(No Model.) 2 Sheets—Sheet 1.

J. HARRISON.

HARVESTING MACHINE.

No. 262,182. Patented Aug. 1, 1882.

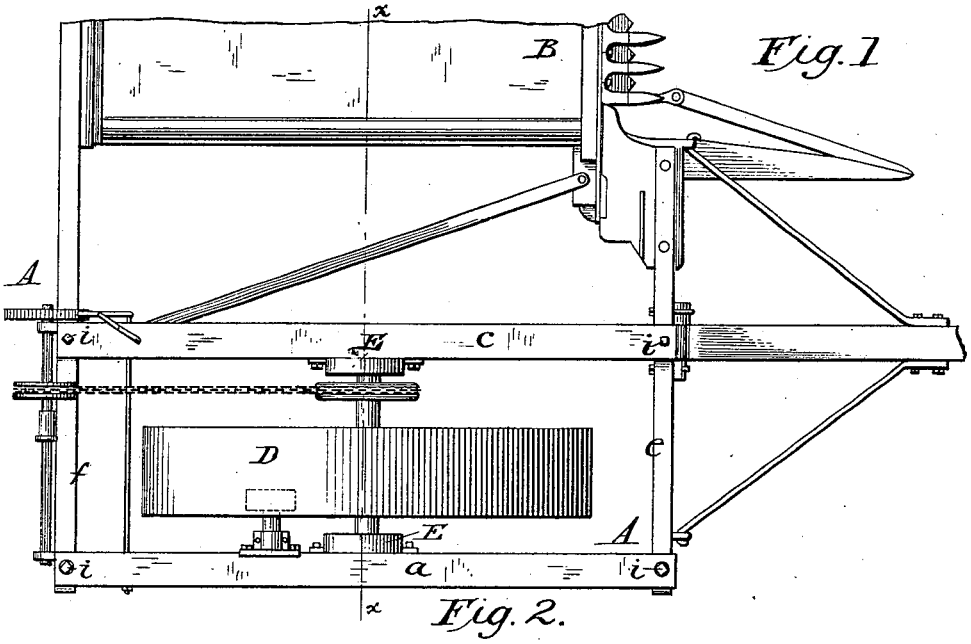
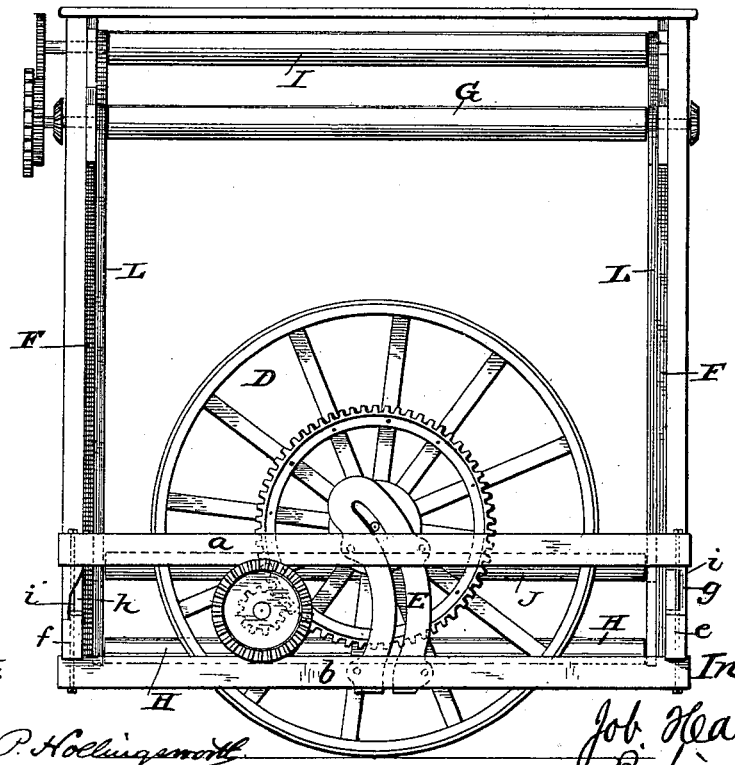


Fig. 1.

