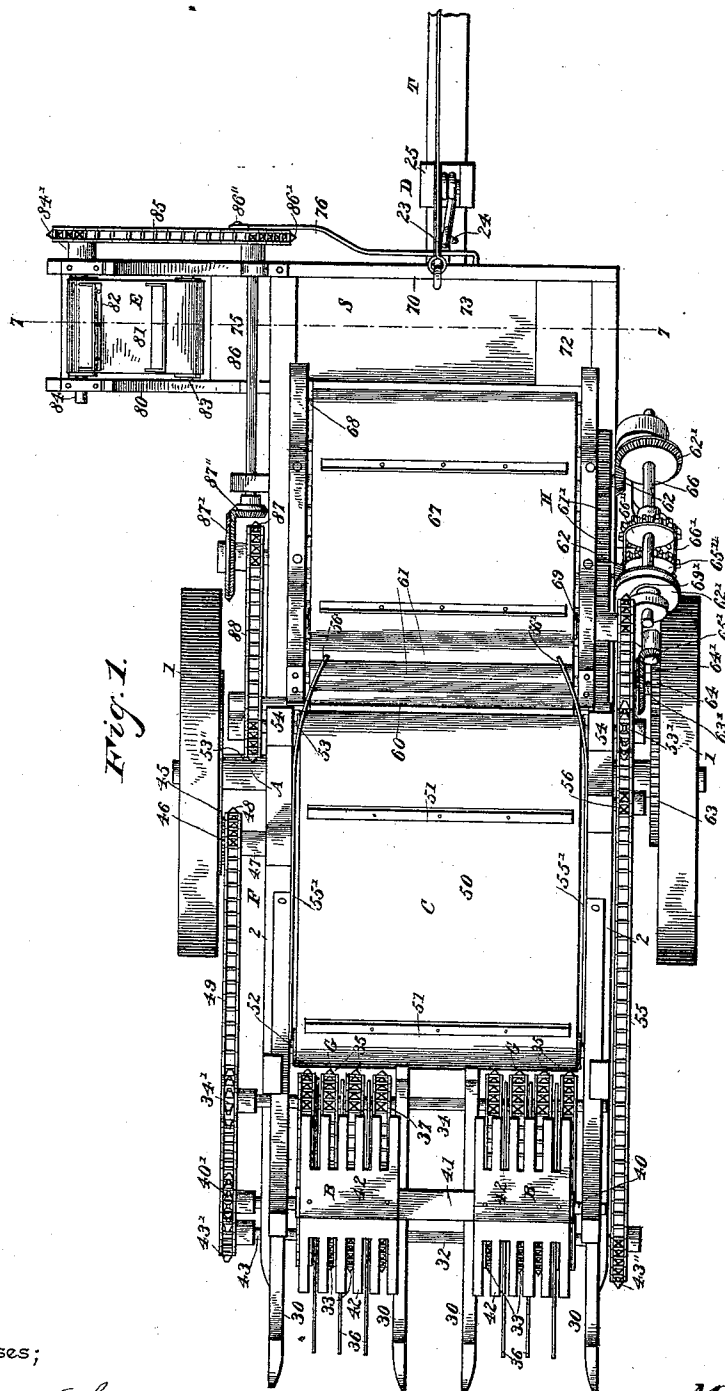


5 Sheets—Sheet 1.

No. 484,076.

Patented Oct. 11, 1892.



Inventor:

J. M. Withrow.

Matthew Wilson,

By *his* Attorneys,

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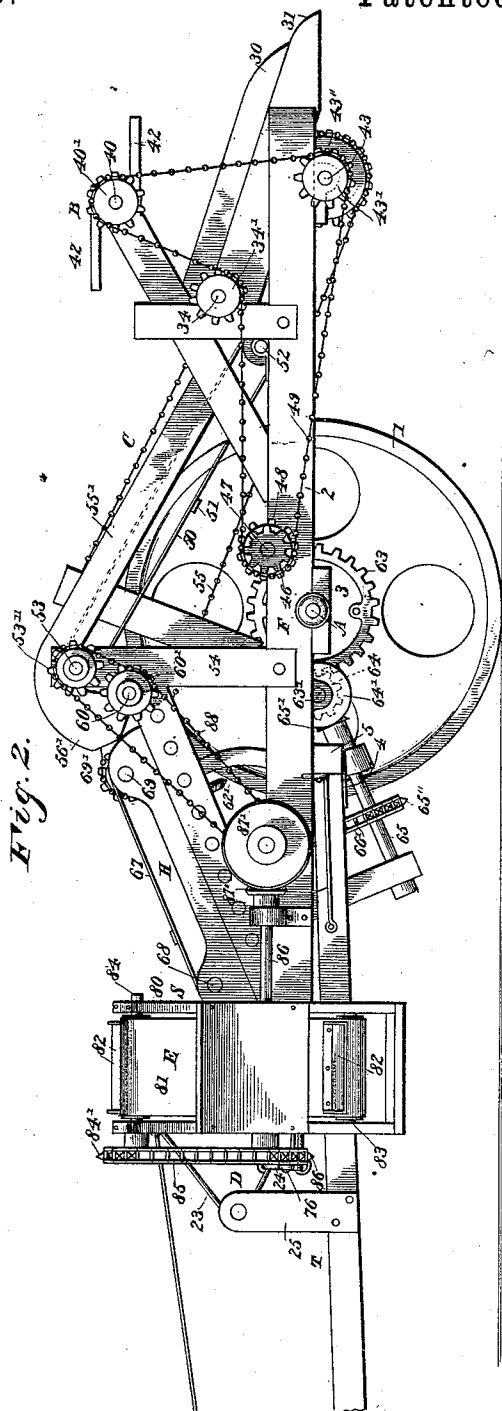
(No Model.)

5 Sheets—Sheet 2.

M. WILSON.  
CORN HUSKER.

No. 484,076.

Patented Oct. 11, 1892.



Witnesses;

*J. M. Withers*

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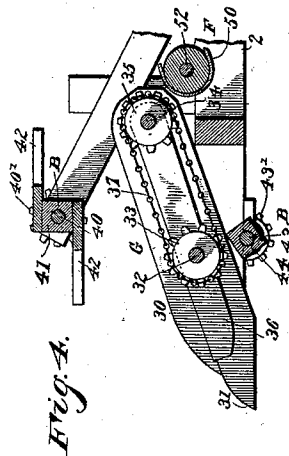
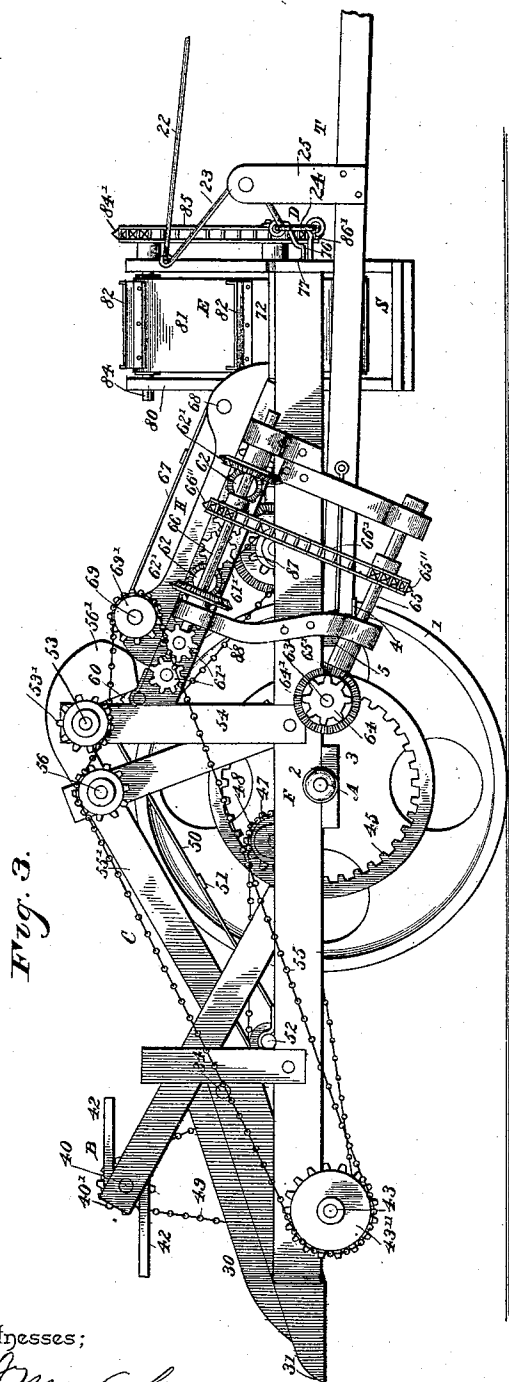
(No Model.)

