

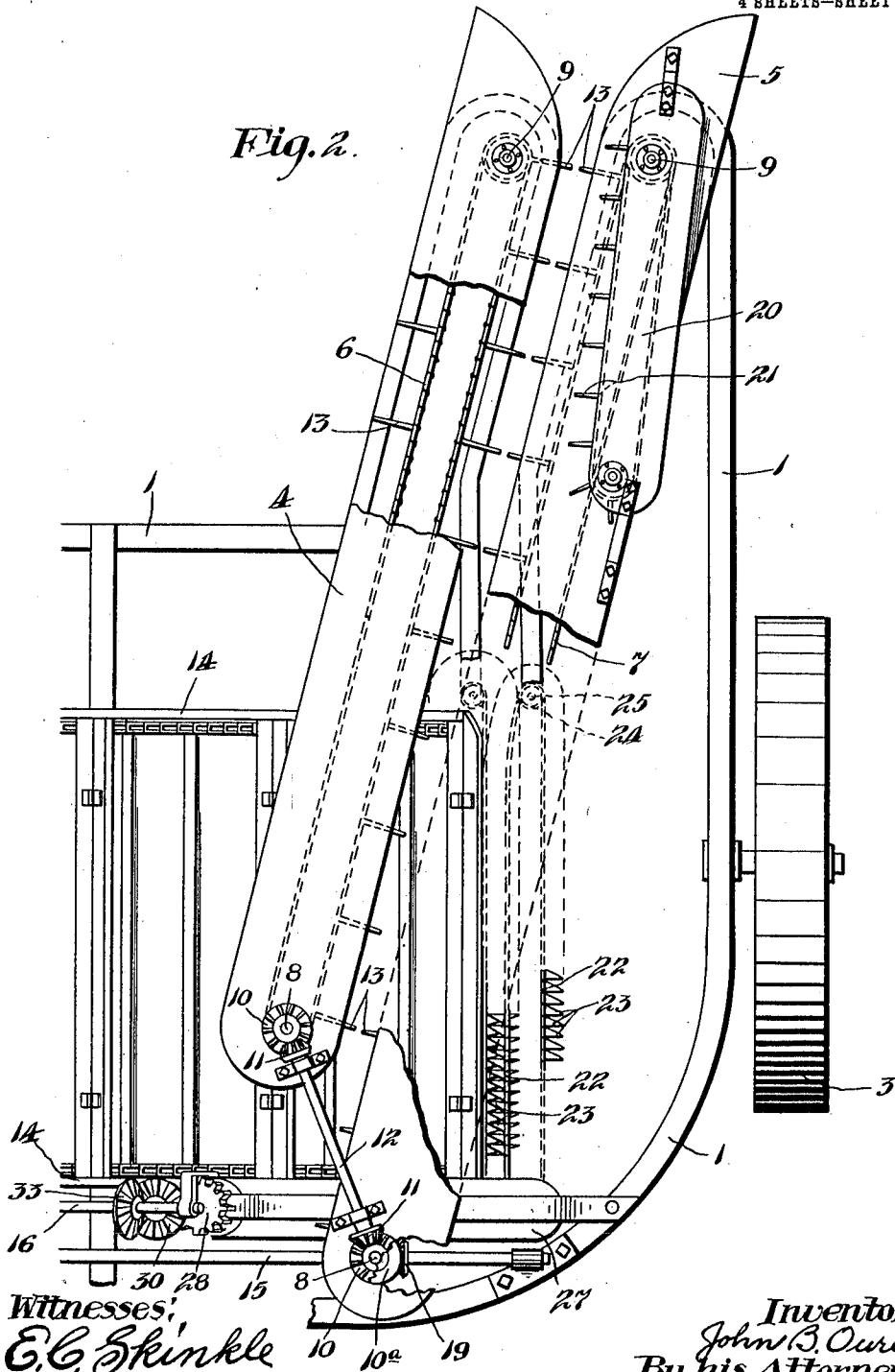
J. B. OUREN.
CORN HARVESTER.
APPLICATION FILED JUNE 9, 1911.

1,039,180.

Patented Sept. 24, 1912.

4 SHEETS—SHEET 2.

Fig. 2.



Witnesses:
E. C. Skinkle
Geo. Knutson

Inventor:
John B. Ouren
By his Attorneys:
William M. Mearns

J. B. OUREN.
CORN HARVESTER.
APPLICATION FILED JUNE 9, 1911.

1,039,180.

