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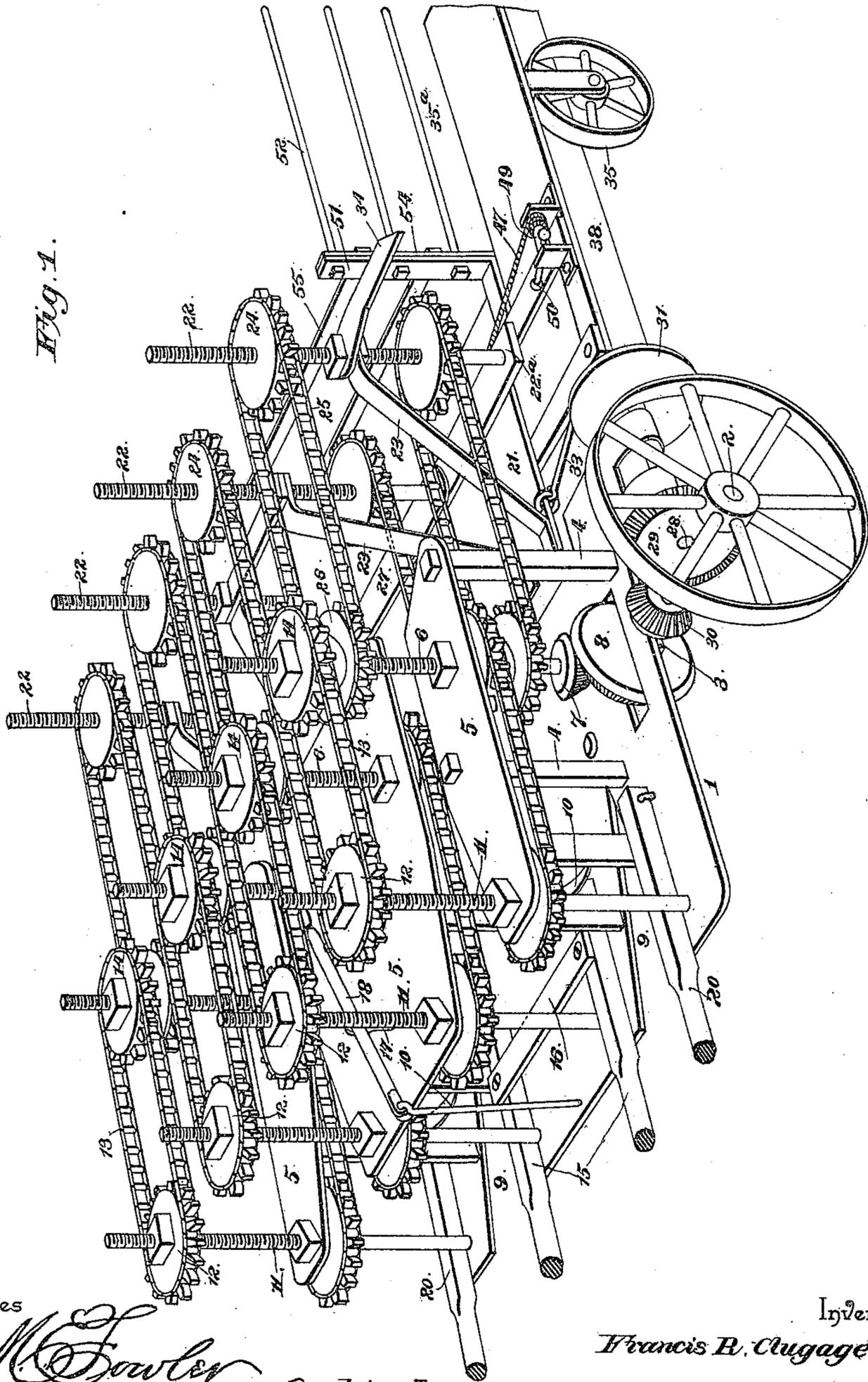
4 Sheets—Sheet 1.

F. R. CLUGAGE.
CORN HARVESTER.

No. 438,142.

Patented Oct. 14, 1890.

Fig. 1.



