(No Model.) 2 Sheets—Sheet 1.

E. A. PECK.

HARVESTER.

No. 588,599. Patented Aug. 24, 1897.

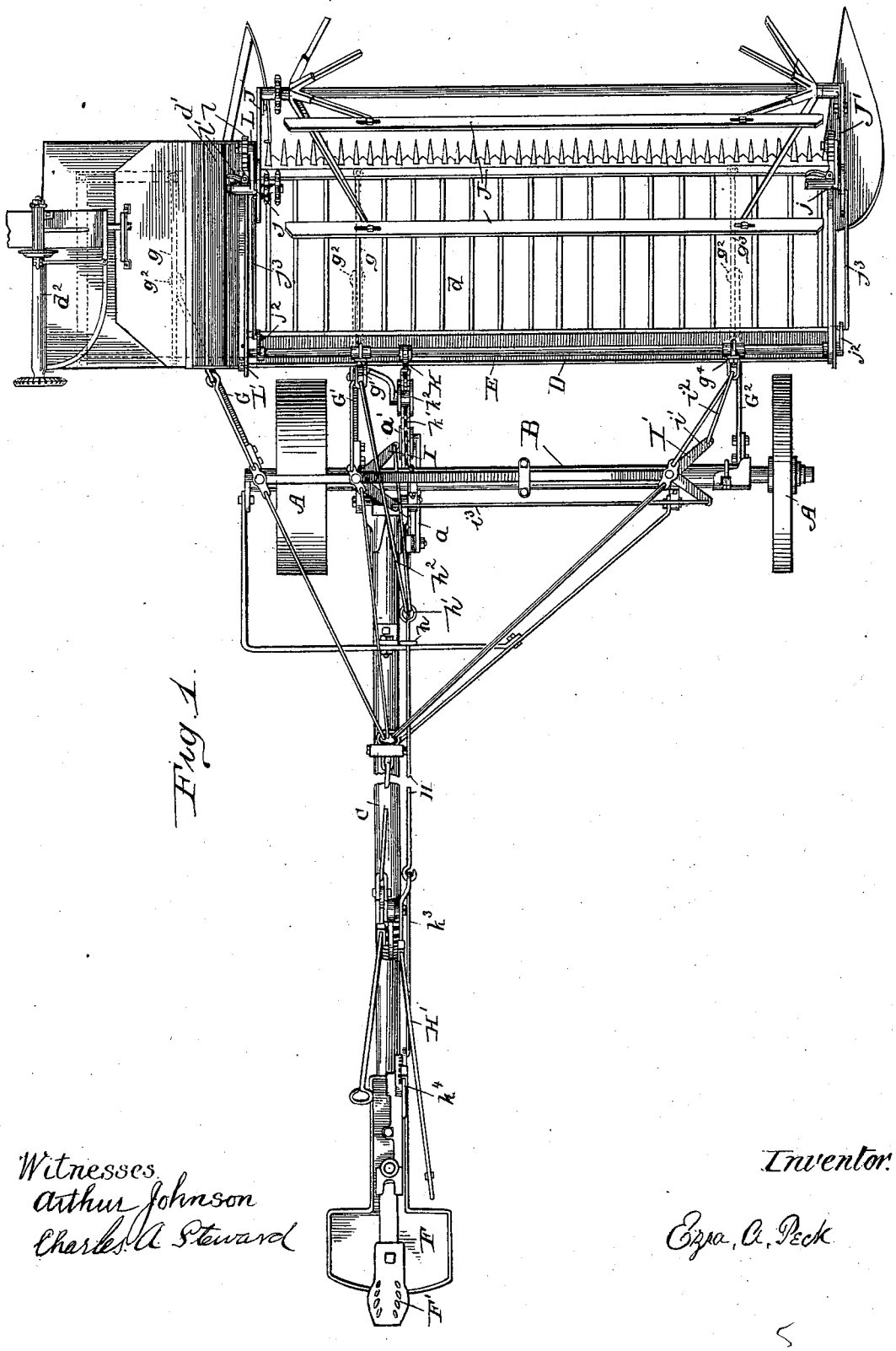


Fig. 1.

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(No Model.)

2 Sheets—Sheet 2.

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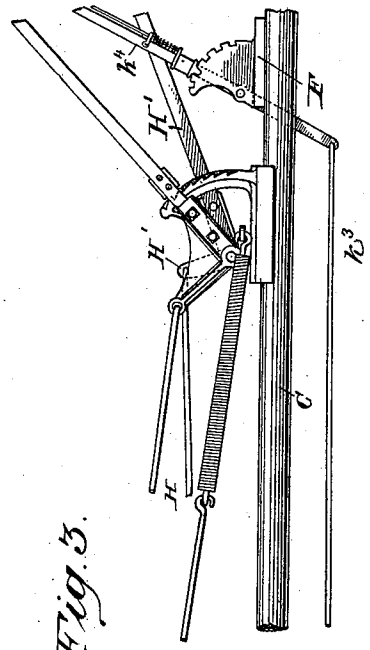


Fig. 3.

