

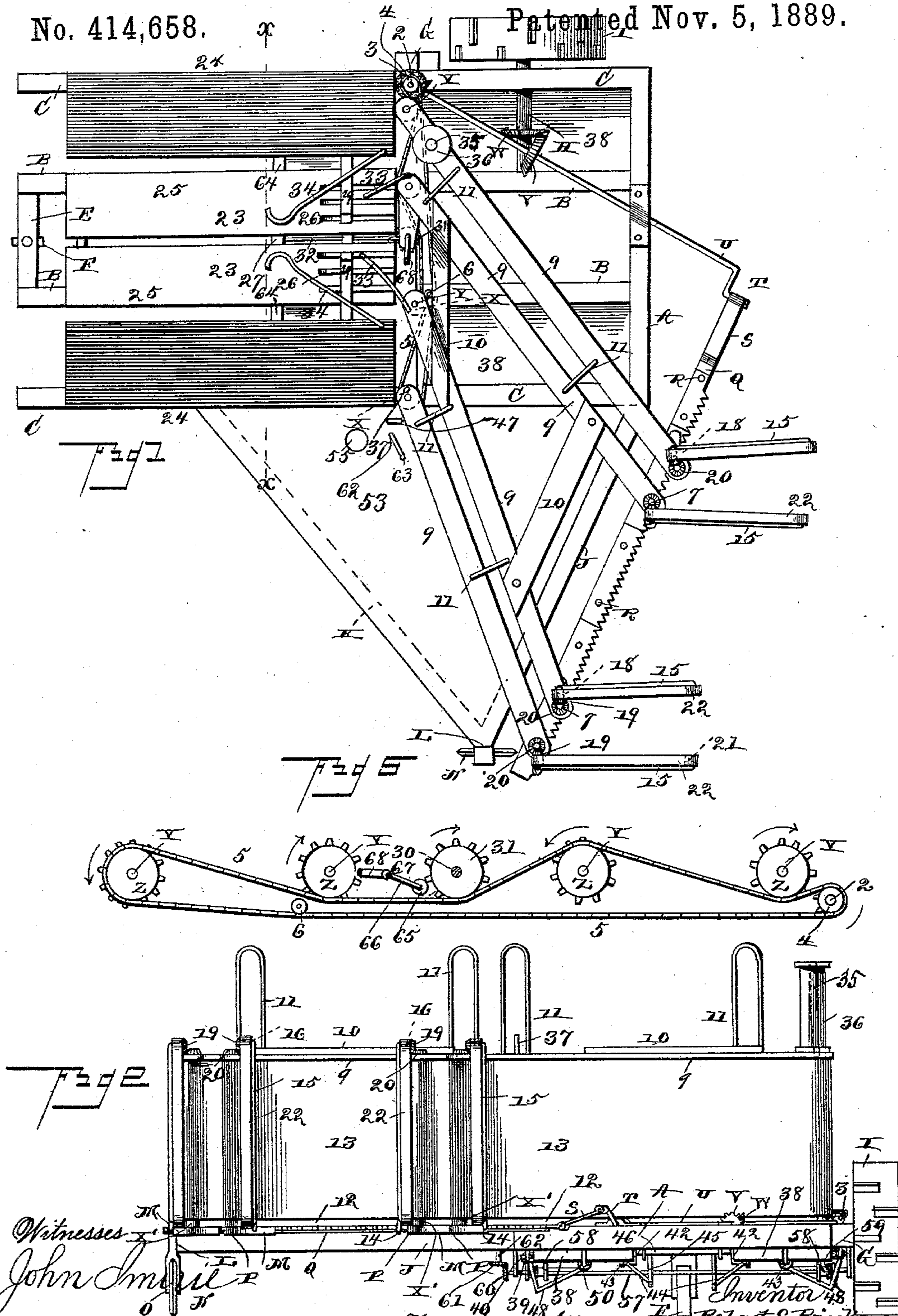
(No Model.)

3 Sheets—Sheet 1.

R. S. RINKER.
CORN HARVESTER.

No. 414,658.

Patented Nov. 5, 1889.



