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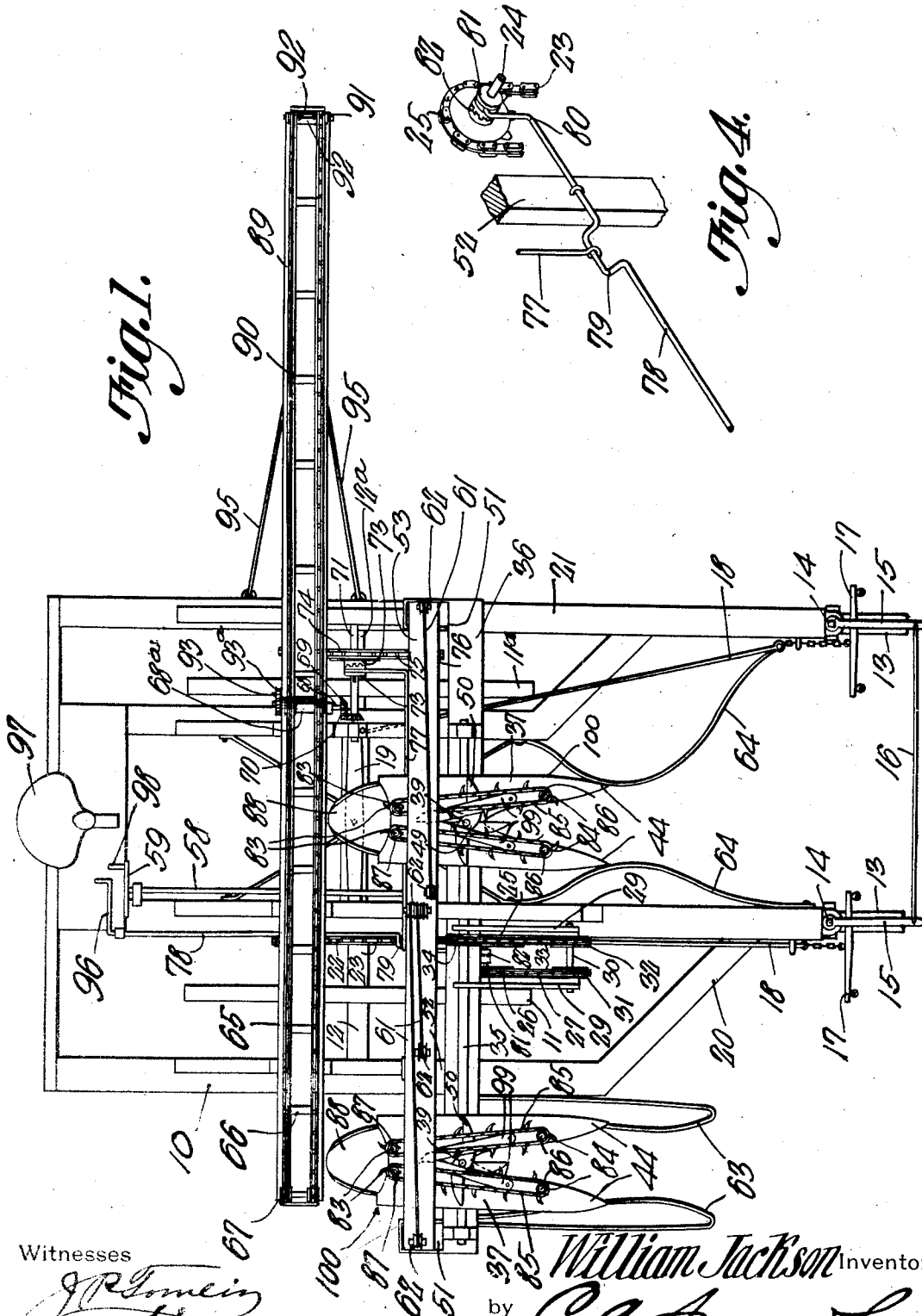
MILO MAIZE AND KAFIR CORN HEADER.

