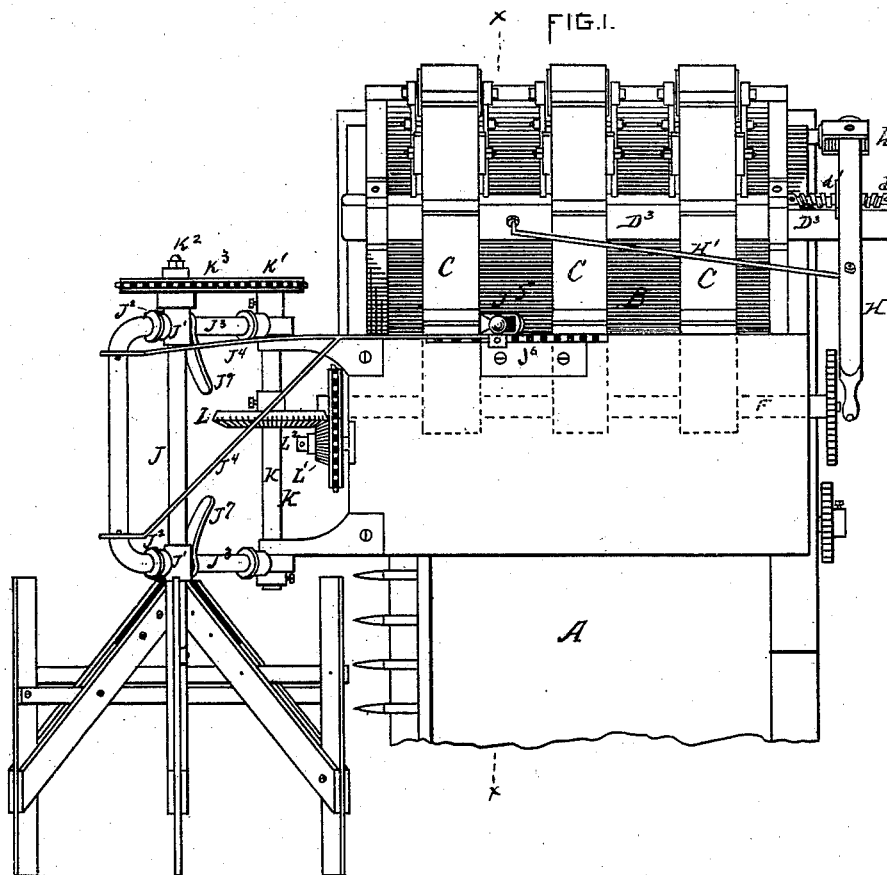


T. M. FLENNIKEN.  
Harvester.

No. 218,952.

Patented Aug. 26, 1879.



WITNESSES:

Forde R. Smith  
Edmund Adcock

INVENTOR:

