C. W. LEVALLEY.

Harvester.

No. 202,036. Patented April 2, 1878.

Fig. 1.

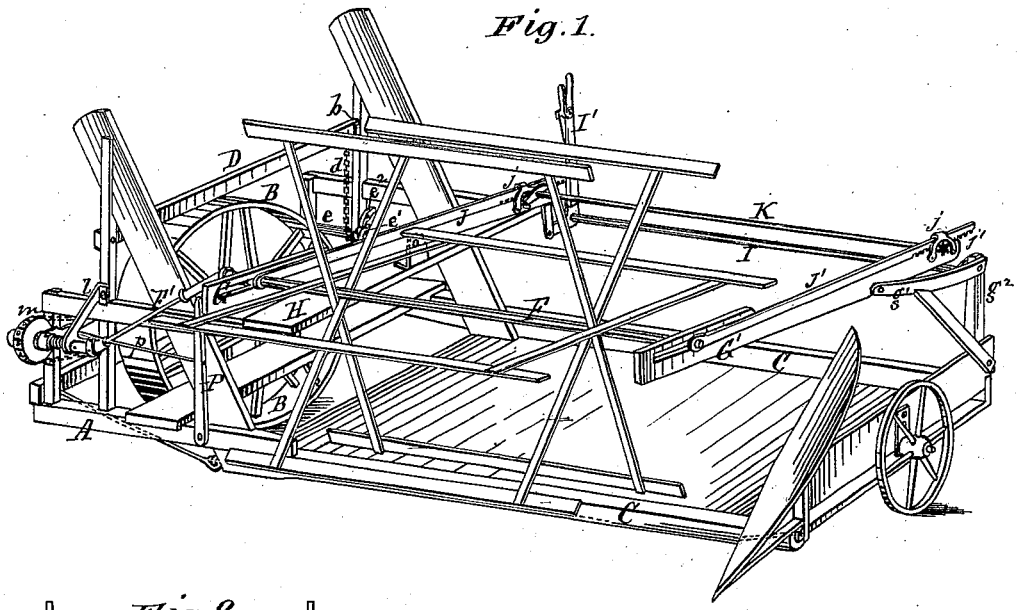


Fig. 2.

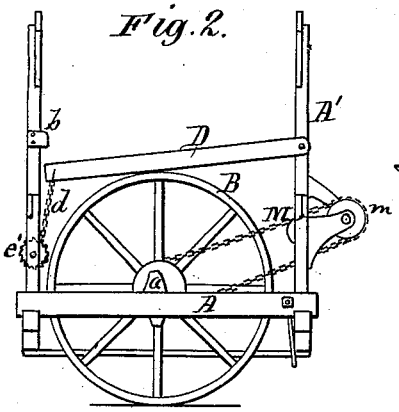


Fig. 4

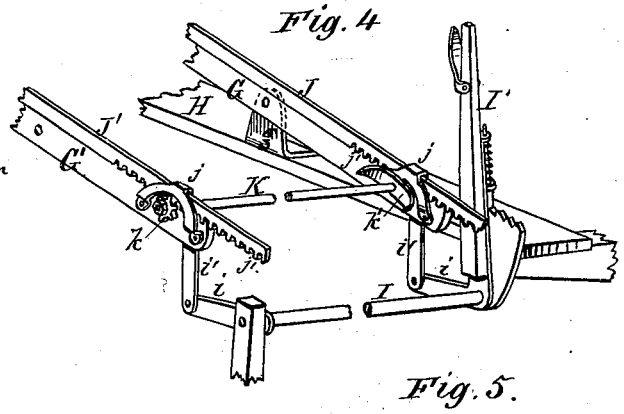


Fig. 3.

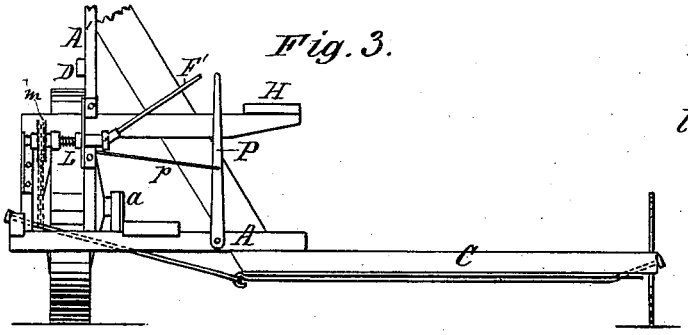
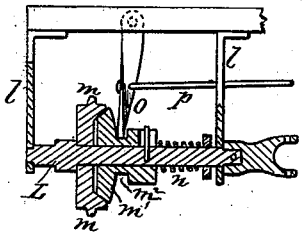


Fig. 5.



Witnesses:

N. B. Smith.

John G. Center.

Inventor:

C. W. Levalley.

by A. M. Smith

Attorney

UNITED STATES PATENT OFFICE.

CHRISTOPHER W. LEVALLEY, OF ST. PAUL, MINNESOTA.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. **202,036**, dated April 2, 1878; application filed October 6, 1877.

To all whom it may concern:

Be it known that I, CHRISTOPHER W. LEVALLEY, of St. Paul, county of Ramsey, State of Minnesota, have invented certain new and useful Improvements in Harvesters, 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 perspective view of my improved harvester, or of so much thereof as is necessary to show my improvements. Fig. 2 is a side elevation, and Fig. 3 a rear elevation, of the same. Fig. 4 is a perspective view of the reel supporting and adjusting devices detached, and Fig. 5 is a horizontal section through the friction-clutch which drives the reel-shaft.

Similar letters of reference denote corresponding parts wherever used.

My invention relates to a novel arrangement of means for adjusting the main frame, employing the driving-wheel as a fulcrum, as hereinafter fully described.