Witnesses

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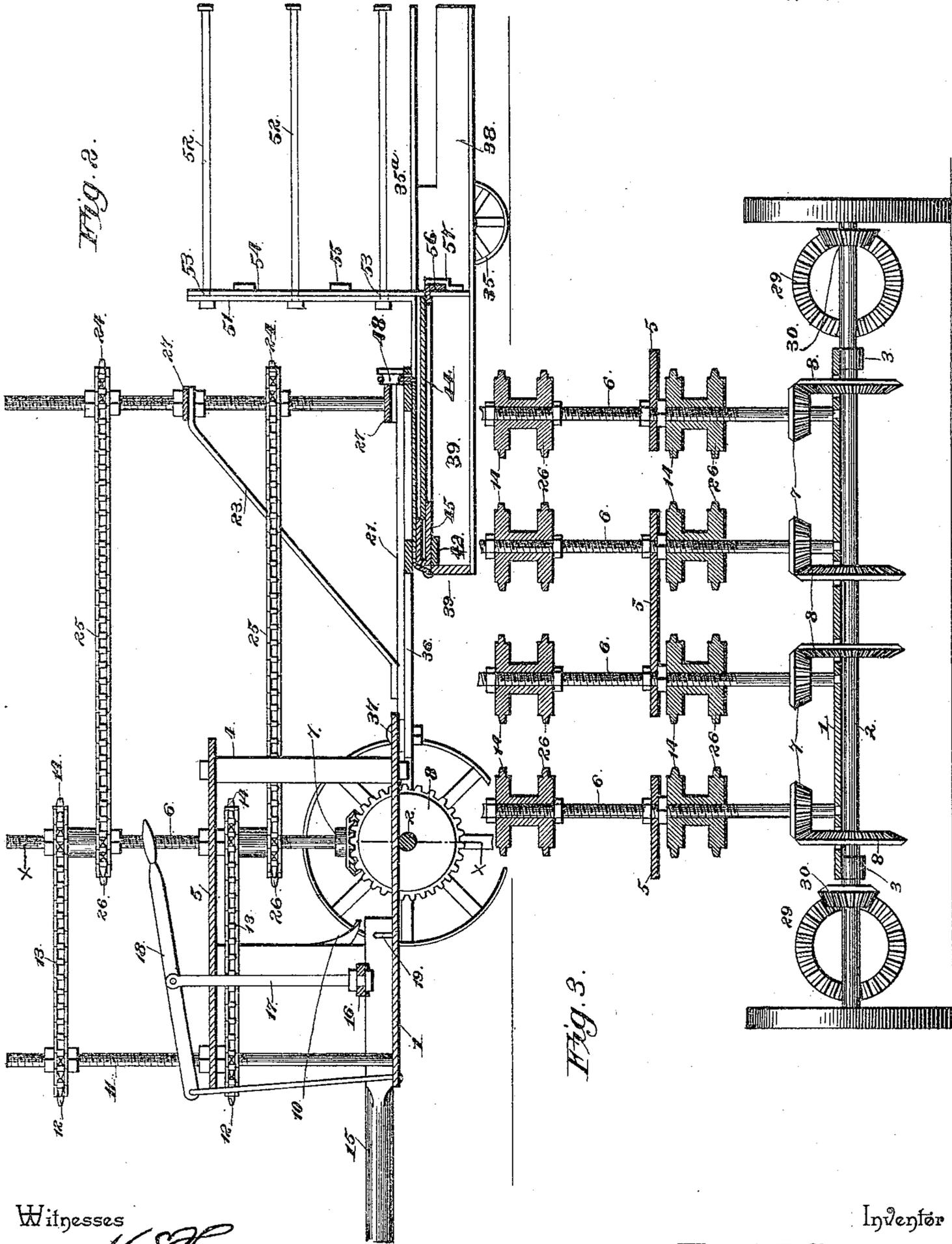
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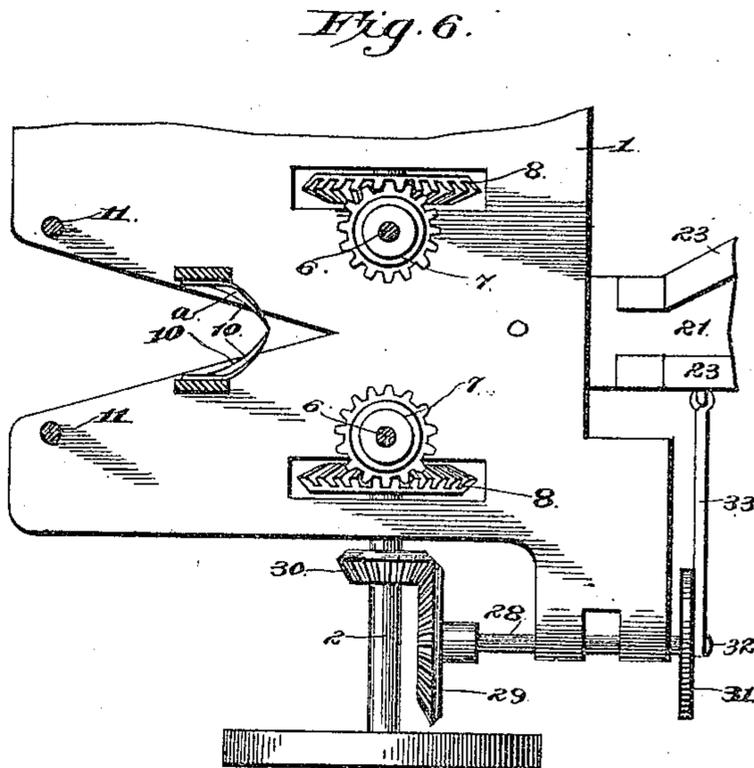