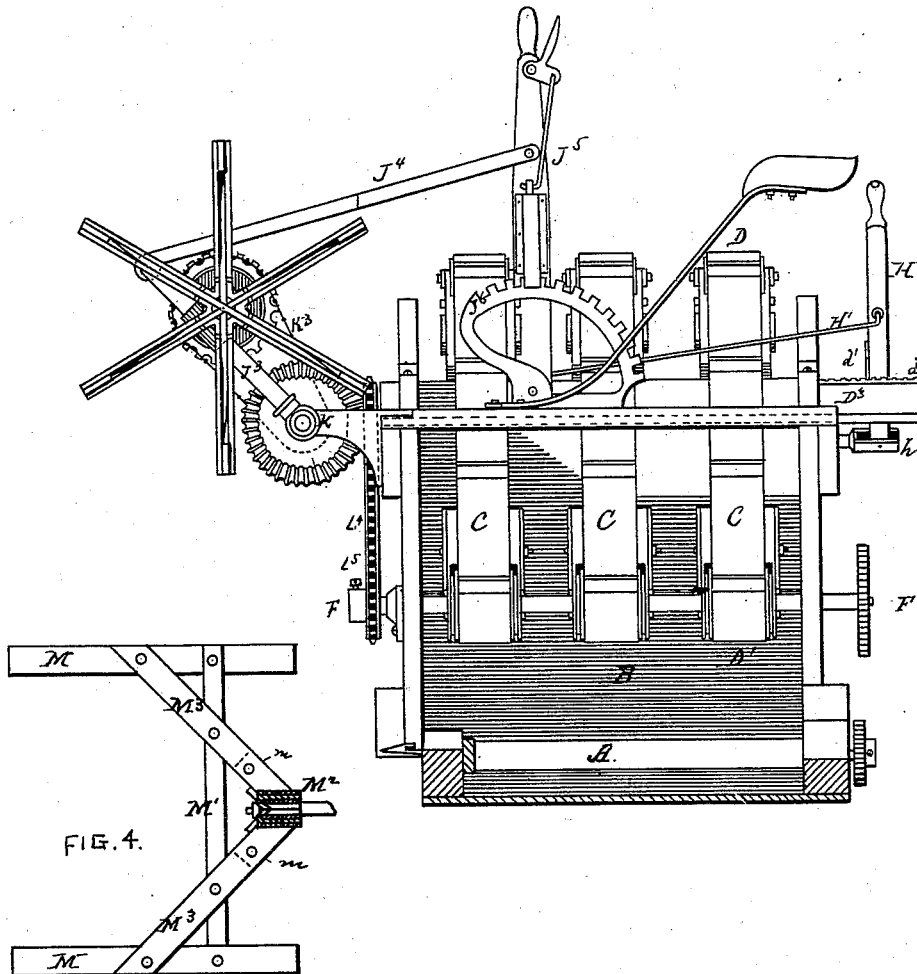
Theodore M. Fleniken  
by Monday T. Evans  
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FIG. 2.



WITNESSES

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Edmund Asch

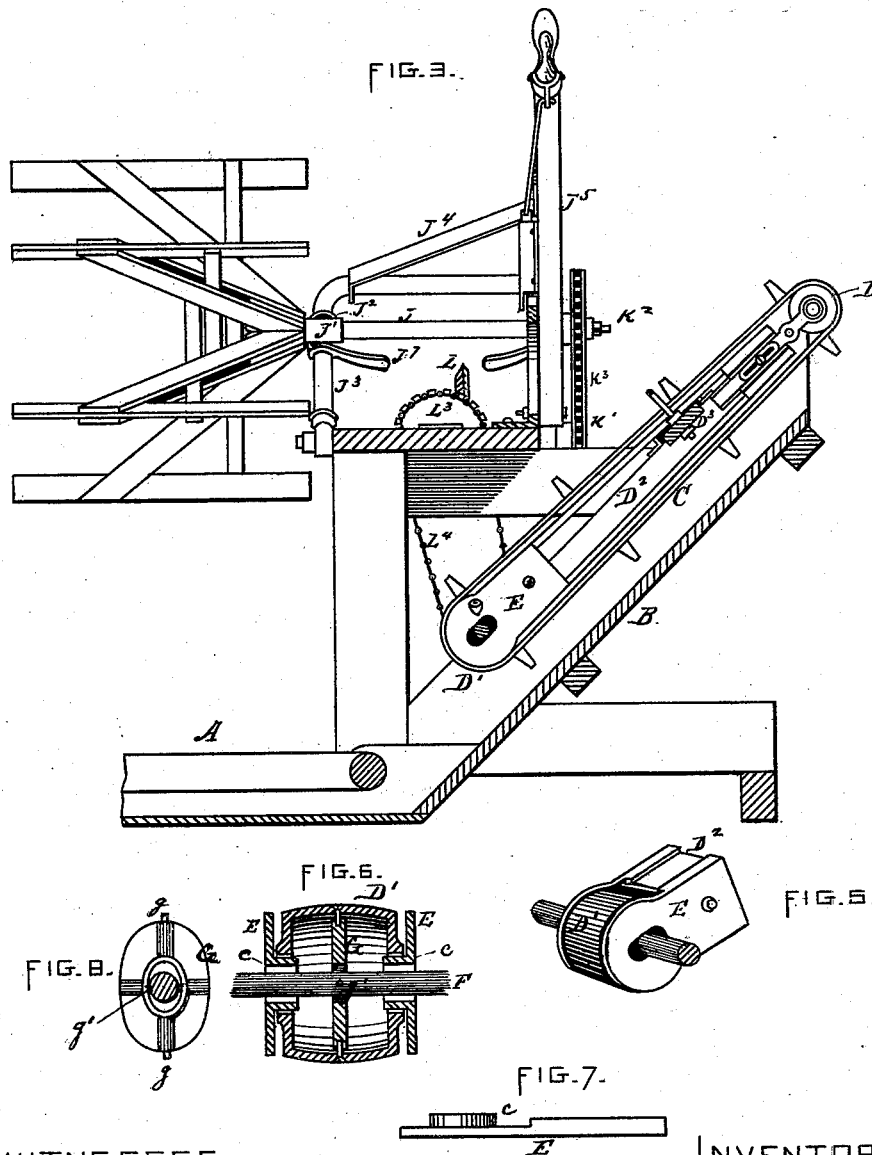
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# UNITED STATES PATENT OFFICE.