Fig. 2.



Attest.

Sidney P. Hollingsworth

Newton Wyckoff.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

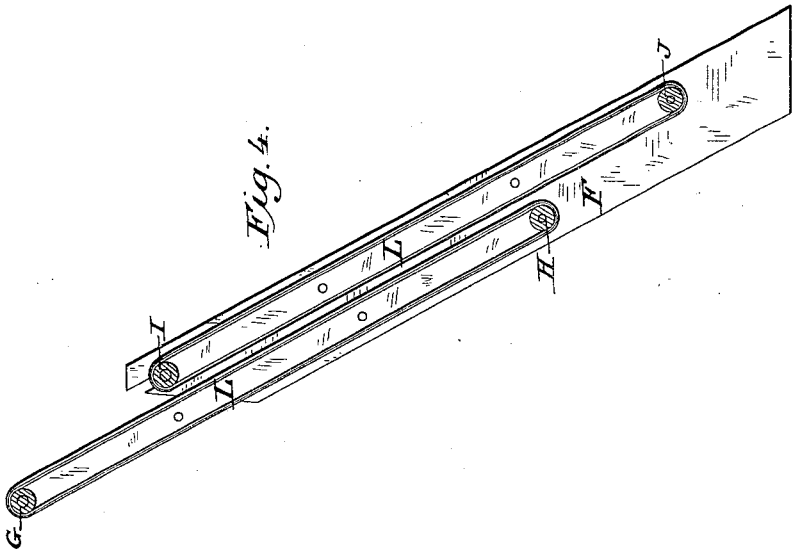
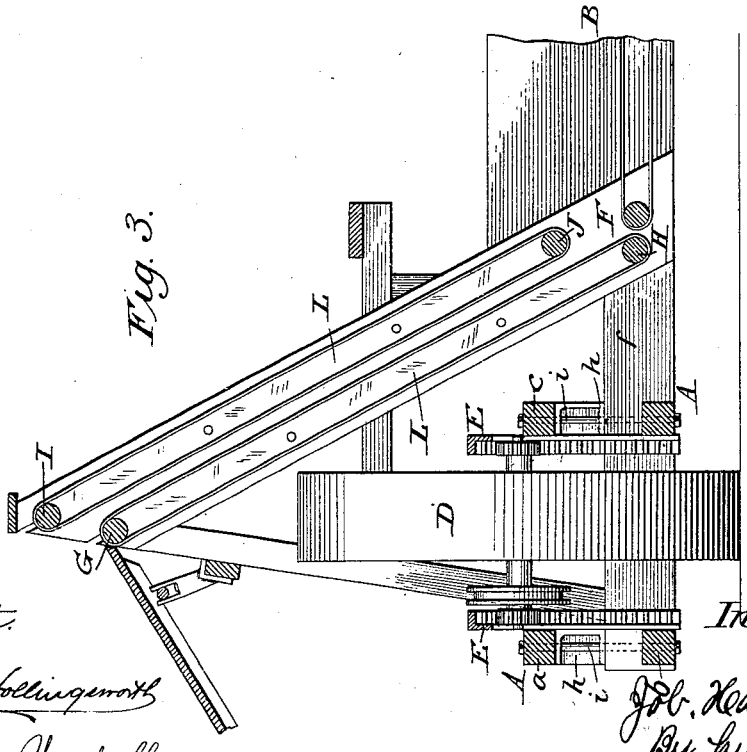


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOB HARRISON, OF WHITEWATER, WISCONSIN, ASSIGNOR TO GEORGE ESTERLY & SON, OF SAME PLACE.

HARVESTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 262,182, dated August 1, 1882.

Application filed April 26, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOB HARRISON, of Whitewater, in the county of Walworth and State of Wisconsin, have invented certain Improvements in Harvesting-Machines, of which the following is a specification.

This invention relates to that class of harvesters in which the platform is carried on the stubble side by a rectangular frame provided with a single supporting-wheel, and in which the grain is elevated and carried over said wheel by means of endless aprons commonly known in the art as "canvases."

