C. W. LEVALLEY.

HARVESTER.

No. 192,871. Patented July 10, 1877.

Fig. 1.

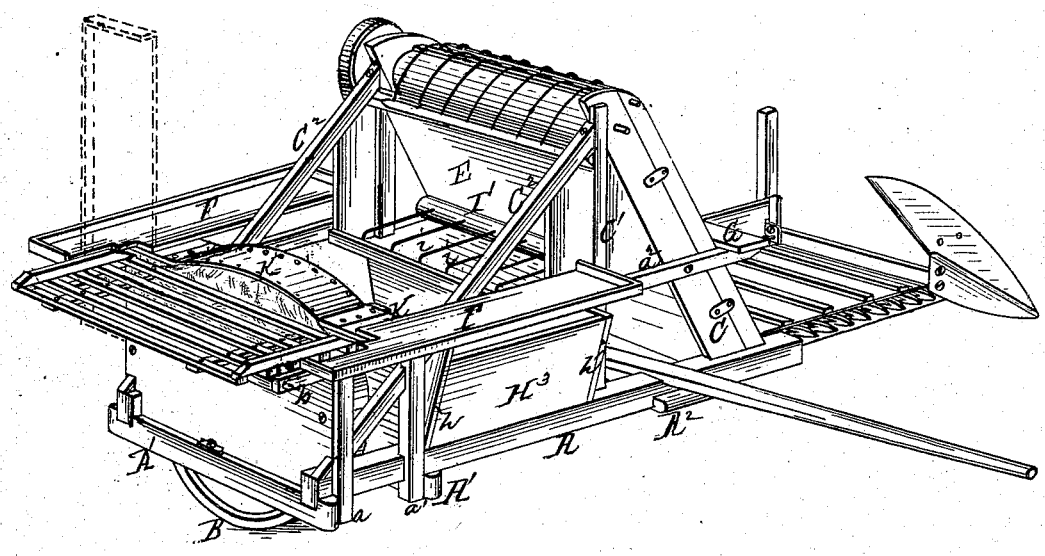
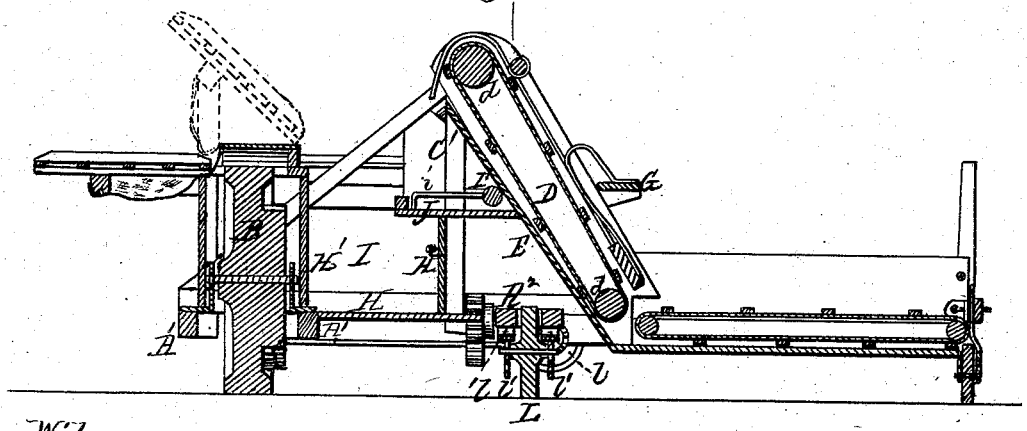


Fig. 2.



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IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. **192,871**, dated July 10, 1877; application filed May 18, 1875.

To all whom it may concern:

Be it known that I, CHRISTOPHER W. LEVALLEY, of St. Paul, county of Ramsey, and State of Minnesota, have invented certain new and useful Improvements in Grain-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 is a perspective view of my improved machine, taken from the front, stubble side; and Fig. 2 is a vertical transverse section through the line of the drive and carrying wheel axles.

Similar letters of reference denote corresponding parts in both figures.

My invention consists in combining, with the extended transverse frame-bars which support the weight of the binders between the elevator and drive-wheel, a bracing-connection between the elevator-frame and the outer end of the transverse frame-bars, for preventing the latter from sagging or bending under the weight of the elevator and binders.

It further consists in a novel arrangement of the grain-receiver relatively to the elevator and the binders' stand or compartment intermediate between the elevator and drive-wheel, for economizing space, and at the same time affording ample room for the binders; and it further relates to the arrangement of the hinged binders' table relatively to the binders' compartment, located between the drive-wheel and elevator, for facilitating the entrance and exit of the binders to and from said compartment.

The main frame of the machine, which is rectangular in form, consists of the transverse bars A A, one in front and the other in rear, united at their outer ends by two longitudinal bars, A^1 A^1, between which the drive-wheel B is placed, mounted in standards which permit the adjustment of the height of the frame.

The transverse bars A, near their inner ends, are united by a third longitudinal bar, A^2, and to these inner ends the platform-frame is united in any usual or preferred manner.

