(No Model.)

2 Sheets—Sheet 1.

R. L. PEARSON.

CORN HARVESTER.

No. 319,310. Patented June 2, 1885.

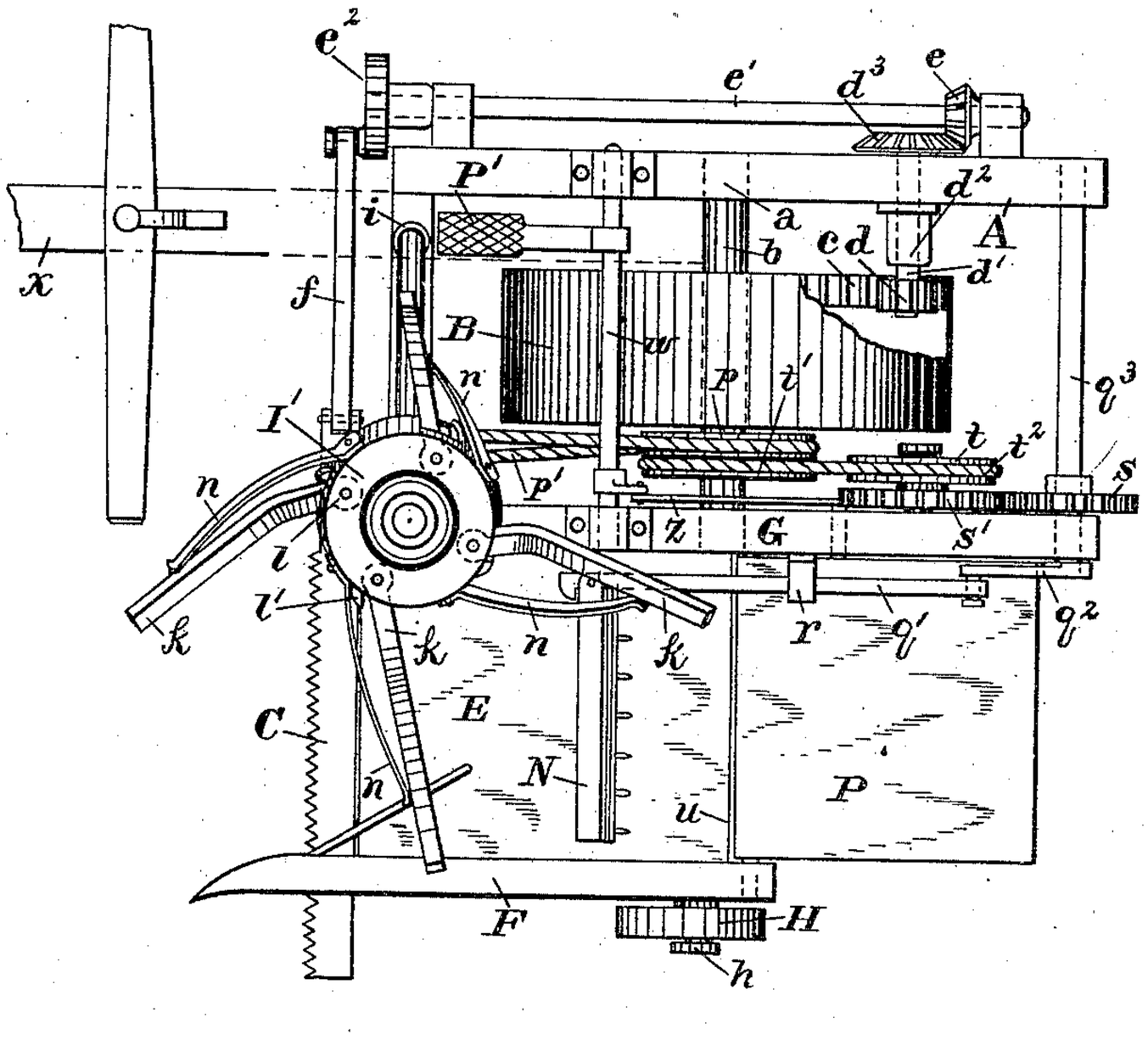

Fig. 1.