Witnesses
John Smiley
Wm. Bagger

Inventor
Robert S. Rinker
By his Attorneys
C. A. Snow & Co

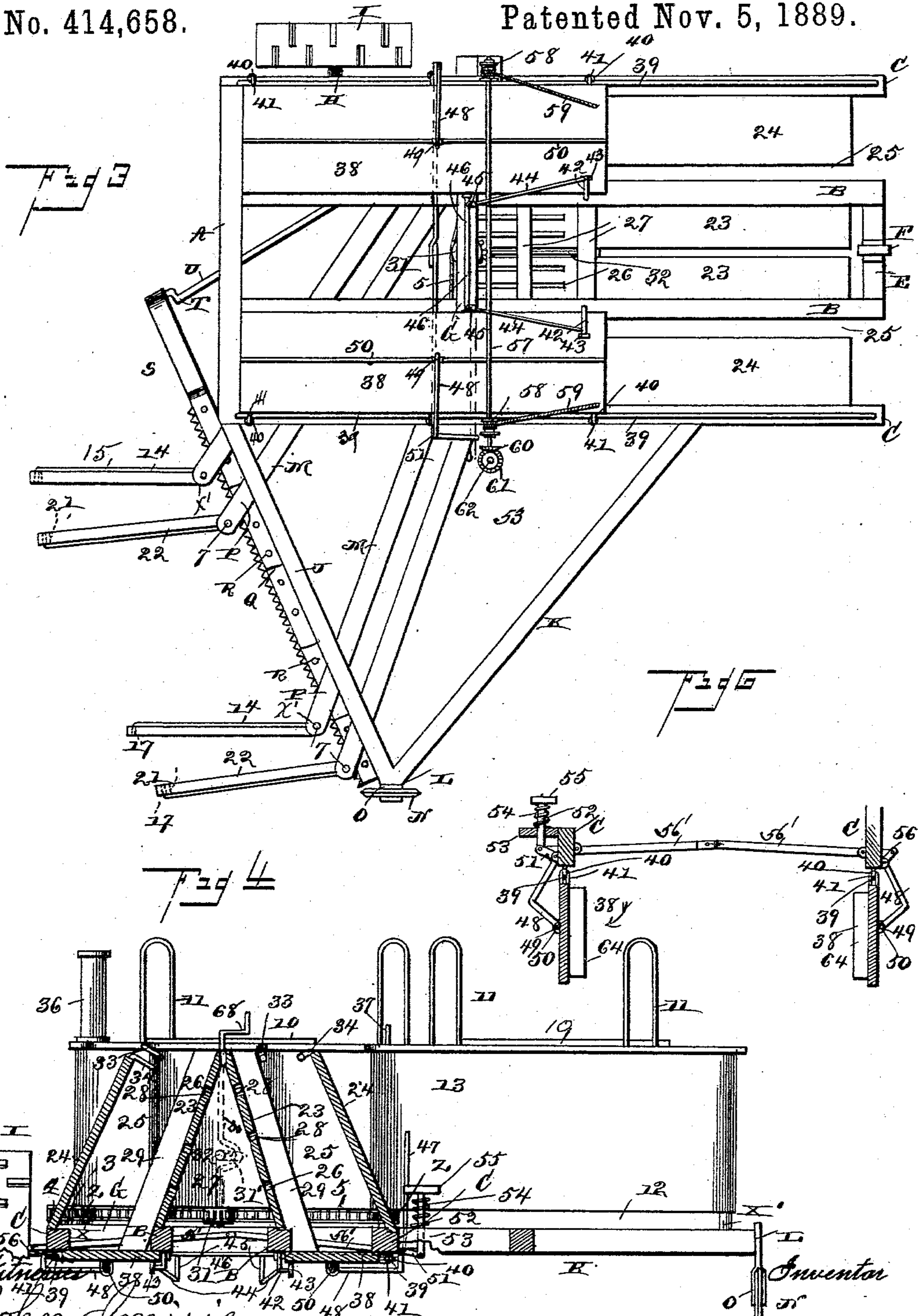
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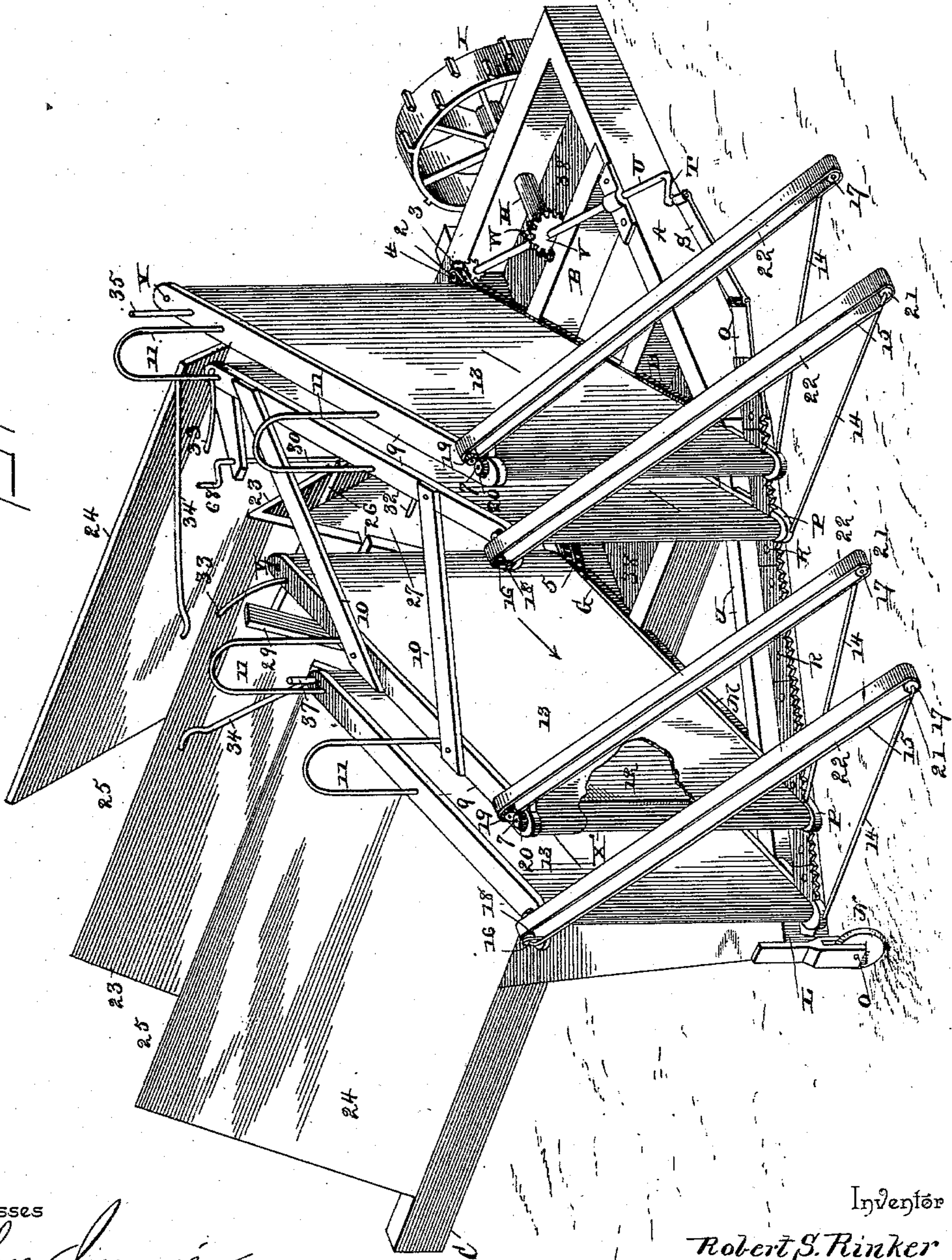
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UNITED STATES PATENT OFFICE.

