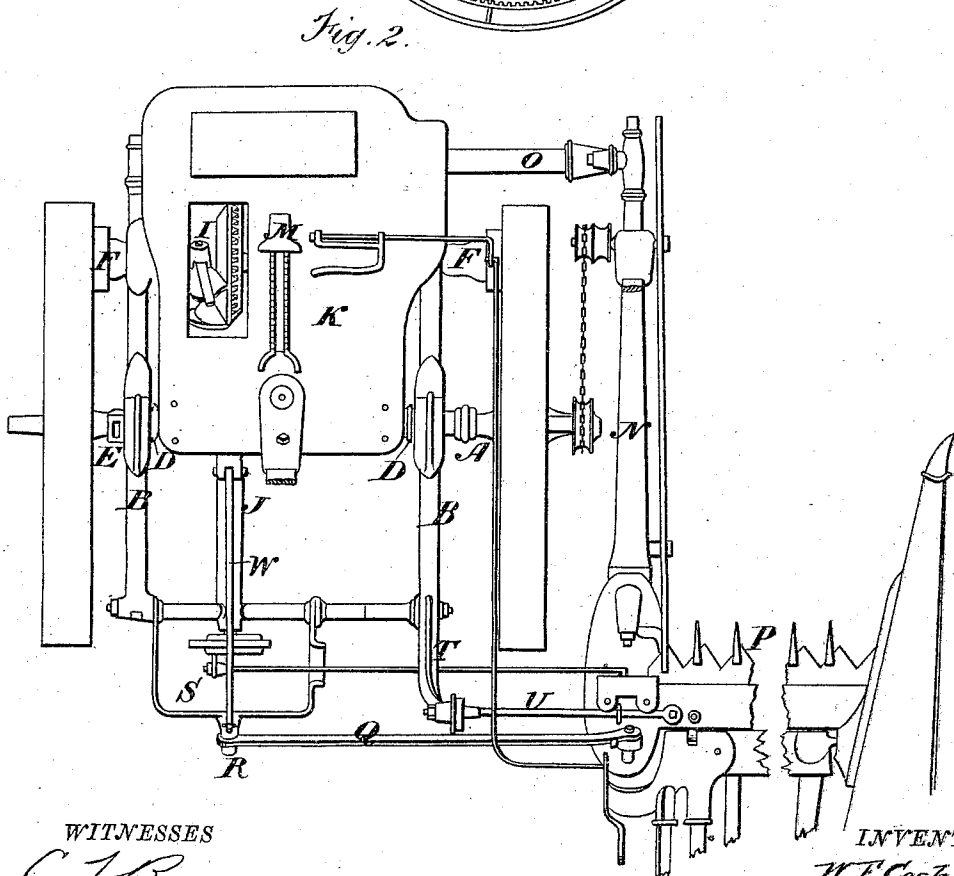
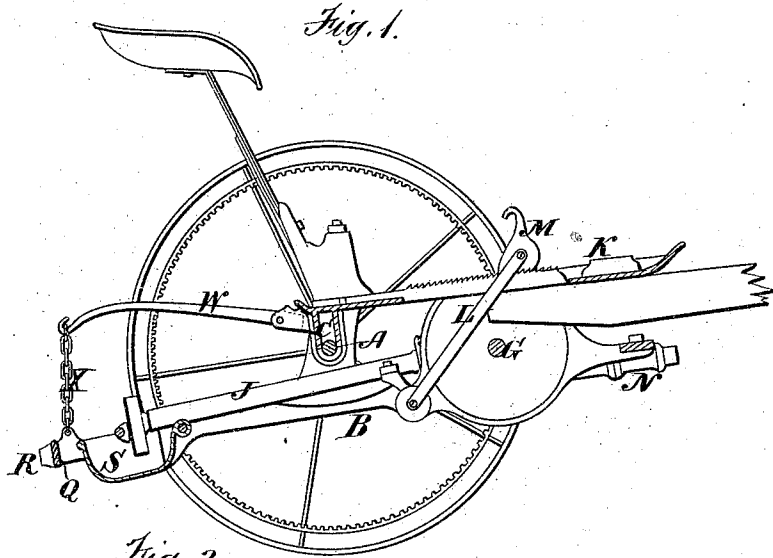


W. F. COCHRANE.
HARVESTER.

No. 173,900.

