

943,051.

D. H. TREE.
CORN HUSKER.
APPLICATION FILED JUNE 5, 1906.

Patented Dec. 14, 1909.
4 SHEETS—SHEET 1.

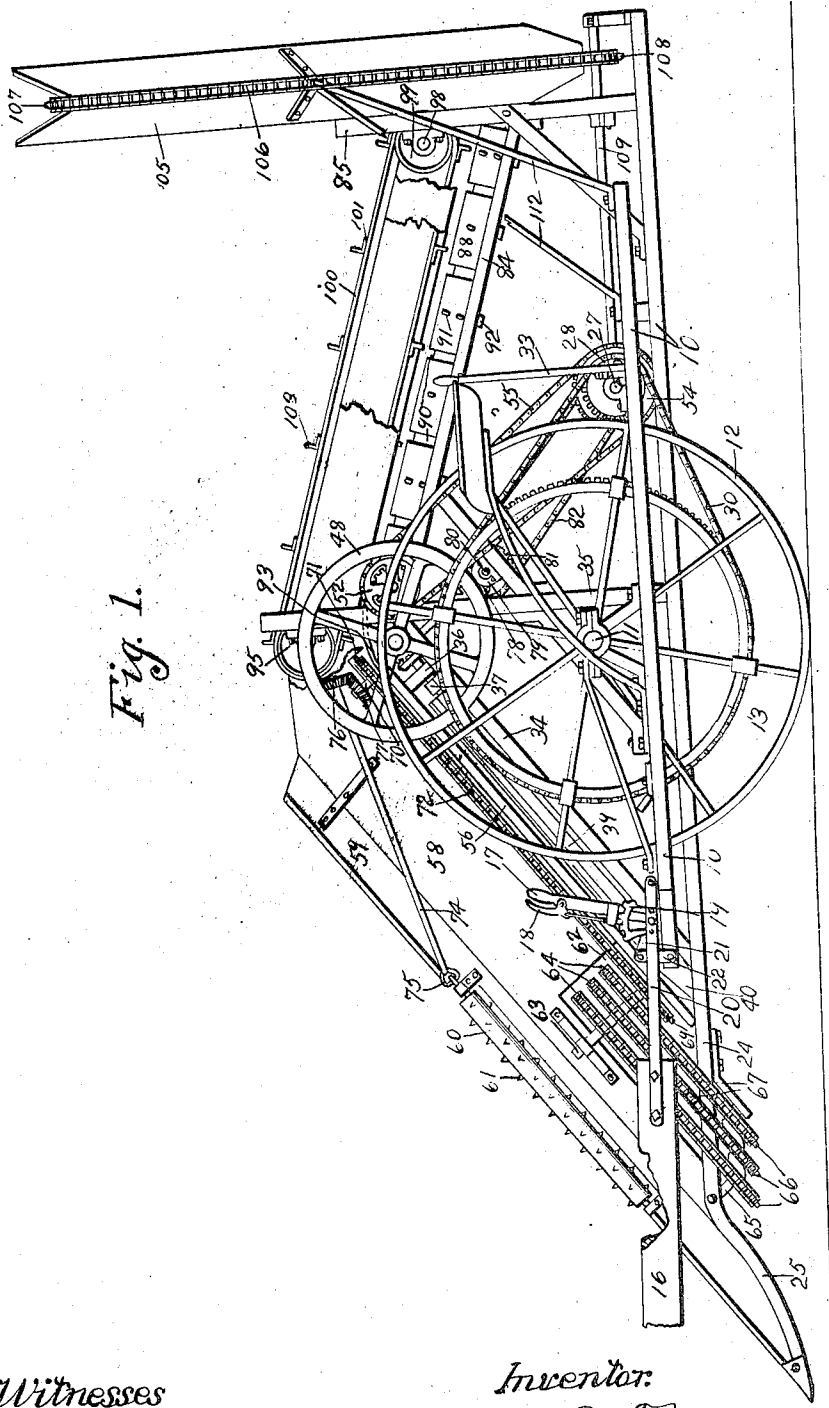


Fig. 1.

