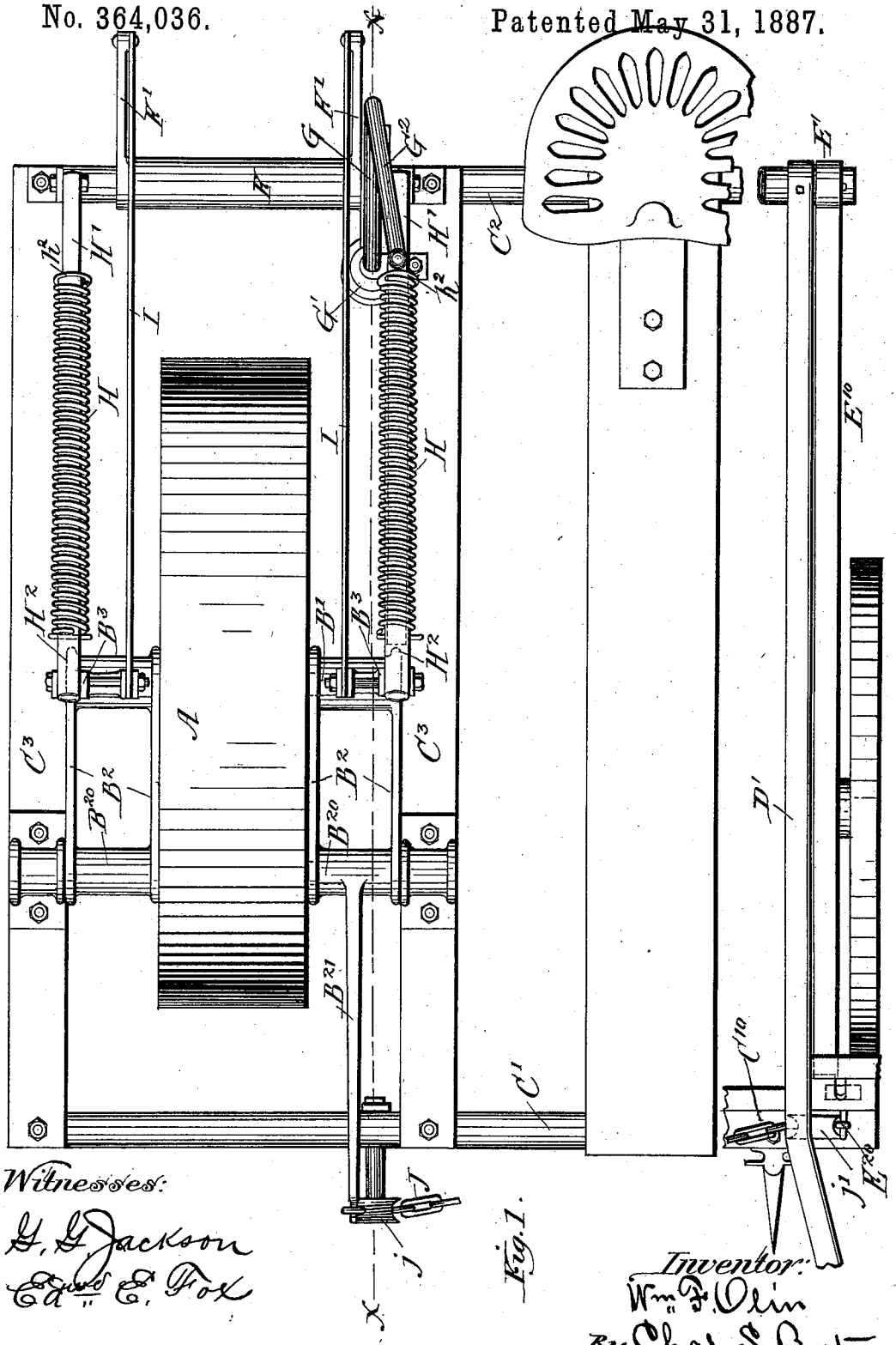
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W. F. OLIN.

PLATFORM ADJUSTMENT.

No. 364,036. Patented May 31, 1887.



Witnesses:
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Edwd. E. Fox

Fig. 1.

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(No Model.)

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PLATFORM ADJUSTMENT.

