

J. P. MANNY.

Harvester.

No. 216,746.

Patented June 24, 1879.

Fig. 1.

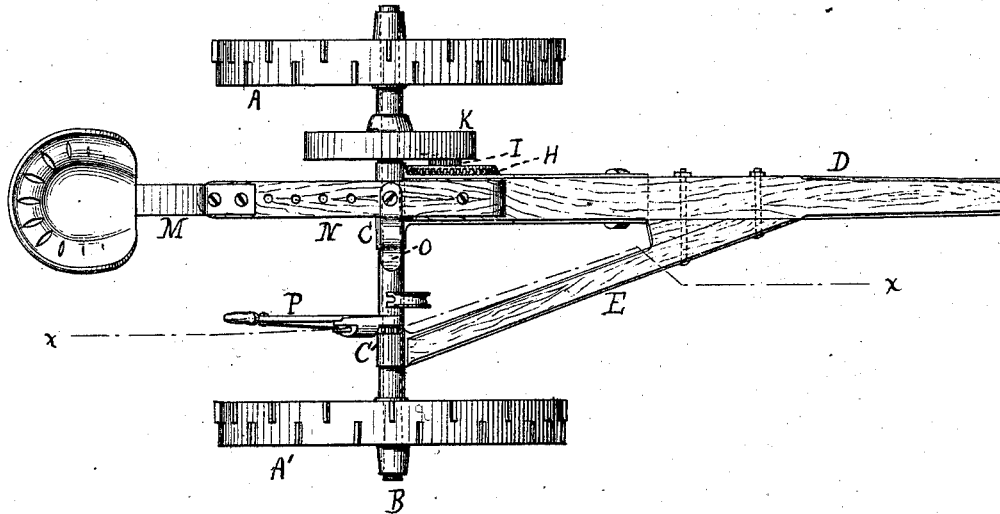
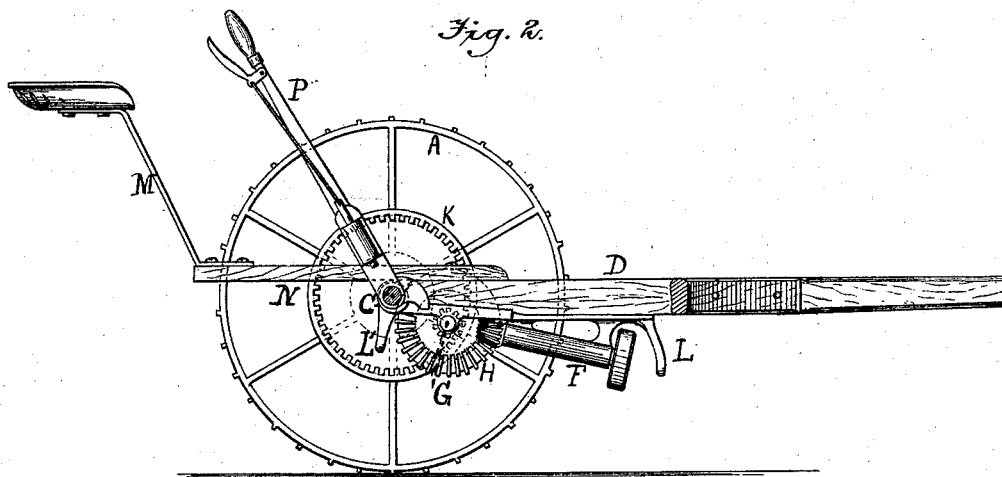


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN P. MANNY, OF ROCKFORD, ILLINOIS.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. **216,746**, dated June 24, 1879; application filed October 15, 1877.

To all whom it may concern:

Be it known that I, JOHN P. MANNY, of Rockford, in the county of Winnebago and State of Illinois, have invented a new and useful Improvement on Harvesters, of which the following is a specification.

The present invention, which constitutes an improvement on the two-wheeled front-cut harvesting-machine, relates generally to the organization and arrangement of the parts with view to securing strength, simplicity, and economy of construction, compactness of form, and durability; and it consists in the mode of constructing and mounting the main frame, the mode of mounting the gearing, and the construction and arrangement of the driver's seat and the foot-rest.

The invention is shown in the accompanying drawings, in which Figure 1 is a plan view of a machine embodying the invention, and Fig. 2 is a side elevation of the parts lying behind the plane of the line *x x* of Fig. 1.

The construction is as follows: Two driving-wheels, A A', are mounted on the main axle B so as to turn freely thereon, being suitably connected with the axle by backing-ratchets of such construction that not only will the wheels run backward without revolving the axle, but the operator will be enabled, by lifting the pawls out of engagement with the ratchets, to move the machine forward at his pleasure without revolving the axle. A suitable construction of backing-ratchets for accomplishing this result was patented to me January 21, 1873.