ROBERT SAMUEL RINKER, OF RINKERTON, VIRGINIA, ASSIGNOR OF ONE-HALF TO MUNROE FUNKHOUSER, OF SAME PLACE.

CORN-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 414,658, dated November 5, 1889.

Application filed April 9, 1889. Serial No. 306,503. (No model.)

To all whom it may concern:

Be it known that I, ROBERT SAMUEL RINKER, a citizen of the United States, residing at Rinkerton, in the county of Shenandoah and State of Virginia, 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 provide a machine of this class which shall be provided with an obliquely-arranged cutter-bar of sufficient length to cut two rows of standing corn as the machine progresses over the field, the said cutter-bar being arranged obliquely for the purpose of crossing it to engage only one hill or stand of corn at any one time, thereby causing less strain upon the working parts of the machine than if the cutter-bar were so arranged as to engage two stands of corn simultaneously.

My invention further consists in mechanism for packing the corn into a shock of proper size and construction, for conveying the corn in an upright position from the cutting to the packing mechanism, and for dropping the shock when completed, all as will be hereinafter more fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a top plan view of my improved corn-harvester. Fig. 2 is a front view. Fig. 3 is a bottom view. Fig. 4 is a transverse vertical sectional view taken on the line *x x* of Fig. 1. Fig. 5 is a detail view of the mechanism for operating the endless carriers. Fig. 6 is a detail view illustrating the operation of the dumping mechanism. Fig. 7 is a perspective view of the machine.

The same letters refer to the same parts in all the figures.

The main frame of my improved corn-harvester is rectangular in shape, and consists, principally, of the transverse front beam A and the rearwardly-extending parallel beams B B and C C. The central beams B B are connected near their rear ends by a transverse beam E, in which is journaled the castor-wheel F, to support the rear end of the frame. A transverse beam G connects the longitudinal beams B B C C at a suitable distance from the front end of the machine, and the outer beams B and C are provided with

bearings for a shaft or axle H, the outer end of which carries a supporting and driving wheel I of ordinary construction.

J and K represent a pair of beams extending from the longitudinal beam C on the opposite side of the frame, and meeting at the point L, where they are secured together so as to form a triangular frame extending laterally from the main frame, the front beam J of said triangular frame being raised obliquely with relation to the front beam A of the main frame. Suitable braces M M are employed to connect the oblique front beam J with the inner side beam C of the said main frame. A supporting-wheel N is mounted upon a suitable bearing O at the outer corner of the triangular frame J K. The braces M, which connect the oblique front bar J of the triangular frame with the side beams C of the main frame, are extended in front of the said bar J, so as to form brackets P, which have suitable bearings or supports for the reciprocating cutter-bar Q, to which the saw-toothed sections of the cutter are suitably secured by means of bolts R, so as to be readily removable for the purpose of shocking the same. The end of the cutter-bar is connected by the pitman S with a crank T upon the front end of a shaft U, which is mounted in suitable bearings obliquely upon the main frame. Said shaft U is provided with a pinion V, meshing with a spur-wheel W upon the shaft H, carrying the driving and supporting-wheel I, from which motion is thus transmitted to the said shaft U and to the cutter-bar.