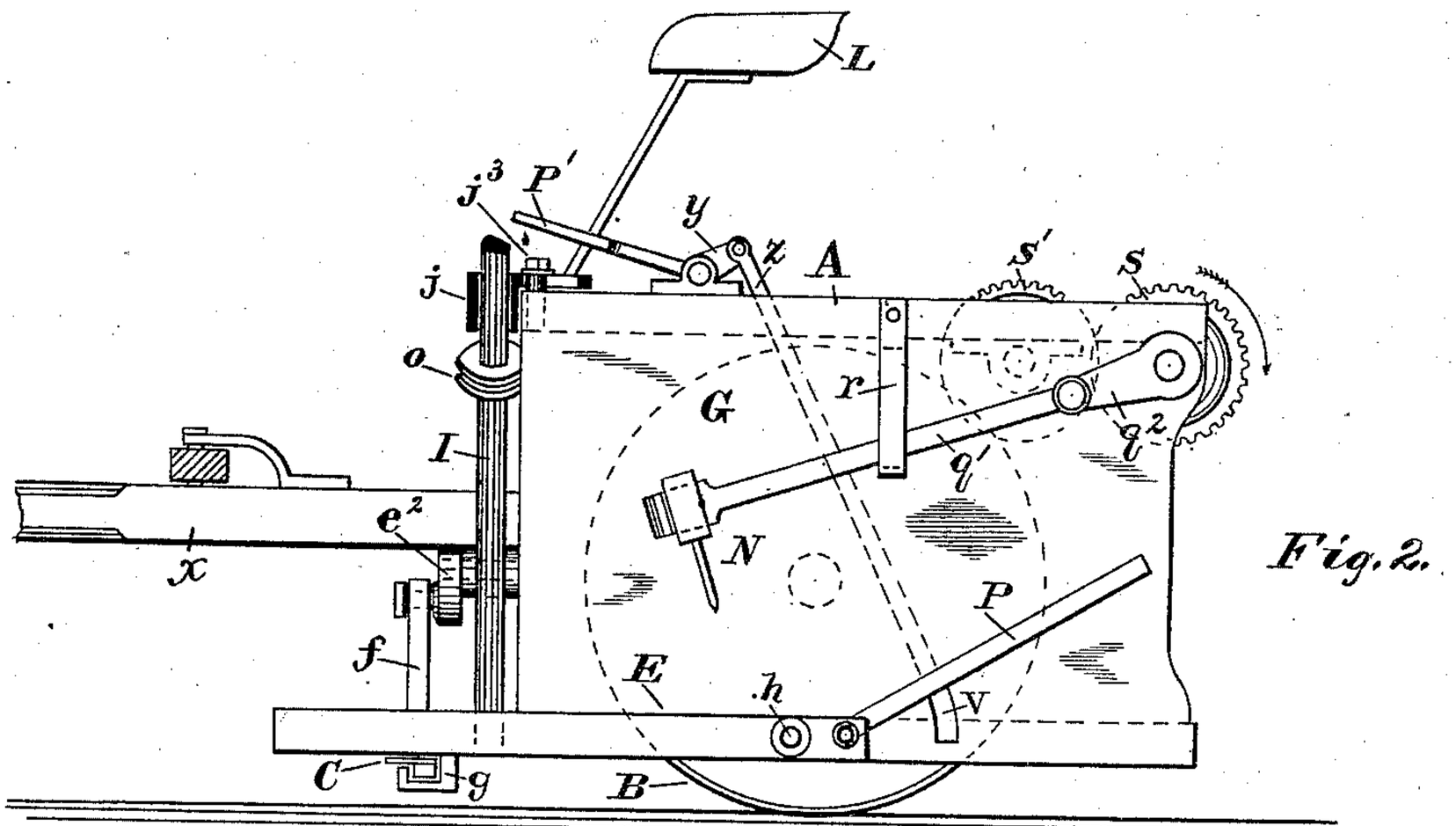

Fig. 2.

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(No Model.)