APPLICATION FILED MAR. 25, 1912. RENEWED MAR. 1, 1913.

1,058,368.

Patented Apr. 8, 1913.

4 SHEETS—SHEET 1.



Witnesses

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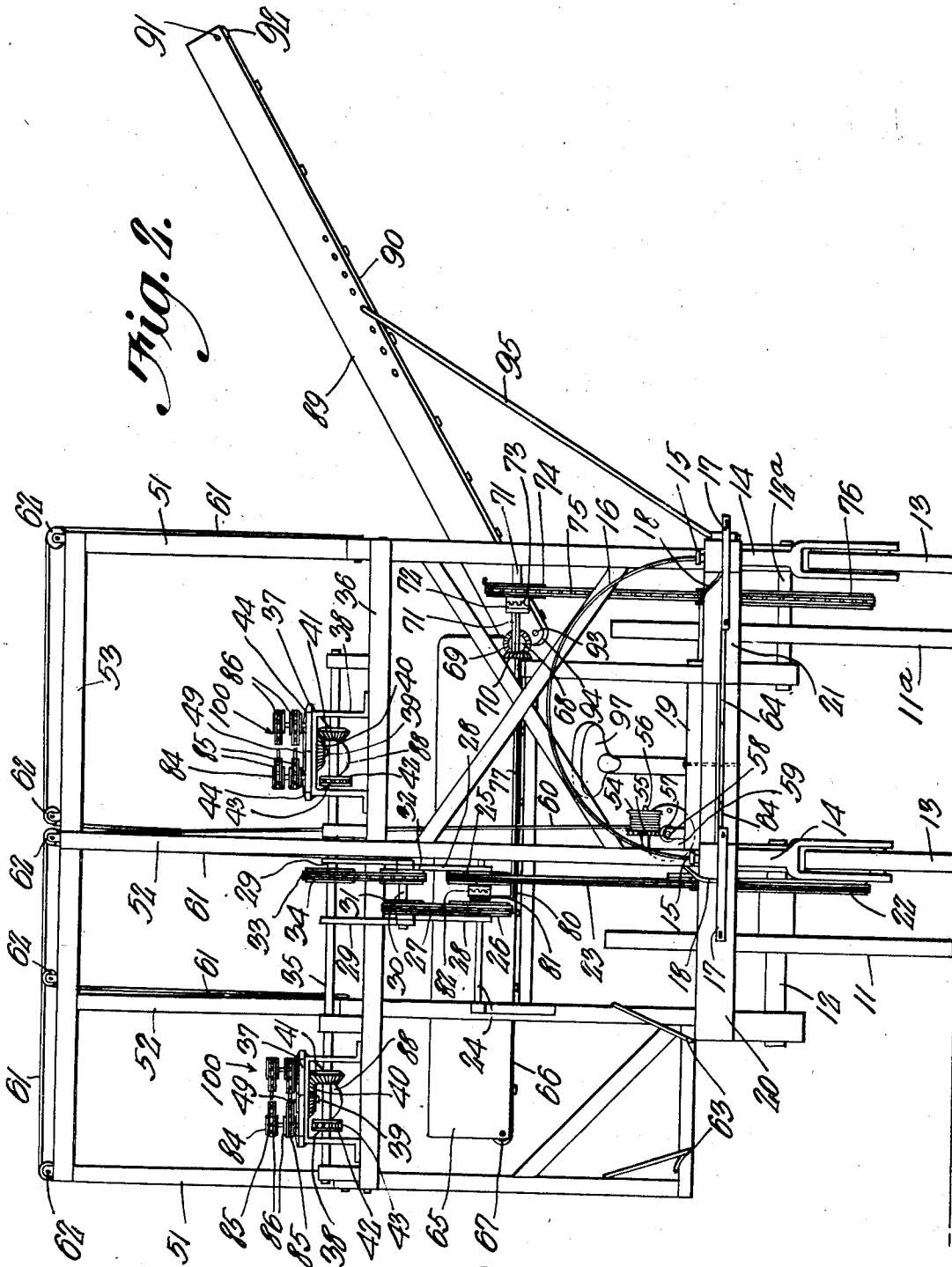