The cross-bar G of the main frame is provided with bearings for a series of vertical shafts carrying rollers X X X X, which are arranged in pairs, as shown. The shafts, which are designated by letter Y, are provided below the said rollers with sprocket-wheels Z, which, as well as the rollers, are securely mounted upon said shafts.

2 is a short vertical shaft mounted in a suitable bearing adjoining the outer roller-shaft Y. The former has a pinion 3, which meshes with a beveled wheel upon the rear end of the driving-shaft U. The shaft 2 is provided with a sprocket-wheel 4.

5 designates a sprocket-chain running over the wheels 4 Z Z Z Z in such a manner as to

cause the rollers of each set to rotate toward each other in the direction indicated by the arrows in Fig. 5 of the drawings.

6 designates a suitably-arranged guide-pulley serving to direct the course of the chain 5.

The brackets P, which extend forwardly from the oblique front beam J of the triangular frame of the machine, are provided with bearings for the lower ends of a series of vertical shafts 7, of which there are four, arranged in pairs to correspond with the vertical shafts Y, journaled in the cross-beam G. The shafts 7 are provided with rollers X', and the upper ends of the shafts 7 are journaled in the front ends of the bars 9, the rear ends of which are provided with bearings for the upper ends of the shafts Y. The two central bars 9 are connected by cross bars or braces 10, and arched braces 11 connect the outer bars 9 in pairs, as shown, with the central bars 9. Vertical partitions 12 connect the top bars 9 with the frame upon which the said partitions rest, said partitions extending between the rollers X and X'. Endless aprons or carriers 13 are stretched tightly upon the said rollers X and X', thereby constituting two pairs of endless carriers, the inner sides of which will be caused to travel rearwardly in the direction indicated by the arrows. The front ends of the endless carriers are extended in front of the cutter-bar of the machine, as will be clearly seen in the annexed drawings, and the said carriers extend obliquely from the oblique front bar J of the machine to the transverse bar G of the main frame.

The operation of that part of my invention which has been thus far described is as follows: When the machine travels over the field, the front ends of the endless carrier will come into engagement with the hills or stands or two rows of corn, and, owing to their oblique arrangement, the stands of the two rows will be engaged alternately by the said carriers and the stalks be severed by the reciprocating cutter, which is arranged directly in rear of the front ends of said carriers. It will thus be seen that the machine will at no time be subjected to the strain incident to cutting two stands of corn simultaneously, and also that the cutter does not come into engagement with the stalks until the latter have been taken hold of by the endless carriers, which serve to hold the stalks securely while being operated upon by the cutter. As soon as the stalks have been severed they are conveyed in an upright position by the endless carriers to the packing-chamber, which will be presently more fully described. The arched braces 11 serve to connect the top bars of the endless carriers in such a manner as not to interfere with the passage of the corn in an upright position, and the endless carriers of each pair are placed sufficiently close together to take a firm hold upon the stalks of corn without creating excessive friction.

14 designates arms extending forwardly from the front ends of the brackets P and connected by means of inclined braces 15 with the front ends of the top bars 9 of the endless carriers. The inclined braces 15 are provided at their upper and lower ends with horizontal arms 16 and 17, upon the upper ones of which 16 are journaled drums 18, having pinions 19, meshing with beveled gears 20 upon the upper ends of the front roller-shafts 7 of the endless carriers. Drums or band-wheels 21, journaled upon the arms 17 at the lower ends of the inclined braces 15, are connected by endless belts or bands 22 with the drums 16 at the upper ends of said braces, to which a rotary motion is imparted by the pinion and bevel-wheel 18 19, thereby causing the endless belts to travel in the direction indicated by the arrows. The endless belts 22 of each pair of carriers face each other, as will be seen clearly in Fig. 1 of the drawings, the inclined braces 15 being arranged on the outer sides of said endless belts. The function of these devices is as the machine progresses over the ground to engage or intercept such of the cornstalks as may have fallen to the ground and raise them to an upright position, in which they are more readily operated upon by the cutter and which causes them to be taken hold of with absolute certainty by the front ends of the obliquely-arranged endless carriers, as has been already described.

