

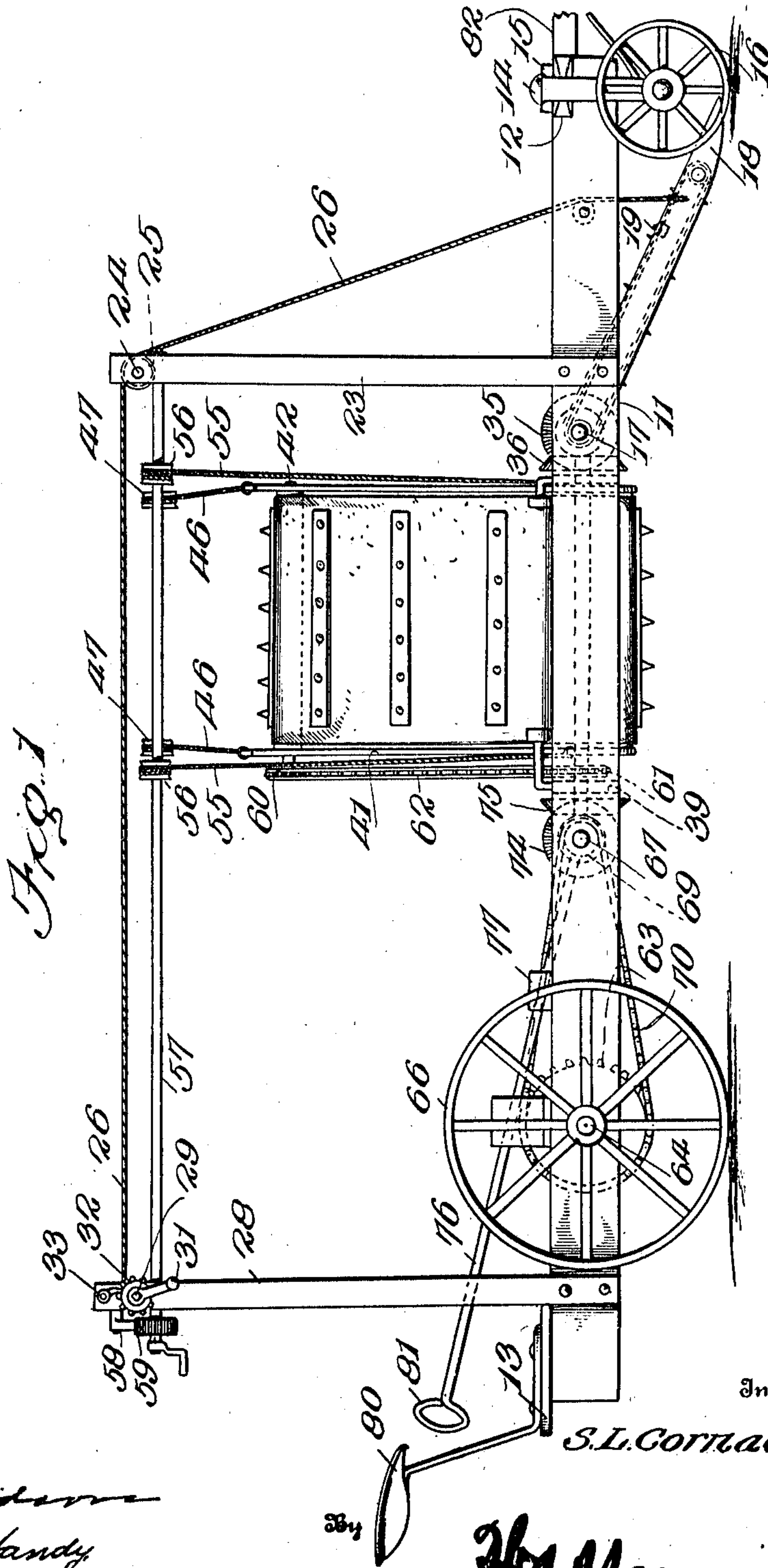
S. L. CORNATZER.
GRAIN LOADER.

APPLICATION FILED FEB. 20, 1909.

Patented Apr. 26, 1910.

3 SHEETS—SHEET 1.

955,947.