In this class of machines having the elevator and the main platform rigidly connected with the main frame it has hitherto been found impossible to keep the latter in its original rectangular form. In the practical operations in the field, particularly when an automatic binder is carried outside of the elevator, as usual, it is found that the various severe and conflicting strains—such as the strain of the drive-wheel, the gearing, and the draft, the lifting devices, the resistance of the platform, and the weight of the binder—will almost invariably give the frame a permanent twist, thereby throwing the working parts out of line so that the friction is greatly increased and the gearing caused to cut rapidly away. Usually the frame has been made with two longitudinal timbers, one on each side; but to avoid the difficulties incident thereto I have constructed machines with two timbers on one side and one on the other.

The present invention is an improvement on the frame with three timbers; and it consists in a frame constructed with four timbers, two on each side, arranged in a peculiar combination or relationship to other parts, as hereinafter described, whereby it is caused to remain in shape.

The second feature of the invention relates to a construction designed to facilitate the removal of the elevating-aprons and their supporting-rolls. Each apron is carried, as usual in this class of machines, by two horizontal rolls, one at the upper and the other at the lower end, these rolls being sustained in an upright portion of the frame-work commonly known in the art as the "elevator-frame." Hitherto it has been necessary in order to remove the rolls and aprons to unbolt and disconnect various parts of the machine—an operation requiring much time and labor. To avoid this difficulty I seat the journals of the elevator-rolls in open notches formed in the edges of the elevator-frame, and secure them in place by means of boards or timbers usually employed to sustain the edges of the apron, these boards or timbers being bolted fast to the elevator-frame and having the journals of the rolls passed through their ends. By releasing the single bolt on each side, the boards referred to are released so that each pair of rolls, with the accompanying boards, may be lifted instantly from its place on the machine.

Referring to the accompanying drawings, Figure 1 represents a top plan view of my improved frame; Fig. 2, a side elevation of the same; Fig. 3, a cross-section of the same on the line *x x*, Fig. 1; Fig. 4, a side elevation, illustrating the manner in which the elevator-rolls are mounted.

Referring to the drawings, A represents the rectangular main frame of the machine, occupying a substantially horizontal position.

B represents the grain-receiving platform, provided with the usual cutting mechanism at its forward edge. The platform is secured rigidly to one side of the main frame in the ordinary manner, and is sustained upon the grain side by means of a wheel, C, while the main frame is in turn sustained by means of the large ground-wheel or bull-wheel D, mounted therein.

Referring to the rectangular main frame, its outer side consists of two horizontal timbers, *a b*, located one above the other, outside of and parallel with the outer face of the main wheel. The inner side of the frame consists of two corresponding timbers, *c d*, arranged in like relation to each other. The outer and inner sides of the frame are connected with each other by means of a heavy transverse timber, *e*, located at the forward end, and a corresponding timber, *f*, located at the rear end. These front and rear timbers, *e* and *f*, are extended, as shown, beyond the main frame and

serve as the supports to carry the main platform and cutting mechanism. The side timbers, *b* and *d*, at the bottom of the main frame, are seated firmly in or against the under side of the timbers *e* and *f*, which lie at right angles thereto. The upper timbers, *a* and *c*, are sustained at their respective ends by means of four vertical castings or standards, *g g* and *h h*, the former resting upon the forward timber, *e*, and supporting the forward ends of the longitudinal bars, while the latter are seated upon the back timber, *f*, to sustain the rear ends of said timbers. The longitudinal and transverse timbers and the intermediate connecting-posts are tied firmly and rigidly together by means of vertical bolts *i*, located one at each corner of the frame, each bolt passing down vertically through the three timbers and the intermediate standard. The longitudinal and the transverse timbers are notched together and the metallic standards provided with broad flanges at the top and bottom to give them a firm bearing, so that when the bolts are tightened the entire frame is given great rigidity.

The horizontal shaft on the main wheel D has its ends seated, as usual, in vertical slotted sector-plates E E, said plates being bolted firmly to the inner sides of the main frame.