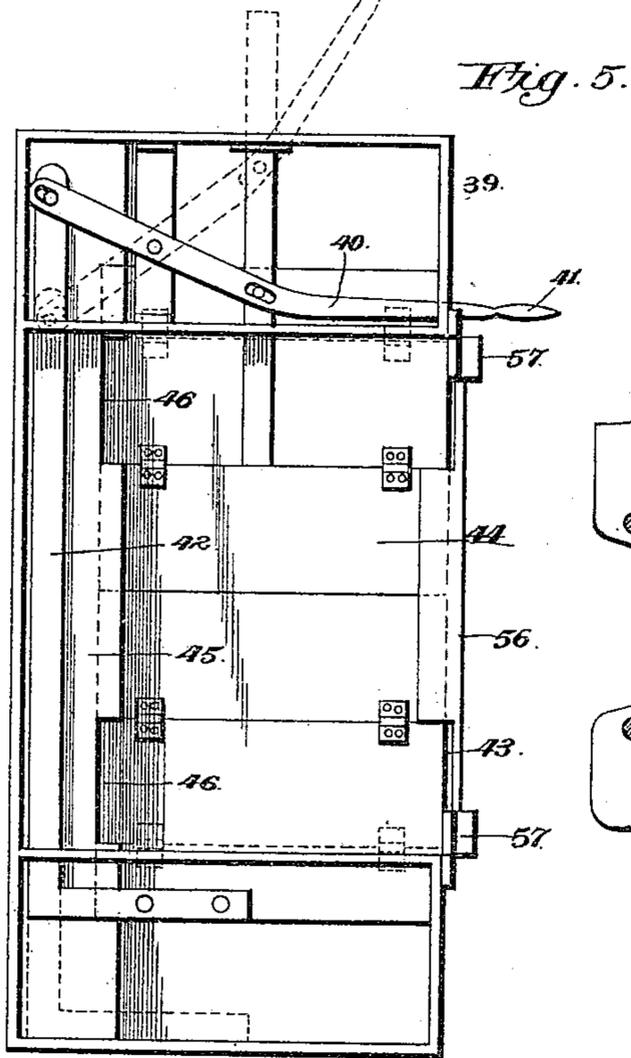
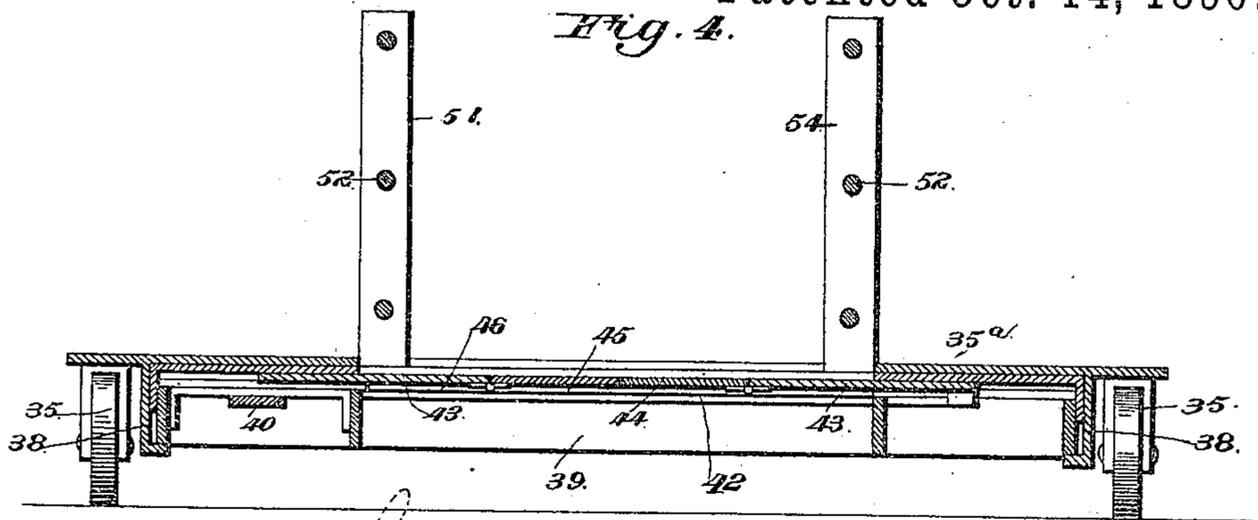
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UNITED STATES PATENT OFFICE.

