divider has a guard-board, Y,

mounted upon its longitudinally-inclining and laterally-beveling top portion, as shown, so that it inclines laterally and longitudinally with respect to the platform. This board is attached to the triangle-divider by means of a pivot, *o*, and an under beveled notch, *p*, as shown. The angle-divider is very strong, and has but little weight. It is fastened to the finger-beam by means of a pivot, *q*, and a set-pin, *r*, which latter should play in a slot, so that the end of the divider may be adjusted in or out, as occasion demands. The board Y might also be adjusted on its pivot *o* and in the notch *p* with the same object in view. The guard *t* on the sole of the divider is to protect the sickle from trash, &c.

The roller W, which is arranged under the finger-beam inside of the range of the divider, is to support the outer side of the finger-beam, and thus prevent sagging down of the divider, &c. This roller may be removed whenever necessary, as it is attached by screws and nuts.

The details of my truss-frame may be changed in many respects, and any other material than iron may be used; and therefore I do not wish to be understood as limiting myself to the precise forms and arrangements shown, so far as the principle involved in the truss-frame is concerned.

Having thus described my invention and set forth its advantages, I will now state what I claim as new and desire to secure by Letters Patent—

1. The truss or suspension draft-frame for a reaper or mower, constructed substantially as set forth.
2. The arrangement of the driver's and the raker's seats in the relation to each other shown, and with respect to the platform and the tongue of the machine, and upon the truss-frame and standards G G', substantially in the manner described.
3. The combination of the angular bracket P, or its equivalent, and the hangers M M, applied and operating substantially as described.
4. The suspending and adjusting screw Q, applied and operating substantially as described.
5. The combination of the cable *k*<sup>2</sup> and the arms *i i* and bracket P, substantially as and for the purpose set forth.
6. The hangers M M, when used as guides for loops of the arms *i i*, substantially as described.
7. The arrangement of the bar N with respect to the main frame and gearing, substantially as set forth.
8. The adjustable skeleton triangle-divider, made in one piece, in combination with the deflecting-board Y, as set forth.

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Witnesses:

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