5 Sheets—Sheet 3.

M. WILSON.  
CORN HUSKER.

No. 484,076.

Patented Oct. 11, 1892.



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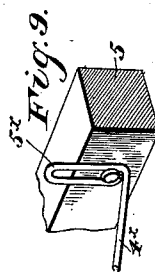
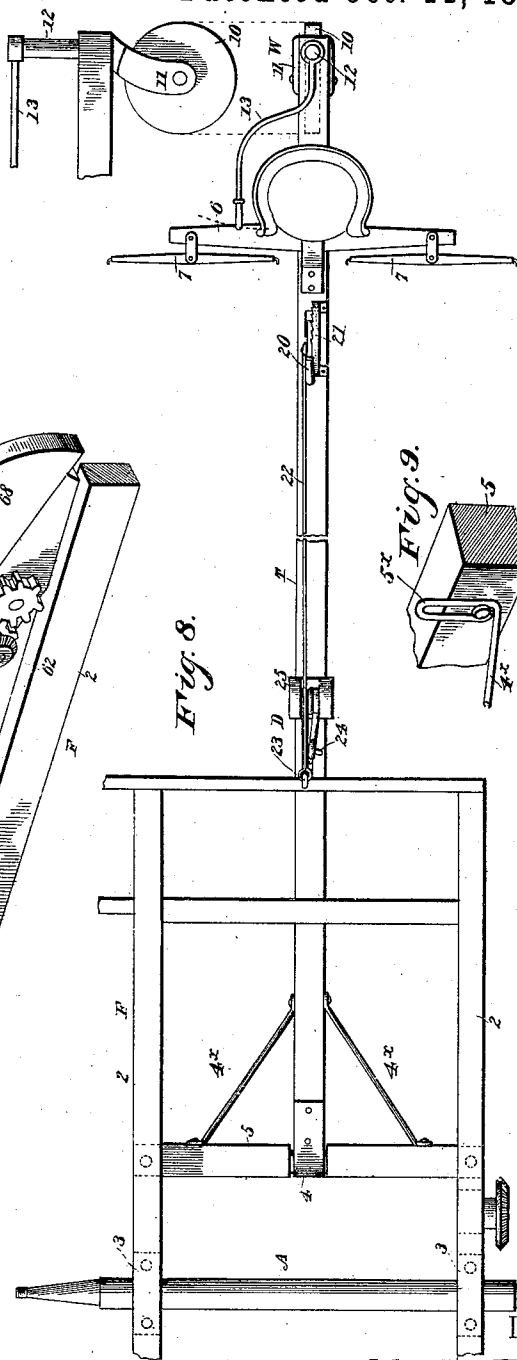
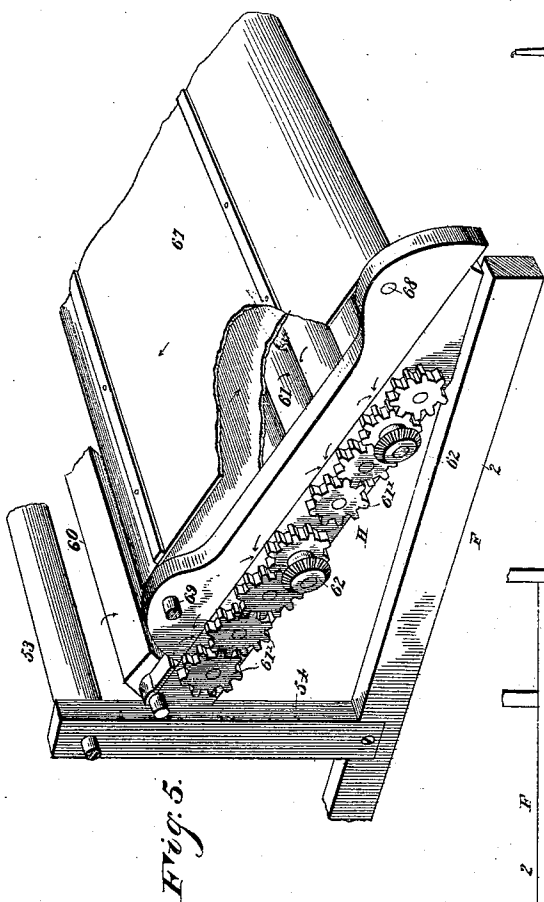
(No Model.)