The rearwardly-extending central beams B B of the main frame are provided with upwardly-extending inclined boards 23 23, the upper ends of which may be connected by means of suitable braces. The outer frame-bars C C of the main frame are likewise provided with upwardly-extending inclined boards 24 24, which form the outer walls of the packing-chamber, the inner walls of which are formed by the said boards 23. It will thus be seen that the packing-chamber consists of two separate compartments 25 25, the inner walls of which are inclined toward each other. The front ends of the boards 23 of the inner walls of the packing-chambers are provided with longitudinal horizontal slots 26.

27 is a suitably-constructed triangular frame or slide, which is arranged between the inner walls of the compartments of the packing-chamber, and which is provided at its front ends with arms 28, extending laterally through the slots 26 in the walls 23 of said compartments and having the packers 29 suitably attached to their outer ends.

30 is a vertical shaft, the lower end of which is journaled centrally in the cross-bar G of the main frame, and provided with a sprocket-wheel 31, which is engaged and operated by the chain 5. The upper end of said vertical shaft is journaled in the cross-bar or brace 10, connecting the rear ends of the longitudinal braces 9 of the endless carriers. The shaft 30 is provided with the crank 31', which is connected by the pitman

32 with the front end of the slide 27, carrying the packers 29, to which a longitudinal reciprocating motion will thus be imparted when the machine is in operation.

33 and 34 designate elastic arms or guides of suitable construction, which are attached, respectively, to the longitudinal upper braces 9 of the inner endless carriers and to the outer walls 24 of the compartments of the packing-chamber, at the upper edges of said walls, said elastic guides being so constructed and arranged as to intersect the corn as it is delivered at the rear ends of the endless carrier and convey it into the compartments of the packing-chamber, where it is delivered at a point in rear of the reciprocating packers, which latter act upon the corn as it is being delivered into the said compartments and force it in a rearward direction in the latter.

35 designates a pin arranged vertically upon one of the top braces 9 and adapted to support a spool 36 of binding-twine, which is carried from said spool transversely across the compartments of the packing-chamber and to a pin 37 at the opposite top brace 9, where the end of said twine is temporarily attached. It will be seen that as the corn enters the compartments of the packing-chamber and is forced rearwardly therein by the action of the reciprocating packer it carries the twine in a rearward direction in such a manner as to cause it to encircle the shock which is being formed in the packing-chambers, as will be presently more fully described.

The bottoms 38 38 of the compartments 25 of the packing-chamber are hinged to the under side of the outer longitudinal frame-beams C C in the following manner: To the under sides of the said frame-beams are secured the longitudinal wire rods 39, forming tracks upon which the friction-rollers 40 of the hinges 41 may travel longitudinally, said hinges being suitably attached to the doors 38, which are thereby connected to the said tracks. The longitudinal frame-bars B B are provided on their under sides with the pivoted catches 42, the horizontal arms of which are provided with friction-rollers 43, to support the inner ends of the doors 38 when the latter are closed, as will be seen in Fig. 4 of the drawings. The pivoted catches 42 are connected by rods or pitmen 44 with cranks 45, formed upon a shaft 46, which is journaled transversely under the frame-beam G and provided at its outer end with an operating lever or handle 47, by means of which it may be conveniently manipulated, so as to open or close the catches 42, as may be required.

48 48 designate a pair of bent arms or levers pivoted to the outer sides of the longitudinal frame-beams C and provided at their outer ends with eyes 49, encircling longitudinal rods 50, which are suitably attached to the under sides of the boards 38, forming the

bottoms of the compartments of the packing-chamber. The upper end of one of the bent arms or levers 48 is provided with an outwardly-extending arm 51, which is connected pivotally with the lower end of a treadle-bar 52, mounted to slide vertically in a suitable platform 53, which is constructed upon the triangular frame J K of the machine in rear of the endless carriers thereof, and which during the operation of the machine is occupied by the attendant. The upper end of the bar 52 is provided with a step 55, and a spring 54, which is coiled around the stem or bar 52 below the step 55, serves to force the said stem in an upward direction, thus throwing the lever 48 in an outward direction, as indicated by the arrow in Fig. 6 of the drawings, and tending to throw the door 38, connected with said lever, wide open. The arm 51 at the upper end of lever 48 is suitably connected with a similar arm 56, extending from the upper end of the opposite lever 48, which will thus be operated by the links 56' in precisely the same manner by the vertically-sliding step or treadle.

57 designates a shaft, which is journaled transversely under the frame of the machine, directly below or in rear of the cross-bar G. Said shaft is provided near its ends with drums 58, on which are wound ropes or chains 59, the rear ends of which are suitably connected to the doors 38, near the rear ends of the latter.

The shaft 57 is provided with a pinion 60, meshing with a bevel-wheel 61, which is mounted upon a vertical shaft 62, journaled in suitable bearings in the platform 53, and provided at its upper end with a crank or handle 63, by means of which it may be conveniently operated by the attendant, who stands upon the said platform within convenient reach of said crank or handle.

