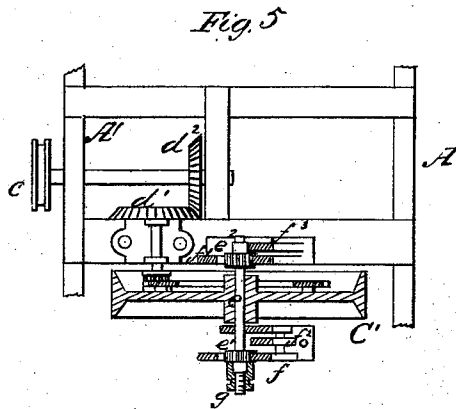
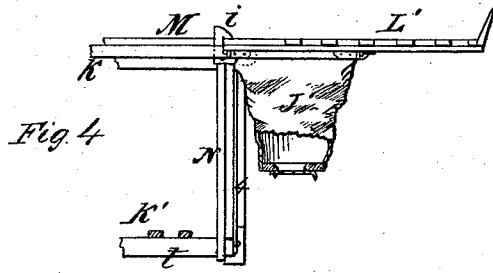
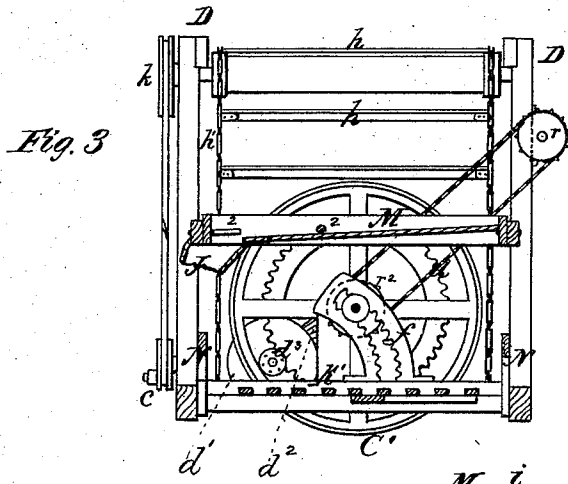


W. D. EWART.
Harvesters.

No. 154,595.

Patented Sept. 1, 1874.



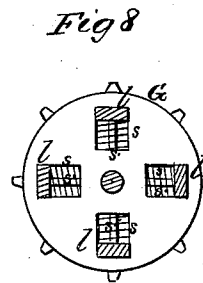
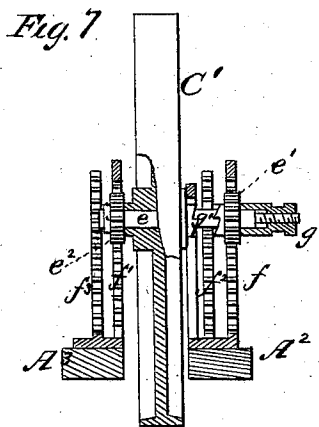
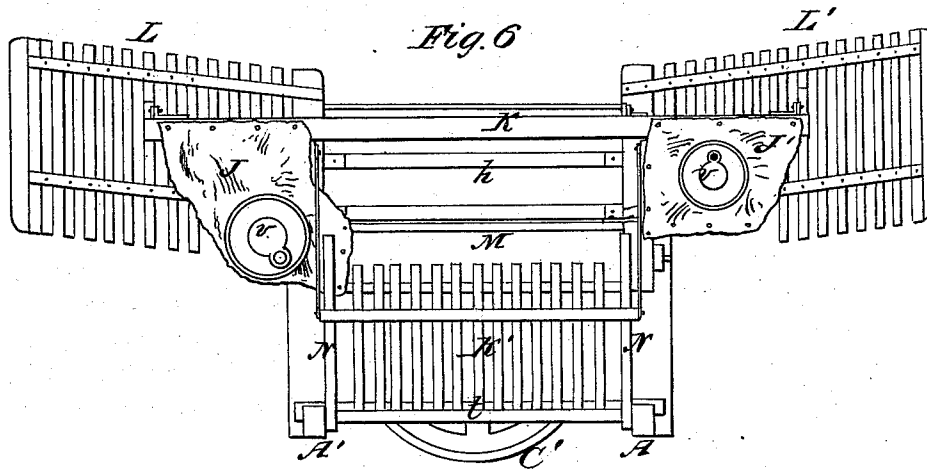
WITNESSES
Chas. Bates
George C. Mpham. By

INVENTOR
William D. Ewart.
Chipman Hosmer & Co.
ATTORNEYS.