FRANCIS R. CLUGAGE, OF MANKATO, KANSAS.

CORN-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 438,142, dated October 14, 1890.

Application filed March 29, 1890. Serial No. 345,818. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS R. CLUGAGE, a citizen of the United States, residing at Mankato, in the county of Jewell and State of Kansas, have invented a new and useful Corn-Harvester, of which the following is a specification.

This invention relates to corn-harvesters; and it has for its object to construct a machine of this class which shall be simple, durable, and efficient in operation, and by means of which the corn may be accumulated in shocks of convenient size before it is dropped.

The invention consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view showing the machine in position for operation. Fig. 2 is a longitudinal sectional view. Fig. 3 is a vertical transverse section taken on the line $x x$ in Fig. 2. Fig. 4 is a vertical transverse section of the supporting-truck. Fig. 5 is a bottom plan view of the sliding frame of the supporting-truck. Fig. 6 is a detail top plan of a portion of the machine. Fig. 7 is a plan view of the machine with the sliding frame partially extended.

Like numerals of reference indicate like parts in all the figures.

The frame 1 of my improved harvester is supported upon an axle 2, which revolves in suitable bearings 3 upon the under side of said frame. The frame 1 is provided with uprights 4, supporting the top plates 5. Two pairs of vertical shafts 6 6 are journaled in the frame 1 and top plates 5 directly above the axle, and said shafts are provided at their lower ends with pinions 7, that mesh with bevel-gears 8 upon the axle, said bevel-gears being arranged adjacent to the outer sides of the vertical shafts 6 of each pair, thereby imparting to the said shafts a rotary motion in opposite directions.

The frame 1 is provided at its front edge with V-shaped notches or recesses 9, adjacent to which knives or cutters 10, having cutting-edges 10^a at their lower edges, as will be seen in Fig. 6, are suitably arranged for the purpose of severing the cornstalks which are guided into the said notches or recesses. Adjacent to the said notches or recesses, at

the front end of the frame, are journaled vertical shafts 11, which are provided with sprocket-wheels 12, connected by endless chains 13 with sprocket-wheels 14 upon the vertical shafts 6, through which motion is communicated from the axle of the machine to the vertical shafts 11.

15 15 designate a pair of shafts or thills, the rear ends of which are secured to or connected by a cross-piece 16, having an upwardly-extending arm 17, which is connected to a lever 18, by means of which it may be vertically adjusted. The thills 15 are also connected by means of links 19 with the frame or platform 1. Additional thills 20 are secured to the outer sides of the frame. To operate my improved machine, three horses are preferably employed, one of which is hitched between the thills 15, while the remaining two are hitched in any convenient manner on the outer sides of the thills or shafts 20. It will thus be seen that the shafts 15 and 20 form guides that serve to conduct the stands of corn into the V-shaped notches 9 in the front side of the frame where the knives or cutters are located.