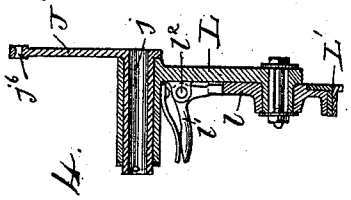


Fig. 4.

Fig. 2.

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UNITED STATES PATENT OFFICE.

EZRA A. PECK, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE DEERING HARVESTER COMPANY, OF SAME PLACE.

HARVESTER.

SPECIFICATION forming part of Letters Patent No. 588,599, dated August 24, 1897.

Application filed January 6, 1896. Serial No. 574,534. (No model.)

To all whom it may concern:

Be it known that I, EZRA A. PECK, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Harvesting-Machines, of which the following is a full description, reference being had to the accompanying drawings.

The improvements herein contained have reference to the class of machines shown in my application, Serial No. 565,232, filed October 10, 1895.

As the improvements pertain only to improvements in the details of construction, only a general description of the machine need be given.

Figure 1 is a plan view of the machine complete; Figs. 2 and 3, side elevations of such portions of the machine as my invention pertains to, and Fig. 4 a detail of the reel-supporting devices.

A and A are main supporting-wheels.

B is an axis which, with the thrust-tongue C, will hereinafter be designated as the "wheel-frame."

D is the harvester-frame, supporting the platform d, the elevators d', the binder d^2, the reel, and their associated parts.

F is the platform upon which the driver stands.

F′ is the driver's seat.

The platform is supported upon two or more forwardly-reaching arms G, G′, and G^2. These are secured to the axis in such a manner that they may move thereon as an axis and reach forward, as shown in Fig. 2, where they are pivoted to the sills g at a point preferably near the middle of the length of said sills. Upon these sills the harvester-frame is supported.

g' is one of two arms and may be considered as one piece with the sill g, or it may be in two parts. The only essential is, as I herein embody my machine, that it be as one piece with the part g. It extends upwardly, and in order to make the whole framework that is supported upon the bar g as substantial as necessary I connect the top of the arm g' with the gas-pipe E, that forms a rock-shaft upon which the reel-adjusting parts are connected, as will be explained. The preponderance of weight of the platform, reel, and the binder supported upon the platform is forward of the pivot g^2, so that only tension of supporting-rods is required to sustain it.

H is a rod connected with the hand-lever H′, adjacent to the driver's seat, for adjusting the tilt of the harvester-frame upon the supporting-bars G, G′, and G^2. The rod H extends forwardly through the support h to a limited distance from the axletree of the wheel-frame and terminates in an eye h'. The rod h^2 connects the rod H with the bar g'. The platform can thus be tilted to any desired angle relative to the ground upon the pivots of the supporting-arms and there held. In order to properly sustain the platform upon the said arms, and owing to its extreme length, the rod H is preferably connected to the grainward sill g^3, having the upright arm g^4, similar to that g', by means which will now be described.

I and I′ are levers, preferably of the bell-crank form, pivoted conveniently upon the axletree B. The arm i' of the bell-crank lever I′ is connected to the upright member g^4 of the sill g^3 by the rod i^2. The bell-crank levers are connected together by the rod i^3. The rod i connects the bell-crank lever I and the rod H.

It will be understood that the harvester-frame can be raised or lowered to and from the ground by being rocked with the supporting-bars upon the axletree as an axis, and when so adjusted the said frame can be tilted upon pivots g^2 to suit the conditions of grain operated upon.

By pivoting the platform upon the supporting-arms, as above described, the harvester-frame can be rocked upon the axletree to any height from the ground, and then, if desired, the platform can be tilted upon its pivots to any desired angle relative to the ground. This additional adjustment has proved itself to be very necessary when certain conditions of grain are operated upon by a self-binding harvester. In the upright bars g' g^4 are series of holes g^6, into any of which the rods i^2 and h^2 may be secured. This provision of adjustment is desirable, because in certain conditions of grain the reel is adjusted well

forward and exerts an additional stress upon the suspension devices, because it is farther away from the tilting centers. If the forward ends of the rods h^2 and i^2 be secured to the uppermost holes in the bar g', the leverages of the weight of the reel when thus adjusted forward and the leverages of the suspension devices will be equalized. The reel J is supported, preferably, from each end upon levers J′, which levers are pivoted at j. To the ends of the rock-shaft of gas-pipe E are cranks j^2, which cranks are connected to the lever J′ by the rod j^3. At a convenient position along the length of the gas-pipe is an arm K, to which is secured a chain k'. This chain passes around sheaves k^2 and a^2 and connects to a rod k^3. The rod k^3 connects to a hand-lever k^4, adjacent to the driver's seat, thereby providing for adjustment of the reel to and from the platform. The sheave a^2 is supported upon a forward projecting bar a from the wheel-frame. The sheave k^2 is supported upon a bracket on the harvester-frame. When the platform is tilted to bring the guards closer to the ground, the sheave k^2 will be raised and the distance from the sheave a^2 around that k^2 to the arm K will be decreased, thereby allowing the reel to drop closer to the cutting apparatus. This will obviate the necessity for a readjustment of the reel when the platform is tilted, as above described, to cut a shorter stubble.