W. D. EWART.
Harvesters.

No. 154,595.

Patented Sept. 1, 1874.



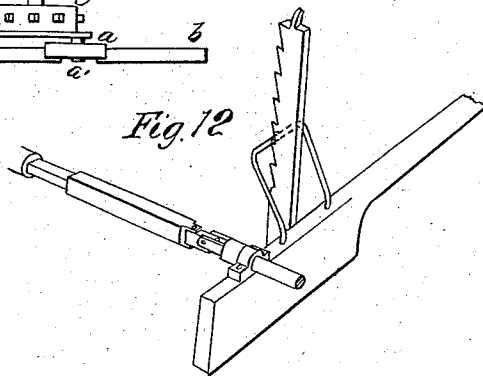
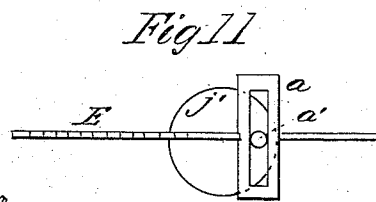
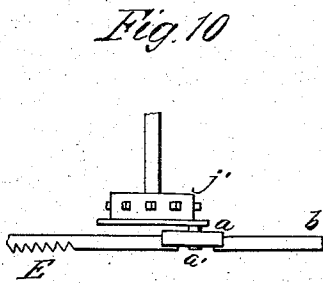
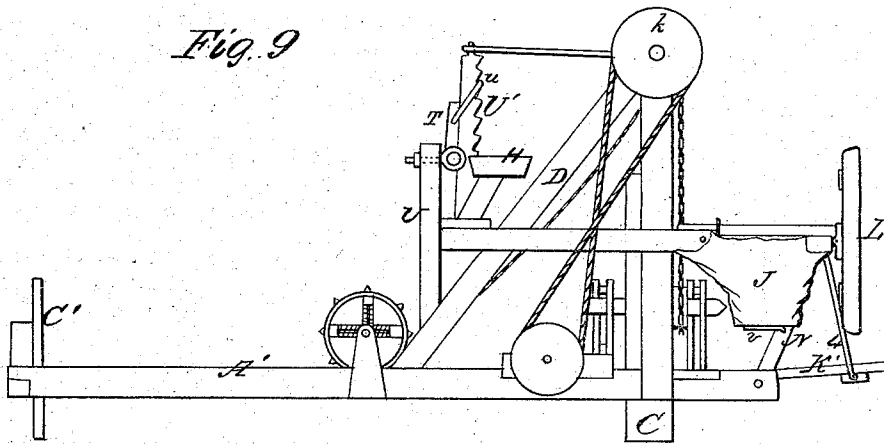
WITNESSES
E. H. Bates
George E. Upham. B11

INVENTOR
William D. Ewart,
Chipman Hosmer & Co
ATTORNEYS.

W. D. EWART.
Harvesters.

No. 154,595.

Patented Sept. 1, 1874.



WITNESSES
E. H. Bates
Geo. E. Upham.

By

INVENTOR
William D. Ewart.
Chipman Hoernes & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

WILLIAM D. EWART, OF BELLE PLAINE, IOWA.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. 154,595, dated September 1, 1874; application filed March 25, 1874.

To all whom it may concern:

Be it known that I, WILLIAM D. EWART, of Belle Plaine, in the county of Benton and State of Iowa, have invented a new and valuable Improvement in Harvesters; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a plan view of my harvester. Fig. 2 is a front, and Fig. 3 a sectional, view of the same. Figs. 4, 5, 6, 7, 8, 9, 10, 11, and 12 are detail views.