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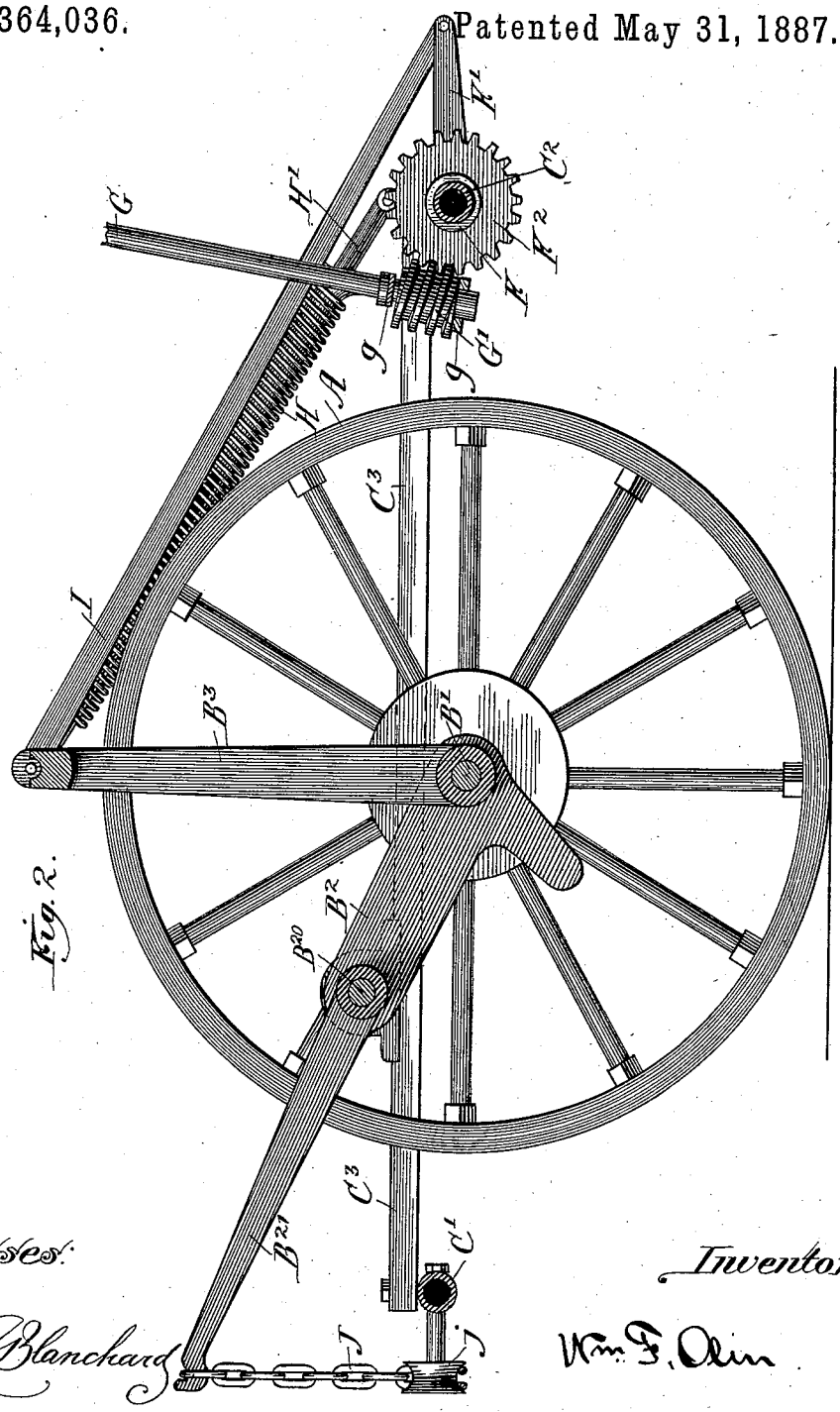


Fig. 2.