It will be observed that by constructing the frame with the longitudinal bars on the inner as well as on the outer side, I am enabled to give each sector-plate a firm and rigid support at all points, each plate being bolted firmly and solidly against the inner face of two timbers.

The construction of the frame with four longitudinal bars is also advantageous for various other reasons, which it is unnecessary to enumerate.

To the main frame, constructed as above, the elevator-frame is firmly attached.

Passing now to the second feature of the invention, F F represent the upright inclined frame, supported upon the main frame for the purpose of carrying the rolls which sustain the elevating-aprons. In its general arrangement this frame is of ordinary construction, and constitutes no part of my invention. Instead, however, of seating the shafts of the rolls therein in the usual manner, I provide the frame, as shown, with notches or recesses cut into its edge to admit of the rolls being dropped sidewise therein. The rolls are represented at G, H, I, and J, with the canvases K passing around them, as usual.

L L represent the boards or timbers, employed, as usual, to sustain the edges of the canvases and prevent the same from sagging or curling out of position. There are two of these bars for each canvas, arranged one on each side, and made of such size and form that the canvas will travel closely around their edges. The boards are seated against the inner sides of the elevator-frame F, and have their ends provided with holes, through which the journals of the rolls pass, as shown. Each board is secured to the elevator-frame F by means of one or more bolts, as shown. Being thus secured in place, the boards serve not only their usual function of supporting the edges of the canvas, but also the additional function of holding the roller-journals to their places in the notched seats or openings in the elevator-frame.

When it is desired to remove either pair of rolls it is only necessary to remove the bolts by which the corresponding pair are secured in place, whereupon the two rolls may be lifted outward through the notched bearings and removed instantly from the machine, together with their accompanying timbers. This feature is of importance, in that it admits of the parts being readily disconnected, examined, and repaired without the necessity of stopping the machine for the usual length of time.

I do not claim a harvester-frame having three longitudinal timbers, nor do I claim separately an axle-supporting plate applied to a timber at both ends; neither do I claim the use of four timbers in a harvester-frame, except when arranged and combined with the other elements, as herein specified.

Having thus described my invention, what I claim is—

1. In a harvester, the combination of the transverse timbers *e* and *f*, sustaining the grain-platform, two pairs of longitudinal timbers arranged and secured to the transverse timbers in the manner described and shown, the main wheel, and the wheel-supporting plates E, each bolted at opposite ends to two of the longitudinal timbers.

2. In a harvester, the combination, with the grain platform and elevator, of the frame for sustaining the same on the main wheel, consisting of two transverse extended timbers, *e f*, the outside longitudinal timbers, *a b*, one above the other, the inside timbers, *c* and *d*, one above the other, the corner standards, *g h*, the vertical bolts passed through both the longitudinal and transverse timbers, and the plates E, secured at their two ends to the longitudinal timbers, as shown.

3. In combination with the main wheel and axle and the carrying-plates E, the two outside frame-timbers, one above another, the two inside timbers arranged in like manner, and the two transverse timbers *e* and *f*, bolted firmly to and between the inside and outside timbers, as described, and extended beyond the inside timbers to support the main platform, as set forth.

4. The main wheel and axle and the axle-supporting plates E, each bolted at opposite ends to two longitudinal timbers, in combination with the two transverse timbers, *e* and *f*, connected rigidly with the ends of the four longitudinal timbers, in the manner described and shown.

5. In a harvester, a main wheel and axle, combined with two supporting-plates at opposite

ends of the axle, each plate being bolted at opposite ends firmly to two longitudinal timbers secured rigidly in and forming part of the main frame, as shown.

6. In combination with the elevator-frame having the open notches or seats, the elevator-rolls, and the fastening boards or timbers encircling the journals of the rolls and detachably secured to the elevator-frame, as described and shown.

7. In combination with the elevator-frame having the open notches in its edge, the elevator-rolls having their notches seated in said notches, the inside timbers or boards encircling the journals of the rolls and sustaining the edges of the canvas, and the fastening-bolts uniting the timbers or boards to the elevator-frame.

JOB HARRISON.

Witnesses:
EDWIN T. CASS,
J. H. PAGE.