This invention has relation to harvesting-machines; and it consists of the following novel contrivances, to wit: First, in an endless revolving grain carrier and elevator, which is composed of chains and carrying slats or rakes, and actuated by means of sprocket-wheels, for giving to it a positive motion, in combination with a continuous tight floor, part of which forms the grain-platform and part the inclined plane, up which the grain is moved to be deposited in a grain-receiver; second, in a slatted drum, which is applied at the angle formed at the junction of the inclined plane and the grain-platform, the slats of which drum will yield as the grain passes beneath it, while the sprocket-wheels at the ends of the drum will maintain their positions intact, and keep the chains of the grain-carrier down to their places on the rigid floor, and hold these chains properly tight; third, in a slotted or grooved sickle-head, which receives in it a wrist-pin, which is applied eccentrically to the face of one of two sprocket-wheels located near the grain end of the platform, whereby the sickle receives its reciprocating motion, and at the same time the resistance on the sprocket-wheels, due to the power required to drive the sickle, will cause these wheels to hold the carrier-slats down firmly on their rigid platform.

Other features of my invention, together with those above referred to, I will now proceed to explain.

In the annexed drawings, A A¹ designate the front and rear sill-beams of the main draft-

frame, which beams are extended out laterally to form the front and rear supports for a rigid floor, B. Beams A A¹ are connected by cross-beams A² A³ A⁴, and mounted on a master-wheel, C, and a grain-wheel, C'. D designates an inclined frame, which is erected on the sill-beams A A¹, and constructed with a rigid floor, B', which is continuous with the platform-floor B.

By thus employing floors which are continuous—that is to say, which do not leave a space between them at the angle between the inclined and horizontal portions—I save a large quantity of shelled grain, which would be scattered upon the ground and lost if a space were left at said angle.

E represents the sickle, the outer end of which has a vertically slotted or grooved head, *a*, and an extension-guide, *b*, formed on it, which plays in a box or shield, *b'*. In the slot or groove of the head *a* plays a wrist-pin, *a'*, which is applied eccentrically to the face of the front one of two sprocket-wheels, *j' j'*, around which endless chains *h' h'* of a grain-carrier pass. The sickle thus receives a reciprocating motion from one of said chain wheels. The master-wheel C is applied to turn loosely at times on an axle, *e*, on which two pinion spur-wheels, *e¹ e²*, are keyed. The axle *e* passes through three toothed standards, *f f¹ f²*, which are rigidly secured upon the two cross-bars A² A³. When the wheels *e¹ e²* are engaged with both sets of teeth on the standards *f f¹*, and held by means of a nut, *g*, the axle *e* will be rigidly fixed to said standards. When the nut *g* is loosened, and the axle *e* is moved endwise toward the grain side of the machine, the pinions *e¹ e²* will engage with the teeth of the standard *f²*, and also with teeth on a similarly-curved standard, *f³*. At the same time the wheel C will be engaged with its shaft *e* by means of a clutch, *g'*, part of which is formed on pinion *e¹*, and part on the hub of wheel C. Now, by backing the machine, the revolutions of the wheel C will cause the pinions to even down in their tracks, thus raising the draft-frame. By moving the machine forward, the draft-frame will be lowered, and by drawing the axle *e* back its pinions will lock into the teeth of the standards *f f¹*, and the wheel C will be allowed