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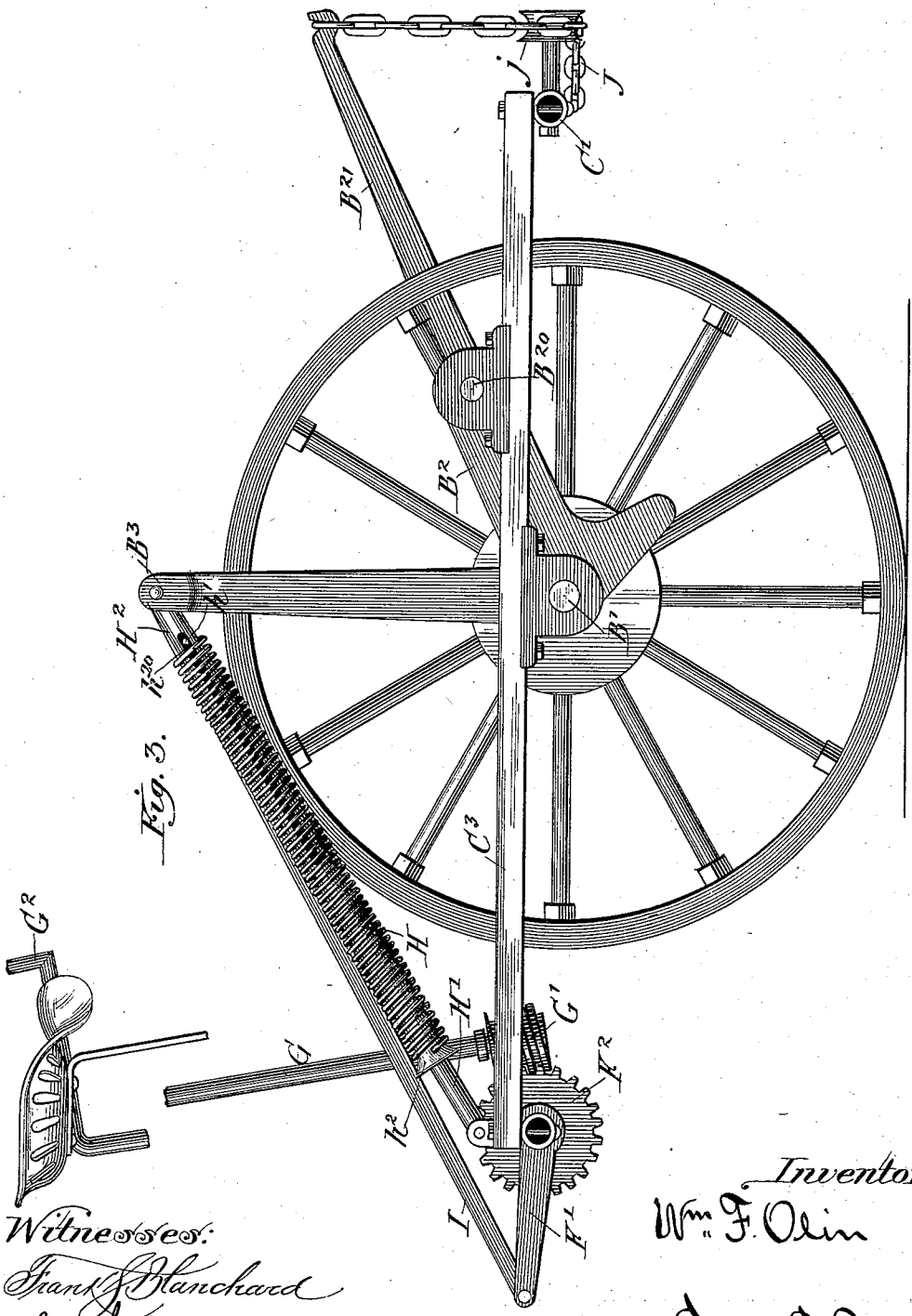


Fig. 3.

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(No Model.) 4 Sheets—Sheet 4.

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PLATFORM ADJUSTMENT.

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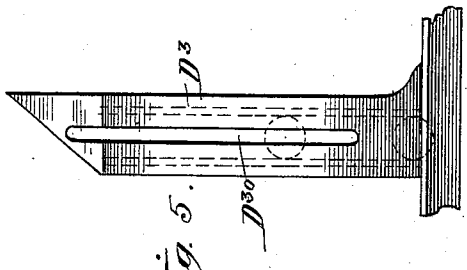


Fig. 5.