Pivoted to the under side of the platform 1, at points between each pair of shafts 6, are the rearwardly-extending brackets 21, the rear ends of which are provided with vertical shafts 22, journaled in cross-pieces 22^a, secured to said brackets, and in straps 23, secured to the upper sides of the latter. Said shafts are provided with sprocket-wheels 24, connected by chains 25 with sprocket-wheels 26 upon the vertical shafts 6. The brackets 21, of which there are two, are connected by means of a link 27. The ends of the frame or platform 1 are provided with bearings for counter-shafts 28, the front ends of which are provided with bevel-gears 29, meshing with pinions 30 upon the axle 2, which said pinions are so arranged as to impart rotary motion in the same direction to the shafts 28. The latter are provided at their rear ends with wheels or disks 31, having wrist-pins 32, which are connected by means of pitmen 33 with the pivoted brackets 21, to which latter an oscillating movement may in this manner be imparted. The outer brackets 23 are provided with laterally-extending arms 34, the purpose of which will be hereinafter described.

35^a designates a truck, consisting of a suitably-constructed frame, mounted upon wheels 35. Said frame is provided with a forwardly-extending tongue 36, which in practice is connected to the harvester-frame 1 by means of a vertical pivotal bolt 37. The frame 35^a is provided on its under side with longitudinal flanges or cleats 38, supporting a frame 39, to the under side of which is pivoted a lever 40. The rear end of the lever 40 has a handle 41, and to its front end is pivoted an L-shaped rod 42. To the lever 40 and to the L-shaped rod 42 are suitably connected the slides 43, the inner edges of which have pivoted wings or doors 44. The said slides 43 and doors 44 slide between supporting-flanges 45, which are provided with notches 46, which, when the slides 43 are moved in an outward direction, permit the doors 44 to swing downwardly, thereby dropping the load. The longitudinally-sliding frame 39 is connected by a rope or chain 47, passing over a guide-pulley 48, with a windlass 49, journaled in suitable bearings near the front end of the top frame, and having a loosely-sliding lever or handle 50 passing transversely through a perforation therein, and by means of which it may be conveniently manipulated. The said operating-lever, by resting against the upper side of the truck-frame, is prevented from rotating during the progress of the machine. The truck-frame 35^a is provided with upwardly-extending arms or brackets 51, connected by longitudinal guide-wires 52, that extend through perforations 53 in the uprights 54, that extend upwardly from the rear end of the frame 39. The said uprights 54 are also connected by cross-pieces 55, as will be seen in the drawings.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of my invention will be readily understood.

When the machine progresses over the field, the stands of corn are guided into the V-shaped notches 9, severed by the cutters 10, and conveyed by the endless carriers composed of the chains 13 and 25 in an upright or standing position to the supporting-truck at the rear end of the machine. The brackets 21, that support the rear shafts 22, have a lateral oscillating motion that causes the corn as it is being delivered upon the supporting-platform to be evenly distributed. The brackets 34 retain the corn in position and prevent it from tilting over in a forward direction when the endless carriers that deposit the corn upon the frame 44 are vibrated. The corn passing between said endless chains or carriers also tends to make them sufficiently taut to be retained upon their respective sprocket-wheels. As the supporting-platform becomes filled it is gradually moved in a rearward direction by winding the rope or chain 47 upon the windlass 49, and in this manner the corn is gradually but firmly packed upon the supporting-platform. When the latter

has been filled, the shock may be tied, and it may then be dumped by manipulating the handle of the lever 40 to cause the doors 44 to swing open. The rear part or cross-piece 56 of the supporting-frame 39 is mounted detachably upon brackets 57 at the rear end of said frame, so that it may be readily removed for the purpose of enabling the machine to be driven clear of the shock. When this has been done, the doors 44 are closed and the supporting-frame 39 is pushed back under the frame of the machine. The rope being unwound from the windlass, the machine is then ready for a repetition of the operation.

My improved corn-harvester, as will be seen from the foregoing description, is exceedingly simple in construction, and it may be easily operated to cut simultaneously two rows of corn in a rapid and efficient manner.

Having thus described my invention, what I claim is—

1. In a corn-harvester, the combination, with the frame or platform having the cutting apparatus and the endless carriers above the platform on each side of the cutting apparatus, of the pivoted brackets having the endless carriers extending rearward from the carriers on the frame and mechanism for imparting an oscillating motion to said brackets, substantially as set forth.

