

(No Model.)

2 Sheets—Sheet 1.

C. S. WATERS.
CORN HARVESTER.

No. 553,798.

Patented Jan. 28, 1896.

FIG. 1.

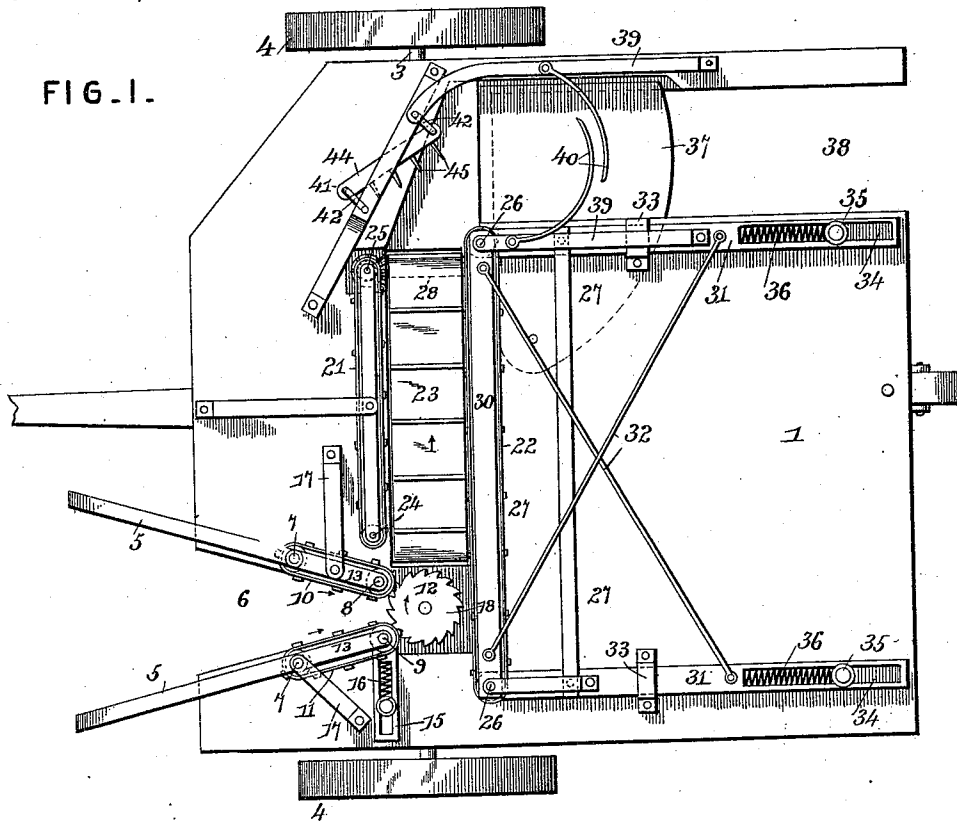
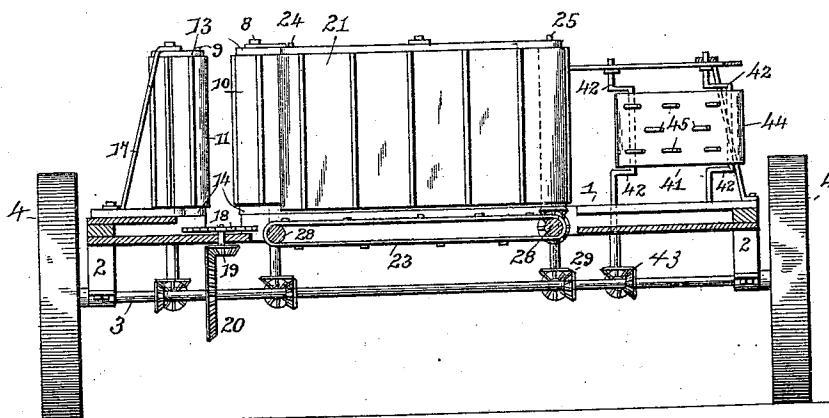


FIG. 4.



Inventor

Witnesses

Jas. H. McClathran
[Signature]

By his Attorneys.

Charles S. Waters

C. S. Waters

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FIG. 2.