Witnesses
H. K. Keffers
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Inventor:
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by Craig Lane Atty's.

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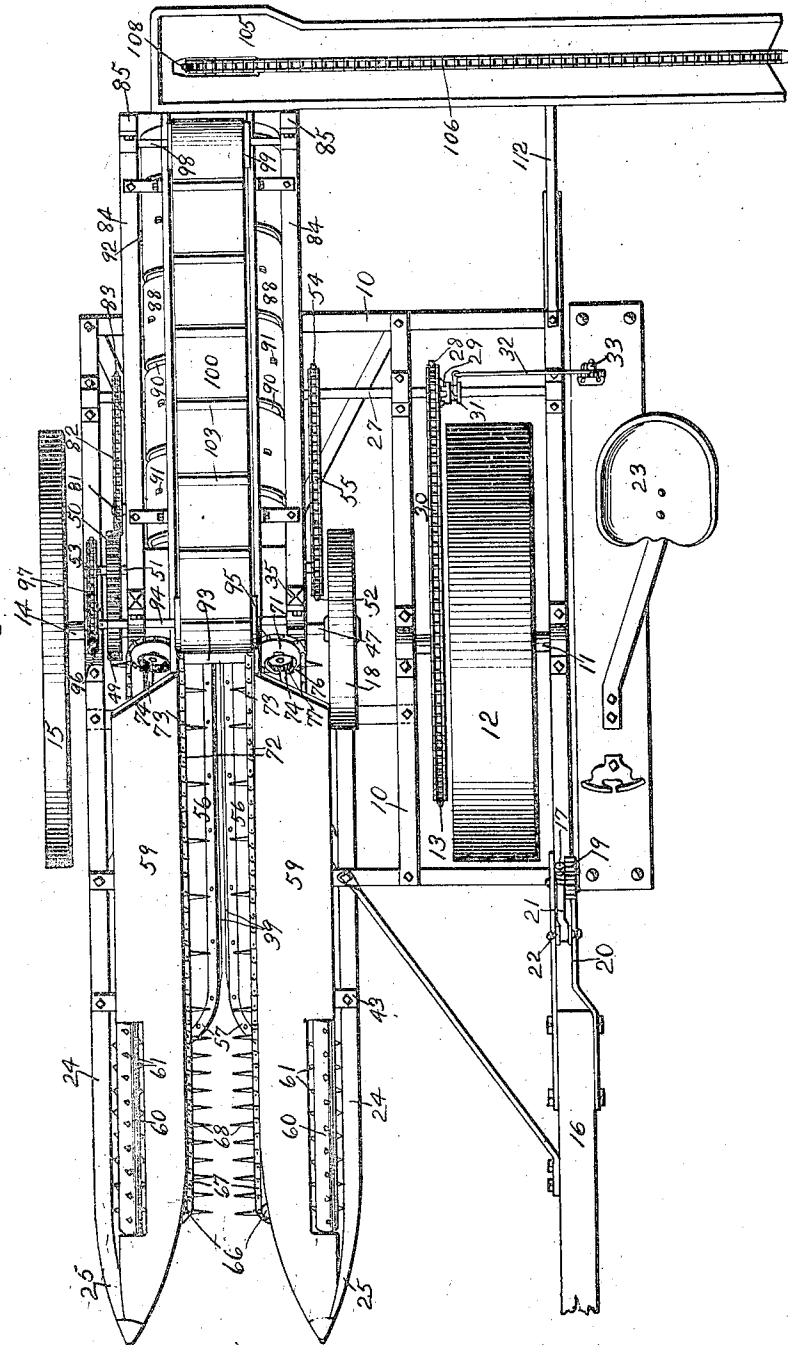
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4 SHEETS--SHEET 2.

Fig. 2.