2. The combination of a harvester-frame, a truck or supporting frame connected to the same, and the horizontally-oscillating endless carriers adapted to deliver the cut corn from the harvester-frame onto the truck-frame, substantially as set forth.

3. The combination of the harvester-frame, the truck having a longitudinally-sliding supporting-frame, and the laterally-oscillating endless carriers connected pivotally to the harvester-frame to deliver the cut corn to the truck, substantially as set forth.

4. The combination, with the harvester-frame, of the laterally-oscillating endless carriers having laterally-extended guard-arms and a receptacle at the delivery end of the carriers, substantially as set forth.

5. The combination, with the harvester-frame having vertical shafts, of the pivoted rearwardly-extending brackets having vertical shafts and the endless chains connecting sprocket-wheels upon the latter with sprocket-wheels upon the vertical shaft of the harvester-frame, substantially as set forth.

6. The combination, with the harvester-frame having vertical shafts provided with sprocket-wheels connected by endless chains or carriers, of the laterally-oscillating pivoted brackets having straps on their upper sides, the vertical shafts on said brackets, having sprocket-wheels, the chains connecting the latter with sprocket-wheels upon the rear vertical shafts of the harvester-platform, and links connecting the said laterally-oscillating pivotal brackets, substantially as set forth.

7. The combination, with the harvester-frame having vertical shafts provided with

sprocket-wheels connected by endless chains or carriers, of the laterally-oscillating pivoted brackets having straps on their upper sides, the laterally-extending guard-arms, a receptacle at the delivery end of the carriers, the vertical shafts on the oscillating brackets, having sprocket-wheels, the chains connecting the latter with sprocket-wheels upon the rear vertical shafts of the harvester-platform, and links connecting the said laterally-oscillating pivoted brackets, substantially as set forth.

8. The combination, with the harvester-platform having the revolving axle, of the counter-shafts geared to the latter and revolving in the same direction, the laterally-oscillating pivoted brackets having endless carriers, and the pitmen connecting said brackets with crank-disks upon the rear ends of said counter-shafts, substantially as set forth.

9. The combination, with the harvester-frame having the laterally-oscillating endless carriers, of the truck having the longitudinally-sliding supporting-frame for receiving the cut corn from the harvester and mechanism for adjusting the sliding frame, substantially as set forth.

10. The truck having longitudinal flanges or supporting-cleats, in combination with the longitudinally sliding supporting-frame having the sliding floor-sections provided with hinged doors, substantially as set forth.

11. The truck having longitudinal flanges or supporting-cleats, in combination with the longitudinally-sliding supporting-frame having notched supporting-flanges, the sliding floor-sections having hinged doors, and the levers for manipulating said floor-sections to bring the hinged doors into alignment with the notches in the supporting-flanges to permit the said doors to drop for the purpose of discharging the load, substantially as set forth.

12. The combination, with the truck having

uprights provided with rearwardly-extending guide-wires, of the sliding supporting-frame having perforated uprights to receive the free ends of said guide-wires, substantially as set forth.

13. The combination, with the truck having uprights provided with rearwardly-extending guide-wires, of the longitudinally-sliding supporting-frame having perforated uprights to receive the free ends of said guide-wires and the cross-bars connecting said uprights, and means for discharging the load from said supporting-frame, substantially as set forth.

14. The combination, with the truck, of the longitudinally-sliding supporting-frame, means for confining the load upon the latter, the sliding cross-sections having hinged doors, and the removable rear cross-bar, substantially as set forth.

15. The combination of the harvester-frame having the cutting apparatus and the endless carriers, the laterally-oscillating endless carriers connected pivotally to the rear end of the harvester-frame and having laterally-extending guard-arms, the truck connected to the harvester-frame and having uprights provided with rearwardly-extending guide-wires, the longitudinally-sliding supporting-platform having perforated brackets to receive said guide-wires, arms connecting the said brackets, the sliding floor-sections having hinged doors, the levers to manipulate said door-sections and the detachable rear cross-bar, and means for manipulating and adjusting the said sliding supporting-platform, substantially as and for the purpose herein set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

FRANCIS R. CLUGAGE.

Witnesses:

J. D. REID,

J. H. MECHEEN.