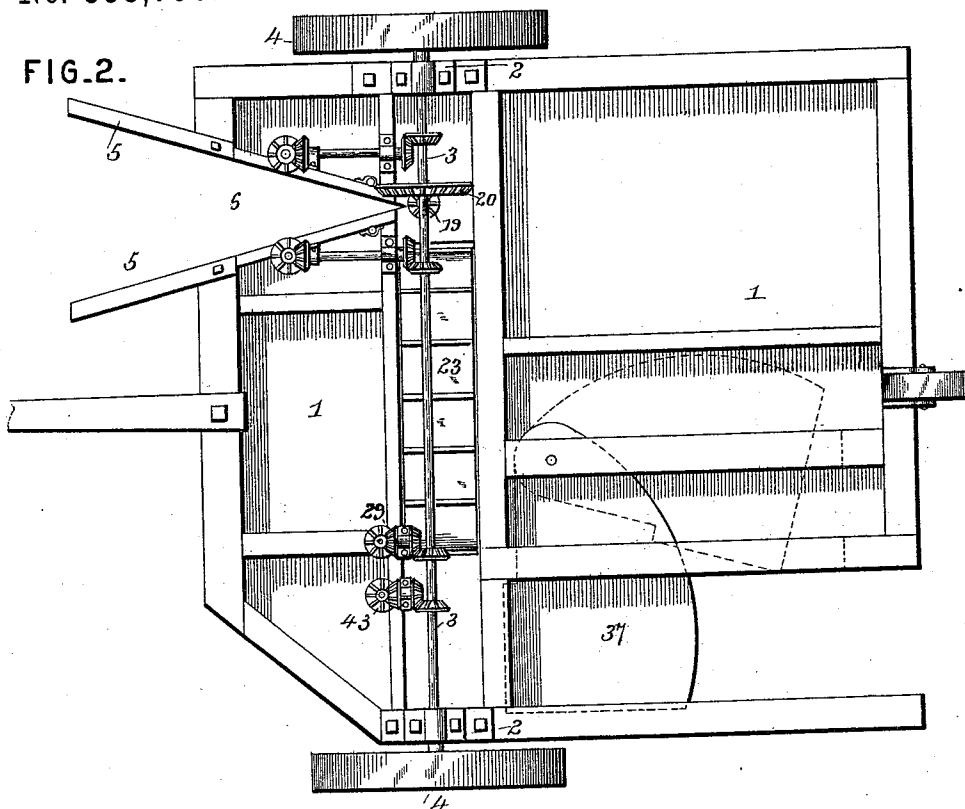
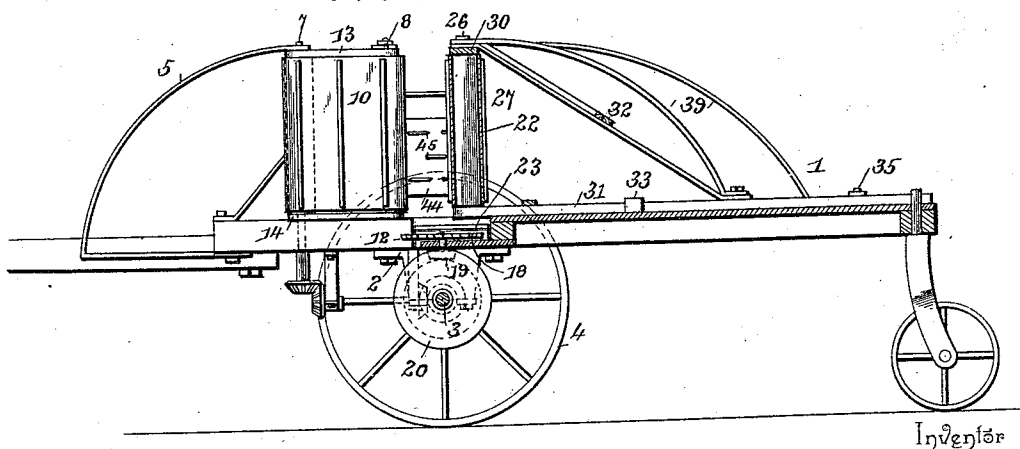


FIG. 3.