5 Sheets—Sheet 4.

M. WILSON.  
CORN HUSKER.

No. 484,076.

Patented Oct. 11, 1892.



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CORN HUSKER.

No. 484,076.

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Fig. 6.

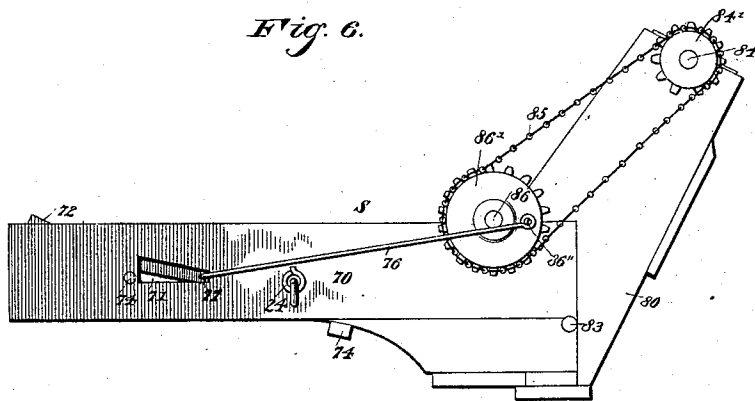
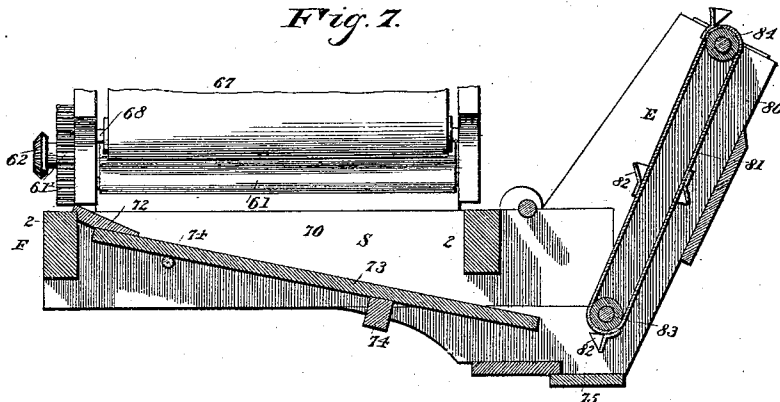


Fig. 7.



Witnesses:

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# UNITED STATES PATENT OFFICE.

MATTHEW WILSON, OF GARRISON, IOWA.

## CORN-HUSKER.

SPECIFICATION forming part of Letters Patent No. 484,076, dated October 11, 1892.

Application filed October 13, 1891. Serial No. 408,607. (No model.)

*To all whom it may concern:*

Be it known that I, MATTHEW WILSON, a citizen of the United States, residing at Garrison, in the county of Benton and State of Iowa, have invented a new and useful Corn-Husker, of which the following is a specification.

This invention relates to corn-harvesters, more especially of that class known as strippers and huskers; and the object of the same is to effect certain improvements in the construction of devices of this character.