2 Sheets—Sheet 2.

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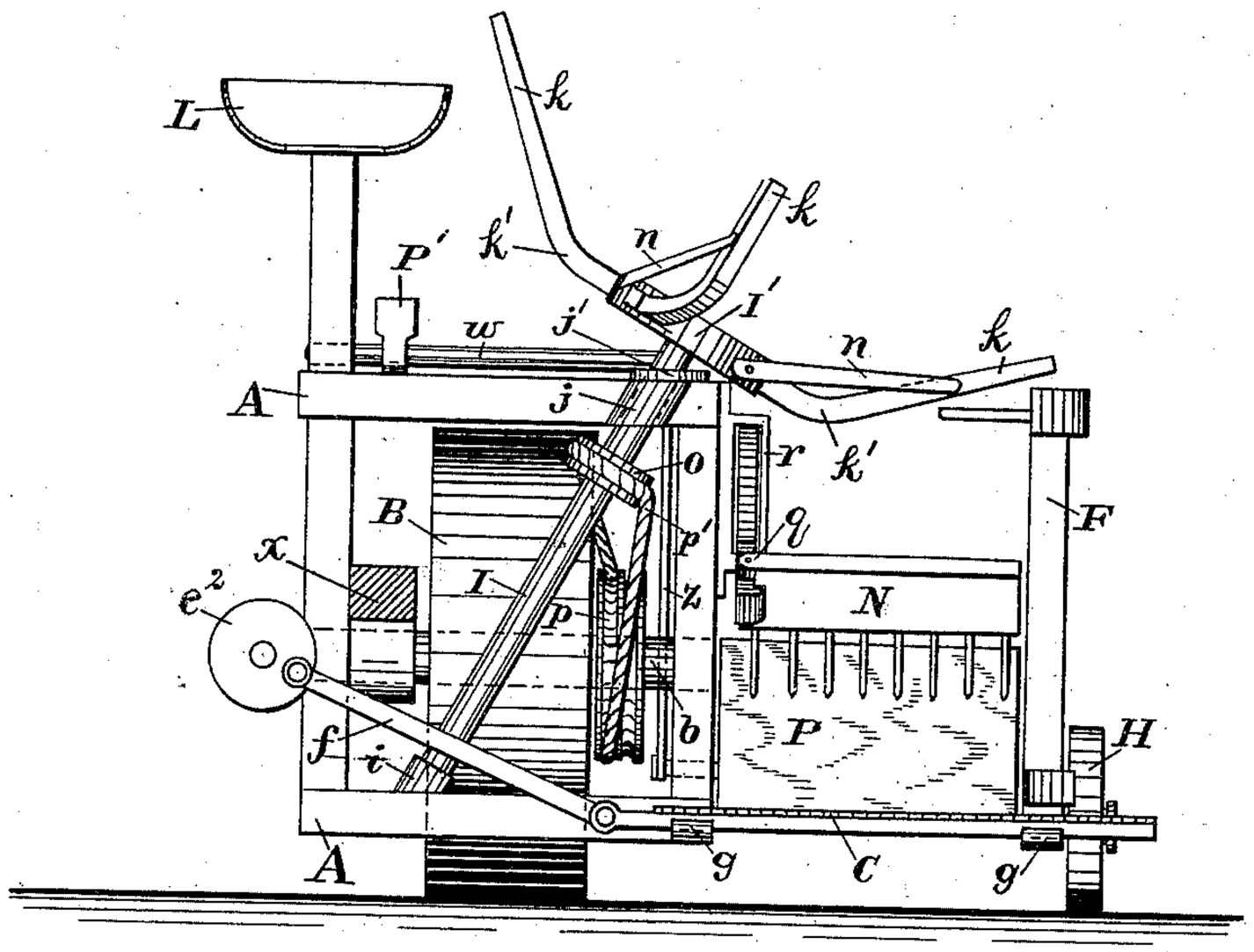

Fig. 3.

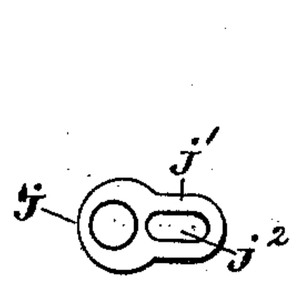

Fig. 4.

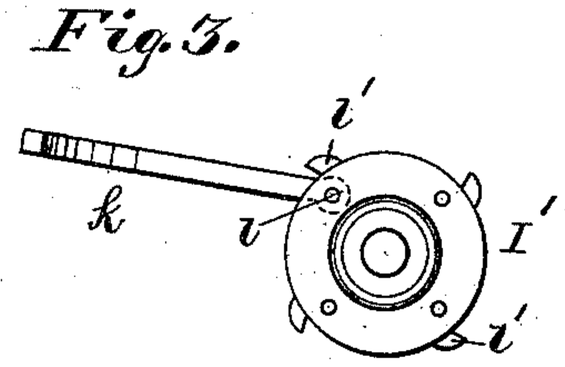

Fig. 5.

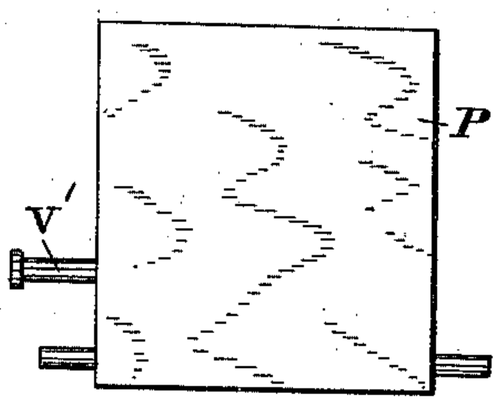

Fig. 7.