Patented Sept. 24, 1912.

4 SHEETS—SHEET 3.

Fig. 3.

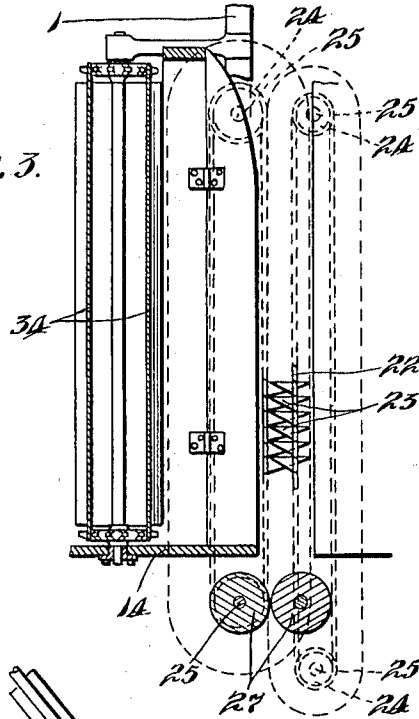
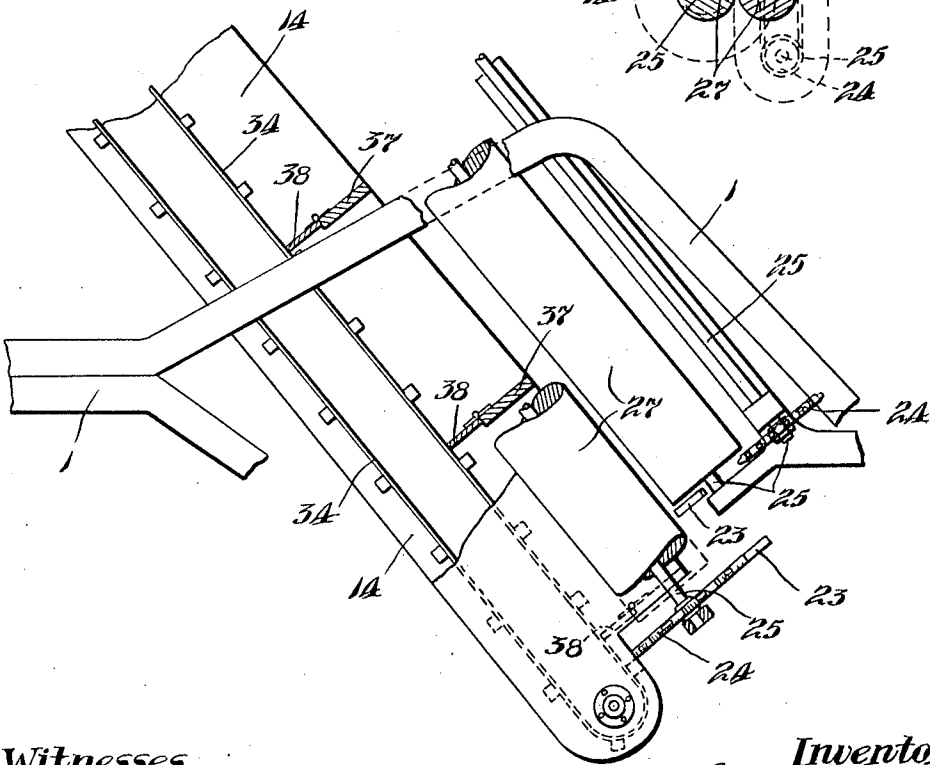


Fig. 4.



Witnesses
E. C. Skinkle
Geo. Knutson

Inventor:
John B. Ouren,
By his Attorneys:
Williamson & Muchand

J. B. OUREN.
CORN HARVESTER.
APPLICATION FILED JUNE 9, 1911.

1,039,180.

Patented Sept. 24, 1912.