Witnesses

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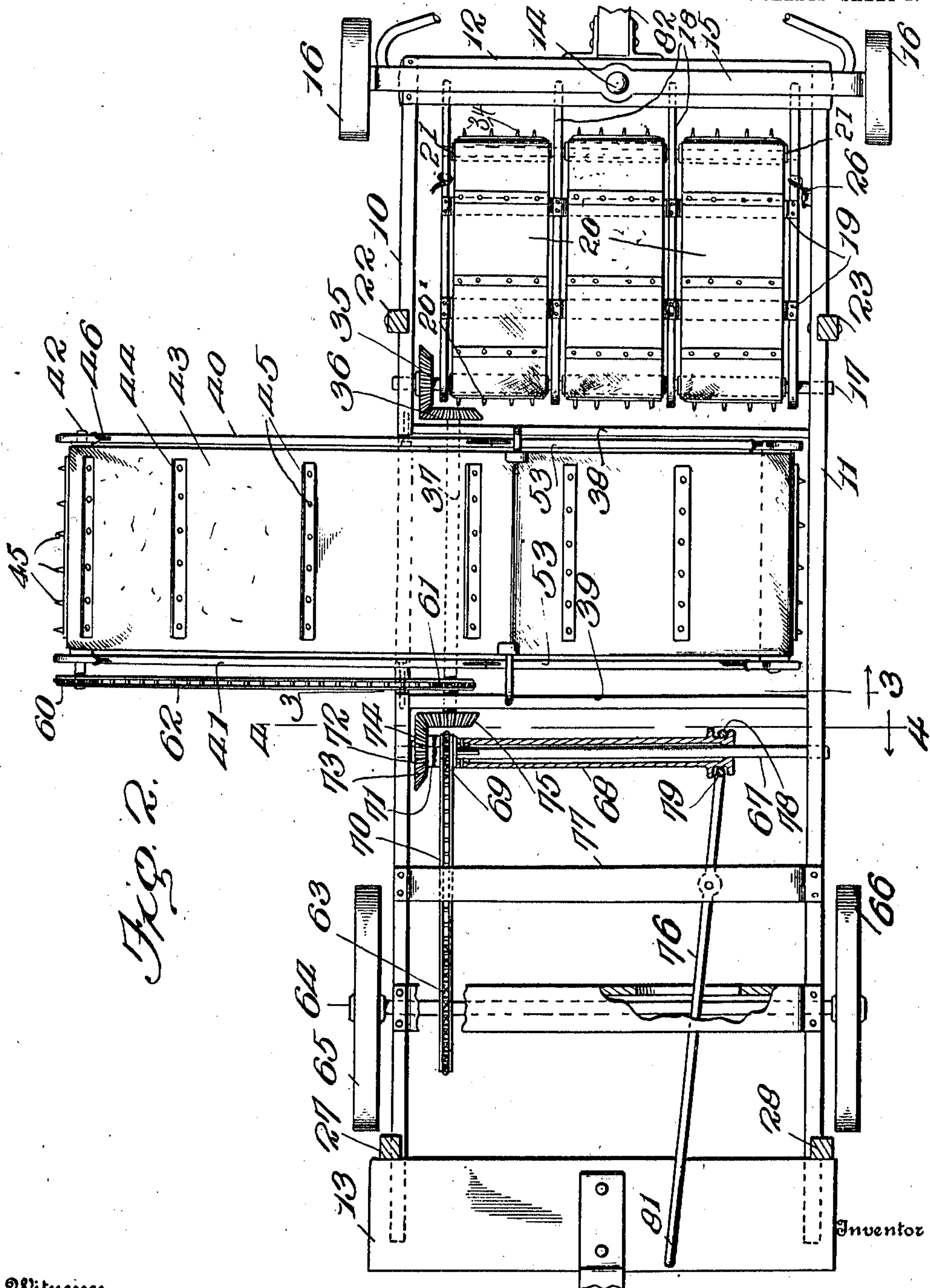


Fig. 2.