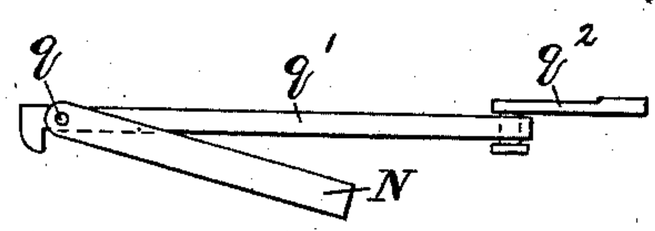

Fig. 6.

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UNITED STATES PATENT OFFICE.

ROBERT L. PEARSON, OF CHESTERVILLE, MARYLAND.

CORN-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 319,310, dated June 2, 1885.

Application filed May 2, 1884. (No model.)

To all whom it may concern:

Be it known that I, ROBERT L. PEARSON, a citizen of the United States, residing at Chesterville, in the county of Kent and State of Maryland, have invented certain new and useful Improvements in Corn-Harvesters, of which the following is a specification.

My invention relates to certain improvements in corn-harvesters, and will first be described, and then designated in the claims.

In the accompanying drawings, Figure 1 is a plan or top view of the machine. Fig. 2 is a side elevation. Fig. 3 is a front elevation. Fig. 4 is a view of the upper bearing for reel. Fig. 5 is a view of the reel-head. Fig. 6 is a view of the hinged rake, showing the rake-head against the reciprocating bar. Fig. 7 is a view of the tilting platform.

A rectangular frame, A, has bearing *a*, in which the main shaft or axle *b* of the machine turns.

A drive-wheel, B, is fixed on the main shaft and carries the machine. The drive-wheel has internal cogs, *c*, with which a pinion, *d*, gears. This pinion is on a shaft, *d'*, which turns in a bearing, d^2, and said shaft has at its outer end a bevel gear-wheel, d^3, which gears with a pinion, *e*, on a horizontal shaft, *e'*, which extends along the side fore and aft of the machine. On the front end of this shaft is a crank-head, e^2, having attached one end of a rod, *f*, the outer end of which is attached to the straight saw C.

By the foregoing described mechanism the saw is reciprocated in suitable bearings, *g*, with great rapidity.

The saw has position at one side of the rectangular frame, and directly in front of and on the same plane with a recipient, consisting of a floor, E. At the outer edge of this floor is a vertical side wall, F, while another wall, G, incloses one side of the rectangular frame. An axle-arm, *h*, projects from the side of the recipient, and a supporting-wheel, H, turns thereon. This wheel travels on the ground and supports the recipient for the cut stalks.

A reel is mounted at the front of the machine, to throw the stalks back and direct them onto the recipient. The reel consists of a shaft, I, having a position which inclines crosswise of the machine, as shown in Fig. 3. It sets in a step, *i*, placed on the lower part of the rectangular frame, near one side thereof, and in front of the drive-wheel, and its upper end leans toward the other side, where the recipient is. The bearing *j* for the upper end of the reel-shaft is attached to a plate, *j'*, provided with a slot, j^2. This slotted plate sets on the top of the frame, and a bolt, j^3, passes through the slot. By this construction the bearing may be adjusted toward or away from the front, and thereby place the reel which is on the shaft in exactly the position where it may be most effective.

The reel-head I' on the upper end of the shaft carries four arms, *k*, each of which is connected to the head by a joint or pivot-bolt, *l*. These pivot-bolts extend parallel with the axis of the inclined shaft, and the arms, therefore, are adapted to swing or move on this pivot in a direction about the shaft and in a plane at right angles to the axis of the said shaft. The movement of the reel-arms on their pivots is limited by a projecting shoulder, *l'*, on the reel-head, back of each arm, which serves as a stop. A separate plate-spring, *n*, is attached to the reel-head, near each pivot-bolt, and each pivoted arm is pressed at its back by one of these springs. The arms project straight from the pivots, and then have a bend, *k'*, at an angle of about forty-five degrees, whereby the outer straight end is turned upward. The result of this particular shape of the arms, when mounted on the inclined shaft, as described, is to present the arm by the shaft's rotation as it sweeps across the saw substantially, or for the most part, in a horizontal position, as seen in Fig. 3, it being thus most effective on the standing cornstalks to throw them or incline them back toward the recipient, while the saw at the same time takes effect on them. This duty of the arm having been performed, its outer upturned end will, as it sweeps over the recipient, rise and continue to rise until it reaches the side diametrically opposite the saw, at which point, as shown in Fig. 3, the said outer upturned end will be presented nearly in an upright or vertical position. By this operation the arm, immediately it has performed its duty, begins to clear the cut stalks, and also avoids interference with the seat L. As the arms are piv-