Inventor

Charles S. Waters

Witnesses

Jas. K. McLaughlin
J. B. Hays

By His Attorneys.

Cashow & Co.

UNITED STATES PATENT OFFICE.

CHARLES SUMNER WATERS, OF WORSTVILLE, OHIO, ASSIGNOR OF ONE-HALF
TO JAMES O. GONSER AND CHARLES E. GONSER, OF SAME PLACE.

CORN-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 553,798, dated January 28, 1896.

Application filed September 10, 1894. Serial No. 522,653. (No model.)

To all whom it may concern:

Be it known that I, CHARLES SUMNER WATERS, a citizen of the United States, residing at Worstville, in the county of Paulding and State of Ohio, have invented a new and useful Corn-Harvester, of which the following is a specification.

My invention relates to improvements in corn-harvesters, and the objects in view are to provide a machine for compressing the hills successively, cutting the same expeditiously, conveying them to a shocking-table, and discharging the shocks after the latter have been tied, leaving the same standing.

Further objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of a machine embodying my invention. Fig. 2 is a bottom plan view of the same. Fig. 3 is a longitudinal section. Fig. 4 is a detail transverse section on a plane in advance of the rear apron looking forward.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates the platform or framework of the machine, provided with depending bearings 2, in which is mounted the transverse operating-shaft 3 carrying the ground-wheels 4. The curved stalk-guides 5 are arranged upon opposite sides of a V-shaped guide-opening 6, the horizontal portions of said guides being attached to the framework and the rear ends of the curved portions thereof being fitted upon the reduced upper ends of the front rollers 7. These rollers, together with the twin rear rollers 8 and 9, carry the guiding-aprons 10 and 11, arranged respectively in alignment with the stationary guides 5. The outer guiding-apron is laterally movable at its rear end to admit of the widening of the passage between the aprons 10 and 11 in case an excessive quantity of stalks approach the cutting apparatus 12, this operation being caused by connecting the upper and lower ends of the rollers upon which said apron travels by means of the upper and lower horizontal bars 13 and 14 and providing a follower-block 15, in which the lower journal of the

roller 9 is mounted, said block being actuated by the spring 16. The follower-block is slotted longitudinally, and is held to its place by means of a suitable guide-pin, the spring 16 being arranged in the slot with one end bearing against the guide-pin and the other against the inner end of the slot. The inner end of the block is connected to the lower extremity of the roller 9, and hence is adapted to travel in the arc described by said roller about the axis of the roller 7. Suitable braces 17 are provided for the guiding-aprons.

The cutting apparatus in the construction illustrated consists in a horizontal serrated rotary knife 18, connected by the bevel-gears 19 and 20 with the operating-shaft 3, and in rear of the cutting apparatus is arranged one end of a conveying apparatus comprising the front apron, 21, the rear apron, 22, and the horizontal conveyer 23. The front apron is carried by the vertical rollers 24 and 25, located respectively near the guide-aprons and at the opposite side of the framework, said rollers being driven by gearing in connection with the operating-shaft. The rear guide-apron is carried by the similar vertical rollers 26, mounted in a sliding frame 27, and the conveyer is carried by the horizontal rollers 28, one of which is geared to the operating-shaft, as shown at 29.

The frame 27 comprises the transverse bar 30, the longitudinal parallel bars 31, and the intersecting braces 32, said longitudinal bars being fitted in guiding-keepers 33 and being provided at their rear ends with the longitudinal slots 34, which receive the guiding-bolts 35. Pressure-springs 36 are attached to these longitudinal bars to press the rear apron forward, and thus compress the stalks and hold them upright during their conveyance from the cutting apparatus to the shocking mechanism.

It should be understood that with the transverse conveying device, as with the carrier-aprons which are arranged in advance of the cutting apparatus, the movable spring-actuated parts are designed to hold the stalks in a compact condition, whether the stalks are slight or few in number or are heavy, and the resilience of the springs allows the movable parts to yield readily to an excessive strain, and thus cause the operation of the mechan-

ism to be uniform. Any desired compression of the stalks may be attained by employing springs of the desired tension.