4 SHEETS—SHEET 4.

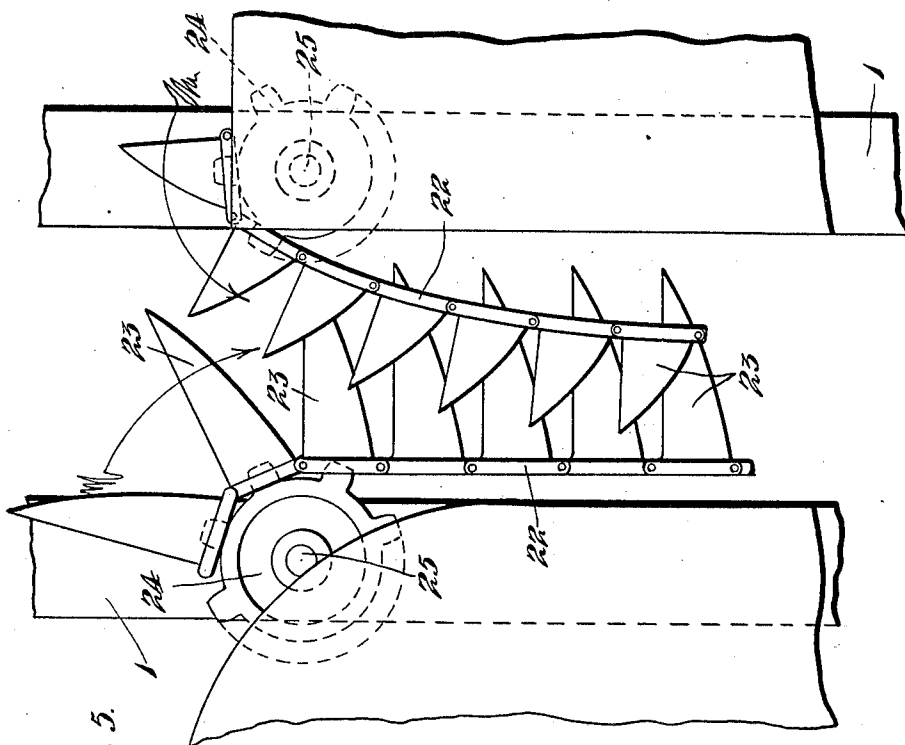


Fig. 5.

Witnesses:
E. C. Skinkle
Geo. Hutson

Inventor:
John B. Ouren
By his Attorneys,
William D. McLean

UNITED STATES PATENT OFFICE.

JOHN B. OUREN, OF HANSKA, MINNESOTA.

CORN-HARVESTER.

1,039,180.

Specification of Letters Patent.

Patented Sept. 24, 1912.

Application filed June 9, 1911. Serial No. 632,187.

To all whom it may concern:

Be it known that I, JOHN B. OUREN, a citizen of the United States, residing at Hanska, in the county of Brown and State of Minnesota, have invented certain new and useful Improvements in Corn-Harvesters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide an extremely simple and highly efficient corn harvester, and to such ends, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

The invention is illustrated in the accompanying drawings wherein like characters indicate like parts throughout the several views.

Referring to the drawings, Figure 1 is a rear elevation of the improved harvester; Fig. 2 is a plan view showing those portions of the machine which are at the right of the line marked $x^2 x^2$ on Fig. 1, some parts being broken away; Fig. 3 is an oblique longitudinal section taken on the line $x^3 x^3$ of Fig. 1, some parts being indicated by dotted lines and some parts being broken away; Fig. 4 is a detail in rear elevation with some parts broken away, illustrating the construction of the elevator, the snapping rollers, and the co-called picking chains; and Fig. 5 is a fragmentary view showing the picking chains and certain of the supports therefor.

The main frame 1 of the machine is carried by a main traction wheel 2, and by a relatively small balancing wheel 3. A pair of long parallel gathering frames 4-5 are rigidly supported by the main frame 1, and are set in upright positions extending in a horizontal direction oblique to the direction of the travel of the machine. Endless gathering chains 6 and 7 are arranged to run over suitable driving and guiding sprockets, the shafts 8 of the former and the shafts 9 of the latter being suitably journaled on the said frames 4-5, respectively. The driving shafts 8 are provided at their upper ends with beveled gears 10, that mesh with pinions 11 carried by the ends of a short counter-shaft 12, mounted in suitable bearings on the said frames 4-5.

The gathering chains 6 and 7 are pro-

vided with projecting gathering fingers 13 which coöperate at the inner rearwardly moving runs of the chains to gather the standing stalks and properly deliver the same rearward to so-called pickers or picking chains, presently to be described. An elevator frame 14 embraces or extends over the traction wheel 2 and is secured to the main frame 1 on opposite sides of the said wheel. A horizontal shaft 15 is journaled in suitable bearings on the rear portion of the frame 1, and an oblique shaft 16 is journaled in suitable bearings on the rear portion of the said frame 1 and on the rear upper portion of elevator frame 14. Both of these shafts 15 and 16 are driven from the traction wheel 2 by any of the well known means, such, for instance, as a chain of gears 17 and a sprocket and chain drive 18 indicated in part in Fig. 1. At its lower end, one of the shafts 8 of the gathering device is provided with a beveled gear 10, similar to the beveled gear 10 of said shaft, but inverted in respect thereto, and meshing with a beveled pinion 19 on the shaft 15. By the connections described, it is evident that feeding movements are imparted to the gathering chains 6 and 7 under forward movement of the machine.

