4 Sheets—Sheet 1.

G. S. WILLIAMS & A. J. PEIRCE.

HARVESTER.

No. 182,504. Patented Sept. 19, 1876.

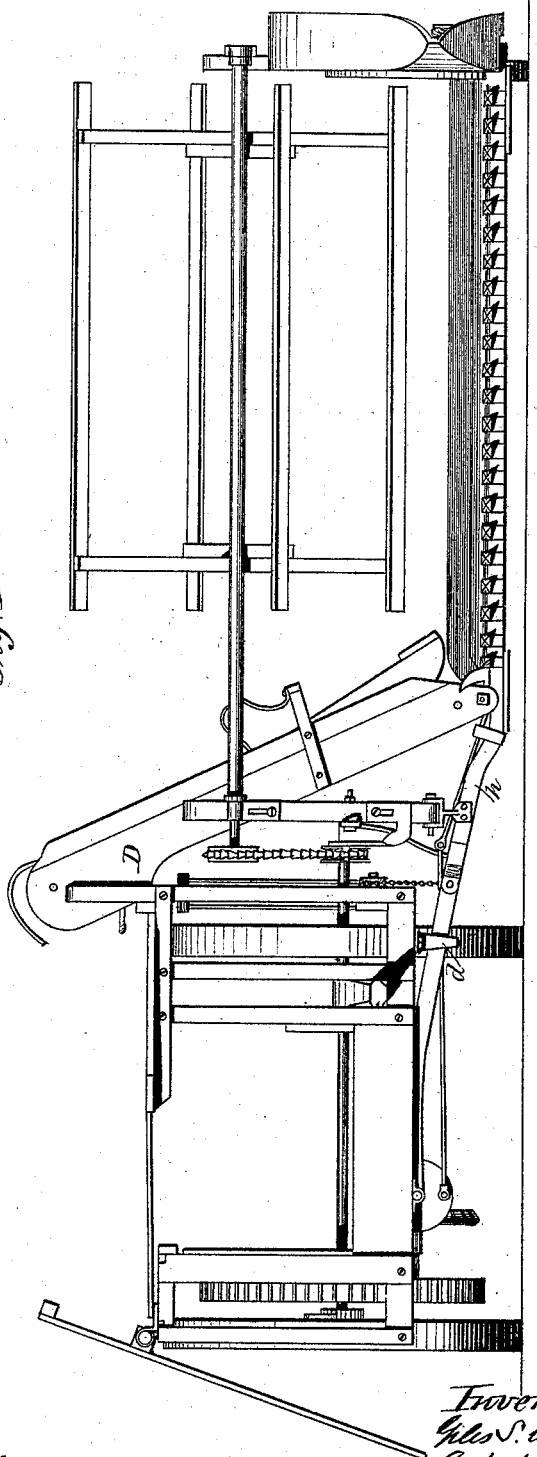

Fig. 1.

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4 Sheets—Sheet 2.