oted and pressed forward by a spring acting on the back of the arm, they are prevented from striking the stalks so hard as to break them. In other words, they yield when striking the stalks.

The reel-shaft has a pulley, *o*, and the main shaft has a pulley, *p*. A cord, *p'*, passes over these pulleys, and thereby the reel is rotated.

A reciprocating hinged rake, N, is employed to draw the cut stalks, as they fall on the recipient, back and lay them in position to rest on the tilting platform, hereinafter described. The rake-head N has one end connected by a pivot or hinge, *q*, to a bar, *q'*. The hinge or joint *q* is a knuckle-joint, which allows the rake-head to take a position crosswise of the recipient, as shown in Figs. 1 and 3. This position of the rake-head is that which it has when engaged in drawing the cut stalks back. The hinge allows the rake-head to swing back against the bar *q'*, to which it is connected, as shown in Fig. 6. This position of the rake-head is that which it assumes when moving forward. By swinging against the bar and moving forward while in this position, the rake-head avoids the cut stalks that are continually falling on the recipient, and then, having moved forward and being tilted down, as hereinafter described, it swings back by gravity and takes position crosswise of the recipient, as before stated. The other end of the rake-bar *q'* is connected to a crank, q^2, on a shaft, q^3, which has bearings in the frame A. An upright slotted bearing, *r*, is fixed against the inclosed side G of the frame, and the bar *q'* passes through this slotted bearing. It will be seen that by the action of the crank q^2 the rake-bar is made to reciprocate in this slotted bearing, and also to oscillate in it. Thereby when the rake-head first begins to move forward it is also raised, which movement clears it of the cut stalks which have just been drawn back, and when the rake-head reaches the end of its forward movement the oscillation of the bar *q'* gives the head a downtilt, which, by the operation of gravity thus brought into play, causes it to swing on its hinge into the crosswise position. The oscillation, therefore, of the bar produces two useful results.

The shaft q^3 has a cogged wheel, *s*, which gears with another wheel, *s'*, and this carries a pulley, *t*. A pulley, *t'*, is on the main shaft *b*, and a cord, t^2, over these pulleys gives motion to the crank mechanism which operates the rake.

A tilting platform, P, is hinged at the rear edge, *u*, of the recipient floor E. A slot, *v*, is in the inclosed side G of the frame, and a short pivot-arm, *v'*, is rigidly attached to the tilting platform and occupies the said slot. On top of the frame A is a rock-shaft, *w*, to which an arm, *y*, is attached. A rod, *z*, connects this arm to the pivot-arm *v'* on the tilting platform. A treadle, P', is also attached to the rock-shaft *w*, and said treadle is in position to be conveniently reached by the driver, who occupies the seat L. Upon the treadle being depressed, the tilting platform P is raised to the position it is seen to occupy in Fig. 2. It is then ready to receive the cut cornstalks which may fall upon it, or which are drawn back upon it by the rake. The stalks will lie over the upper rear edge. When enough cut stalks have accumulted to form a bundle or to require removal, the treadle is allowed to rise, whereupon the platform P drops and the cornstalks, no longer supported at the rear, will drop out on the ground as the machine continues to move forward.

A tongue, *x*, is provided, to which animals are attached for drawing the machine.

From the foregoing description the operation of the machine will be readily understood.

Having described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The herein-described rake mechanism, consisting of a bar, *q'*, having at one end a head, N, hinged thereto by a knuckle-joint, and the other end connected to a crank, and a slotted bearing for the bar fixed between the rake and crank, as set forth.

2. A corn-harvester having, in combination, a recipient, E, a platform, P, hinged at the rear edge of the recipient, a rake consisting of a bar, *q'*, having at one end a head, N, hinged by a knuckle-joint, and the other end connected to a crank, and a bearing for the bar fixed between the rake-head and crank, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT L. PEARSON.

Witnesses:
JNO. T. MADDOX,
JOHN E. MORRIS.