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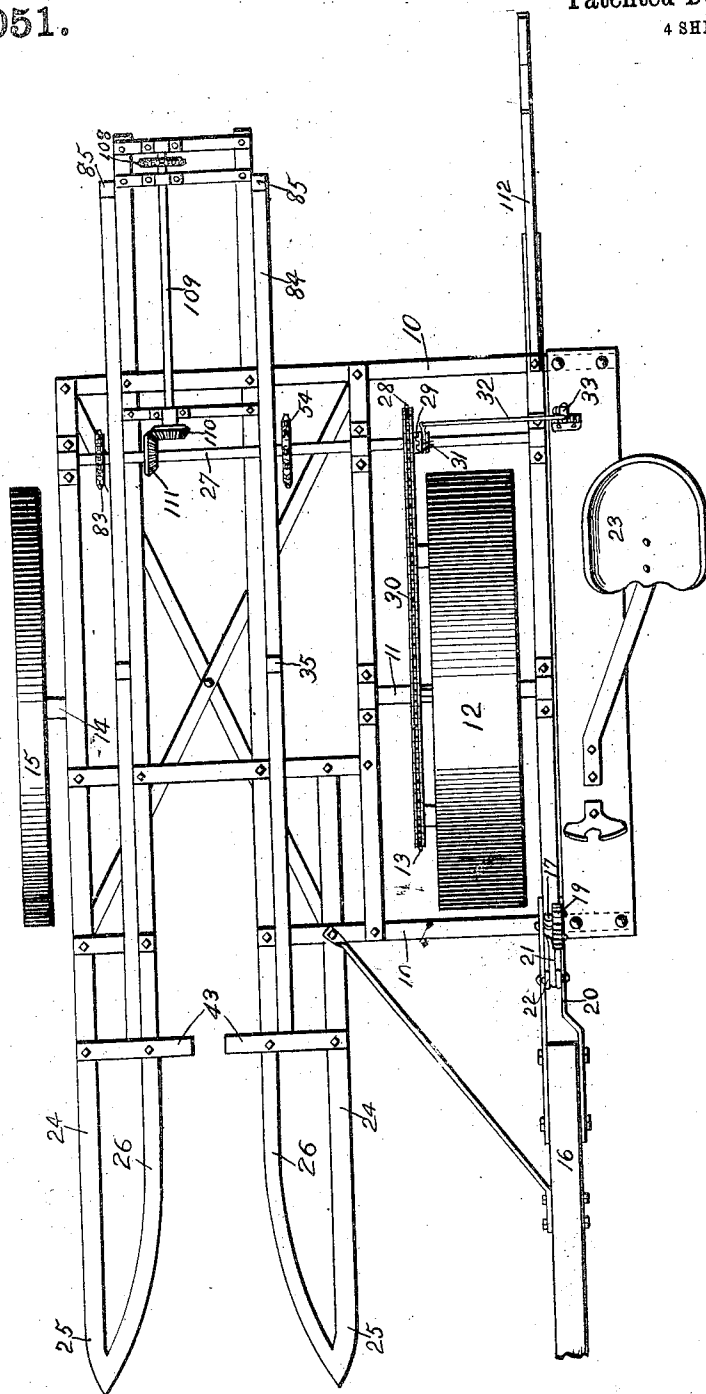
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4 SHEETS—SHEET 3.

Fig. 3.