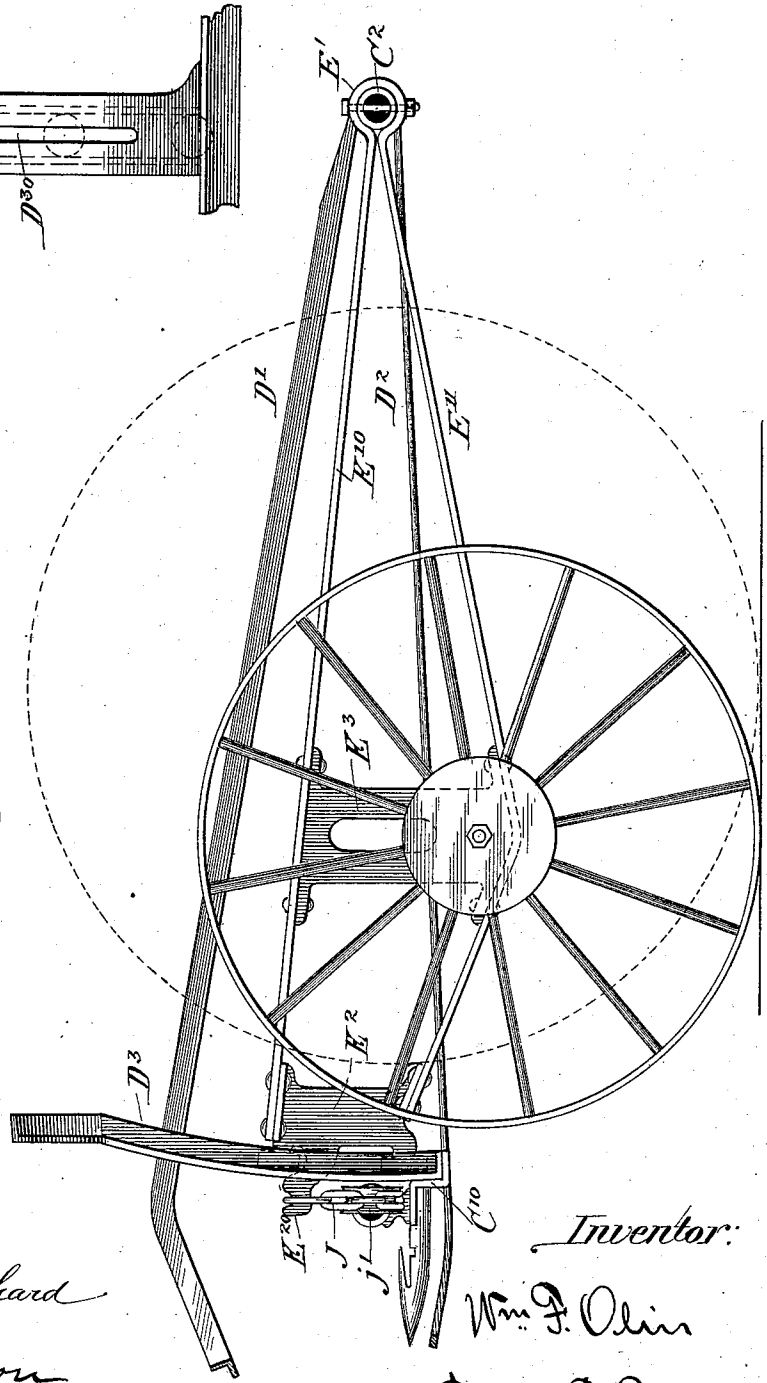


Fig. 4.

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UNITED STATES PATENT OFFICE.

WILLIAM F. OLIN, OF CHICAGO, ILLINOIS.

PLATFORM ADJUSTMENT.

SPECIFICATION forming part of Letters Patent No. 364,036, dated May 31, 1887.

Application filed November 6, 1886. Serial No. 218,211. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. OLIN, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Harvester-Platform Adjustments, which are fully set forth in the following specification, reference being had to the accompanying drawings, forming a part thereof, wherein—

Figure 1 is a plan of portions of the frames, showing also the drive-wheel and grain-wheel in their relations to said frames. Fig. 2 is a section at *x x*, Fig. 1. Fig. 3 is a stubble-side elevation of the drive-wheel and the wheel-frame and platform-frame and adjusting mechanism. Fig. 4 is a grain-side elevation of the divider and the grain-wheel frame and the adjusting mechanism, showing also the position of the drive-wheel in dotted lines. Fig. 5 is a front elevation of the divider-truss strut-post.

A is the drive-wheel. The drive-wheel frame comprises the following parts, all rigidly joined, viz: the axle B′, the parallel lever-arms B^2 B^2, extending forward and having the crank-wrists B^{20} B^{20}, the forward extension B^{21}, and the lever-arms B^3 B^3.

The platform-frame comprises the tubular front sill, C′, underneath which is secured the finger-bar C^{10}, of Z-iron, the rear sill, C^2, likewise tubular, and the side beams, C^3 C^3, flanking the drive-wheel, secured at front and rear to the cylindrical sills C′ and C^2.