The pivot-journals j are placed upon arms L, which are in turn pivoted upon the reel-supporting frame L′. l is a quadrant having teeth which are engaged by a hand-latch l' upon the arm L. The latch l' may be of the kind best shown in Fig. 4, which is pivoted at l^2 and spring-held into engagement with the notches of the quadrant l, and the arms L can be adjusted around their pivotal centers and connected to the quadrant l by means of the latch, which can be disengaged from and connected with any one of the notches in the said quadrant for the purpose of adjusting the reel fore and aft. The levers J′ have a series of holes j^6, into which the forward ends of the rods j^3 can be secured conveniently when the supports L are rocked to any desired position.

It will be observed that by the peculiar structure of the reel connections there is a relative adjustment of said reel and platform to each other and that while I have improved the harvester-frame and have improved the reel I have also, by the means for connecting them, so provided that the machine as a whole is competent to perform a new function, which is the one of adjusting the reel relative to the tilt.

As before stated, the harvester-frame is supported upon the arms G, G′, and G^2 and can be suspended from the axletree and wheel-frame by any convenient mechanism which is adapted to provide for adjustment in height of the said harvester-frame. The mechanism shown in my previous application, filed October 10, 1895, and serially numbered 565,232, will answer the purpose, and, in fact, as far as shown in the drawings of this application such mechanism is illustrated.

In cutting short grain it is necessary that the cutting apparatus be close to the ground and that the reel be closer to the cutting apparatus than if long grain was being operated upon—that is to say, the distance between the reel and the cutting apparatus should be generally in proportion to the distance of the cutting apparatus from the ground and to the height of the grain being cut.

One of the objects of my invention is to so provide mechanism that when the platform is tilted so that the cutting apparatus assumes a position close to the ground the reel will be also adjusted closer to the cutting apparatus than it was before by the single adjustment of the lever H′. To cut long grain, the platform is tilted so that the guards move away from the ground and the reel moves away from the cutting apparatus. This is accomplished because the chain k' goes around the pulley k^2. When the guards are tilted down, the pulley k^2 moves in a radius struck from the pivot-center g^2 and the reel is allowed to drop upon its pivotal center, because the distance around which the chain k' travels is reduced in effect. When the guards are adjusted away from the ground upon the pivot g^2, the pulley k^2 moves downward toward the ground and increases the distance around which the chain travels and increases the distance between the reel and the cutting apparatus. It will thus be seen that by the movement of a single lever the operator can make the proper adjustment of the cutting apparatus and the reel. The independent adjustment of the reel is for the purpose of lowering the reel relative to the cutting apparatus should a patch of down and fallen grain be met with. By using the pulley a^2 a similar result is effected when the machine is adjusted vertically upon the axletree and in a similar manner as that before described.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination in a harvesting-machine of a harvester-frame adapted to be tilted upon its supports, an adjustable reel mounted thereon, means under the control of the operator for regulating the height of said reel and means under the control of the operator for tilting said harvester-frame and connecting mechanism between said reel and said harvester-frame, whereby the reel is lowered relative to said platform when the forward edge of the platform is tilted downward, and the reel is raised when the front edge of the platform is raised, substantially as described.

2. The combination in a harvesting-machine of a harvester-frame adapted to be tilted upon its supports, an adjustable reel mounted thereon, means under the control of the operator for tilting said harvester-frame and connecting mechanism between said reel and said harvester-frame, whereby the reel is low-

ered relative to said platform when the forward edge of the platform is tilted downward, and the reel is raised when the front edge of the platform is raised, substantially as described.

3. In a thrust-cut harvester the combination of a wheel-frame having an axletree supported upon the main wheels and a thrust-tongue pivoted thereto, the said axletree having forwardly-extending arms and adapted to be rocked upon the supporting-wheels, a harvester-frame pivotally supported upon said outreaching arms, means for tilting said harvester-frame upon its pivotal support and means for rocking said axletree whereby the said harvester-frame is carried bodily to and from the ground, and a reel and reel-adjusting mechanism within reach of the operator, connecting mechanism between said reel and said harvester-frame whereby when the said frame is tilted forwardly the said reel is moved toward said frame and when said frame is tilted rearwardly the said reel is moved away from said frame, substantially as described.

4. In a harvesting-machine, a harvester-frame adapted to be tilted on its supports, an adjustable reel mounted thereon, mechanism connecting said reel to a part of the machine that does not change its position when the platform is tilted, and tilting mechanism whereby the tilting of the platform downward lowers the reel, and the tilting of the front of the platform upward raises the reel, substantially as described.

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