To this end the invention consists in a machine embodying the details hereinafter more fully described and claimed, and as illustrated on the five sheets of drawings, wherein—

Figure 1 is a plan view of this machine complete. Fig. 2 is a right-hand-side elevation with the supporting-wheel removed. Fig. 3 is a left-hand-side elevation with the supporting-wheel also removed. Fig. 4 is a central longitudinal section through one of the banks of gatherers, giving a cross-section of the two beaters. Fig. 5 is a perspective detail of the left-hand ends of the feeder-roll and the several husking-rollers, showing their driving mechanism and showing the left edge of the presser-belt partly broken away. Fig. 6 is a rear elevation of the machine, showing only the slide and elevator. Fig. 7 is a cross-section of the machine on the line 7 7 of Fig. 1. Fig. 8 is a plan view showing the axle, the frame in rear thereof, the tongue, and the devices mounted on the latter. Fig. 9 is a detail perspective view of a portion of the mechanism.

This machine comprises the supporting devices, consisting of an axle A, mounted on main wheels, a tongue T, pivotally connected with the frame, mounted on the frame, extending to the rear and supported by a caster-wheel, and devices W, by which the machine is to be guided by the operator; a main frame F, pivotally mounted on the axle and adapted to have its angle of inclination changed and its height from the ground at the front end set, as desired, by the adjusting devices D; the operating mechanisms mounted upon and carried by this framework and consisting of two banks of gatherers G, rotating beaters B, above and below the gatherers, a rearward-moving carrier C, the husking devices H, a

transverse slide S, to which the husker delivers, and an elevator E, and the various connections for driving these several mechanisms, each and all of which are more specifically described below. These several parts of my machine are capable of a considerable degree of modification without necessarily departing from the spirit of the invention, and while some parts might be used without others or certain parts might possibly be dispensed with entirely I prefer to construct the machine about as shown and described, though I do not limit myself to the exact details nor to the proportions or materials used.

The supporting-wheels 1 may either be journaled on the axle A or may be keyed thereon, and the framework F has its longitudinal side bars 2 provided with boxes 3 at about the centers of their lengths, which boxes are pivoted on the axle between the wheels 1. The tongue T has a strap-bearing 4 at its front end, which is preferably pivoted on a cross-piece 5, connecting the side bars 2 slightly in rear of the axle, as shown in Fig. 8. Braces 4<sup>x</sup> extend from the said tongue T and are connected movably at their rear ends to the adjacent side of the cross-piece 5 by means of elongated loops 5<sup>x</sup>, formed at the rear ends of said braces and engaging headed studs or pins on the said cross-piece. By this means the adjustment of the frame is permitted. The tongue extends thence beneath the frame and far to the rear thereof, and it carries near its rear end a doubletree 6, to which are connected singletrees 7, to which the horses may be hitched, whereby the machine will be pushed in front of them.

The guiding mechanism W consists of a caster-wheel 10, mounted in a fork 11, whose stem 12 rises vertically through the rear extremity of the tongue, and a handle or tiller 13 projects forward from this stem, by which the operator, sitting in his seat, can turn this caster-wheel so as to guide the machine. The horses, being attached to the tongue, will of course travel as directed thereby, and the necessity for reins is thereby avoided, while the guiding or steering of the machine is rendered very fine.

The adjusting devices D, by which the angle of the machine to the tongue and the height of its front end from the ground may

be regulated, consist of the following elements: 20 is a lever pivoted at its lower end to the tongue and moving over a toothed rack 21, and the body of this lever is connected by a link 22 with the upper end of a bell-crank lever 23, whose lower front end is connected by a short link 24 with the rear end of the frame. The angle of this bell-crank lever is pivoted in an upright 25, which rises from the tongue. Hence the operator by manipulating the hand-lever 20 can turn the bell-crank lever 23 and raise or lower the rear end of the frame, whereby it will be turned around its boxes 3 over the axle A, and its front end will be correspondingly lowered or raised.