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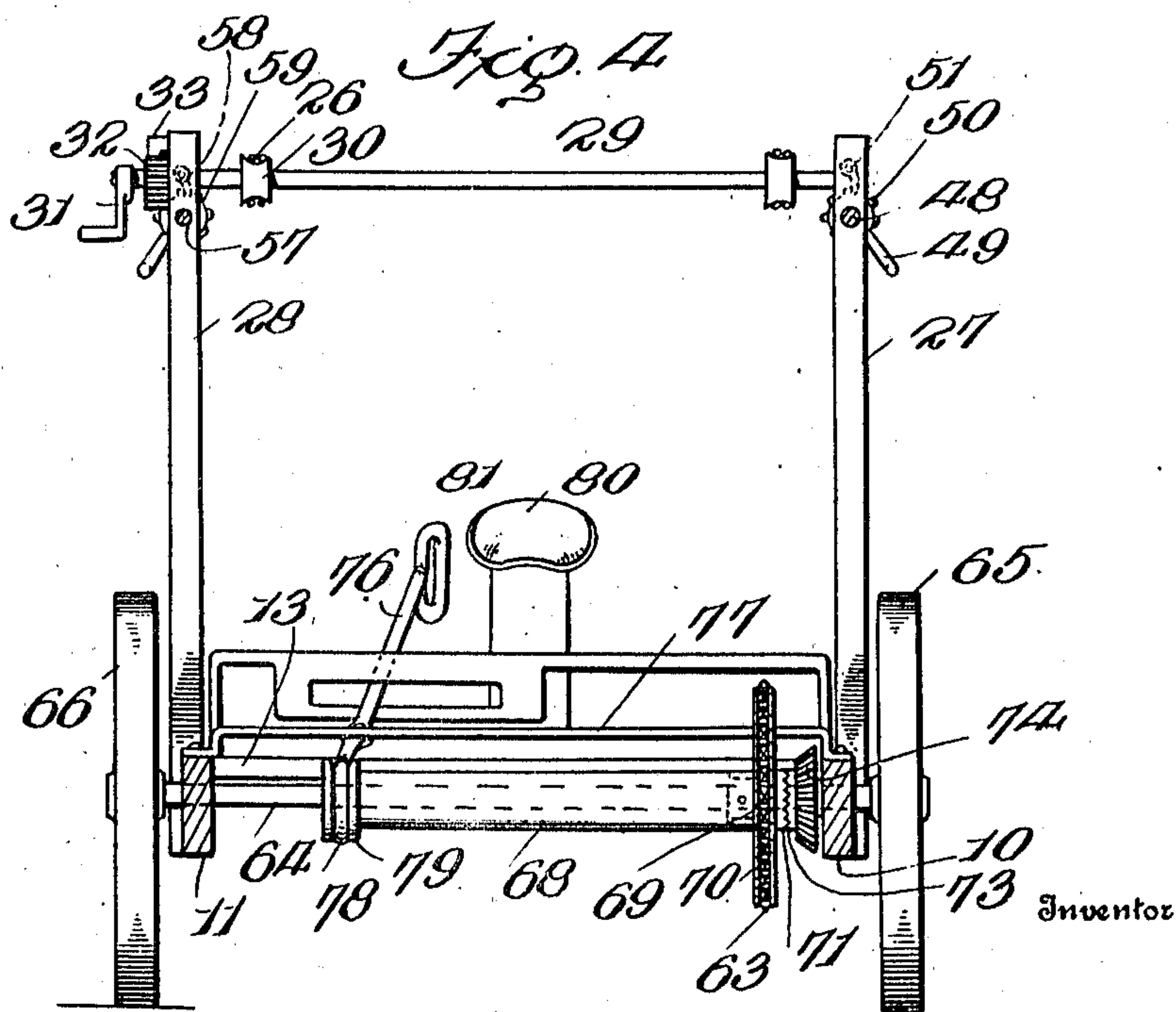
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

SAMUEL L. CORNATZER, OF PHOENIX, ARIZONA TERRITORY, ASSIGNOR OF ONE-THIRD TO EDWARD OLSEN AND ONE-THIRD TO DENNIS CORBETT, BOTH OF PHOENIX, ARIZONA TERRITORY.

GRAIN-LOADER.

955,947.

Specification of Letters Patent.

Patented Apr. 26, 1910.

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To all whom it may concern:

Be it known that I, SAMUEL L. CORNATZER, citizen of the United States, residing at Phoenix, in the county of Maricopa and Territory of Arizona, have invented certain new and useful Improvements in Grain-Loaders, of which the following is a specification.

This invention relates to loaders and has particular reference to a combined loader and conveyer which is adapted for special use in handling alfalfa.

The invention has for an object the provision of a device of this character which is adapted to convey the alfalfa without stripping the same of its leaves, as devices heretofore employed, which renders the same practically worthless.

The invention has for another object the provision of a machine of this character which is adapted to pick up the alfalfa from the ground and to deposit the same in wagons or suitable receptacles which are positioned laterally of the machine.