To the inner ends of the front and rear bars or timbers A are secured the lower ends of the inclined elevator-frame bars C, which, at their upper ends, are secured to uprights C^1, also attached to the frame-bars A, and from the upper ends of the bars and uprights C C^1 inclined braces C^2 extend outward, and are bolted to the outer ends of the frame-bars A, giving to each of said bars A an inverted **V**-shaped truss, which effectually prevents its sagging.

The bars C, in front and rear, afford bearings for the rollers *d d* of the elevator D, and underneath this elevator is a flooring, E, secured to and conforming to the inclination of the lower inclined faces of the bars C. To the outer ends of the bars A, in front and rear of the drive-wheel, uprights *a* a^1 are secured, and to the upper ends of these are secured horizontal rails a^2, said rails crossing the elevator-frame and braces, and being secured thereto at a convenient height for the support of the binders' tables F, and extending past the elevator-frame bars. The rails a^2 form a support also for the seat-plank G.

The frame-bars A, between the drive-wheel B and the uprights C^1, are provided with a flooring, H, extending from front to rear, and from this flooring vertical guards H^1 H^2 extend upward, one at the inner side of the drive-wheel, and the other secured to the uprights C^1, for protecting the binders from the gearing, and also for preventing loose straw, &c., from getting into and obstructing the same. To the uprights a^1 and C^1, on their adjacent faces, tapering strips *h h*, widest at the top, are secured, and the outer inclined faces of these, in front and rear, are united by a boarding, H^3, these, in connection with the flooring H and sides H^1 H^2, forming a binders' compartment, I, extending from the drive-wheel to the elevator, and open the whole length of the frame from front to rear, affording the binders entire freedom of movement between the tables F F at front and rear.

I′ represents a longitudinal roller, provided with receiving-fingers *i*, and secured underneath the inclined elevator-flooring E, in close proximity thereto, in such manner that the upper end of the elevator shall overhang the receiving-fingers for about half their length, more or less, as shown in Fig. 2, thereby economizing space and rendering the machine more compact than would otherwise be practicable.

Underneath the fingers *i* is a flooring, J, with raised sides or ledges, forming a receptacle for shattered grain, the fingers *i* being turned up on the roller I′ when such grain is to be removed.

Upon the rails a^2 is secured a longitudinal plank, K, either raised above and forming a cover for the drive-wheel B, or cut away and provided with a cover, K′, covering and protecting said wheel, as shown by the drawing.

To the outer edge of this plank K, in front and rear of the drive-wheel, the binders' tables F are connected by hinges, which permit them to be turned up into the vertical position shown in dotted lines, Fig. 1, for enabling the binders to get into or out of the binders' compartment I with greater ease, and also for getting said tables out of the way in passing through gates, &c.

k are transverse bars pivoted to the upper ends of standards *a*, their inner ends extending under the plank K, for preventing the outer ends from dropping below a horizontal position, while permitting said outer ends to be raised up out of the way for passing through gates, &c., and to these outer ends the dumping-tray is pivoted, arranged outside of the drive-wheel, for receiving and carrying the bound grain placed thereon by the binders.

A canvas flooring to the dumping-tray is attached to the arms *k k*, and to the pivotal center of said tray, for receiving and saving the grain shattered out of the bound bundles after they are placed on the tray, and previous to the dumping of the same, when a sufficient number has accumulated to form a shock.

The increased length of frame between the drive and carrying wheels, due to the location of the binders' compartment and grain-receiver at the inner side of the drive-wheel, as explained, in connection with the added weight of the binders at this point, greatly increases the tendency of the frame to sag between said wheels.

This tendency is resisted by the truss form given to the frame, as explained, which obviates the necessity of giving increased size and weight to the frame-timbers A; but for the purpose of more effectually resisting this tendency to sag, I apply an intermediate wheel to the frame, as follows, viz: The frame-timber A^2 is slotted, or it may be in two parts, and has secured to it two strong longitudinal plate or strap springs, *l l*, provided each with a pendent standard or bracket, *l′*, in bearings in which a carrying-wheel, L, is mounted. A series of perforations in the bearing-brackets *l′* permit the adjustment of the wheel to conform to the adjustment of the height of the frame, while the springs permit the wheel to yield to inequalities in the surface of the ground, in such manner as not to interfere with the main frame resting upon and being carried by the main driving and grain wheels.

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

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

1. The open rectangular binders' compartment I, intermediate between the elevator and the single main carrying and driving wheel, and arranged in the same vertical transverse plane therewith, said compartment extending from front to rear of said frame, between the binders' tables, as described.

2. The extended transverse frame-bars A, accommodating the binders' stand between the elevator and drive-wheel, as described, in combination with the triangular truss-frames C C^1 C^2, substantially as and for the purpose set forth.

3. The grain-receiver I′ *i*, arranged partly underneath the inclined elevator, and between said elevator and the driving-wheel, as and for the purpose described.

4. The hinged binders' tables F F, arranged upon the inner or grain side of the driving-wheel, and in front and rear of the binders' compartment, located between the driving-wheel and elevator, as described.

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