The gatherers G are located at the front end of the framework F and are arranged in banks, which are separated so as to engage two or more rows of stalks, two of such banks being shown in the present case. Each bank comprises two side-boards 30 tapered to points 31 at their front ends and suitably supported by the framework. Through these boards, at about the center of their lengths, is journaled an idle-shaft 32, carrying sprocket-wheels 33, and through the upper ends of the boards is journaled a driving-shaft 34, carrying sprocket-wheels 35. 36 are sheet-metal fingers set on edge and mounted on the shafts 32 and 34, their front ends projecting forward to a line nearly opposite the points 31. In the present case three of such fingers are shown in each bank, interposed between four sprocket-wheels on each shaft, and the sprocket-wheels are connected by chains 37, moving to the rear on their upper sides. The beaters B are located above and below the gatherers. The upper one comprises a shaft 40, parallel with and a little to the rear of the idle-shaft 32, a polygonal roller 41, keyed on this shaft, and combs 42, secured to opposite faces of the roller with their teeth projecting tangentially therefrom and sufficiently far to project downwardly between the side-boards 30 of each bank of gatherers and draw or move upwardly over the chains therein. The lower beater comprises a shaft 43, just beneath and parallel with the idle-shaft 32, said shaft 43 carrying a square roller 44. The right end of the driving-shaft 34 carries a sprocket-wheel 34', and the right ends of the shafts 40 and 43 respectively carry sprocket-wheels 40' and 43'. On the inner face of the right-hand supporting-wheel 1 is a ring 45, having inwardly-projecting gear-teeth, as seen in Fig. 3, and 46 is a gear engaging this ring and mounted on a stub-shaft 47, a sprocket-wheel 48 being rigidly connected with this gear. 49 is a sprocket-chain passing over this gear 48, thence under the gear 34', thence over the gear 40', thence under the gear 43', and back to the point of starting. By this means the movement of the right-hand supporting-wheel drives the gatherers and the two beaters in the proper direction. As the machine progresses forwardly the stalks pass in between the fingers of the gatherers, which are

spaced just to permit, and the combs 42 beat the tops of the stalks down and back onto the chains 37. The machine continuing further, the bodies of the stalks are deflected, and they finally draw down between the fingers, the sharp edges of the latter nipping the ears from the stalks and the lower beater assisting the natural movements of the stalks and preventing the front links of the chains 37 from engaging them.

The rearwardly-moving carrier C comprises an endless apron 50, having transverse slats 51 and moving over an idle-roller 52, standing across the frame just beneath the rear ends of the gatherers and over a driving-roller 53, standing across the frame nearly over the axle A and journaled in uprights 54 of the framework. Guide-boards 55' stand along the edges of this apron and have their rear ends 56' curved downward and inward, as seen in Fig. 1, and said boards prevent the ears of corn as they are carried up by the slats 51 from falling off the edges of the apron. The husking devices H are located in rear of this carrier, and the presser-belt forming a part of said devices is driven by a sprocket-wheel 69', described below. On the left-hand end of the shaft 43 of the lower beater is a sprocket-wheel 43'', from which leads an endless chain 55, passing over an idle-sprocket 56, thence under a sprocket-wheel 53' on the left end of the shaft 53, which drives the carrier, thence over said sprocket 69' and back to the point of starting, and by this means the carrier is caused to move in the proper direction to carry the ears back from the gatherers, as will be understood.

The husking devices H comprise a feeder-roll, a series of husking-rollers, and a presser-belt. The feeder-roll 60 is mounted in journals on the rear edges of the uprights 54, just under the driving-roller 53 of the carrier, and is turned to the rear by means described below, the face of this roll being polygonal (preferably square) and its function is to receive the ears from the carrier, turn them so as to stand across the machine, and deliver them properly to the husking-rollers. The latter comprises cylindrical rollers 61, arranged in parallel pairs across the machine, the rollers of each pair being revolved toward each other by the means set forth below. The presser-belt comprises an endless apron 67, moving at its rear end over an idle-roller 68 and at its front end over a driving-roller 69, on whose left end is keyed the sprocket 69', above mentioned, and by means of which the apron is moved. On the left ends of the rollers 61 are intermeshing gears 61', certain of which are provided with beveled pinions 62 on their hubs. On the inside of the left-hand driving-wheel 1 is a gear-ring 63, meshing with a gear 64, mounted on a stub-shaft 63' and carrying a miter-gear 64'.

65 is a lower longitudinal shaft having a miter-gear 65' meshing with that on said stub-shaft by which it is driven.