The divider-frame is secured to the grain end of the rear sill preferably by having its bars D′ and D^2 bent around said sill and bolted thereto, and is secured to the front sill by having its strut-post D^3 suitably shaped to afford securement for said sill as well as for the finger-bar. The grain-wheel frame or lever is also a truss comprising the bar E′, bent around the projecting end of the rear sill, and thereby formed into a journal-bearing, by which the wheel-frame is pivoted on the said rear sill, the ends of said bar being joined to the bracket E^2 at the front. The two parts E^{10} and E^{11} of the bar E′, being spread apart between the rear sill and the bracket E^2, form, respectively, the arch and chord of a truss of which the grain-wheel bearing-block E^3 forms the strut-post.

The bracket E^2 has the hook E^{20}, which protrudes through a slot, D^{30}, in a flange of the strut-post D^3 of the divider-frame and affords securement forward of said post D^3 for the chain by which the grain end of the platform-frame is raised and lowered, as hereinafter explained.

The raising and lowering mechanism comprises the tubular rock-shaft F, which is a sleeve placed on the rear sill, C^2, of the platform-frame between the side beams, C^3 C^3, and provided with the parallel lever-arms F′ F′, in line from front to rear, respectively, with the lever-arms B^3 B^3 of the wheel-frame, and provided, also, with the spur-wheel F^2, rigid with it at the grainward or inner end, the worm G′ on the shaft G, journaled in suitable bearings on the platform-frame, as in the brackets *g*, secured to the inner side beam, C^3, (the worm G′ on said shaft engages the spur-wheel F^2, and said shaft is provided at the upper end with a crank-handle, G^2, in reach of the driver when seated,) the links I I, connected at one end to the lever-arms F′ F′ and at the other end to the lever-arm B^3 B^3, the two elastically-extensible links, (see Fig. 3,) each one of which is composed of the spring H and the telescoping parts H′ and H^2, the former secured to the rear part of the platform-frame and the latter to the lever-arms B^3 B^3. The part H^2 has the flange h^2, which forms a stop for one end of the spring H, and the slot h^{20}, through which protrudes the pin h', fixed to the opposite end of the part H′, and forming thus a stop for the other end of the spring. The said spring thus tends to resist but not to prevent the elongation of the composite link.

A chain, J, is secured to the forward end of the extension B^{21}, and passes thence down around a guide-pulley, *j*, at the stubble end of the finger-bar, but above the same. Thence it extends along above the finger-bar to the grain end, and passes around the guide-pulley *j′*, and thence up to the hook E^{20}, as herein-above stated.

The operation of this structure is as follows: The rotation of the worm-shaft G, by means of the crank-handle G^2, rotates the spur-wheel F^2 and the tubular rock-shaft or sleeve F, and causes the lever-arms F′ F′, by means of the links I I, to tip the lever-arms B^3 B^3 back or forward, according to the direction of rota-

tion of the worm-shaft, and the wheel-frame is thereby rocked about the axis of the drive-wheel, and the forwardly-projecting lever-arms B^2 B^2 are caused to move downward, and the platform-frame supported on the wrists B^{20} B^{20} of said lever-arms B^2 B^2 is lowered. The forward movement of the lever-arms B^3 B^3 also causes an elongation of the elastically-extensible links and compresses the springs H H, and the reactionary force of said springs operates counter to the weight of the platform-frame, and may be made sufficient to fully counterbalance the same, so that when the worm-shaft is revolved in the opposite direction, and the lever-arms B^3 B^3 are thereby tipped back, the entire work of sustaining the weight of the platform-frame will be performed by said springs, and the force necessary to be exerted by the operator in rotating the worm-shaft will be reduced to that which is needed merely to overcome the friction of the mechanism and the inertia of the parts moved. When the wheel-frame is thus rocked, the extension B^{21} draws or slacks the chain J, and raises or lowers the grain end of the platform by shortening or lengthening the portion of chain between the pulley j' and the hook E^{20}. The distance from the pivot of the grain-wheel frame (viz., the rear sill) to the grain-wheel axle is two-thirds of the whole length of said frame—that is, from the pivot to the hook E^{20}. It is therefore evident that the platform at the grain end will rise or fall two-thirds as far as the chain J is drawn or slacked—that is, the length of chain drawn should be once and a half the distance the platform is raised. To effect this the extension B^{21} should be once and a half as long as the lever-arm B^2, (the length of the extension being measured from the wrist B^{20} to the point of securement of the chain.) I do not find it necessary in practice, however, to construct these parts precisely in these proportions, as I have successfuly operated the machine when they varied considerably therefrom.