The doors 38 are provided on their outer sides, at their rear ends, with transverse cleats 64, the object of which will be presently described. It will be seen that by the construction herein described the doors 38 are hinged to the longitudinal frame-beams C C in such a manner as to enable them to travel longitudinally upon the supporting-rods 39, attached to said frame-beams. By operating the crank 63 the transverse shaft 57 will be rotated, thereby causing the ropes or chains 59 to be wound upon the drums 58, thereby carrying the hinged doors 38 in a forward direction to the extreme front ends of the longitudinal frame-beams C. The free inner ends of said hinged doors are meanwhile supported upon the rollers 43 of the pivoted catches 42, which by their operating-levers are meanwhile held in the closed position indicated in Fig. 4 of the drawings. It will now be seen that when the machine is in operation and the corn is being delivered by the endless carriers into the front ends of the compartments of the packing-chamber the lower ends of the cornstalks will rest upon the upper sides of

the doors 38 and engage the cleats 64 at the rear ends of said doors, which latter will thus be forced in a rearward direction. As the corn is being forced rearward in the compartments 5 of the packing-chamber by the operation of the reciprocating packer, it will be also understood that the hills or stands of corn will be delivered by the endless carriers alternately into the opposite compartments of the packing-chamber, and that, owing to the inclined position of said compartments with relation to each other, the upper ends of the cornstalks will be crossed diagonally or knit together, instead of being caused simply to abut against each other. To this feature of my invention I attach considerable importance, for the reason that it enables me to construct an exceedingly compact shock, which, when secured by means of the binding-twine, will be in no danger of becoming separated from any cause whatever. The binding-twine, having been arranged in the manner previously described, will be carried with the corn in a rearward direction, so as to encircle the shock. After a shock of sufficient size has been formed in the compartments of the packing-chamber the operation of the reciprocating packer may be temporarily suspended while the attendant removes the free end of the twine from the peg or pin 37, upon which it is supported, and, grasping the opposite end of the twine, brings the ends of said twine together and joins them by hand or by the aid of a suitable knotter, which latter, however, forms no part of my present invention and has not been illustrated in the drawings.

The mechanism for temporarily suspending the operation of the reciprocating packer 40 may consist of a guiding-pulley 65, journaled to the outer end of an arm 66, extending laterally from the lower end of a vertical shaft 67, journaled in suitable bearings in the cross-bar G, and provided at its upper end with an operating crank or handle 68. The reciprocating packer is, as already described, operated by means of the sprocket-wheel 31, which is mounted at the lower end of the vertical crank-shaft 30 and actuated 50 by the sprocket-chain 5. It will be seen that by operating the vertical shaft 67 by means of the crank or handle 68 the pulley 65 at the outer end of the arm 66 of said shaft will be brought into contact with the sprocket-chain 55 and throw the latter out of engagement with the sprocket-wheel 31, thus temporarily stopping the rotation of the shaft 30, by which the reciprocating packer is operated without interfering with the operation of the remaining parts of the machine. When the shock has been formed in the packing-chamber and the binding-twine has been knotted or tied, as above described, the shock is ready to be dumped or dropped onto the ground. Care 60 should be taken to arrange the binding-twine a sufficient distance above the ridge formed by the upper edges of the inner

walls 23 of the compartments of the packing-chamber to prevent the said ridge from pushing or displacing the binding-twine when the shock is dropped. The latter operation 70 is performed by the attendant standing upon the platform 53, by operating the rock-shaft or crank-shaft 46, so as to turn the pivoted catches 42 away from the free edges of the hinged doors 38, supported upon said catches, thus permitting the doors to swing downwardly and outwardly, as shown in Fig. 6 of the drawings, to the position shown in full lines in said figure, in which position the said doors 80 are retained by the action of the spring 54, coiled upon the vertically-sliding stem or treadle 52 below the step 55 of the latter. The shock now drops down onto the ground, where it remains supported, while the machine continues to pass in a forward direction, thus leaving behind it the shock, which escapes through the open rear ends of the compartments of the packing-chambers. As soon as the shock has been cleared by the machine the attendant or operator rotates the shaft 57, thus winding the ropes or chains 59 upon the drums 58 of said shaft and drawing the hinged doors 38 to the front end of the machine. The said doors are now ready to be 95 closed, and this is accomplished by the operator simply stepping upon the treadle 52, which is thus operated against the tension of the spring 54 to throw the arms or levers 48 in an inward direction toward each other, thereby closing the doors and bringing their free edges into contact with the under sides of the longitudinal beams B B of the main frame of the machine. The crank-shaft 46 is now again manipulated, so as to close the pivoted catches 42 and bring the rollers journaled upon said catches under the free ends of the doors 38. The driving-chain 5 is now again brought into engagement with the sprocket-wheel 31 at the lower end of the vertical crank-shaft 30, operating the reciprocating packer, and the machine is now ready to form another shock in the packing-chambers in the same manner as above described. 105