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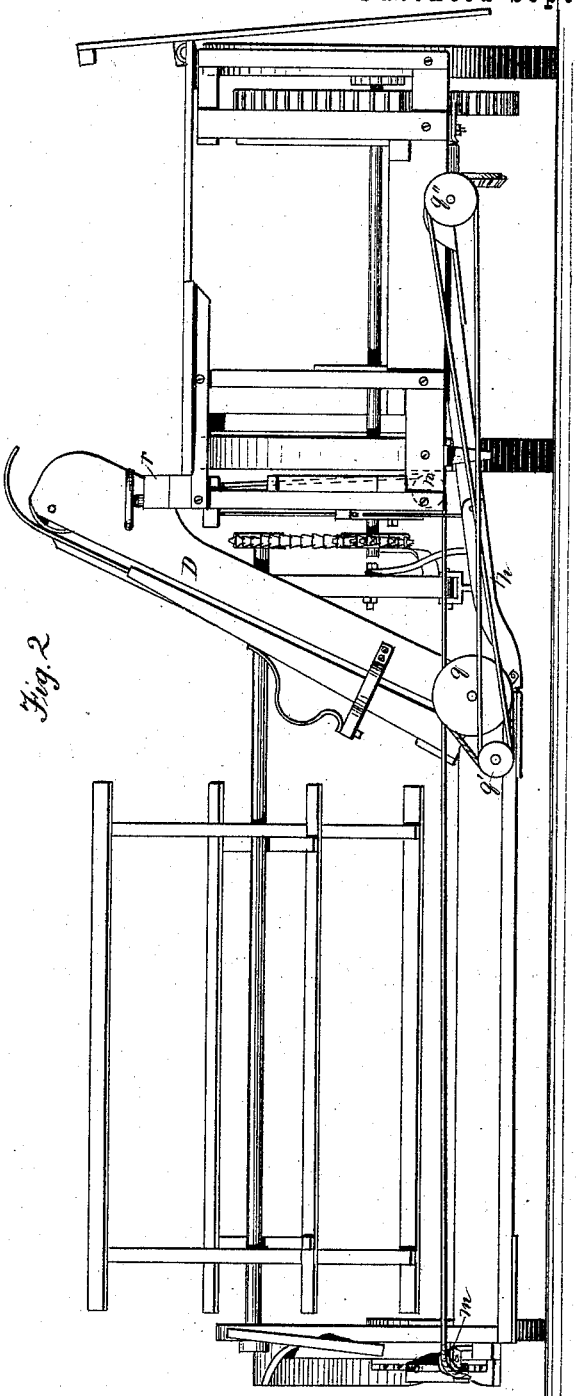

Fig. 2

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HARVESTER.

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Fig. 3.

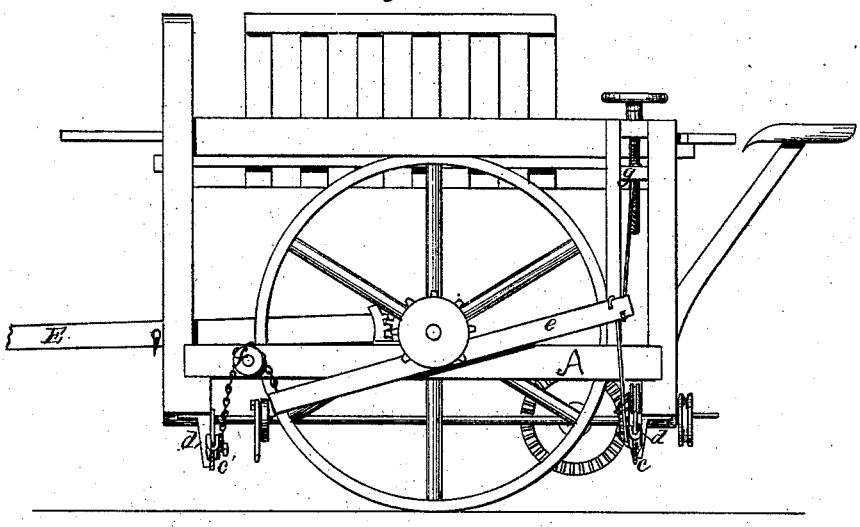
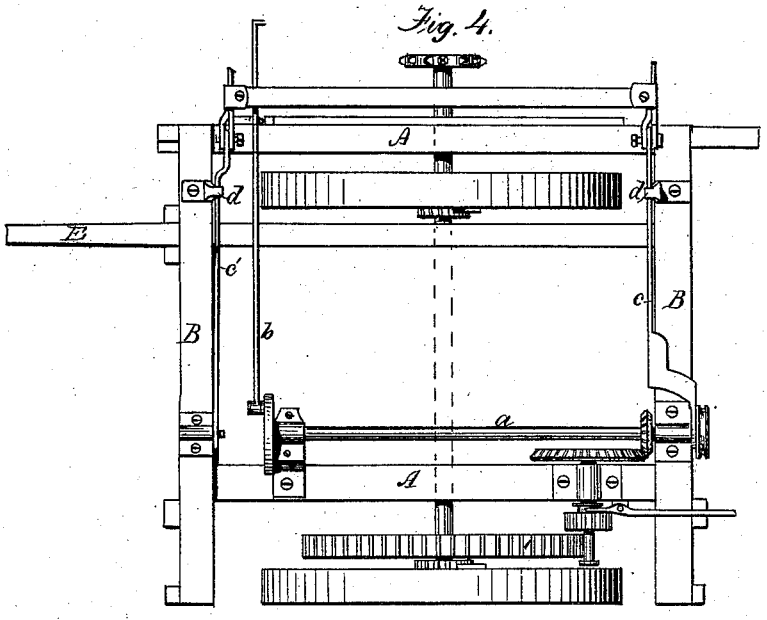


Fig. 4.