66 is an upper longitudinal shaft having beveled pinions 62', meshing with those on certain of the husking-rollers. On said lower shaft is a sprocket-wheel 65'', which is connected by a chain 66' with a sprocket-wheel 66'' on said upper shaft, all as best seen in Fig. 3. By this means the turning of the left supporting-wheel through the connections described drives the husking-rollers in pairs in the manner above set forth. As the ears fall off the upper end of the carrier they are directed by the feeder-roll onto the upper pair of husking-rollers, and the general inclination of the husking devices to the rear of the machine causes the ears to move down over the rollers. Passing under the roller 69 the ears are borne down onto the husking-rollers by the presser-belt 67, and thus they are moved to the rear until the approaching faces of the rollers of some pair catch the husks and drag them off the ears. The husked ears pass on while the husks drop through the frame onto the ground or into a receptacle, which, if desired, can be carried by the frame at the proper point, as well known in this art, but is not shown in the drawings.

The slide S consists of a box-shaped body 70, extending transversely across the rear end of the frame F and having a longitudinal slot 71 in its rear wall and an inclined directing-board 72 within its left end. The bottom 73 of this box rests on cross-bars 74 at the bottom of the casing, its left end moving under the board 72 and its right end moving under the right-hand side bar 2 of the frame and delivering into a receptacle 75.

76 is a pitman whose inner end 77 passes through the slot 71 and connects with the bottom board 73, whereby the latter is reciprocated longitudinally when the outer end of the pitman is driven in the manner described below.

The elevator E consists of a casing 80, mounted on and supported by the projecting right-hand end of the box 70 and above the receptacle 75, and an endless belt 81, having buckets 82, and moving over rollers 83 and 84. On the rear end of the latter roller is a sprocket-wheel 84', which is connected by a chain 85 with a sprocket-wheel 86', mounted on a horizontal shaft 86. This sprocket-wheel has a crank-pin 86'', which moves the outer end of the pitman-rod 76 to impart the reciprocating motion to the bottom board 73, as above mentioned.

On the front end of the horizontal shaft 86 is a miter-gear 87'', which is in mesh with another miter-gear 87', mounted on a stub-shaft in the frame and carrying a sprocket-wheel 87 on its hub, and an endless chain 88 leads from this sprocket-wheel over a sprocket-wheel 53'' on the right end of the driving-shaft 53, which moves the carrier C, thence under a sprocket-wheel 60' on the right end of the feeder-roll 60, and back to the point of starting. By this means the driving-shaft of the carrier drives the feeder-roll, and through

the connections described drives the horizontal shaft 86, and the cranked sprocket-wheel 86' on this shaft reciprocates the slide and also drives the elevator.

The horses being hitched to the singletrees, and preferably having their bridles connected with the tongue to prevent them from getting out of position, the operator takes his seat, manipulates the hand-lever to set the gatherers at the proper distance above the ground, starts the team, and then guides the machine by the handle 13 of the guiding mechanism. The rotation of the right main wheel drives the gatherers and the two beaters, the shaft of the lower beater drives the carrier and the presser-belt, the shaft of the carrier drives the feeder-roll and the horizontal shaft, and the cranked sprocket on said shaft drives the slide and the elevator. The rotation of the left main wheel drives the several pairs of husking-rollers. The ears as they are stripped from the stalks are driven onto the chains of the two gatherers by the upper beater, pass to the rear and fall onto the carrier, are carried up thereby between the guide-boards, and are delivered over the feeder-roll onto the husking-rollers. Thence they pass under the presser-belt, by which they are borne against the rollers, so that the husks are stripped off the ears, and the latter pass to the rear onto the slide, down which they move into the receptacle, and from this point they are picked up by the elevator and delivered at the right side of the frame into a wagon, which may be driven along at that side of the machine into a crate or box (not shown) or onto the ground.

What is claimed as new is—

1. In a corn-harvester, the herein-described gatherer, comprising parallel side-boards carried by the frame of the machine and projecting forward thereof, a transverse rotating shaft through their upper ends, a series of sprocket-wheels mounted thereon, an idle-shaft connecting the side-boards at about the centers of their lengths, a series of sprockets thereon, a series of belts connecting the sprockets in pairs, and a series of sheet-metal fingers, each of which is mounted on edge on said shafts between adjacent sprockets and projects forward of said idle-shaft, and a beater consisting of a horizontal shaft rotating above and standing across the gatherer, and combs projecting therefrom.