In the accompanying drawings, A represents the main frame of the machine; B, the driving-wheel; C C, the platform-frame, said parts, with their several attachments, except in particulars hereinafter specified, being similar in their construction and general arrangement to machines now in use.

The main drive-wheel axle has its ends flattened, and these are made adjustable in grooved or flanged sector-plates *a*, secured to the inner sides of the longitudinal frame-bars, and are held at any desired point of adjustment by pins or bolts passing through the flanges and ends of the axle.

For adjusting the height of the frame, a bar, D, is employed, pivoted at one end in an upright, A′, which in the present instance forms also one of the uprights of the elevator-frame, but which may be made separate therefrom, if desired.

The bar or lever D extends thence longitudinally over the driving-wheel, and has its opposite end connected by a chain, *d*, with a windlass at *e*, the shaft of which is mounted in suitable bearings in the main or elevator frame, either or both, as may be convenient. This shaft or windlass is provided with a ratchet-wheel, e^1, and a pawl at e^2, pivoted upon the frame, engages therewith for holding the ratchet-wheel and shaft or windlass at any desired adjustment.

The shaft may be rotated by means of a wrench-lever placed upon a squared end of the shaft; or the lever may be provided with a backing-pawl, and made to operate the shaft by engaging with the ratchet-wheel, as preferred.

By rotating the windlass *e* and winding up the chain *d*, the lever-bar D will be drawn down upon the periphery of the wheel until it lifts the frame and relieves the supporting-pins, through the axle and sector-plates *a* referred to, of its weight; and the pins being withdrawn, the frame can be readily raised or lowered, as required, by the action of the windlass and lever D, when, the pins being inserted through holes in the flanges corresponding with the changed position of the axle, the frame is held at the desired height.

When the lever D is not in use for adjusting the frame, its swinging or free end is placed in a supporting socket-piece, *b*, attached to one of the elevator-uprights, thus carrying it above and out of contact with the wheel, where it remains, always in convenient position for use when required.

The reel-shaft F is supported in the forward slotted ends of the two reel-bearers G G′, one pivoted, at a point about one-third of its length (more or less) from its rear end, in a bracket or standard, *g*, on the seat-plank H, and the other about in the same transverse line in an arm or bar, g^1, supported at the rear grain-side corner of the platform-frame in an upright, g^2, as shown.

A rock-shaft, I, actuated by a lever, I′, arranged within reach from the driver's seat or plank H, is connected by crank-arms *i i* and links *i′ i′* with the rear ends of bearers G G′, enabling the driver to readily vibrate the latter and to adjust the height of the reel, as desired.

J J′ are sliding bars secured to and moving back and forth in guiding ways or brackets *j j* on the bearers G G′. The forward ends of these bars J J′ are provided with eyes or bearings for the reel-shaft, and move back and forth, carrying the reel with them, in planes

parallel with the slots in the forward ends of the bearers G G′.

The rear ends of the bars J J′ have toothed racks *j′* formed upon them, which engage with pinions *k* on a shaft, K, mounted in the rear ends of the bearers G G′, and operated by means of a thumb-lever or wheel at *k′* on the end of the shaft adjacent to and within convenient reach of the driver, who, by rotating the shaft K, can readily move the reel forward or backward, as the condition of the crop may require.

The reel is driven, by means of an extensible tumbling-shaft connection at F′, from a secondary shaft, L, mounted in suitable bearing-brackets *l l* at the front of the elevator-frame, or other convenient part of the machine. This shaft L has a driving-wheel pulley or sprocket-wheel, *m*, mounted and turning freely upon it; and motion is imparted to said wheel by any convenient arrangement of mechanism for the purpose. In the present instance a chain, M, is employed for driving it direct from a sprocket-wheel on the hub of the driving-wheel.

The wheel *m* is dished or made concave on the face adjacent to the reel, and a second wheel, m^1, feathered to and turning the shaft L, is made convex or beveled on its face adjacent to wheel *m*, for matching and engaging therewith. These matching-faces are intended to be engaged by frictional contact, and may be made smooth, but, by preference, will be slightly roughened, as giving a stronger frictional grasp or hold upon each other.

The wheel m^1, which, while adapted to slide endwise on the shaft L, is at the same time so connected with said shaft as to insure the rotation of the latter when it (wheel m^1) is rotated by wheel *m*, is held up in contact or into engagement with wheel *m* by a spring, *n*, on shaft L, as shown.

The wheel m^1 has a grooved hub or sleeve, m^2, and a shipping-fork, O, connected by a link, *p*, with a lever, P, arranged within convenient reach of the driver, serves to enable the latter to throw the wheel m^1 out of engagement with wheel *m*, and thus to throw the reel out of action when desired.

The reel being thus driven simply by frictional contact of the wheel m^1 with the wheel *m*, it will be seen that if the reel strikes an obstruction which, if the rotation of the reel were continued, would be liable to break or injure the reel, the latter is allowed to stop until the obstruction is safely passed or removed, when the reel will resume its operation without attention from the driver, while at the same time the reel is placed under the control of the driver, and can be thrown into or out of action by the latter whenever required.

Parts of the machine not particularly described may be constructed and arranged in any usual or preferred way.

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

1. The lever D, permanently pivoted to the adjustable main frame of a harvester, in position overhanging the drive-wheel, and adapted to be let down upon and used in combination with the driving-wheel as a fulcrum, for adjusting the frame, as described.

2. The adjusting-lever D, permanently pivoted to the frame, and employing the driving-wheel as a fulcrum, as described, in combination with the chain and windlass for operating said lever and adjusting the main frame, as described.

CHRISTOPHER W. LEVALLEY.

Witnesses:
R. C. MOORE,
ED. L. SEESHOLTS.