THEODORE M. FLENNIKEN, OF ROCKFORD, ILLINOIS, ASSIGNOR TO N. C. THOMPSON, OF SAME PLACE.

## IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. 218,952, dated August 26, 1879; application filed January 23, 1878.

### *To all whom it may concern:*

Be it known that I, THEODORE M. FLENNIKEN, of Rockford, in the county of Winnebago and State of Illinois, have invented certain Improvements in Harvesters, of which the following is a specification.

In the drawings, Figure 1 represents a plan view of a portion of a harvester containing my improvements. Fig. 2 is a side elevation of the same from the grain side of the machine. Fig. 3 is a vertical section on the line *xx* of Fig. 1. Fig. 4 is a sectional view of the reel detached. Fig. 5 is a perspective of one of the universal-joint pulleys of the elevator. Figs. 6, 7, and 8 are details of the same.

My invention relates to the elevator for elevating the grain from the platform to the binder; and it may be premised that this invention is intended to be used in conjunction with a mechanical binding apparatus.

The grain to be cut is sometimes long and sometimes short, and hence a difficulty has been experienced in delivering it to the binder so that it will be bound in the center. I surmount this difficulty by pivoting (so to speak) the elevator in such manner that while the lower or receiving end may remain in a position to take the grain from the platform, the upper or delivery end may be swung or adjusted laterally to guide the grain properly to the binder.

In the said drawings, A represents the platform of a harvester. B is the inclined extension thereof, up which the grain is carried by the action of the battens projecting from the endless aprons C C C. Each of these belts is mounted upon a head-roll, D, and a foot-roll, D<sup>1</sup>, the two rolls being connected together by a frame-piece, D<sup>2</sup>, to which the head-roll is secured by bars, which afford journaling for the pivot of the roll, and which are secured by a bolt through a slot on each bar to the frame-piece. This affords a means for tightening the belts when desired.

The lower or foot rolls are of peculiar construction. A hollow pulley, D<sup>1</sup>, (shown clearly at Fig. 6,) is supported from the frame-piece D<sup>2</sup> by two metal plates, E, one of which is shown at Fig. 7. A hollow bearing, *c*, projects from each plate into the end of the roll or pulley. Through this hollow bearing passes the

shaft F, passing through all of the lower rollers, and journaled to the frame-work of the machine. Each roller is attached to this shaft by an oval ring, G, as shown at Figs. 6 and 8. The ring is pivoted to the roller by pivots *g*, and to the shaft by other pivots, *g'*, at right angles to the former pivots, constituting between the shaft and roller a universal joint. The frame-pieces D<sup>2</sup> are all connected together by a transverse bar, D<sup>3</sup>, which is pivoted to each of the frame-pieces, and the lateral movement of which swings simultaneously all of the frame-pieces with their belts and pulleys, each frame-piece turning upon the universal joint of its lower roller or pulley, and of course all preserving their parallelism.