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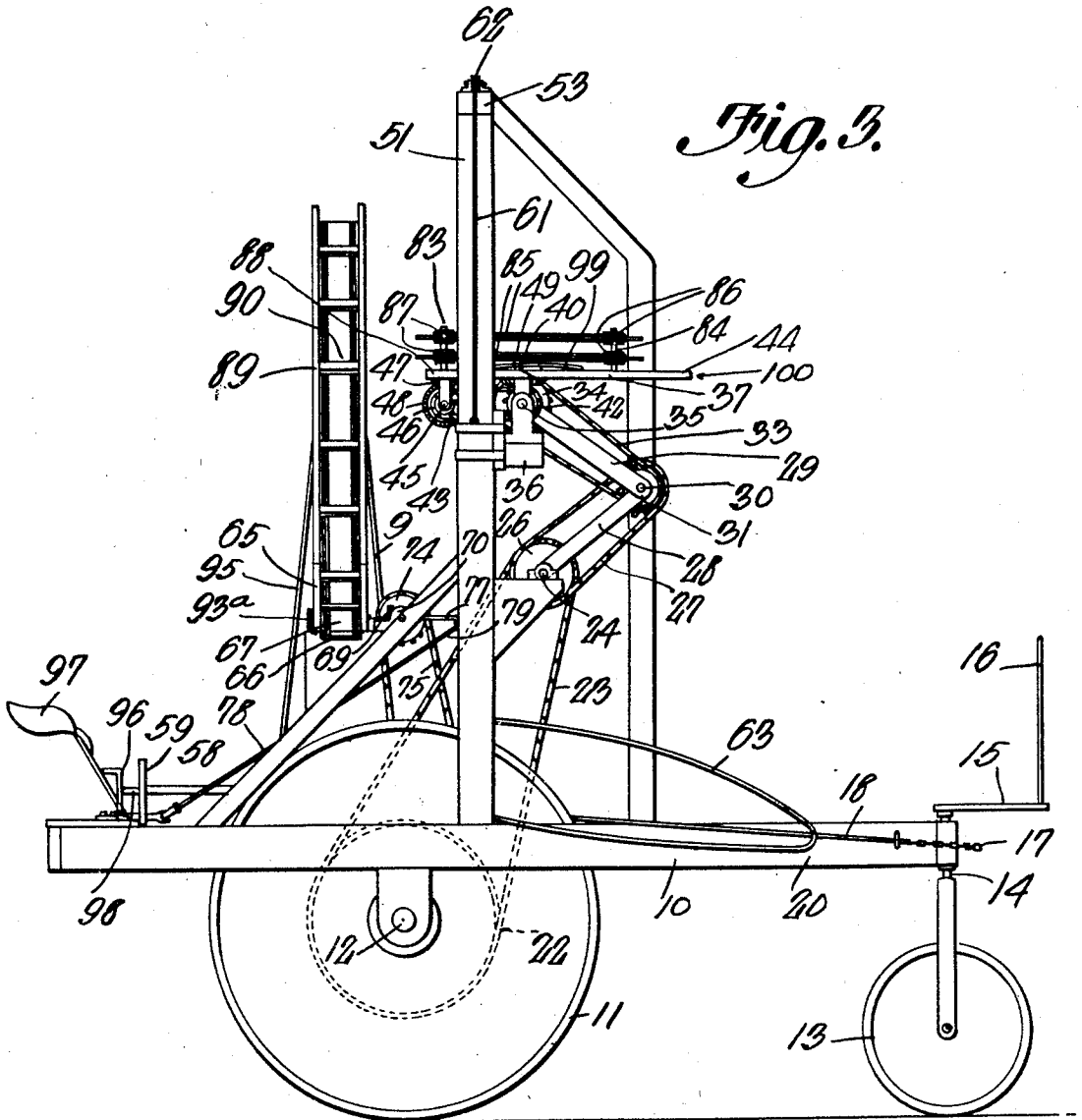
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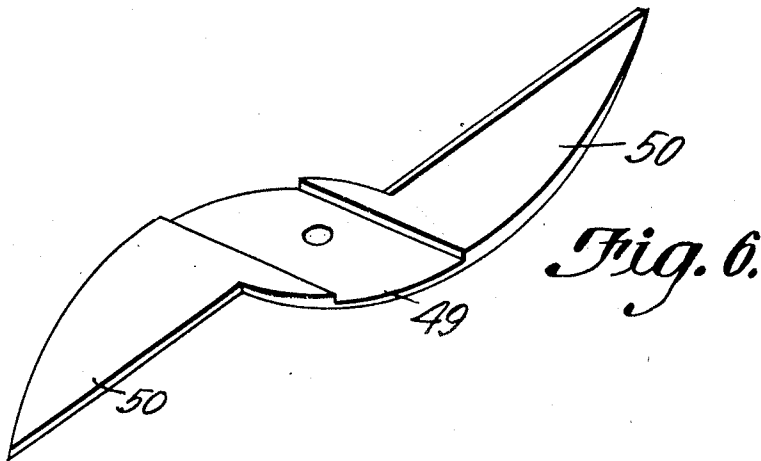