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4 Sheets—Sheet 4.

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HARVESTER.

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Fig. 5.

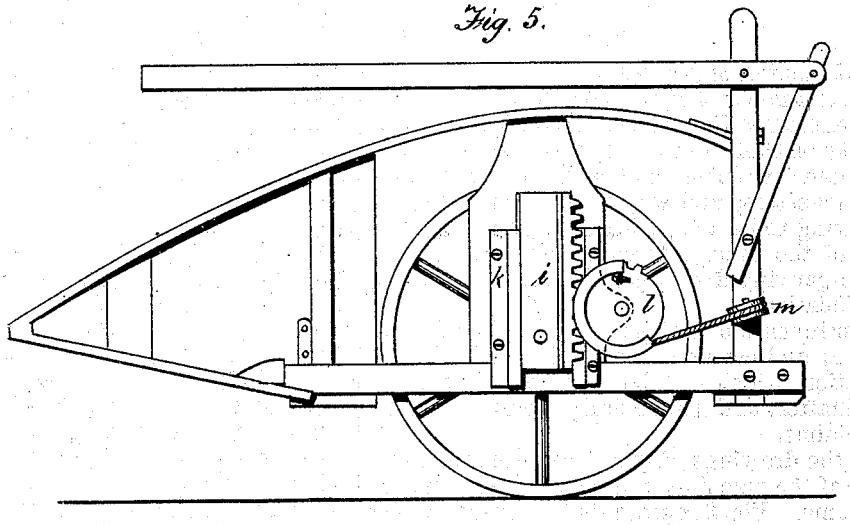
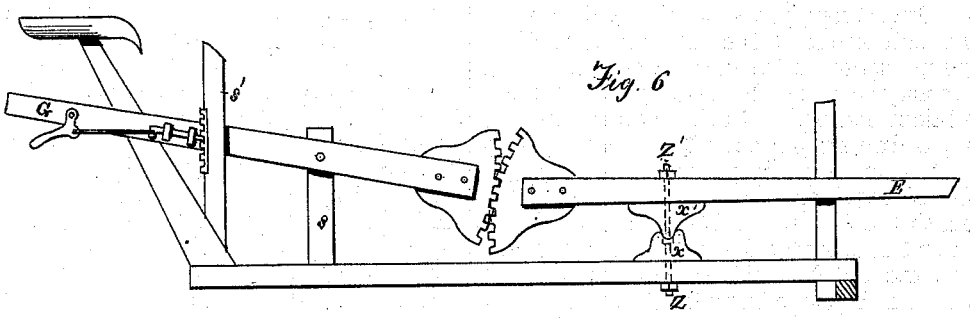


Fig. 6



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UNITED STATES PATENT OFFICE.

GILES S. WILLIAMS AND ANDREW J. PEIRCE, OF MADISON, WISCONSIN.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. **182,504**, dated September 19, 1876; application filed April 28, 1876.

To all whom it may concern:

Be it known that we, GILES S. WILLIAMS and ANDREW J. PEIRCE, of Madison, in the county of Dane and State of Wisconsin, have invented certain new and useful Improvements in Harvesters; and we 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.

Our invention relates to a three-wheeled harvester; and consists in certain details of construction, which will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 represents a front view of the machine, and Fig. 2 a rear view of the same. Fig. 3 represents the left-hand side of the machine with the platform removed. Fig. 4 is a bottom view of the machine, showing the connecting-bars without the platform. Fig. 5 is an end view of the platform, illustrating the gear and rack-bar, and mechanism for raising and lowering the outer end of the platform. Fig. 6 represents the tilting devices.