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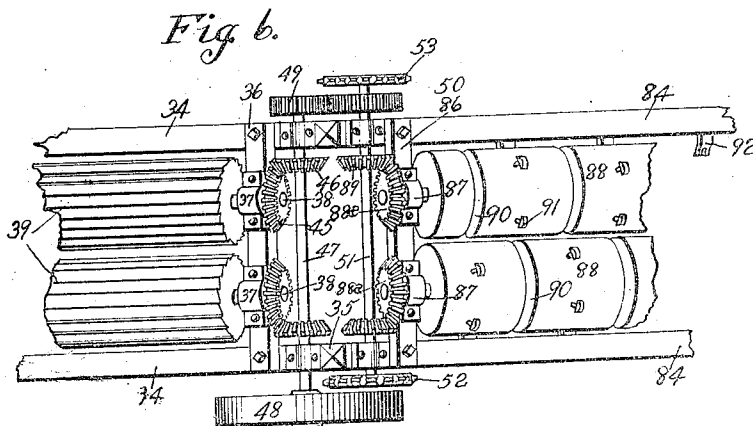
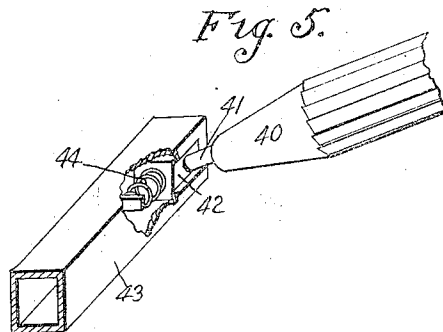
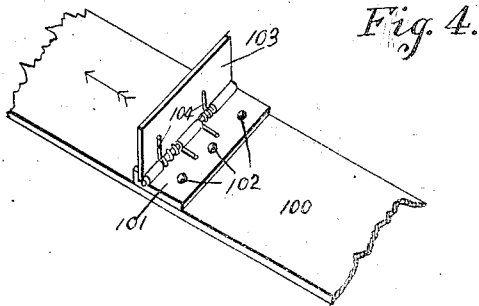
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UNITED STATES PATENT OFFICE.

DANIEL HENRY TREE, OF CARTERSVILLE, IOWA.

CORN-HUSKER.

943,051.

Specification of Letters Patent.

Patented Dec. 14, 1909.

Application filed June 5, 1908. Serial No. 320,905.

To all whom it may concern:

Be it known that I, DANIEL H. TREE, a citizen of the United States, residing at Cartersville, in the county of Cerro Gordo and State of Iowa, have invented a certain new and useful Corn-Husker, of which the following is a specification.

The object of my invention is to provide a corn husking machine of simple, durable and inexpensive construction, designed to be advanced over a field by draft animals; to engage standing stalks of corn; to pick up stalks of corn that are lying on the ground; to straighten stalks that are inclined laterally from the row; to remove the ears from the stalks; to remove the husks from the ears, and to place the ears in a conveyer that will discharge them upwardly and laterally into a wagon advanced alongside of the machine.

My invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims and illustrated in the accompanying drawings, in which—

Figure 1 shows a side elevation of a complete machine embodying my invention. Fig. 2 shows a plan view of same. Fig. 3 shows a plan view of the machine frame. Fig. 4 shows a detail perspective view of the conveyer belt provided with spring actuated leaves. Fig. 5 shows a detail, perspective view illustrating the means for slidably supporting the forward ends of stalk holding rollers, and Fig. 6 shows a detail, plan view of the rear ends of the stalk holding rollers, the forward ends of the husking rollers and the gearing devices by which all of said rollers are operated.

Referring to the accompanying drawings, I have used the reference numeral 10 to indicate the main frame of the machine. At one side of the frame is the main axle 11 to which the traction wheel 12 is fixed. Connected with the traction wheel 12 is a sprocket rim 13 by which power is provided for operating the various parts of the husker, as will hereinafter appear. Upon the other side of the machine frame is the axle 14 on which is mounted the supporting wheel 15. Hinged to the forward end of the frame 10 is the tongue 16 and I have provided a lever 17 having a pawl 18 connected

therewith to engage a sector 19 connected with the tongue.

The lever 17 is pivoted to the extension 20 of the tongue and its lower end is extended forwardly at 21 and connected by a link 22 with the forward end of the frame 10 so that by shifting the lever 17, the frame 10 and tongue may be adjusted relative to each other. At the side of the frame 10 adjacent to the traction wheel 12 is the driver's seat 23.

