J. F. STEWARD.
Harvesters.

No. 197,499. Patented Nov. 27, 1877.

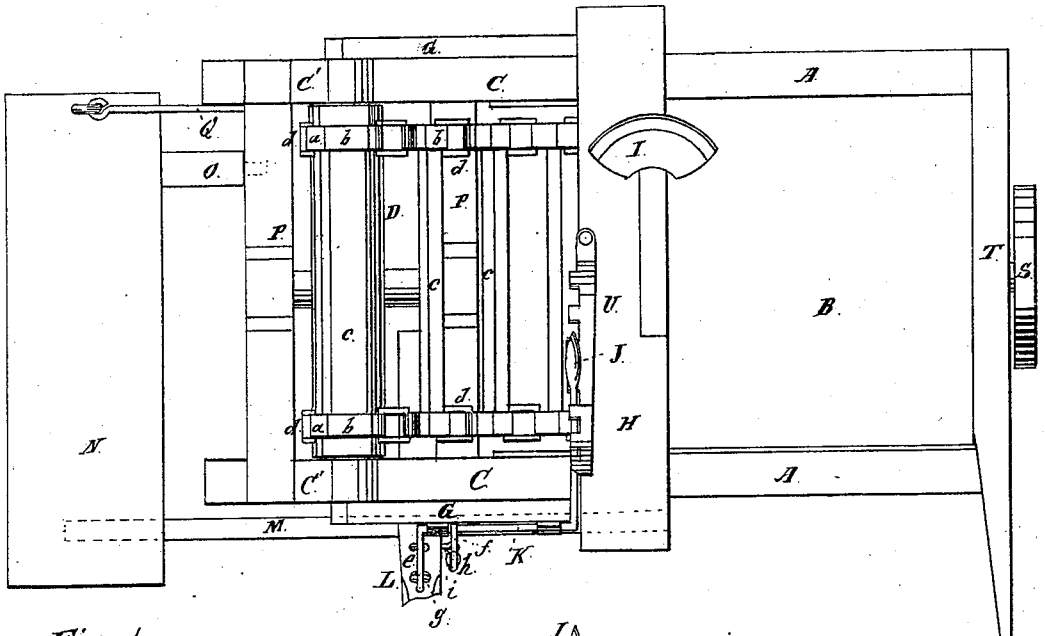

Fig. 1.

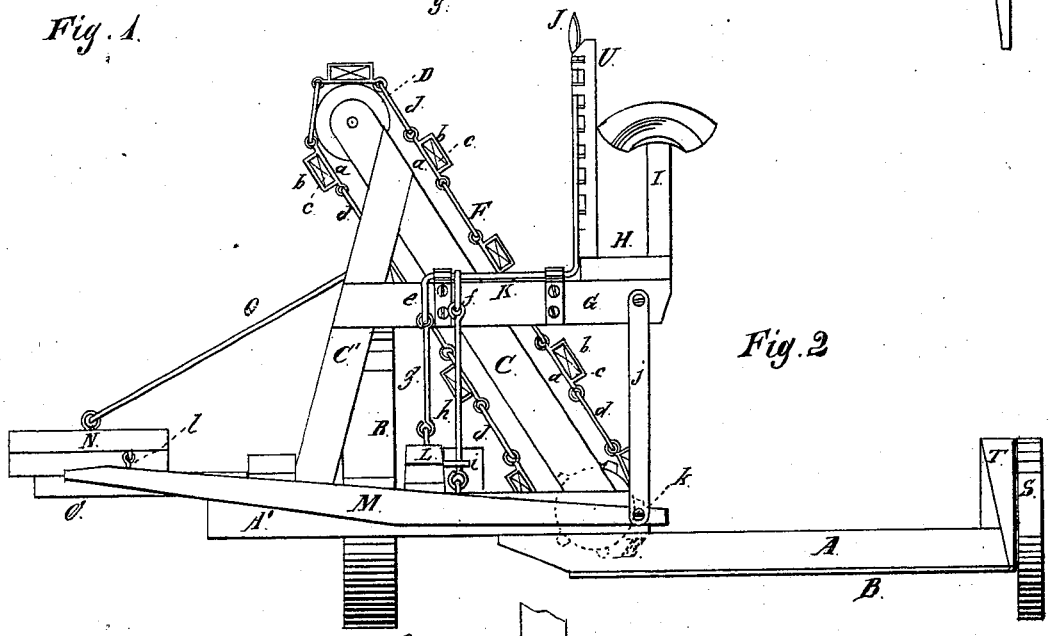

Fig. 2

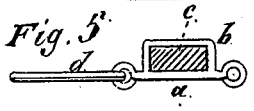

Fig. 5.

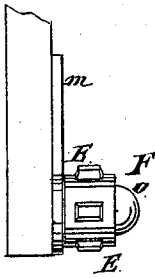

Fig. 3

Fig. 4.

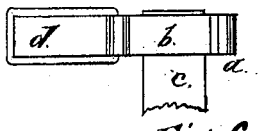

Fig. 6.

Witnesses:
Frank Lull
L. B. Wood

Inventor:
John F. Steward

UNITED STATES PATENT OFFICE.

JOHN F. STEWARD, OF PLANO, ASSIGNOR TO ELIJAH H. GAMMON AND WILLIAM DEERING, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. **197,499**, dated November 27, 1877 application filed October 24, 1876.

To all whom it may concern:

Be it known that I, JOHN F. STEWARD, of Plano, Kendall county, State of Illinois, have invented new and useful Improvements in Harvesters, of which the following is a full description, reference being had to the accompanying drawings, in which—

Figure 1 is a top or plan view; Fig. 2, a front elevation; Figs. 3 and 4, details of the sprocket-wheels; Figs. 5 and 6, details of the elevating-chains.