to turn loosely on its axle. The cut grain is moved over the floors B B', and deposited into a receiving-trough, M, by means of cross slats or rods *h*, the ends of which are secured to sprocket-chains *h'*, that pass around sprocket-wheels *j j*, and also around the wheels *j' j'*, and beneath sprocket-wheels G G. The rear end of the shaft on which the sprocket-wheels *j j* are applied has a pulley, *k*, keyed on it, which receives rotation from a large spur-wheel on the master-wheel C, acting through the medium of spur-wheels *d' d' d'*, a pulley, *c*, and a crossed belt. The chains *h' h'* and their slats *h* constitute an endless grain-carrier, which is held down snugly upon the floor B by reason of the resistance which it receives from the sprocket-wheels *j' j'*, one of which, as above stated, actuates the sickle. The shaft of wheels G G has its bearings in standards rising from the front and rear sill-beams A A', and these wheels are slatted radially, and contain within them coiled springs *s*, which act to hold the ends of slats or bars *l* out against the rims of the wheels G, but allow these slats to yield toward the axis of the wheel-shaft as the grain is moved beneath them. The wheels G will keep the chains under proper tension, and hold them down to their places at the angle formed by the junction of the floors B B'. I prefer to arrange the slats on the wheels G G, and adjust the same so that in revolving they will successively fall in the intervals between the carrier-slats *h*. The grain is pressed back to the cutter by means of an overhanging reel, R, the shaft *r* of which is journaled in a box, *r'*, on the front end of an arm, T. The rear end of this arm T is pivoted to a post, U, rising from the rear sill-beam, A', and the front broad end of arm T is adjustably connected to a toothed standard, U', by means of a loop, *u*.

The arm T, with its reel, can, by this simple device, be raised or lowered. The reel is rotated from the master-wheel shaft by means of pulleys *r' r'*, and an extensible tumbling-shaft, T', which latter will accommodate itself to the adjustments of the reel, and at the same time rotate freely.

It will be seen that the weight of the reel will operate to keep the front broad end of the arm T against the standard U', and also keep the loop safely engaged with the teeth of this standard.

The driver's seat H is arranged alongside of the reel-supporting arm T, so that the driver can adjust the reel without leaving his seat. The grain-receiver M is pivoted by its front and rear ends to the extremities of two arms, H'. The bottom of this receiver is inclined backward to a discharging-hole, beneath which is a sack, J. Just above the bottom of this receiver M are bars 2, which support the grain, so that the binders can conveniently pass their arms around it in the act of removing it to be bound. The end bars 3 3 of the receiver M are extended out, and rigidly secured to a horizontal bar, K, which is so arranged relatively

to a slatted binders' stand, K', that the binders arrange themselves astride of this bar, and are thus prevented from falling off the machine while at work. The front and rear ends of the straddle-bar K are extended far enough to afford firm supports for two racks, L L', which are hinged to said ends, so that these racks can be tilted for discharging the bound gavels upon the ground. These racks are hinged so that when they are released the weight of the bundles will dump them, and after a load is discharged they will of themselves return to horizontal positions again, in which positions they are held by end bars 3 3 and angular catches *i i*. The sack J is extended beneath the rack L to catch the scattered grain, and another sack, J', is arranged in a similar manner beneath the rack L' for catching the grain which falls through this rack. The sacks have holes through their bottoms, which are provided with valves *v* for the purpose of allowing the collected grain to be drawn out of the sacks through their bottoms. The racks are constructed so as to afford tables on which to bind the grain, and also supports for the bundles. The binders' stand K' is connected by a hinged bar, *t*, to the beams A A', and the free end of this stand is connected by suspension-rods 4 4 to the free ends of the bars 3 3.

By the pivotal connections of the parts, as described, the grain-receiver M, the binders' stand K', and the racks L L', together with the bar K, can be folded up closely against the end of the draft-frame, as shown in Fig. 6.

When said parts are in position for the binders to operate, the props N N will afford supports for the racks, the bar, and the grain-receiver.

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

1. An endless open-slatted grain carrier and elevator combined with a continuous and rigid floor, B B', substantially as described.

2. Yielding slats *l*, combined with wheels G G, located in the angle between the platform and elevator floor, as described, and for the purposes set forth.

3. In combination with the sprocket-wheels *j' j'*, the front one of which is provided with a wrist-pin, *a'*, the slotted or grooved sickle-head *a*, and an endless chain, *h' h'*, for operating the sickle through the medium of the endless grain-carrier, substantially as described.

4. The endwise-adjustable axle *e* of the wheel C, provided with pinions *e' e'*, in combination with toothed standards, a clutch, *g'*, and a nut, *g*, substantially in the manner and for the purposes set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

Witnesses: WILLIAM D. EWART.
GEORGE E. UPHAM,
ROBERT EVERETT.