To enable the driver to make the adjustment, I provide a lever, H, pivoted at one end to the frame-work of the machine, and connected by a rod, H', to the transverse bar D<sup>3</sup>, so that the swing of the lever will move the bar and, through it, the several elevator-belts. This lever H is so pivoted as to have a capability of being moved or swung at right angles to its fulcrum, as will be understood from Fig. 1 of the drawings, where this double pivoting is shown at *h*. Upon the projecting end of the bar D<sup>3</sup>, just below the frame, is placed a metal detent-strip, *d*, with notches engaged by the plate *d'* from the under side of the lever. When the elevator is to be adjusted to a new position the lever is raised over the notches, then swung into the required position, and dropped into the notch which may chance to be below it, thus locking the device against accidental displacement.

The reel, to be presently described, is mounted upon the end of a shaft, J, journaled in bearings J<sup>1</sup>, which are supported in sleeves J<sup>2</sup>, movable upon the arms J<sup>3</sup> of a pivoted U-shaped frame, to which is connected a bar, J<sup>4</sup>, extending to the hand-lever J<sup>5</sup>, which may be set at any desired position upon its quadrant J<sup>6</sup>, thus adjusting the reel higher or lower by the swing of its frame. Through the pivotal points of the U-shaped reel-sustaining frame runs the shaft K, counter to the reel-shaft. Upon the end of this shaft is a rag-wheel, K<sup>1</sup>, connected to a rag-wheel, K<sup>2</sup>, upon the reel-shaft by a chain, K<sup>3</sup>. About midway of the shaft K is a

bevel-gear wheel, L, engaged by the bevel-pinion L<sup>1</sup> upon shaft L<sup>2</sup>, driven by rag-wheel L<sup>3</sup>, which, in turn, is driven by a chain, L<sup>4</sup>, from the rag-wheel L<sup>5</sup> on the shaft F, which drives, also, it will be remembered, the elevator, as above described.

The purpose of the sleeves J<sup>2</sup> is to afford a means of setting the reel-shaft at varying distances from the pivotal points of the frame, it being fastened at the desired position by cams J<sup>7</sup>. In order to effect this adjustment it will be necessary to lengthen or shorten the drive-chain K<sup>3</sup> by supplying or removing links.

The reel itself, the construction of which will be most clearly obtained from Figs. 1, 2, and 4, consists of horizontal beaters M, connected in pairs by perpendicular braces M<sup>1</sup>, and connected to a light hub, M<sup>2</sup>, by diagonal struts M<sup>3</sup>. These struts each consist of two flat pieces placed upon opposite sides of the beater-bar and braces, to both of which they are secured, and are attached to the hub by being bolted to thin blades *m*, extending from said hub. This constitutes a very light, strong reel, and dispenses with the large metal hub sometimes hitherto employed.

Having thus fully described my invention, I claim—

1. The independent belts C C, constituting the elevator, mounted upon frame-pieces D<sup>2</sup>, which are centered upon the shaft F at one end, and provided with universal-joint attach-

ments to said shaft, as set forth, combined with independently-adjustable rollers D at the other end of said frame-pieces, whereby each belt C may be separately adjustable as to tension.

2. The frame-piece D<sup>2</sup>, provided at its one end with plates E, which are provided with inwardly-projecting annular flanges *c*, fitted to corresponding openings in the ends of the rollers D<sup>1</sup>, combined with the shaft F and said roller D<sup>1</sup>, mounted upon said shaft with a universal-joint connection, whereby said roller D<sup>1</sup> has an axis fixed in direction as to the frame-piece D<sup>2</sup> and movable as to the shaft F.

3. The roller D<sup>1</sup>, mounted upon the shaft F with a universal-joint connection, for the purpose set forth, combined with frame-piece D<sup>2</sup>, provided with plates E, each of which has an annular flange, *c*, fitted to the open ends of said roller, whereby said frame-piece receives its whole connection with said shaft F through the medium of said roller and its connection to said shaft.

4. The device for setting the elevator at different angles, consisting of the lever H, rod H', bar D<sup>3</sup>, and the detent upon said bar, substantially as specified.

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Witnesses:

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WM. MCGEEGOR.