I claim—

1. In combination with the drive-wheel, the drive-wheel frame comprising the axle and the lever-arms B^2, the platform-frame supported on the lever-arms, the frame in which the grain-wheel is journaled, connected and vertically adjustable relatively to the platform-frame, the drive-wheel frame having an extension, B^2, extending farther forward than the lever-arms B^2, and a chain which connects said forward extension with the grain-wheel frame, and guides for said chain at the opposite ends of the platform, substantially as set forth.

2. In combination with the drive-wheel frame comprising the lever-arm B^2 and an arm, B^{21}, extending farther forward than said lever-arm, the platform-frame pivoted to said lever-arm, the grain-wheel frame or lever pivoted toward the rear corner of the platform and extended forward of the grain-wheel, a chain connected to the forward end of said grain-wheel frame and extending along the finger-bar around guides at the ends thereof and secured to said extension B^{21} of the wheel-frame, and the adjusting mechanism which connects the platform-frame and the drive-wheel frame, substantially as set forth.

3. In combination with the drive-wheel frame comprising the lever-arm B^2 and the extension B^{21}, the platform-frame pivoted to said lever-arm, the grain-wheel frame pivoted to the platform-frame and extending forward of the grain-wheel axle, a chain connecting the forward end of the grain-wheel frame and the forward end of the extension B^{21}, and guides for the same at the opposite ends of the platform, the ratio of the length of the extension B^{21} and the lever-arm B^2 being substantially the same as the ratio of the length of the grain-wheel to the distance between its pivot and the grain-wheel axle, substantially as set forth.

4. In combination with the drive-wheel, the wheel-frame comprising the drive-wheel axle and the lever-arms B^2, projecting forward, and B^3, projecting upward, the platform-frame pivoted to the said lever-arms B^2 forward of the vertical plane of the axle, the rock-shaft F, journaled on the platform-frame behind the wheel and having the lever-arms F′, the links I, which connect said lever-arms to the lever-arm B^3 of the wheel-frame, and the means, substantially as shown and described, for rocking and securing said rock-shaft.

5. In combination with the drive-wheel and the drive-wheel frame comprising the drive-wheel axle and the lever-arms B^3, the platform-frame pivoted on the said lever-arms and comprising the side beams and a cylindrical rear sill rigidly joining said beams, the tubular rock-shaft encircling said cylindrical rear sill and having rigid with it the lever-arms F′ and the spur-wheel F^2, and the worm-shaft G, journaled on the platform-frame and having a worm engaging said spur-wheel, and the links I I, connecting the lever-arms F F and B^3 B^3, respectively, substantially as set forth.

6. The drive-wheel frame comprising the lever-arms B^2 and B^3, the platform-frame pivoted on the arms B^2, the grain-wheel frame adjustably connected to the grain end of the platform, the elastically-extensible links which connect the drive-wheel frame and the platform-frame, the chain which connects the drive-wheel frame with the grain-wheel frame, and its guides at the opposite ends of the platform, all combined substantially as and for the purpose set forth.

7. The drive-wheel frame comprising the lever-arms B^2 and B^3, the platform-frame pivoted on the arms B^2, the grain-wheel frame adjustably connected to the grain end of the platform, the elastically-extensible links which connect the drive-wheel frame and the platform-frame, the adjusting mechanism which further connects said frames, the chain which

connects the drive-wheel frame and the grain-wheel frame, and its guides at the opposite ends of the platform, all combined substantially as and for the purpose set forth.

8. In combination with the drive-wheel frame comprising the lever-arms B^2 and an extension forward of said arms, the platform-frame pivoted to said lever-arms, elastically-extensible links which connect the platform-frame to the wheel-frame, the grain-wheel frame or lever pivoted to the grain end of the platform at the rear corner and extended forward of the grain-wheel, a chain which connects the forward end of said grain-wheel frame with the forward extension of the wheel-frame, and guides for said chain at the opposite ends of the finger-bar, substantially as set forth.

9. In combination with the platform-frame having the cylindrical rear sill, the grain-wheel frame having the said cylindrical sill for its pivot, substantially as set forth.

10. In combination with the platform-frame having the tubular rear sill, the divider-frame secured at the rear to said sill and the grain-wheel frame pivoted on the end of said sill outside of the divider-frame, substantially as set forth.

In testimony whereof I have hereunto set my hand this 1st day of November, A. D. 1886, in the presence of two witnesses.

WILLIAM F. OLIN.

Witnesses:
CHAS. S. BURTON,
G. G. JACKSON.