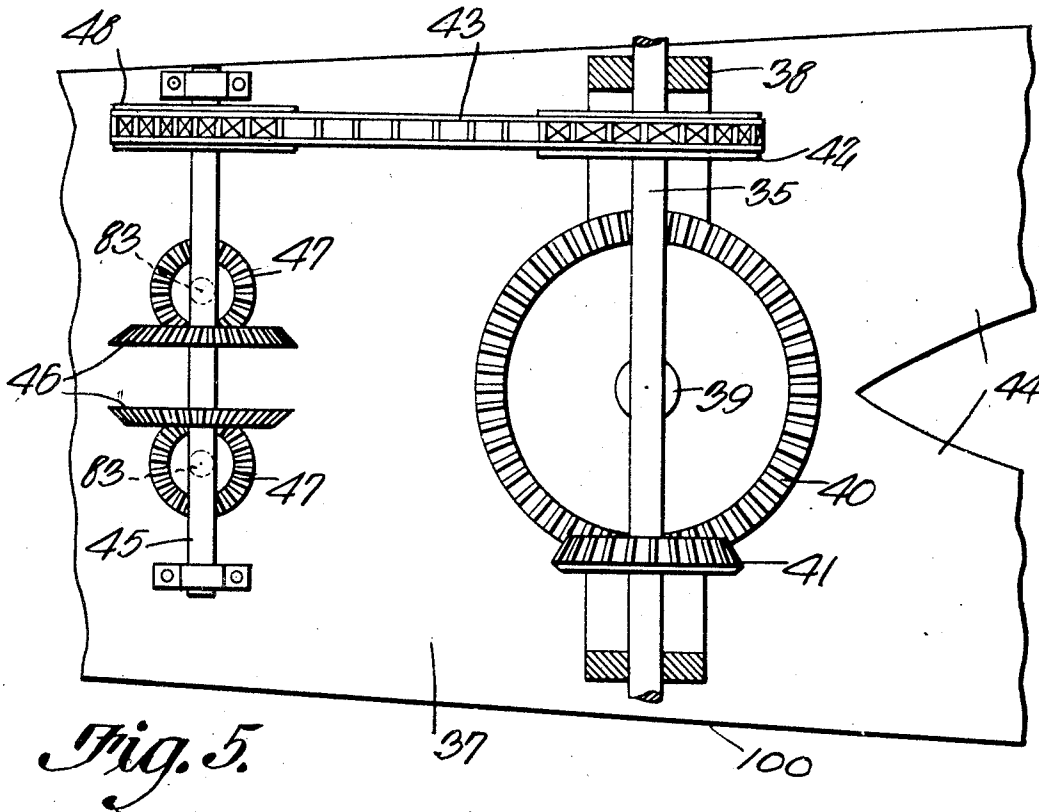
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4 SHEETS-SHEET 4.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM JACKSON, OF PLAINVIEW, TEXAS.