On the side of the machine frame adjacent to the wheel 15 are the guide or pick up arms, each comprising a straight outer member 24 extended parallel with the longitudinal axes of the machine to a point near the forward end thereof and then inclined downwardly and forwardly at 25, as shown in Fig. 1. Then beginning at the forward end of each of the parts 24 is an inner member 26 inclined rearwardly and away from the part 25 and upwardly, the body portions of said parts 26 being parallel with the longitudinal axis of the machine frame and being spaced apart far enough to admit rows of corn between them.

At the rear of the machine frame is a transverse shaft 27 from which all of the operative parts of the machine are driven. This shaft has a sprocket wheel 28 provided with a clutch member 29 fixed to it in line with the sprocket rim 13 and the sprocket chain 30 connects the rim 13 and the wheel 28. Mounted on the shaft is a clutch member 31 controlled by a rod 32 connected with the lever 33 which stands adjacent to the operator's seat. In this way the shaft 27 may be made to operate with the sprocket wheel 28 or to stand idle when said sprocket wheel is rotating.

Mounted on top of the members 26 are the supporting bars 34 extending upwardly and rearwardly at an angle of about forty-five degrees and supported at their rear ends by the uprights 35. Directly in front of the rear ends of the bars 34 is the cross piece 36 on which are the bearing boxes 37. These bearing boxes are designed to support the journals 38 at the rear ends of the stalk holding rollers 39. These stalk holding rollers are each formed with longitudinal grooves of such size as to present the appearance of a ratchet wheel and the rollers stand spaced apart far enough to engage corn stalks between them. The forward ends of

said rollers, as shown in Fig. 5, are smooth and tapered at 40 and the journals 41 at the forward ends thereof are each mounted in a sliding bearing block 42 arranged in tubular guides 43 to permit said blocks 42 to move slightly in a direction transversely of the machine frame. For each block, 42, there is an extensible coil spring 44 to normally hold the forward ends of the stalk holding rollers toward each other and yet to permit them to spread slightly against a spring pressure when necessary.

On the rear end of each roller 39 is a beveled pinion 45 meshed with a mating pinion 46 on a shaft 47, which shaft is provided at one end with a balance wheel 48 and on its other end with a cog wheel 49. This cog wheel 49 is rotated by means of a cog wheel 50 on a shaft 51, which shaft is provided with a sprocket wheel 52 on one end and sprocket wheel 53 on its other end. This sprocket wheel 52 is driven from the shaft 27 by means of a sprocket wheel 54 on the shaft 27 and a chain 55 connects the sprocket wheels 54 and 52. By this means, when the machine is advanced, the rollers 39 will have their adjacent faces moved downwardly and the teeth thereon will engage stalks of corn and hold the stalks in position so as to prevent them from being pulled out of the ground, the teeth on the rollers being arranged to prevent them from slipping relative to the stalks. Said rollers are inclined at an angle of about forty-five degrees and they are rotated at such speed that, as the machine is advanced, there will be no tendency for the stalks to be pulled out of the ground forwardly.

Directly above the rollers 39 are the ear snapping bars 56 which have their forward ends curved inwardly and rearwardly toward each other at 57 and their body portions extended straight rearwardly and upwardly and spaced apart far enough to freely admit corn stalks between them but to prevent ears of corn from passing downwardly through them. Thus when the machine is advanced, the ears of corn will be caught by the snapping bars 56 and the stalks will be drawn downwardly by the rollers 39 and the ears will be left lying upon the flat surface on top of the bars 56.

Above the ear snapping bars 56 are two upright guide boards 58 and at the tops of these upright guide boards are the guides 59 inclined outwardly and away from each other. In the outer edges of the boards 59 near the lower ends thereof are the rollers 60 provided with projections 61 and arranged to turn with their upper portions moving in a direction toward each other, so that corn stalks inclined laterally from the rows will be engaged by said rollers and forced inwardly toward the snapping bars so that said stalks will not be broken.