The main axle turns freely in boxes C C', set as wide apart as the proper arrangement of the other parts will permit; and these boxes are made with forwardly-projecting arms, to which the rear end of the tongue or pole D (which is rigid throughout) and its hound E are firmly bolted. These two parts constitute the main frame, which, being thus made up of the fewest possible parts, and being triangular in shape, with a broad bearing on the axle, and a broad bearing of the hound on the tongue where the two unite, is at once cheap to construct, compact, and admirably adapted to resist the constant strain and shock from the vibration of the cutters, from the side draft, and from other sources. In practice the

bearing of the hound on the tongue should be increased by the use of a wedge between the two, as shown in the drawings. The rigidity of this triangular frame is also of special importance, in that its main timber supports the gearing; and as it is next to impossible, under ordinary usage, for a timber secured as this is to become twisted, the gear-wheels will always be kept true in their relative adjustments, so as not to bind when in operation.

Instead of making the pole of one piece extending from the necks of the team to the axle, it may, if preferred, be made in two parts, firmly bolted together, as shown in Fig. 1. This will not materially change the triangular character of the main frame.

The crank-shaft F and counter-shaft G are supported in boxes directly underneath the main timber of the frame and forward of the main axle; and to the stubble end of the counter-shaft, which projects at the side of this timber, are attached the bevel-gear H, which meshes with the bevel-pinion on the crank-shaft and the spur-pinion I, which meshes with and is driven by the internally-gear'd spur-wheel K, keyed fast on the main axle. Both the pinion I and the bevel-gear H are fast on the counter-shaft, and this shaft is secured in its box in such manner as to prevent any longitudinal play therein, and the spur-wheel K is similarly secured on the main axle. The result is, that when the several parts of the gear mechanism are once assembled in their relative positions they remain constantly in mesh, which is rendered possible by the employment of any suitable means for permitting the driving-wheels to turn on the axle without causing it to revolve. This organization secures greater compactness, and at the same time prevents that injurious wear of the gear-teeth which is inevitable where the cutters are brought into or thrown out of action by the shipping and unshipping of the gears.

The coupling-frame (not shown in the drawings) is to be pivoted to the two down-hangers L L', attached to the under side of the main frame and its box C, at points respectively in front and in rear of the crank-shaft and the counter-shaft; and to counterbalance measurably the weight of the gearing and

this coupling-frame thus thrown upon the main frame in front of the axle, the driver's seat is located in rear of the axle, being mounted on the upright spring M, the foot of which is bolted to a horizontal arm, N, which is attached at its forward end to the main frame. This arm is constructed with bolt-holes, to permit of the driver's seat being set forward or backward, according to the weight of the driver, and it is also provided with a foot-rest, O, which has a corresponding adjustment. This arm N, which supports the driver's seat, is preferably made of greater width than thickness, as this construction will increase the torsional capacity of the part, and thus give increased lateral swing to the driver's seat to compensate for the inequalities of the ground. This lateral flexibility of the seat, however, comes largely from the circumstance that its standard connects approximately at right angles with a support projecting out substantially in a horizontal direction from the main frame.

The arms or sockets to which the two members of the main frame are bolted are so cast upon the boxes C C' that the pole D and its hound E lie in the same plane with the axle, instead of, as is usually the case, being raised above the plane of the axle. This construction gives a low draft, and admits of getting the gearing low down without the use of long down-hangers, which are always an element of weakness; and by bringing the pull of the machine in its advance and the thrust in its backward movement directly upon the axle, much shock and strain that would be inevitable under any other construction are avoided.

The lifting-lever P, constructed in the usual manner, is mounted directly on the main axle by means of a sleeve which turns freely thereon, and its pawl engages with the teeth of a circular rack cast on the box C' of the hound. This mode of mounting the lifting-lever dis-

penses with the extra parts that would be required were it located on the main frame, and also brings it within easy reach of the driver's seat.

What is claimed as new is—

1. In a front-cut harvester, a triangular frame composed of the tongue and its hound, and carrying the gearing, substantially as described.

2. In combination with the main draft-frame of a front-cut harvester, the crank-shaft and counter-shaft attached to the under side thereof, and at points in front of the main axle, substantially as described.

3. In combination with the crank-shaft and counter-shaft, supported upon the draft-frame in front of the axle, a driver's seat located behind the axle upon supports that are connected with the draft-frame, substantially as and for the purpose described.

4. A driver's seat mounted upon a vertical or inclined spring-support, which is made adjustable on a horizontal arm projecting rearward from the main frame, substantially as described.

5. In connection with driving-wheels capable of being locked upon the axle or remaining loose upon it, at the pleasure of the operator, the combination of a spur-wheel mounted upon the axle and of a pinion on a counter-shaft, when the two are arranged so as to remain constantly in gear, substantially as and for the purpose described.

6. In combination with the tongue of a harvester, carrying the crank-shaft and counter-shaft upon its under side, boxes mounted on the main axle, and constructed substantially as described, to bring the tongue to the plane of the axle, as and for the purpose set forth.

JOHN P. MANNY.

Witnesses:

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