MILO-MAIZE AND KAFIR-CORN HEADER.

1,058,368.

Specification of Letters Patent.

Patented Apr. 8, 1913.

Application filed March 25, 1912, Serial No. 686,029. Renewed March 1, 1913. Serial No. 751,645.

To all whom it may concern:

Be it known that I, WILLIAM JACKSON, a citizen of the United States, residing at Plainview, in the county of Hale and State of Texas, have invented a new and useful Milo-Maize and Kafir-Corn Header, of which the following is a specification.

This invention relates to machines for heading milo maize, Kafir corn and the like, and has for one of its objects to provide a machine of this character embodying vertically adjustable heading devices and novel flexible means for operatively connecting the heading devices with one of the ground wheels of the frame of the machine.

Another object of the present invention is to provide novel means for raising and lowering the heading devices, which heading devices are operatively connected to one of the ground wheels of the frame.

A further object of the present invention is to provide means for catching the material delivered by the heading devices and for conveying and elevating the material to one side of the machine.

A still further object of the present invention is to provide means for simultaneously throwing the heading devices and the conveying and elevating mechanism into and out of operation.

With the foregoing and other objects in view, which will be apparent as the invention is better understood, this invention is embodied in the novel construction and combination of parts elicited in the following description and pointed out in the appended claims, it being understood that this invention is susceptible of alterations or deviations in its details within the scope of the appended claims without departing from the spirit of the invention.

The preferred embodiment of the invention is illustrated in the accompanying drawings, wherein similar reference characters indicate similar parts, and wherein,—

Figure 1 is a plan view of the machine. Fig. 2 is a front view thereof. Fig. 3 is a side elevation. Fig. 4 is a fragmental perspective of a detail. Fig. 5 is a fragmental bottom view of one of the heading devices. Fig. 6 is a perspective view of one of the cutters of the heading devices.

Referring particularly to the drawings, the numeral 10 designates generally the frame of the machine, which is divided into the two side sections 20 and 21. The re-

spective sections 20 and 21 of the frame carry the axles 12 and 12^a, upon which axles are mounted the respective ground wheels 11 and 11^a, and at the forward ends of the said sections are pivoted the forks 14 carrying the steering wheels 13. Tongues 15 are secured to the upper ends of the forks 14 and are connected at their forward ends by an arch 16, whereby the tongues will swing simultaneously to properly steer the machine. A swingle tree 17 is arranged at the forward end of each of the sections 20 and 21, and the said swingle trees are connected by draft cables 18 to the ends of an evenner bar 19 pivoted upon the intermediate portion of the frame 10, between the sections 20 and 21, whereby the draft is equalized between the swingle trees 17. The sections 20 and 21 of the frame are adapted to pass on the opposite sides of a row of milo maize, Kafir corn or the like, and the swingle trees 17 being arranged at the forward end of the said sections, will permit the draft animals attached thereto to walk between the rows of milo maize, Kafir corn or the like, the arch 16 which connects the steering tongues 15 passing over the row between the sections 20 and 21 of the frame.