It will be seen by reference to the foregoing description that the operation of the machine is continuous and uninterrupted, it being only necessary to temporarily suspend the operation of the reciprocating packer for the few moments required to tie and dump the shock and to allow the machine to clear the same. 120

The operation of my invention will be readily understood from the foregoing description, taken in connection with the drawings hereto annexed. The machine as it passes over the field operates automatically to raise such stalks of corn as may have been broken down to an upright position, to grasp the stands of corn while being operated upon by the cutting mechanism, to carry the severed stalks of corn in an upright position to the packing-chambers, and to pack the corn in the said packing-chambers in such a manner as 130

to interweave the upper ends of the stalks, thereby forming a very soft and compact shock which may be conveniently tied or secured by the attendant; and the machine is
 5 furthermore constructed in such a manner as to dump and discharge the finished shock without the slightest strain upon the machine or any effort on the part of the operator. The sliding doors which form the bottom of the compartments of the packing-chamber are mounted upon friction-rollers at their
 10 free as well as at their hinged ends, and therefore are enabled to slide rearwardly while supporting the weight of the shock without any excessive strain upon the machine and without great expenditure of power. It will finally
 15 be seen that owing to the inclined arrangement of the compartments of the packing-chamber with relation to each other the shock is constructed in such a manner as to leave
 20 a central longitudinal open passage which serves to admit air to the interior of the shock, the advantage of which in curing the corn is obvious. It will also be seen that the
 25 corn is discharged from the machine directly in a rearward direction, and that any side draft or lateral strain is thereby avoided.

While I have herein described the preferred construction of my improved corn-harvester, I would have it understood that I reserve the privilege of making any modifications in the construction and arrangement of details which may be resorted to without departing from the spirit of my invention.

35 Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a corn-harvester, the combination of the vertically-arranged endless carriers arranged in pairs, as described, the arms or
 40 brackets extending forwardly from the supports of the front ends of said endless carriers, the inclined braces extending upwardly from the front ends of said arm or braces to the cap-pieces of said endless carriers, the
 45 laterally-extending arms at the upper and lower ends of said inclined braces, the drums journaled upon said upper lateral arms and provided with pinions meshing with bevel-
 50 gears upon the upper ends of the shafts of the front rollers of the vertical endless carriers, the drums journaled upon the lateral arms at the lower ends of the inclined braces, and the endless belts or bands mounted upon
 55 the said drums at the upper and lower ends of said inclined braces, substantially as and for the purpose herein shown and specified.

2. In a corn-harvester, the combination, with the rectangular main frame, of the triangular frame extending obliquely and laterally from the same, the brackets extending forwardly from the oblique front beam of said triangular frame, the roller-shafts
 60 mounted vertically in said brackets, a transverse beam connecting the longitudinal beams of the main frame, the roller-shafts mounted vertically in said transverse beam,

the endless aprons or carriers connecting the rollers upon the oblique front beam with those upon the transverse beam of the main
 70 frame, the sprocket-wheels upon the rear roller-shafts, and a chain connecting the said roller-shafts with a sprocket-wheel actuated by intermediate gearing by the driving-wheel of the machine, and the single obliquely-
 75 ranged cutter-bar parallel to the oblique front side of the triangular frame, whereby by a single passage of the machine two rows of corn shall be cut, but only a single stand at any one time, thus relieving excessive
 80 strain upon the cutting apparatus, substantially as and for the purpose herein set forth.

3. In a corn-harvester, the combination of the vertical endless carriers arranged obliquely upon the frame, as described, the reciprocating cutter-bar arranged in rear of the
 85 front ends of said carriers, a shaft mounted obliquely upon the frame of the machine and geared to the driving-wheel of the same, a pitman connecting the reciprocating cutter-
 90 bar with a crank on the front end of said shaft, and mechanism for communicating motion from the rear end of said shaft to the rear roller-shafts of the vertical endless carriers, substantially as set forth.

4. In a corn-harvester, the combination, with the cutting mechanism and the two sets of vertical endless carriers, of the packing-chambers arranged parallel to each other at the rear ends of said endless carriers and
 100 comprising two separate chambers having their upper ends inclined toward each other, substantially as set forth.

5. The combination, with the packing-chamber comprising the two separate compartments inclined toward each other, of the
 105 longitudinally-reciprocating packer comprising a slide arranged between the inner walls of said compartments, and having arms extending through longitudinal slots in the said
 110 walls, and provided with wings resting upon the latter, and a pitman connecting said slide with a vertically-arranged crank-shaft geared to the operating mechanism of the machine, substantially as herein set forth.

6. In a corn-harvester, the combination, with the cutting mechanism and the vertically-arranged endless carriers, of the packing-chamber composed of two separate inclined compartments, the longitudinally-reciprocating packer, and the elastic guides connecting the rear ends of the carriers with the
 120 said compartments of the packing-chamber, substantially as and for the purpose set forth.