Patented Feb. 22, 1876.



WITNESSES
C. J. Brown
McNeill & Church By

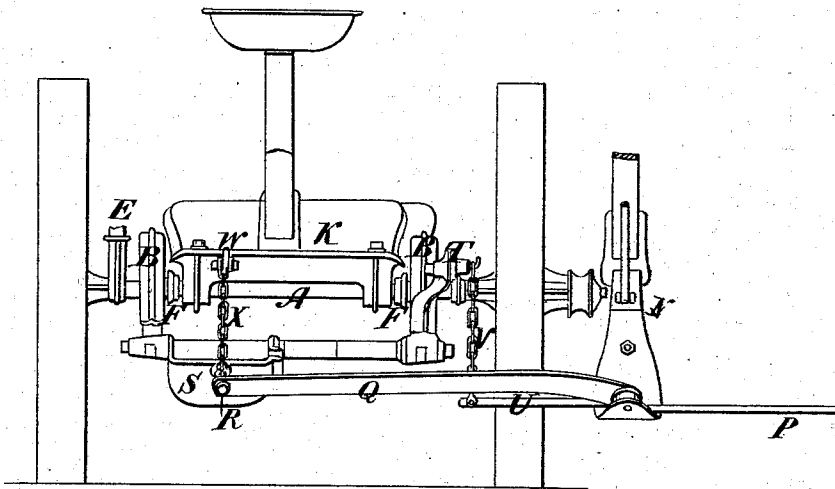
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Fig. 3



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UNITED STATES PATENT OFFICE

WILLIAM F. COCHRANE, OF LA FAYETTE, INDIANA.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. 173,900, dated February 22, 1876; application filed March 6, 1874.

To all whom it may concern :

Be it known that I, WILLIAM F. COCHRANE, of La Fayette, in the county of Tippecanoe and State of Indiana, have invented certain new and useful Improvements in Harvesting-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a longitudinal section of the harvesting-machine, looking toward the outer driving-wheel. Fig. 2 is a top-plan view, and Fig. 3 is a rear elevation.

Similar letters of reference in the accompanying drawings denote the same parts.

My invention relates to a harvesting-machine in which the main frame is suspended from the front of the foot-board, between the driving-wheels, by means of an adjustable traction-latch, pivoted to the frame between the main axle and gear center or counter-shaft; and it consists in connecting the cutting mechanism with the pivoted or suspended frame, for the purpose of increasing the flexibility of the frame and cutting mechanism, to permit them to follow the undulations of the ground and pass over obstructions, and to distribute the weight of the cutting apparatus more uniformly upon the two drive-wheels.

In the drawings, A is the main axle, supporting the two driving-wheels of the machine so as to rotate independently of each other, and B B are the side pieces of the frame, enlarged near their center for the formation of segmental slots C, through which the axle passes. The side pieces are properly secured together by cross-bolts and nuts, and the frame, thus formed, is prevented from moving laterally upon the axle by collars D, keyed to the latter. The collars are each cast with a segmental pinion to mesh into segmental racks cast upon the short arcs of the segmental slots in the side pieces. E is a hand-lever, connected to the axle between the outer driving-wheel and frame, by the operation of which the frame is raised and lowered through the medium of the racks and pinions, the axle turning, as a rock-shaft, in the segmental slots to