The frame of the machine has a plurality of masts 51 and 52 arranged laterally thereon, one of the end masts which are designated by the numeral 51 being supported by the section 21 and the other end mast 51 and the intermediate masts 52 being supported by the section 20. A beam 53 is secured to the upper ends of the masts 51 and 52, and a beam 36 is slidable on the said masts. From the lower end of one of the intermediate masts 52 projects a pintle having a drum 54 mounted thereon, which drum has a worm wheel 55 attached thereto, and a longitudinal shaft 58 extending to the rear end of the frame carries a worm at its forward end meshing with the worm wheel 55, whereby when the shaft 58 is rotated the drum 54 may be made to rotate. This shaft 58 has a hand wheel 59 secured to the rear end thereof and carrying a crank 98 for convenience in rotating the same. A cable 60 is connected to the drum 54 and at its upper end has a plurality of branches 61 trained over a number of pulleys 62 mounted on the beam 53 and connected to the beam 36, whereby upon the drum 54 being rotated, the cable 60 may be wound and unwound to raise and lower the beam 36.

A shaft 35, which for convenience will be termed a secondary counter-shaft, is journaled upon the beam 36, and is operatively connected to the heading devices, designated generally by the numeral 100, mounted on the said beam 36. This secondary counter-shaft 35 is operatively connected to the axle 12 of the ground wheel 11 by a novel flexible means, which will be directly described.

A sprocket wheel 22 is mounted on the axle 12, and a shaft 24 is journaled upon the intermediate masts 52 and has a loose sprocket wheel 25 thereon, a chain 23 being trained over the sprocket wheels 22 and 25. The sprocket wheel 25 mounted on the shaft 24 has a clutch hub 82, and a clutch member 81 is slidable on the shaft 24 and rotatable therewith, whereby the clutch member 81 may be slid into and out of engagement with the clutch hub 82. When the clutch member 81 is in engagement with the clutch hub 82, the shaft 24 is made to rotate with the axle 12, and when the clutch member 81 is disengaged from the clutch hub 82, the shaft 24 will remain stationary or passive. Two pairs of toggle links 28 and 29 are pivoted at their outer ends to the shafts 24 and 35, and a primary counter-shaft 30 is journaled through the joint of the said links. The sprocket wheels 31 and 32 are fixed on the primary counter-shaft 30, and a chain 27 is trained over the sprocket wheel 31 and over the sprocket wheel 26 fixed on the shaft 24, while a chain 33 is trained over the sprocket wheel 32 and over the sprocket wheel 34 fixed on the secondary counter-shaft 35. Thus, upon the shaft 24 being rotated, rotary motion is transmitted to the secondary counter-shaft 35, and by reason of the toggle links 28 and 29, the secondary counter-shaft 35 may be adjusted vertically with the beam 36 without impairing the motion given to the secondary counter-shaft, the toggle links 28 and 29 and associate parts providing a flexible means for operatively connecting the shaft 24 and the secondary counter-shaft 35.

The heading devices 100, of which there are two, are located at a point between the sections 20 and 21 of the frame and to one side of the section 20, respectively, whereby two rows may be headed simultaneously, one row being arranged on the outer side of the section 20. The frame 10 carries the respective guide rods 63 and 64 for directing the rows of milo maize, Kafir corn or the like, to the heading devices. Each of the heading devices comprises a frame 37 having the forward end thereof forked to provide the arms 44 adapted to pass on the respective sides of the row of milo maize, Kafir corn or the like, which frame is supported by a bracket 38 secured to the beam 36 and through which the secondary counter-shaft 35 passes. A short shaft 39 is journaled in the frame 37 in rear of the