The invention further aims the provision in a device of this character which comprises the combination of comparatively few operative parts by means of which the herein recited advantages are obtained, thereby making a machine which is strong, durable and one which may be economically produced and maintained, thereby forming a machine of this character which is of great practical advantage.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawings, in which,

Figure 1 is a side elevation of the complete device. Fig. 2 is a top plan view of the same having the extreme upper portion of the device removed. Fig. 3 is a transverse section of the device on the line 3—3 of Fig. 2 looking forwardly of the machine. Fig. 4 is a transverse section of the device on the line 4—4 looking rearwardly of the machine.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawings the numerals 10 and 11 designate two beams which are extended in parallel and which are supported in such position by means of cross-

beams 12 and 13 positioned across the opposite extremities of the same. The cross-beam 12 is provided with a king-bolt 14 which is passed centrally and loosely through an arched axle 15 which supports upon its lower outturned extremities the forward wheels 16 of the device. Transversely positioned between the beams 10 and 11 a shaft 17 is rotatably disposed which is journaled in the opposite inner faces of the beams 10 and 11 in any suitable manner and which is provided with a plurality of teeth 18 loosely disposed in equi-distant relation throughout the length of the shaft 17, the teeth 18 being mounted upon the shaft 17 at their rear enlarged extremities and extended forwardly in parallel therefrom.

Suitable braces 19 are extended across the teeth 18 for the purpose of supporting the same in equi-distant relation and also for the purpose of supporting a plurality of conveyer belts 20 which are disposed longitudinally between the teeth 18 and engaged upon the shaft 17 through which motion is imparted to the same. The conveyer belts 20 are provided with pluralities of spurs 20' which extend laterally across the faces of the same in equi-distantly spaced relation throughout. The teeth 18 are provided at their forward ends with rollers 21 over which the endless belts 20 are passed and thereby supported. The teeth 18 are beveled at their lower edges for the purpose of admitting of the engagement of the same upon the ground and to present a plurality of inclined surfaces for the reception of the alfalfa contacted therewith. For the purpose of adjusting the height of the forward extremities of the teeth 18 the beams 10 and 11 are each provided with standards 22 and 23 respectively adjacent the forward ends thereof across which is supported a bar 24 which is provided with idlers 25 disposed thereon in spaced relation adjacent the opposite ends of the same for the reception of cables 26 which are secured at their forward extremities to the outer teeth 18 and which are passed rearwardly of the machine to enable the operator to regulate the teeth thereby. The beams 10 and 11 are provided adjacent their rear extremities with standards 27 and 28 which are arranged in parallel and which are provided with a transverse shaft 29 upon which is rigidly mounted drums 30 in spaced relation adja-

cent the opposite ends thereof. The shaft 29 is provided upon one extremity with a crank handle 31 adapted for engagement by the operator in order to rotate the shaft 29 and to thereby actuate the drums 30 which carry the rear extremities of the cables 26 for the purpose of operating the same. For retaining the teeth 18 in adjusted position the shaft 29 is provided upon its outer extremity adjacent the crank handle 31 with a ratchet wheel 32 adapted for coöperation with a pawl 33 which is disposed upon the outer face of the standard 28 for the purpose of retaining the shaft 29 in adjusted position thereby supporting the cables 26.

For the purpose of causing the positive engagement of the endless belts 20 with the grain which is engaged by the teeth 18 the conveyers are provided with a plurality of spurs 34 which stand outwardly from the face thereof and serve to carry the alfalfa to the rear extremities of the teeth 18. The shaft 17 is provided with a beveled gear 35 upon one extremity adjacent the beam 10 which is meshed with a second beveled gear 36 carried upon a shaft 37 which is longitudinally disposed within the frame adjacent the beam 10 and supported rotatably between the braces 38 and 39.

Pivotally disposed upon the shaft 37 is a conveyer which comprises the sides 40 and 41 which are fulcrumed at their inner extremities and extend outwardly and laterally from the frame beyond the beam 10 and are provided with a shaft 42 transversely disposed between the outer extremities of the same. The shaft 42 in conjunction with the shaft 37 carries an endless conveyer 43 which is provided with a plurality of transverse strips 44 from which are upwardly extended a plurality of spurs 45.