7. The combination of the cutting mechanism, the vertically-arranged endless carriers, the packing-chamber comprising two separate inclined compartments, the longitudinally-reciprocating packer, the elastic guides connecting the rear ends of the endless carriers with the compartments of the packing-chamber, mechanism for simultaneously operating the cutting mechanism, the said endless
 130 carriers, and the reciprocating packer, and

mechanism for temporarily suspending the operation of the latter while the operation of the remaining parts is not interfered with, substantially as set forth.

5 8. In a corn-harvester, the combination, with the inclined compartments forming the packing-chamber, of the longitudinally-sliding hinged doors forming the bottoms of the said compartments and means for latching
10 the same, substantially as and for the purpose set forth.

9. The combination, with the compartments forming the packing-chamber, of the longitudinally-arranged tracks or guides at the
15 lower outer edges of the same and the bottom doors having hinges provided with friction-rollers arranged to travel upon the said tracks or guides, substantially as set forth.

10. The combination, with the longitudi-
20 nally-arranged tracks or guides, of the bottom doors of the compartments of the packing-chamber, having hinges provided with friction-rollers arranged to travel upon the said tracks or guides, and the pivoted catches
25 having friction-rollers adapted to support the free edges of the said longitudinally-sliding hinged doors, substantially as herein set forth.

11. In a corn-harvester, the combination,
30 with the packing-chamber composed of two separate compartments, of the longitudinally-sliding hinged bottom doors of said compartments and mechanism for carrying the same in a forward direction, substantially as set
35 forth.

12. In a corn-harvester, the combination of the packing-chamber composed of two separate compartments, the hinged longitudinally-sliding doors forming the bottoms of said com-
40 partments, a transverse shaft journaled to the frame of the machine and provided with winding-drums, and chains connecting the latter with the rear ends of said longitudinally-hinged sliding doors, substantially as
45 and for the purpose set forth.

13. In a corn-harvester, the longitudinally-sliding hinged doors forming the bottoms of the compartments of the packing-chamber, provided at their rear ends with transverse
50 cleats, substantially as and for the purpose set forth.

14. In a corn-harvester, the herein-described packing chambers or compartments arranged longitudinally with relation to the
55 frame of the machine and having open rear ends, in combination with the longitudinally-sliding hinged bottom doors having transverse cleats at their rear ends and mechanism for releasing the inner or free edges of
60 said hinged doors, substantially as herein set forth.

15. In a corn-harvester, the combination, with the longitudinally-sliding hinged doors forming the bottoms of the compartments of
65 the packing-chamber and provided at their rear ends with transverse cleats, of the pivoted catches supporting the free edges of

said hinged doors, a transversely-arranged crank-shaft, pitmen connecting the crank upon the same with the said pivoted catches, 70 and a lever or handle for operating the said crank-shaft, substantially as herein set forth.

16. In a corn-harvester, the combination, with the longitudinally-sliding hinged doors forming the bottoms of the compartments of 75 the packing-chamber, of the levers bearing against the outer sides of said hinged doors, rods connecting the said levers with a vertically-sliding treadle, a spring arranged to force the said treadle in an upward and the 80 said levers in an outward direction, and a step upon the upper end of the said treadle, substantially as and for the purpose set forth.

17. The combination of the longitudinally-sliding hinged doors forming the bottoms of 85 the compartments of the packing-chamber and provided on their lower or outer sides with longitudinally-arranged track-rods, the levers having eyes that encircle the said track-rods, rods connecting the said levers with a ver- 90 tically-sliding treadle, and a spring arranged to force the said treadle in an upward and said levers in an outward direction, substantially as and for the purpose set forth.

18. The combination, with the longitudi- 95 nally-arranged inclined compartments constituting the packing-chamber, of the longitudinally-reciprocating packer, the longitudinally-sliding hinged doors provided with transverse cleats at their rear ends, mechanism for 100 releasing the free edges of said hinged doors, and a spring arranged to force the said doors, when open, in an outward direction, substantially as and for the purpose set forth.

19. The combination of the longitudinally- 105 arranged inclined compartments constituting the packing-chamber, the longitudinally-reciprocating packer, the longitudinally-sliding hinged bottom doors provided with transverse cleats at their rear ends, mechanism for open- 110 ing and closing the said doors, and means for operating the said doors to move in a forward direction, substantially as and for the purpose set forth.

20. In a corn-harvester, the combination of 115 the cutting mechanism, the vertically-arranged endless carriers, the longitudinal inclined compartments constituting the packing-chamber, the longitudinally-sliding hinged doors forming the bottoms of said compart- 120 ments, mechanism for operating the said doors, the longitudinally-reciprocating packer, a spool-holder, and a pin or peg arranged to hold the free end of the twine, substantially as and for the purpose herein shown and speci- 125 fied.

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

ROBERT SAMUEL RINKER.

Witnesses:

J. H. TISINGER,
J. A. TISINGER.