The objects of this invention are to so arrange the binders' platform that it will maintain nearly a level position when the cutter is raised or lowered, and utilizing the weight of the binder in balancing the machine; and its nature consists in suspending from the machine the front end of the binders' platform by a cross-bar operated from the same lever by which the front of the machine is raised or lowered, and in the several parts and combination of parts hereinafter described and claimed as new.

In the drawings, A A′ represents the main frame; B, the carrier-platform; C C′, the elevator-frame; D, the upper elevator-roller; E, the sprocket-wheels, over which the chains pass; F, the elevator-chain; G, the cross-bars on which the driver's platform and seat are supported; H, the driver's platform; I, the driver's seat; J, the hand-lever for raising and lowering the cut of the machine and the binders' platform; K, the shaft to which the hand-lever is attached; L, the tongue; M, the cross-bar or lever supporting the front end of the binders' platform; N, the binders' platform; O, the rear support for the binders' platform; P, the cross-timbers of the main frame, to which the main or driving wheel is journaled; Q, the supporting-brace for the binders' platform; R, the main or driving wheel; S, the grain-wheel; T, the divider; U, rack for holding the lever J in position; *a b*, the mortise-links of the elevator-chain; *c*, the cross-slats; *d*, the open links of the elevator-chain; *e*, the bent portion or crank of the shaft K for lifting the tongue; *f*, the fixed bar or crank attached to the shaft K for lifting the front support of the binders' platform; *g h*, the connecting-rods for the cranks *e f*; *i*, the guide for the rod *h*; *j*, the fulcrum-bar for holding the inner end of the bar M; *k*, the pivot connecting the bar M with the fulcrum-bar *j*; *l*, the joint for connecting the bar M with the platform N; *m*, the plate for attaching the sprocket-wheels E to the frame; *n*, the axles for the sprocket-wheels; *o*, the caps fitting over the end of the axles *n* and the hubs of the sprocket-wheels, to prevent the grain from winding on the wheels and interfering with the operation of the elevator.

The frame-work A A′ C C′ P P, with the carrier B, divider T, grain-wheel S, and main wheel R, are made in the usual form, and the completed machine is to be provided with an ordinary sickle, reel, and other appliances used in a harvester, and also a carrier. (Not shown.)

The elevator F is made of peculiar chains. (Shown in detail in Figs. 5 and 6.) These chains are provided with mortise-link *a b*, into which the slats *c* are inserted, and with ordinary square links *d*.

These chains F are placed at the ends of the elevator, and are driven by the roller D, and supported upon the sprocket-wheels E. The hubs of these wheels E are covered by a cap, *o*, (see Figs. 3 and 4,) so that no grain will wind thereon and interfere with the operation of the elevator.

By constructing an elevator in this manner the use of a lower roller is avoided, so that the grain or other material brought to the elevator does not become wound around it and clog it, as it is all open between the sprocket-wheels E E, and the grain cannot clog the wheels by reason of the caps *o*. The elevator in use is provided with a backing, over which the slats *c* slide, which prevents the grain from falling through while being elevated.

The binders' platform N is supported at its rear end by the bar O and brace Q, in the usual manner. The front end is supported by a bar or lever, M, which passes under the tongue. This bar M, at its inner end, is pivoted at *k* to a stiff bar, *j*, which acts as a fulcrum, and at its outer end is coupled to the platform N. Near the tongue it is connected, by the rod *h* and crank-connection *f*, with the

bar K, so that as the cutter or front portion of the machine is raised or lowered the front end of the platform N will also be raised and lowered, by the driver operating the shaft K from the lever J.

In an ordinary harvester, when the machine is tilted forward and down, the preponderance of weight in front is so great that the operator has great difficulty in returning the machine to a horizontal position; but by arranging the binders' platform so that one end is supported on the lever M, and pivoting and attaching this lever to the machine, as shown and described, it will be seen that, if the weight of the binder be placed upon the outer end of the lever M or front end of the platform N, such weight will act to raise the front of the machine. As the lever M is connected to the rod K by the rod *h* and crank *f*, the weight of the binders placed on the outer end of the lever M will raise the inner end thereof, and with it the front of the machine.

By this arrangement, if the operator desires to raise the front of the machine to a horizontal position, it can be done almost instantly by releasing the lever J from the rack U, when the binders are in position.

The coupling-rod *g* connects the crank *e* of the shaft K with the tongue L, so that the machine is raised or lowered by the driver by means of the lever J.

I do not confine myself to the use of the two coupling-rods *g* and *h*, for it will be seen that the rod *g* may pass down through the tongue or by its side, and be attached to the lever M, thereby performing the office of the two shown and described; or the arm *e* and coupling-rod *g* may be dispensed with, and the tongue operated by the arm *f* and coupling-rod *h*, the tongue being connected to the lever M.

The inner end of the bar or lever M may be pivoted directly to the frame-piece A′; but I prefer to use it as shown, as the bar G, in practice, is thrown much forward of the piece A′.

What I claim as new, and desire to secure by Letters Patent, is as follows:

1. The combination of the lever M and platform N with the lever J, shaft K, arm *f*, and coupling-rod *h*, substantially as specified.

2. The combination of the lever J, shaft K, arms *e* and *f*, and links *g* and *h*, with the tongue L, pivoted lever or bar M, and platform N, substantially as and for the purpose specified.

3. The bar M, pivoted at its inner end to the frame of a harvester, in combination with and connected to the tongue L and foot-board N, substantially as and for the purpose described.

JOHN F. STEWARD.

Witnesses:

FRANK LULL,

L. B. WOOD.