The sides 40 and 41 are supported upon cables 46 which are secured adjacent their outer extremities and which extend upwardly and inwardly therefrom to engage over drums 47 rigidly mounted upon a shaft 48 which is longitudinally mounted in the frame between the standards 22 and 27. The shaft 48 is provided at its rear extremity with a crank handle 49 by which the same is adapted to be rotated in order to wind the cables 46 upon the drums 47. The shaft 48 is provided with a ratchet 50 which is adapted for coöperation with a pawl 51 which is disposed upon the rear face of the standard 27 adjacent the ratchet 50 which is carried rigidly upon the shaft 48 adjacent the crank handle 49. The sides 40 and 41 are provided upon their inner extremities with hinges 52 which support the ends of arms 53 which extend transversely between the beams 10 and 11 and carry between their extremities adjacent the beam 11 a shaft 54 over which the conveyer belt 43 is adapted to pass. The conveyer belt 43 extends over

the shafts 42 and 54 passing upon the opposite sides of the outer conveyer supported upon the sides 40 and 41 and the inner conveyer supported upon the arm 53 and serves the purpose of conveying the alfalfa from the rear extremities of the teeth 18 to a wagon or the like which is disposed upon the outer extremity of the sides 40 and 41. The extremities of the arms 53, adjacent the beam 11, which are free, are supported by means of cables 55 which extend upwardly therefrom and are engaged upon drums 56 carried rigidly upon a longitudinally disposed shaft 57 mounted in the upper ends of the standards 23 and 28. The shaft 57 is provided with a pawl 58 and ratchet 59 by means of which the shaft 57 is retained in adjusted position.

The conveyer belt 43 is actuated by the shaft 42 through the medium of the sprockets 60 and 61 disposed upon the extremities of the shafts 42 and 37 respectively, and which are disposed in alinement for the reception of a chain 62 which is adapted to communicate motion between the same.

The means employed in connection with this device for transmitting power to operate the several conveyer belts disposed thereon, comprises a large sprocket wheel 63 which is rigidly mounted upon an axle 64 journaled transversely in the rear ends of the beams 10 and 11 and upon which are secured the drive wheels 65 and 66. The beams 10 and 11 are provided forwardly of the axle 64 with a shaft 67 which is rigidly disposed transversely between the same and which is provided with a sleeve 68 which is loosely and slidably disposed upon the same. The sleeve 68 carries a sprocket 69 which is disposed in alinement with the large sprocket 63 and is adapted for the reception of an endless chain 70 for the purpose of communicating rotation by the sprockets, the sleeve 68 being provided with a plurality of longitudinally extended teeth 71 which form a clutch for coöperation with teeth 72 disposed upon a collar 73 carried by a beveled gear 74. The beveled gear 74 is loosely mounted upon the shaft 67 and is meshed with a beveled gear 75 disposed rigidly upon the rear extremity of the shaft 37.

For the purpose of admitting of the operation of the sleeve 68 by hand a hand lever 76 is provided which is intermediately fulcrumed upon a cross-brace 77 disposed between the beams 10 and 11 and which is provided at its forward extremity with a loop 78 adapted to engage about a flanged collar 79 carried upon the outer extremity of the sleeve 68 by means of which the sleeve 68 is reciprocated longitudinally upon the shaft 67. The hand lever 76 is extended rearwardly adjacent a seat 80 where it is

provided with a suitable hand grasp 81 to admit of the ready operation of the same by the operator of the device.

The arched forward axle 15 is provided in any suitable manner with a tongue 82 by means of which the device is adapted to be drawn.

The operation of the device is as follows:—

The machine is drawn forwardly and the teeth 18 are adjusted to the desired height through the medium of the cables 26 which are secured to the drums 30 upon the shaft 29 which are held in adjusted position through the medium of the pawl 33 and ratchet 32. The inner conveyer is now adjusted to the desired height by the rotation of the shaft 57 which raises or lowers the cables 55 to admit of the depositing of the alfalfa from the upper extremities of the belts 20 upon the conveyer belt 43 whereby the same is carried outwardly and deposited in wagons or the like which are disposed beneath the outer extremities of the sides 40 and 41. When the drive wheels 65 and 66 are rotated the motion is transmitted through the sprockets 63 and 69 by means of the chain 70 to the sleeve 68, which when so moved as to engage the clutch teeth 71 and 73, causes the rotation of the beveled gears 74 and 75 thereby actuating the shaft 37. The rotation of the shaft 37 causes the rotation of the shaft 42 through the medium of the sprockets 60 and 61 and the endless chain 62 disposed thereover. This motion of the shaft 42 causes the traveling of the endless conveyer 43 and feeds the alfalfa laterally of the device. The spurs 45 which are disposed upon the transverse strips 44 engage the alfalfa and convey the same without injury thereto and thus prevent the displacement of the leaves from the stalks which renders the same practically useless. As the shaft 37 is rotated the gears 35 and 36 are actuated to cause the rotation of the transverse shaft 17 which carries the belts 20 and thereby causes the upward feeding of the same which engages the spurs 34 in and between the leaves thereby causing the effectual transporting of the same.