forked portion thereof, and on its lower end has secured a beveled gear 40 meshing with a beveled gear 41 secured on the secondary counter-shaft 35, and on its upper end has secured a cutter 49 embodying the knives or blades 50 for severing the heads of the milo maize, Kafir corn or the like, from the stalks thereof. The blades 50 rotate beneath knives 99 secured on the frame 37 and arranged in an approximate V-shape to pass on the respective sides of the stalks, the blades 50 cooperating with the knives 99 to sever the heads of the stalks. A shaft 45 is journaled on the bottom and at the rear end of the frame 37 and has a sprocket wheel 48 fixed thereto, the shaft 45 being operatively connected to the secondary counter-shaft 35 by means of a chain 43 trained over the sprocket wheel 48 and a sprocket wheel 42 secured on the said secondary counter-shaft. A pair of vertical shafts 83 are journaled in the rear end of the frame 37, and on their lower ends have beveled gears 47 meshing with beveled gears 46 secured to the shaft 45. Vertical shafts 84 are also journaled in the forward ends of the arms 44 of the frame 37, and the respective shafts 83 and 84 have secured thereto the respective pairs of sprocket wheels 87 and 86, over which are trained chains 85, which chains carry suitable hooks or fingers for engaging the stalks of the maize or corn, whereby upon the shaft 35 being rotated, the chains 85 will be made to travel rearwardly along their inner runs to carry the stalks into operative relation with the cutters 50 in order to permit the heads thereof to be severed therefrom. The heads of the stalks thus severed are carried rearwardly and are delivered from the heading device by a chute 88 secured to the rear end of the frame 37.

A conveyer frame 65 is mounted upon the frame 10 in rear of the masts, and is adapted to receive the material delivered from the chutes 88 of the heading devices, which are arranged above the conveyer frame. An endless conveyer 66 is mounted in the bottom of the frame 65, the said conveyer traveling over a roller 68 mounted on a shaft 68 journaled in the delivery end of the conveyer frame and over the roller 67 journaled in the other end of the frame. An elevator frame 89 is connected to the frame of the machine at its receiving end adjacent the delivery end of the conveyer frame 65, and has an endless elevator 90 mounted in the bottom thereof, the said elevator passing over a roller 92 mounted on a shaft 91 journaled in the delivery end of the elevator frame and over the roller 94 mounted on the shaft 93 journaled in the lower or receiving end of the elevator. The shafts 68 and 93 are operatively connected in any convenient manner, whereby the endless con-

veyer 66 and the endless elevator 90 are operated simultaneously, the said shafts preferably being provided with sprockets over which an endless chain is trained, as designated generally by the numeral 93^a. The details of the sprockets and chain designated generally by the numeral 93^a are of no moment, and as the same are well known in the art, they need not be illustrated or described in detail. The elevator frame 89 is supported by braces 95, which are preferably adjustable to vary the angle of inclination of the elevator frame as may be desired or necessary. The endless conveyer and endless elevator are operatively connected to the ground wheel 11^a of the section 21 in a novel manner to be directly described.

A sprocket wheel 76 is secured on the axle 12^a of the ground wheel 11^a, and a chain 75 is trained over the sprocket wheel 76 and over a loose sprocket wheel 74 mounted on a shaft 71 supported on the frame 10. The sprocket wheel 74 has a clutch hub 73 which coöperates with the slidable clutch member 72 on the shaft 71 and which rotates with the said shaft, whereby upon the clutch member 72 being slid into engagement with the clutch hub 73, the shaft 71 may be rotated, and whereby upon the clutch member 72 being disengaged from the clutch hub 73 the said shaft will remain stationary. A beveled gear 69 is secured to the shaft 68 and meshes with a beveled gear 70 secured on the shaft 71, whereby upon the shaft 71 being rotated the shaft 68 will rotate therewith to move the conveyer 66 and the elevator 90.

The clutch members 72 and 81 are operated simultaneously by means of a longitudinal and inclined shaft 78, which is journaled at its rear end to the rear end of the frame 10 and at its forward end upon one of the intermediate masts 52, and which has a crank 79 adjacent its inner end and has its inner end formed into a crank 80 which is in engagement with the clutch member 81. A link 77 is connected to the crank 79 and to the clutch member 72, and the shaft 78 at its rear or lower end is provided with a crank 96 by means of which the said shaft may be swung or rotated and in which event the clutch members 81 and 72 will be moved simultaneously to engage the corresponding clutch hubs or disengage the same.