The numeral 20 indicates the frame and the numeral 21 the sprocket driven chain of a supplemental gathering device, shown as applied on the gathering frame 5, which constitutes no part of the present invention, but is a feature hitherto quite generally employed, and hence, requires no detailed description.

The gathering chains 6 and 7 deliver the standing stalks between the front portions of a pair of so-called picking chains 22, that are provided with coöperating blade-like picking teeth or fingers 23. These chains 22 run over suitable sprockets 24 carried by shafts 25. These shafts 25 are journaled in suitable bearing-yokes 26 secured on the main frame 1, and so set that the said shafts are inclined from the right toward the left in respect to the direction of travel of the machine, at an angle of about 45 degrees to the perpendicular (see particularly Fig. 1). The rear portions of these picking chains 22 deliver the stalks directly between the lower ends of a pair of coöperating snapping rollers 27, the shafts of which are also journaled in the rear bearing-yoke 26 and are inclined at the same angle as the said shafts

25. One of the shafts 25, to-wit, the left hand rear member, is utilized as the shaft of the lower or left hand snapping roller 27. The shafts of the snapping rollers 27 are connected by intermeshing spur gears 28. One of the gears 28 carries a sprocket 29 and the other carries a beveled pinion 30. A sprocket chain 31 runs over the sprocket 29 and over a sprocket 32 on the upper end of the right hand rear shaft 25. The beveled pinion 30 meshes with a beveled gear 33 carried by the oblique driving shaft 16. Connections have now been described for driving the gathering chains, the picking chains, and the snapping rollers.

An endless inclined slat-equipped elevator belt 34 is arranged to run over suitable guide rollers on the upper and lower portions of the elevator frame 14 and will operate to deliver the unhusked corn heads to a husking mill, or device indicated as an entirety by the numeral 35, and shown as supported by the left hand portion of the main frame 1. The husked ears are adapted to be carried from the husking mill 35 and delivered into a wagon or other suitable receptacle by a delivery elevator 36 carried by the left hand portion of the said frame 1. The elevators 34 and 36 may be driven from the traction wheel 2 by any well known or suitable driving connections. The husking mill 35, in itself, constitutes no part of the present invention, and in as much as it is a mechanism well known, it need not be here described in detail. The upper surface of the elevator belt 34 extends forward immediately in front of the snapping rollers 27, and preferably, extends slightly below the lower snapping roller so that all of the corn heads snapped from the stalks will be delivered directly on to the said belt. The upwardly extended sides of the elevator frame 14 forms sort of a trough in which the elevator belt 34 is arranged to work, and at various different points longitudinally of the said belt, the said elevator frame is provided with transverse partitions 37 that are spaced far enough above the upper surface of the elevator belt to permit all of the ears to be passed thereunder. Each partition 37 is provided with a gravity-held hinged plate 38, the lower portions of which are indicated in Fig. 4, the hinges thereof permitting the same to freely swing upward for an important purpose.

Operation: When the machine is driven forward, the standing stalks are delivered between the converging front ends of the gathering frames 4 and 5 and are engaged by the teeth of the gathering chains 6 and 7, and under forward movement of the machine, the stalks thus engaged, are, by the said gathering chains, gently bent into inclined positions toward the left, and when they have been inclined at approximately