permit this rising and falling movement. F F are the driving-pinions upon the ends of the counter-shaft G, which has its bearings in the side pieces in front of the main axle, so that the pinions shall engage with the toothed rims of the driving-wheels. The pinions are connected to the counter-shaft by spring-pawls and pawl-plates in the usual manner. I is the beveled gearing for driving the pitman-shaft, and the latter has its bearings in a long pipe-box, J, secured to the frame longitudinally thereof, as shown. K is the foot-board, supporting the driver's seat and draft-pole, and secured to the axle so as to project forward over the frame to receive the traction-latch L. The traction-latch is pivoted at its lower end to a cross-girder of the frame, between the axle and shaft of the driving-pinions, and extends upward through a longitudinal slot in the foot-board, where it is pivoted to a clutch-block, M, formed with one ratcheted side to engage with corresponding teeth cast around the slot in the foot-board, as shown. N is the drag-bar, jointed at its front end to the end of a girder, O, projecting laterally from the main frame in front of the inner driving-wheel, and P is the finger-bar, bolted to the drag-bar shoe. The front joint of the drag-bar is so formed as to enable the bar to rock freely and to rise and fall at its rear end, carrying the finger and cutter bars with it, as well as the reel and reel-post. Any of the ordinary joints now in use for this purpose may be employed, but I prefer the joint for which I have already made application for Letters Patent. The outer end of the finger-bar is supported by a grain-wheel and provided with a grain-divider in the usual manner. The drag-bar is further connected to the frame by a back-brace, Q, pivoted at one end to the drag-bar shoe, in rear of the cutter-bar, and at its opposite end to a projection, R, cast upon the crank-shield S, in line, or nearly so, with the pitman-shaft. The back-brace also forms a radius-bar to equalize the throw of the cutters through the guard-fingers during the rising and falling movements of the cutting mechanism. T is a bracket, cast upon the inner side piece of the main frame so as to extend upward and to the

rear thereof over the pitman; and U is the extension-bar, bolted firmly to the shoe of the drag-bar in front of the back-brace. The extension-bar projects inward behind the main frame, where it is suspended by a chain, V, from the end of the bracket. The cutting mechanism and drag-bar are, therefore, suspended from the rear end of the main frame by the extension-bar, chain, and bracket, and from the front end by the jointed coupling at the forward end of the drag-bar. W is a bar pivoted to the rear edge of the foot-board so as to extend backward over the main frame to a point in line, or nearly so, with the axial line of the cutter-bar, and its outer end is formed with a hook to receive the links of a chain, X, pivoted to the rear end of the frame or to the shield of the pitman-shaft crank. The inner end of the bar is pivoted in a socket of the foot-board in such a manner as to prevent the bar from dropping down while its outer end is free to rise. This bar and the chain X form the point of suspension for the rear end of the gear-frame, and thus becomes the center of motion for the frame when its front end is raised or lowered by the lever and held by the traction-latch to change the pitch of the guard-fingers. The hand-lever E serves to raise and lower the frame through the medium of the segmental racks and pinions, so that the traction-latch can be moved to any point within the length of its guide-slot in the foot-board. By lengthening or shortening the chain X the rear end of the frame and the cutting mechanism are raised or lowered together for the purpose of regulating the height of cut, and by lengthening or shortening the chain V the cutting mechanism is raised or lowered above or below the main frame, and independently thereof. When the chain V is adjusted the chain X must be also adjusted to correspond with the changed position of the cutting mechanism. In whatever position the main frame is placed by these various adjustments the pitch of the guard-fingers may be raised by the traction-latch in the manner

hereinbefore described. While the pivoted bar and its chain X suspend the rear end of the frame at the desired point, they also allow it to rise freely, in connection with the cutting mechanism, for passing over obstructions, whether in the path of the frame or cutter-bar. When the rear end is thus thrown upward the pivoted bar also rises to prevent it from striking the fly-wheel of the pitman-shaft, and thereby interfering with the movements of the pitman or cutter-bar. When the main frame is thus suspended in front from the tongue-bracket or foot-board, and the cutting mechanism attached to the main frame by jointed connections and suspended from the rear of the foot-board K by the extension-arm W and chain X, it will be seen that in passing over undulations in the ground or obstructions near the inner end of the cutting mechanism, the rear end of the main frame will be free to rise, the pinions on the axle riding in the segmental slots, so that the main frame and cutting mechanism will oscillate upon an oblique axis extending from the traction-latch to the center of the grain-wheel.

Having thus fully described my invention, what I claim as new is—

1. The main frame B B, suspended at its rear end from the extension-bar W, attached to the rear end of the foot-board K, and at its front end by the adjustable traction-latch L, substantially as described, and for the purpose set forth.

2. The main frame B B, suspended at its rear end from the extension-bar W, attached to the rear end of the foot-board K, and at its front end by the adjustable traction-latch L, in combination with the cutting mechanism jointed to the main frame by the drag-bar and back-brace, substantially as described, and for the purposes set forth.

WM. F. COCHRANE.

Witnesses:

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N. K. ELLSWORTH.