I have provided means for picking up fallen stalks and also for moving the ears of corn that have been snapped from the stalks rearwardly and upwardly to a point of discharge as follows: In each of the upright, guide boards 58, I have cut away a portion at 62 and on the outer face of the board, I have mounted the upright shaft 63 having fixed thereto three sprocket wheels 64. Beneath the frame member 26, I have fixed a stationary shaft 65 having thereon three loosely mounted sprockets 66 in line with the sprocket 64 and I have provided three sets of chains 67 running around the wheels 64 and 66, which chains are provided with fingers 68. The inner portions of said chains project through the opening 62 and the fingers 68 thereof will engage corn stalks that are lying near the ground and move them upwardly toward the lower ends of the snapping bars. Fixed to the shaft 63 is a sprocket wheel 69 directly above the snapping bars 56. At the rear end of each snapping bar 56 is a shaft 70 arranged at right angles to the snapping bar and having thereon a sprocket wheel 71. A sprocket chain 72 is passed around the wheels 71 and 69, and is provided with inwardly projecting arms 73 to travel rearwardly and upwardly directly above the snapping bars 56.

I have provided for driving the rollers 60 as follows: Connected with the upper end of each roller 60 is a shaft 74, said connection being by means of a universal joint 75. At the rear end of the shaft 74 is a beveled pinion 76 in mesh with a similar pinion 77 fixed to the shaft 70. I have provided for driving this shaft 70 during the advance of the machine frame as follows: On the lower end of the shaft 70 is a beveled pinion 78 in mesh with a mating pinion 79 fixed to a shaft 80. Mounted on this shaft 80 is a sprocket wheel 81 to receive the sprocket chain 82, which chain also passes around the sprocket 83 on the shaft 27.

I have provided for removing the husks from the ears as follows: The numeral 84 indicates supporting bars connected at the forward ends with the uprights 35 and extended downwardly and rearwardly to the uprights 85 at the rear end of the machine. Near the forward ends of the bars 84 is a cross piece 86 on which the bearings 87 are mounted. The two husking rollers are indicated by the numeral 88 and stand side by side near enough to each other to prevent ears of corn from passing between them, but capable of permitting the husks to drop downwardly between them. On the forward end of the journal of each husking roller is a beveled pinion 88^a in mesh with a mating pinion 89 on the shaft 51. Each husking roller is provided with a series of annular grooves 90 and with a series of annularly arranged headed husking pins 91,

the rows of pins 91 on one roller registering with the grooves 90 of the mating roller. I have also provided stripping devices for the husking pins by fixing to the bars 84 the notched strippers 92 to receive the headed pins 91 when they are adjacent to said bars 84. The ears of corn discharged from the rear ends of the snapping bars 56 will pass upon a flat plate 93 which covers the gearing devices that operate the rollers. Directly above the forward end of this plate 93 is a transverse shaft 94 having thereon a pulley 95. This shaft is driven by means of the sprocket wheel 96 on one end thereof connected with the sprocket wheel 53, by the chain 97. At the rear ends of the husking rollers is an idler shaft 98 having a pulley 99 thereon. An endless conveyer belt 100 is passed around the pulleys 95 and 99 and is arranged to move with its lower portion directly above the husking rollers to thereby hold the ears of corn in position where the husking pins may readily engage the husks and also to advance the ears of corn that have been husked toward the discharge end of the rollers. Fixed to the conveyer belt 100 at regular intervals is a series of L-shaped plates 101, which plates are connected by the rivets 102 with the belt and have a portion projecting at right angles to the belt. Connected with each of the plates 101 is a hinged leaf 103 capable of movement from a position at right angles to the belt to a position parallel with the belt, its movement being limited by the part of the plate 101 that stands at right angles to the belt. Springs 104 are provided for normally holding said leaves at right angles to the belt. In this way if one of said leaves should strike upon an ear of corn when traveling rearwardly above the husking rollers and said ear of corn should have its husk engaged by the husking pins, then the leaf would fold and pass said ear and engage and move only such ears as were free to slide.