forty-five degrees they are delivered between the front portions of the so-called picking chains 22. By the overlapping teeth 23 of these picking chains, the stalks are held in such manner that no ear of corn which may be severed from the stalk before reaching the snapping rollers, can escape or drop to the ground, but will be delivered to the lower portion of the elevator belt 34. By the said picking chains and their cooperating teeth or blades 23, the stalks are positively and accurately delivered between the snapping rollers 27, and it is here important to note that the frame-work which supports the lower ends of the snapping rollers is open so that the stalks may pass laterally there-through and between the snapping rollers. As the stalks are passed between the snapping rollers, the ears, with the husks attached thereto, are snapped from the stalks and fall onto the elevator belt 34. This machine may be equipped to pick up and snap ears that are less than one foot from the ground, and the elevator belt 34 will catch and elevate all of these. Ears located high on the stalks will be delivered onto the elevator belt 34 above certain of the partitions 37—38 and the latter will prevent the ears from falling downward to the lowermost portion of the elevator belt. The elevator belt will, therefore, pick up the ears approximately at the point from where they are snapped from the stalks. The hinged plates 38 readily yield to permit the ears to be carried upward under the various partitions 37. The ears are, as already indicated, delivered by the elevator belt 34 to the husking mill 35 and the husked ears are delivered from thence, by the delivery elevator 36 into a wagon box driven at the side of the harvester, or, in any other suitable receptacle, or upon the ground, for that matter, if such delivery were desired.

Nearly all of the weight of the machine is carried by the traction or driving wheel 2 and the pole, not shown, is adapted to be attached nearly or directly in front of the said traction wheel, so that there will be no side draft on the machine.

The efficiency of the machine is very greatly increased by setting the stripper rollers obliquely instead of arranging the same lengthwise of the travel of the machine, as has hitherto been customary. The stalks are gradually and gently bent into oblique positions and are positively and accurately delivered to the snapping rollers, so that there is no danger of waste due to leaving ears on the stalks. The stalks, themselves, are not broken up but are only slightly crushed in passing, between the snapping rollers.

What I claim is:

1. In a corn harvester, cooperating snapping rollers set obliquely in a vertical plane

that transversely intersects the line of travel, cooperating parallel gathering chains set oblique in respect to the line of travel, and cooperating devices for delivering the stalks from said gathering chains to and between said snapping rollers.

2. In a corn harvester, cooperating snapping rollers set obliquely in a vertical plane that transversely intersects the line of travel, cooperating gathering chains set oblique in respect to the line of travel, and cooperating devices for delivering the stalks from said gathering chains to and between said snapping rollers, said cooperating devices working in a plane that is at right angles to said rollers.

3. In a corn harvester, cooperating snapping rollers set obliquely in a vertical plane that transversely intersects the line of travel, cooperating parallel picking chains set oblique in respect to the line of travel, for delivering the stalks to and between said snapping rollers, and means for guiding the stalks to said picking chains.

4. In a corn harvester, cooperating snapping rollers set obliquely in a vertical plane that transversely intersects the line of travel, cooperating picking chains having overlapping blades or fingers working in oblique planes that are at right angles to the said rollers, for delivering the stalks to and between said snapping rollers, and means for guiding the stalks to said picking chains.

5. In a corn harvester, cooperating snapping rollers set obliquely in a vertical plane that transversely intersects the line of travel, cooperating horizontally extended picking chains having overlapping blades or fingers working in oblique planes that are at right angles to the said rollers, for delivering the stalks to and between said snapping rollers, and means for guiding said stalks to said picking chains.

6. In a corn harvester, cooperating snapping rollers set obliquely in a vertical plane that transversely intersects the line of

travel, cooperating horizontally extended picking chains having overlapping blades or fingers working in oblique planes that are at right angles to the said rollers, for delivering the stalks to and between said snapping rollers, means for guiding said stalks to said picking chains, and an elevator arranged to receive the stalks from said snapping rollers.

7. In a corn harvester, cooperating snapping rollers set obliquely in a vertical plane that transversely intersects the line of travel, that are approximately of the same diameter from end to end, one of said snapping rollers extending slightly below the other, cooperating horizontally extending picking chains having overlapping blades or fingers, working in oblique planes that extend at right angles from the lower ends of said rollers, for delivering the stalks to and between said snapping rollers, and means for guiding the stalks to said picking chains.

8. In a corn harvester, cooperating snapping rollers set obliquely in a vertical plane that transversely intersects the line of travel, that are of approximately the same diameter from end to end, one of said snapping rollers extending slightly below the other, cooperating horizontally extended inner and outer picking chains having blades or fingers, the blades of said outer picking chains overlapping the blades of the said inner chain, said blades or fingers working in oblique planes that extend at right angles from the lower ends of said rollers, for delivering the stalks to and between said snapping rollers, means for guiding said stalks to said picking chains, and an elevator underlying said rollers and extending below said gathering chains.

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

JOHN B. OUREN.

Witnesses:

IMAR TOENBERG,
GUS. BRUDELIN.