The shocking mechanism consists of a segmental pivoted table 37, arranged to swing under the platform and adapted normally to occupy a position in the longitudinal opening 38 formed in the framework. Guards 39 are arranged on both sides of this opening in the framework, and attached to the guards are the shocking-arms 40, consisting of springs, which are of sufficient strength to hold a shock in a vertical position during formation, but which yield after the shock has been dropped by withdrawing the table and leave the stalks standing.

Interposed between the end of the conveying apparatus and the shock-holding table is a packer 41, consisting of the crank-shafts 42, arranged vertically, the forward shaft being connected by gearing 43 with the operating-shaft, and the plate 44, mounted upon the cranked portions of said crank-shafts and provided with spurs or projections 45.

This being the construction of the improved apparatus, the operation thereof is as follows: The stalks as they enter between the guiding devices and before they reach the cutting-knife are compressed, whereby the operation of the said knife is positive. The severed stalks are passed backward between the front and rear carrying-aprons and are received upon the transverse conveyer. After reaching the end of the conveyer the stalks are discharged by the rotary packer and are received upon the shocking-table, the stalks being held in a vertical position by the shocking-arms 40. When a sufficient quantity of stalks has been accumulated to form a shock, the machine is stopped and the shock is tied, after which the table is swung under the platform and the shock is dropped vertically and allowed to rest upon the ground. The machine is then moved forward and the shock is left standing. The stalks are held from falling laterally over the left-hand ground-wheels subsequent to being cut by the movement of the front side of the rear apron, 22, and the flexibility of said apron, which catches the stalks after severance. In practice said rear apron is arranged so close to the rear ends of the conveyers, by which the stalks are guided to the cutter, as to bring the front side of said apron in contact with the stalks as they are severed, even when the number of stalks is small.

It will be obvious that various changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described my invention, I claim—

1. In a corn-harvester, the combination with the platform having the stalk gathering and cutting appliances at one side and the shock-forming provisions at the opposite side,

of a horizontal conveyer located in front of the platform and extending between the cutting apparatus and the shock-forming provisions, a vertically-disposed apron located in front of the horizontal conveyer and about an equal length therewith, and a vertical apron disposed in the rear of the aforesaid horizontal conveyer and projected at one end to extend across the path of the stalk gathering and cutting appliances, and adapted to yield rearwardly, substantially as set forth for the purpose described.

2. In a corn-harvester, the combination of the platform having stalk gathering and cutting appliances at one side and a shock-forming compartment at the opposite side, a transversely-arranged conveyer extending between the cutting apparatus and the shock-forming compartment and comprising a horizontal conveyer and vertical aprons which have their inner portions traveling in the same direction and toward the shock-forming compartment, the rear apron extending across the path of the stalk gathering and cutting appliances and mounted so as to yield rearwardly, and a packer disposed at the delivery end of the transversely-arranged conveyer to receive the stalks therefrom and move and compress them into the shock-forming compartment, substantially as set forth for the purpose described.

3. A corn-harvester comprising in its organization a platform, divergent stalk-guides at one side, apron-guides at the inner ends of the stalk-guides and forming prolongations thereof, the outer apron-guide adapted to yield outwardly at its rear end, a cutting apparatus at the inner ends of the apron-guides, a vertical apron 22 extending transversely across the platform in the rear of the cutting apparatus and mounted in a spring-actuated frame which is constructed to yield rearwardly, a horizontal conveyer arranged in front of the vertical apron 22 and to one side of the cutting apparatus, a vertical apron 21 arranged in front of the horizontal conveyer and to one side of the inner apron-guide, a movable table closing the lower end of the shock-forming compartment, disposed at that side of the platform opposite to the cutting apparatus, oppositely-extending arms forming the rear wall of the shock-forming compartment, and a packer located at the delivery end of the horizontal conveyer and arranged to receive the stalks therefrom and compress the same into the shock-forming compartment, said packer consisting of crank-shafts and a plate mounted upon the crank portions thereof and having spurs on its working face, substantially as specified.

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

CHARLES SUMNER WATERS.

Witnesses:

JOHN B. SMITH,
H. K. GANT.