At the rear end of the husking rollers is a chute 105 inclining upwardly and laterally to receive the ears of corn. In this chute is a conveyer chain 106 traveling over a sprocket wheel 107 at the outer end of the chute and driven by a sprocket wheel 108 at the inner end of the chute. This sprocket wheel 108 is fixed to a shaft 109, which shaft has a beveled pinion 110 at its forward end in mesh with the pinion 111 on the shaft 27. The outer end of the chute 105 is supported by means of the brace 112 fixed to the machine frame.

Having thus described the construction and operation of each of the elements of the machine in turn, the operation of the machine as a whole will be readily understood.

I claim as my invention:

1. In a harvesting machine, the combina-

tion of a pair of stalk drawing rollers, a pair of stationary ear snapping boards above them, and toothed gathering rollers arranged forward of said snapping boards and above and parallel with said drawing rollers.

2. In a harvesting machine, the combination of a pair of stalk drawing rollers inclined rearwardly and upwardly and provided with longitudinal teeth, means for rotating them, a pair of ear snapping bars above said rollers and spaced apart from each other far enough to freely allow corn stalks to pass and also engage the ears of corn, and toothed gathering rollers arranged forward of said snapping bars and above and parallel with said drawing rollers.

3. In a harvesting machine, the combination of a pair of stalk drawing rollers, a pair of stationary ear snapping boards above said rollers, carrying arms arranged to move rearwardly and upwardly over said ear snapping bars to conduct the ears upwardly and rearwardly to a point of discharge, and toothed gathering rollers parallel with said drawing rollers and located forward of said snapping boards.

4. In a harvesting machine, the combination of a pair of stalk drawing rollers inclined rearwardly and upwardly and provided with longitudinal teeth, means for rotating said rollers, a pair of ear snapping bars above said rollers and spaced apart from each other far enough to freely allow corn stalks to pass through and to engage ears of corn, upright boards at the sides of the ear snapping bars and conveyer chains having arms thereon arranged to move upwardly and rearwardly on the inner faces of said upright boards and having the arms projecting over the snapping bars and toothed gathering rollers parallel with said drawing rollers and mounted in said boards forward of said snapping bars.

5. In a harvesting machine, the combination of a pair of stalk drawing rollers inclined upwardly and rearwardly and formed with longitudinal teeth, means for rotating the adjacent portions of said rollers downwardly, sliding bearings for the forward ends of said rollers, springs for normally holding said bearings in position with the forward ends of the rollers at their limit of movement toward each other, a pair of stationary, flat, snapping bars arranged directly above the rollers with their forward ends curved rearwardly and toward each other and their body portions spaced apart far enough to freely allow corn stalks to pass and to prevent the passage of ears of corn, and toothed gathering rollers parallel with said drawing rollers and located forward of said snapping bars.

6. In a harvesting machine, the combination of stalk drawing rollers, means for

rotating said rollers, stationary ear snapping bars above the rollers, upright guide boards above the snapping bars and projecting forwardly beyond them, supplemental
5 guide boards at the upper edges of the upright guide boards inclined upwardly and away from each other and toothed stalk gathering rollers mounted in said supplemental guide boards at the outer edges
10 thereof and means for moving said toothed rollers in a direction to draw stalks inwardly between the guide boards.

7. In a harvesting machine, the combination with snapping bars, chains cooperating
15 therewith, and stalk gathering devices arranged in advance of said bars, each of said gathering devices comprising a plurality of parallel sprocket chains each provided with outwardly projecting arms.

20 8. In a harvesting machine, the combina-

tion of a frame, ear snapping devices therein, upright boards at the sides of the ear snapping devices inclined upwardly and rearwardly from the front of the machine and a stalk gathering device in each of said
25 boards comprising two shafts, a series of sprocket wheels on each, a series of sprocket chains in parallel planes passing around said sprocket wheels and provided with outwardly projecting teeth, the inner portions
30 of the sprocket chains projecting through said guide board and means for rotating one of the shafts in a direction to move the inner portions of the chains upwardly and
35 rearwardly.

Des Moines, Iowa, April 12, 1906.

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