The machine is drawn forward by means of the draft animals attached to the swingle trees 17, the draft animals passing between the rows of maize or corn, and the operator sits upon the seat 97 provided at the rear end of the frame 10 adjacent the rear ends of the shafts 58 and 78. When the clutch members 81 and 72 are thrown into engagement with the clutch hubs 82 and 73, the heading devices and the conveyer and elevator mechanism

will be operated from the respective ground wheels 11 and 11^a, which pass on the opposite sides of a row of maize or corn, the ground wheels 11 and 11^a being independent of each other, and the heading devices and the conveyer and elevator mechanisms being independently operated by the respective ground wheels. The operator may throw the clutch members 81 and 72 into engagement or disengagement with the corresponding clutch hubs by manipulating the crank 96, as may be desired or necessary in the operation of the machine. The beam 36 may be raised or lowered to accommodate the heading devices to the maize or corn, by rotating the shaft 58, which will cause the cable 60 to be correspondingly wound or unwound upon the drum 54 to elevate the heading devices or permit same to gravitate. Thus by manipulating the shaft 58 the operator may at all times adjust the heading devices to the proper elevation for heading the maize or corn, and the heads which are severed by the heading devices drop into the conveyer frame 65 to be delivered to the elevator mechanism. The material is then delivered from the upper end of the elevator mechanism and may be caught in any suitable manner. The axles 12 and 12^a may be mounted upon roller bearings, or other anti-frictional bearings, to decrease the draft, and the axles 12 and 12^a being separated permit the ground wheels 11 and 11^a to rotate with respect to each other thereby dispensing with the necessity of differentials, such as are used on solid axles. This machine may be readily steered, and it will be noted that the respective sections 20 and 21 are independently connected to the draft animals, the draft being equalized by means of the evenner bar 19 pivoted between the said sections intermediate the ends of the frame.

Having thus described the invention, what is claimed as new is:—

1. A header embodying a frame, ground wheels therefor, a vertically adjustable beam on the frame, means for adjusting the beam, a shaft journaled on the frame and operatively connected to one of the ground wheels, a counter-shaft journaled on the beam, heading devices mounted on the beam and operatively connected to the said counter-shaft, toggle links pivoted to the said shafts at their ends, and a counter-shaft journaled through the joint of the said links and operatively connected to the afore-mentioned shafts.

2. A header embodying a frame, ground wheels and axles therefor, a vertically adjustable beam on the frame, a shaft journaled on the frame, a fixed sprocket and a loose sprocket on the said shaft and having a clutch hub, a clutch member slidable on the said shaft to engage the clutch hub, means for sliding the clutch member, a

sprocket secured to the axle of one of the ground wheels, a secondary counter-shaft journaled on the beam, a fixed sprocket on the secondary counter shaft, heading devices
 5 mounted on the beam and operatively connected to the said secondary counter-shaft, means for adjusting the beam, toggle links pivoted at their outer ends to the said shaft and secondary counter-shaft, a primary
 10 counter-shaft journaled through the joint of the said links, two fixed sprockets on the primary counter-shaft, and chains trained around the sprocket secured to the axle of
 15 sprocket on the said shaft, and around the fixed sprockets on the primary counter-shaft and the fixed sprockets on the secondary counter-shaft and the first mentioned shaft, respectively.
 20 3. A header embodying a frame including masts, ground wheels for the frame, a beam

slidable on the masts, a shaft journaled on the beam, and heading devices mounted on the beam and operatively connected to the said shaft, a flexible means operatively connecting the said shaft with one of the
 25 ground wheels, a beam secured on the upper ends of the masts, a plurality of pulleys on the last mentioned beam, a drum mounted on the frame, a cable connected to the drum
 30 and having a plurality of branches trained over the said pulleys and connected to the former beam, and means for rotating the drum.

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

WILLIAM JACKSON.

Witnesses:

W. F. HOFFMAN,
 S. HOFFMAN.