The main frame of the machine is particularly represented in the drawings at A A B B, and it may be suspended upon the axle in any convenient manner. On the axle is fixed, as usual, a driving-pinion, which gears into a smaller, communicating motion, through its shaft and bevel-gear, to the crank-shaft *a* underneath the frame. A face-plate on the forward end is connected by an ordinary wrist-pin to the rod *b*, which directly moves the sickle. In the same line with this crank-shaft are pivoted two bars, *c c'*, which extend close to the cross-beams of the frame, just beyond the outer edge of the left-hand side of the machine. Being pivoted on the inner ends, they have a free vertical movement, but are guided and limited in their motion by the hangers *d d*, the lower ends of which are bent inward for the purpose. On the outside of the beam A is centrally pivoted a lever, *e*, directly in vertical line over the outer ends of the bars *c c'*. The rear end of this lever is connected to the bar *c* by a rod. (Represented as slipped upon the connecting-pin in the joint.) The other end of the lever is connected to the bar *c'* by a short piece of chain, which passes over a pulley, *f*, on the beam, so that the same motion of the lever moves the bars *c c'* equally and in the same direction. This lever is also connected at the rear end, by a vertical rod or chain, to a nut, *g*, which is raised or lowered by a screw, which works in the upper beam, and has a hand-wheel for convenient operation near the driver's seat. To the outer ends of the bars *c c'*, thus adjustably suspended, are connected, by suitable hinges or pivots, the arms *h h* of the platform, so that the inner end of the platform is raised or lowered by the motion of the screw through the rods and lever heretofore described. The outer end of this platform rests, as usual, on the grain-wheel, which has its bearing-pin fixed in a metal bar, *i*, which slides up and down in guides *k k* fixed to the platform. One side of the bar *i* is formed with teeth, which gear into a segmental wheel, *l*, cogged to match, and pivoted at proper position on this platform. This gear-wheel has, by the side of the cogs, a grooved flange for a cord or chain, which runs over a small pulley, *m*, on the outer end of the frame, over a similar pulley, *n*, beneath the frame, and in line with the screw, and thence passes up and is connected to the moving nut. Thus, by the same motion of the nut, the outer end of the platform is raised on the grain-wheel simultaneously with the inner end through the lever and its connections with the inner arms. In proper bearings on the upper side of the inner end of the platform-frame, we mount a roller, by which the elevator-band is moved. A pulley, *q*, is fixed on the rear end of the shaft prolonged of this roller, and thereby motion is imparted to the shaft and roller by means of a band passing around this and a pulley behind the pulley *q q'* on the driving-roller of the horizontal belt. This last-named pulley *q'* receives its motion from a pulley, *q''*, fixed upon the end of the crank-shaft, as shown in Fig. 2 of the drawings.

The elevator D is hinged to the platform on the same line as the axis of its lower roller. The elevator and platform are thus kept at the same distance from each other, however much the free ends may move, through unevenness of ground, and the pulleys operate unaffected thereby. This elevator, the upper end of which moves freely, rests by this upper

end against the upper cross-bar *r* of the frame, extending above the receiving-board and binders' table, and, as the platform rises or falls, the elevator may move unobstructedly up or down, always automatically adjusting itself.

The bars *c c'*, to which the arms of the platform are hinged, have been referred to as pivoted on the same line as the crank-shaft. Since the rod which moves the sickle directly connects the wrist-pin on this crank-shaft to the sickle, it follows that, whether the platform, with the finger-bar and sickle, rise or fall, the position and stroke of the sickle will always be the same. It will also be observed that, by locating the hinges in the bars *c c'*, directly under the lever *e*, the simultaneous elevation of both sides is accomplished by very simple and efficient apparatus.

The arrangement of the driving-roller of the elevator has been described. It should be added that this arrangement requires less belt, and avoids friction and danger by entanglement and obstruction from the grain in passing up over the elevator.

Having thus described our invention, what we claim, and desire to secure by Letters Patent of the United States, is—

1. The hinged bars *c c'*, arms *h h*, in combination with the equilibrium-lever *e*, and rod or chain connections, as set forth.

2. In combination with the hinged bars and arms and levers, the nut-screw and hand-wheel and connections, as and for the purposes set forth.

3. In combination, the lever *e*, bars *c c'*, and arms *h h*, and the nut for raising and lowering the inner end of the platform and the grain-wheel, the cord or chain for raising the same passing over the pulleys, and connected to the nut, for simultaneously raising both ends, as set forth.

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