2. In a corn-harvester, the herein-described gatherer, comprising parallel side-boards carried by the frame of the machine and projecting forward thereof, a series of sheet-metal fingers standing on edge between and parallel with said boards, rearwardly-moving belts between the fingers at the rear portions of their bodies, and a beater mounted rotatively above and standing across the gatherer.

3. In a corn-harvester, the combination, with a gatherer comprising parallel longitudinal fingers and belts moving to the rear between them, of a beater consisting of a hori-

zontal shaft rotating above and standing across the gatherer and combs projecting therefrom with their teeth moving adjacent to and in the same direction as said chains.

5 4. In a corn-harvester, the combination of a gatherer having deep side-boards and a series of longitudinal fingers standing on edge between and parallel with said boards and having rearwardly-movable belts between them, a beater-shaft standing across and above  
10 the gatherer, a polygonal roller on said shaft, combs mounted on the faces of said roller, and means for rotating the latter, substantially as described.

15 5. In a corn-harvester, the combination, with the main framework and banks of gatherers carried thereon, each gatherer comprising deep side-boards extending forward of the frame and pointed, a rearwardly-rotating  
20 shaft through the upper ends of said boards, an idle-shaft through them near their centers, a series of sprockets on the shafts, chain belts connecting them in pairs, and a series of sheet-metal fingers on edge extending between the  
25 sprockets and to a line nearly parallel with the points of the boards, of a transverse shaft above the gatherers, means for turning it in opposite direction to the shaft through the gatherers, a square roller on this shaft, and  
30 combs mounted on said roller with their teeth projecting tangentially therefrom.

6. In a corn-harvester, the combination, with the gatherers projecting beyond the front end of the main frame and having sheet-metal  
35 fingers on edge, of a beater above said gatherers and another beater below the gatherers in rear of the front ends of said fingers and comprising a square roller whose upper face is moving forwardly.

40 7. In a corn-harvester, the combination, with a gatherer comprising side-boards, a series of rearwardly-turning sprocket-wheels at about the centers of said boards, chains leading rearwardly therefrom, and a series of fingers interposed between and projecting forward of said wheels, of a lower beater comprising a forwardly-turning shaft below and parallel with the shaft of said wheels and a roller mounted on and turning with said shaft  
45 and having an angular face.

50 8. In a corn-harvester, the combination, with the main frame mounted on supporting-wheels, gatherers at the front end of said frame, having rearwardly-moving belts therein, oppositely-moving beaters located one

above and one below said gatherers, wheels on the shafts of the beaters, and a driving-shaft for said belts, of a toothed ring on one supporting-wheel, a gear engaging said ring and having a wheel on its hub, and a belt connecting this wheel with the wheels on said shafts.

9. In a corn-harvester, the combination, with the main frame, the gatherers at the front end thereof, and a rearwardly-moving and upwardly-inclined carrier, of the husking devices in rear of said carrier, a feeder-roll under the carrier, comprising a polygonal roller turning to the rear, and guide-boards along the edges of the carrier, having their rear ends passing over the feeder-roll and bent slightly inward.

10. In a corn-harvester, the combination, with the main framework having a transverse box across its rear end, provided with a longitudinal slot in its rear wall and an inclined directing-board at one end, and means for gathering the ears and delivering them into said box, of cross-bars at the open bottom of the box, a bottom sliding on said cross-bars, a rotating crank-wheel, a pitman leading from its crank through said slot and connected with the bottom, and a receptacle at the end of the bottom opposite said directing-board, beneath which latter the other end of the bottom moves.

11. In a corn-harvester, the combination, with the main framework having a transverse box across its rear end, a horizontal rotating shaft above said box, a sprocket-wheel on said shaft, having a crank-pin, connections between the shaft and one of the supporting-wheels, and means for gathering the ears and delivering them into the box, of bars across the bottom of the box, an inclined board resting on said bars, connections between this board and said crank-pin, an elevator whose casing is mounted on the projecting end of the box, a receptacle at the lower end of said board and from which the elevator leads, and a chain connecting said sprocket-wheel with the elevator for driving the latter.

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

MATTHEW WILSON.

Witnesses:

GEORGE KERR,

M. H. CRAWFORD.