In the use of a device of this nature it frequently happens that the material collects in bunches or clusters and tends to clog the parts of the machine and in order to avoid this difficulty the machine is provided with a pivotal conveyer which is located rearwardly of and adjacent the gathering teeth 18 so as to dispose the conveyer at a greater incline to cause the clearance of the same by permitting the alfalfa to fall by gravity toward the side conveyer, when the transverse conveyer may be re turned to a normal horizontal position.

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

1. A machine as specified comprising a

frame, a shaft transversely disposed adjacent the forward end of said frame, a plurality of teeth loosely and equi-distantly positioned on said shaft and extended forwardly therefrom, braces interposed between said teeth for retaining the same in position in parallel, rollers mounted between the forward ends of said teeth, belts engaged over said rollers and said shaft between said teeth, standards carried by said frame, a bar disposed on said standards at the forward end of said frame, idlers mounted on said bar, cables connected to the forward ends of said teeth extended upwardly over said idlers, a shaft mounted on the said standards at the rear of said frame, drums rigidly disposed on said shaft for the reception of the rear extremities of said cables, means carried by said shaft in said standards for rotating the same by hand and securing the same in adjusted position, a transverse conveyer disposed intermediately in said frame and means carried by said frame for actuating said belts and said transverse conveyer.

2. A machine as specified comprising a frame, a plurality of teeth equi-distantly and transversely disposed in parallel at the forward end of said frame, conveyer belts disposed between said teeth for carrying alfalfa therebetween, a shaft longitudinally disposed in said frame adjacent one side thereof, sides disposed pivotally in parallel upon said longitudinal shaft and extended outwardly therefrom, cables carried by said sides and adjustably supported in the upper portion of said frame, a shaft transversely disposed between the outer ends of said sides, arms hingedly disposed in parallel upon the inner extremities of said sides, cables upwardly extended from said arms and adjustably engaged with said frame, a shaft transversely disposed between the free ends of said arms, a conveyer belt disposed over said shaft in said sides and said shaft in said arms, means connected between said longitudinal shaft and said shaft between said sides for communicating motion thereto, beveled gears disposed upon the adjacent extremities of said longitudinal shaft, a transverse shaft disposed in said frame for supporting said teeth and said belts disposed between the same, a beveled gear carried by said transverse shaft adapted to mesh with the beveled gear disposed upon the forward end of said longitudinal shaft and a train of gears connected to said beveled gear on the rear extremity of said longitudinal shaft to rotate the same.

3. A grain loader including a frame, a plurality of teeth forwardly extended in parallel from said frame, conveyer belts mounted between said teeth, a longitudinal shaft mounted at one side of said frame, sides pivoted in parallel on said shaft, a second shaft mounted between the outer ends

of said sides, a pair of arms hingedly connected to the inner ends of said sides, a third shaft journaled in said arms, a conveyer belt disposed over said second and third shafts, 5 means for adjusting said sides and said arms vertically, gears carried by said longitudinal shaft and said second shaft to communicate motion between the same, and means disposed between said conveyers between said 10 teeth and said longitudinal shaft for actuating said conveyers.

4. A machine including a frame, teeth extended in parallel from the forward end of said frame, cables extended upwardly from 15 said teeth and engaged on said frame, drums mounted on said frame for raising said cables to adjust said teeth vertically, conveyers mounted between said teeth, spurs disposed upon said conveyers, a transverse 20 conveyer located on said frame rearwardly of said teeth and extended outwardly from

said frame, means for vertically adjusting all of said conveyers and means carried by said frame for actuating all of said conveyers. 25

5. A machine as specified including a frame, teeth pivotally mounted on said frame and forwardly extended therefrom, longitudinal conveyers mounted on said teeth and disposed between the same, a transverse conveyer mounted on said frame and 30 extended laterally therefrom, gears carried by said frame for actuating said conveyers and means carried by said frame for adjusting said teeth and said transverse conveyer. 35

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

SAMUEL L. CORNATZER. [L. s.]

Witnesses:

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RAY KIRTLEY.