(No Model.) 3 Sheets—Sheet 1.

F. HAZEN.

CORN HARVESTER.

No. 420,939. Patented Feb. 11, 1890.

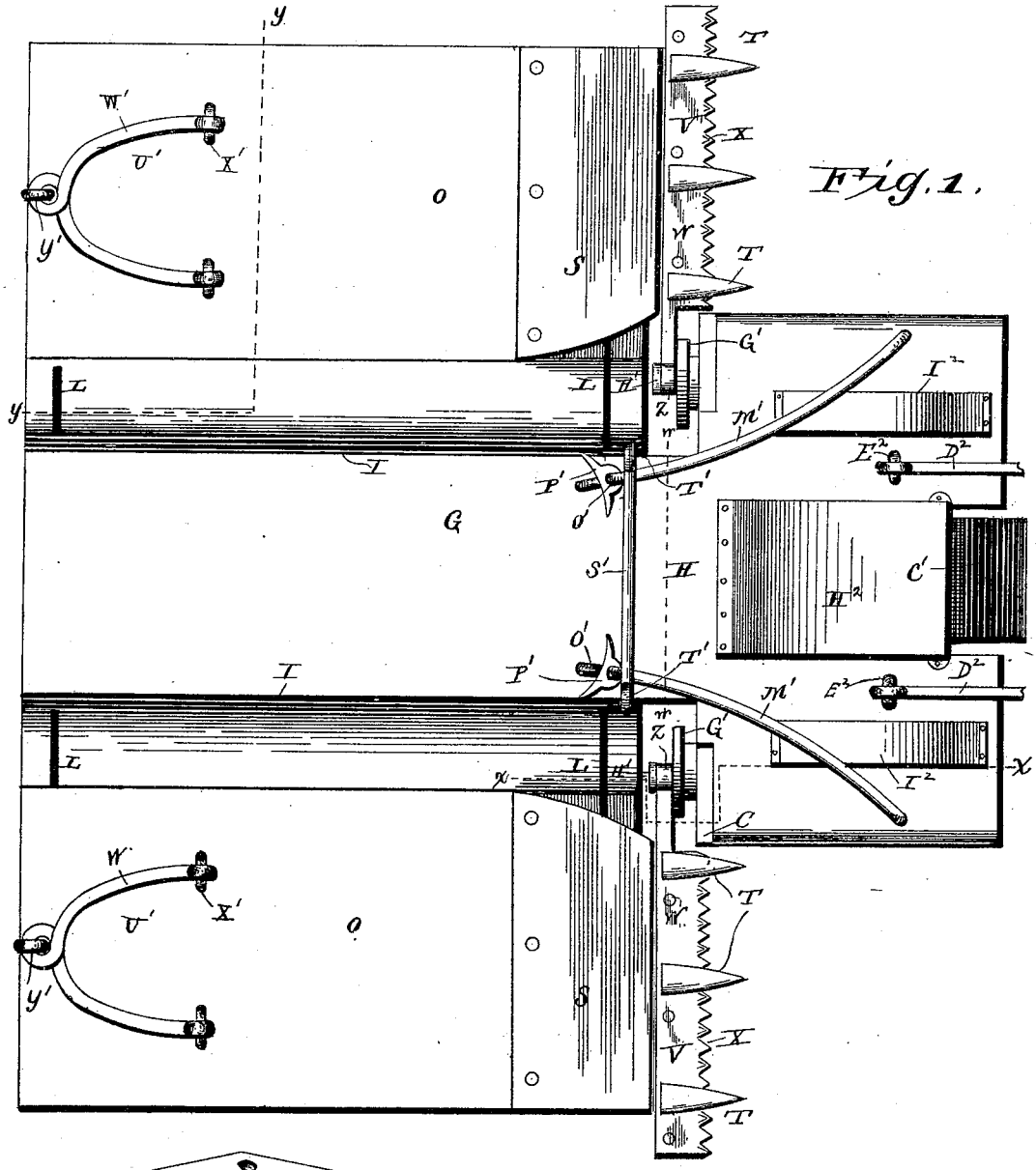

Fig. 1.

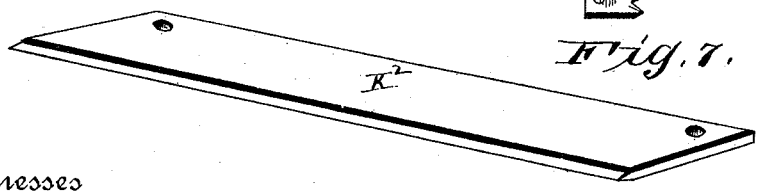

Fig. 7.

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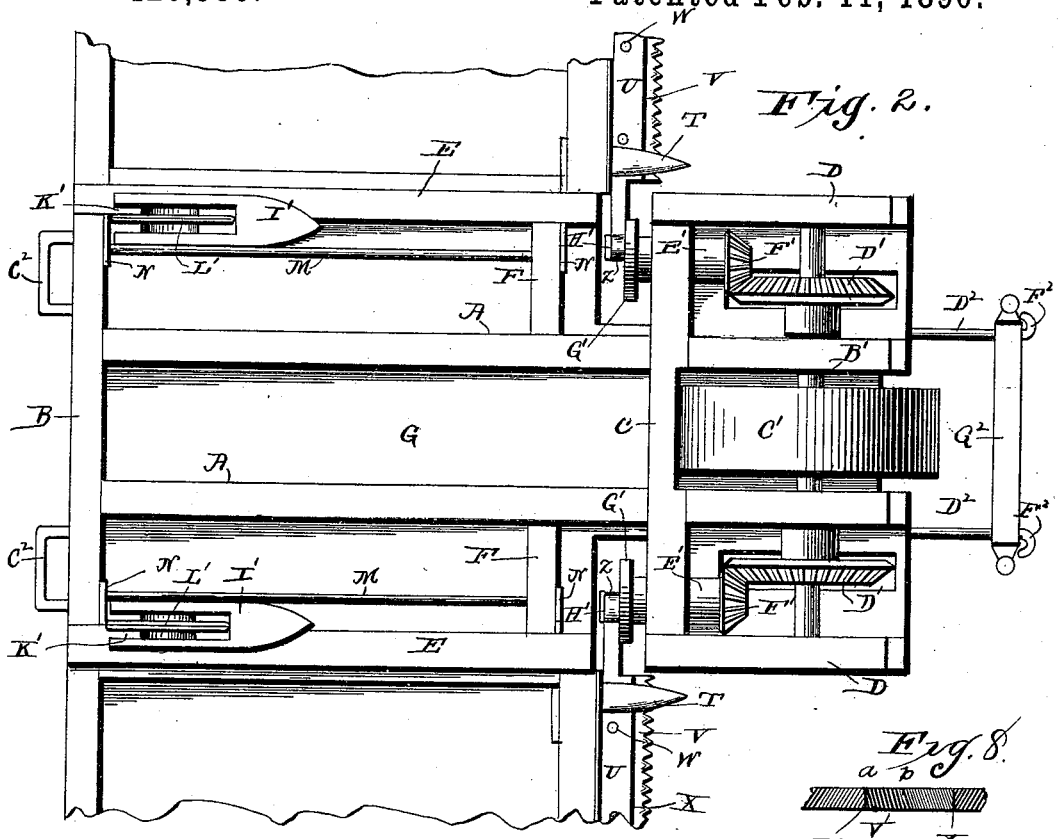

Fig. 2.

Fig. 8.

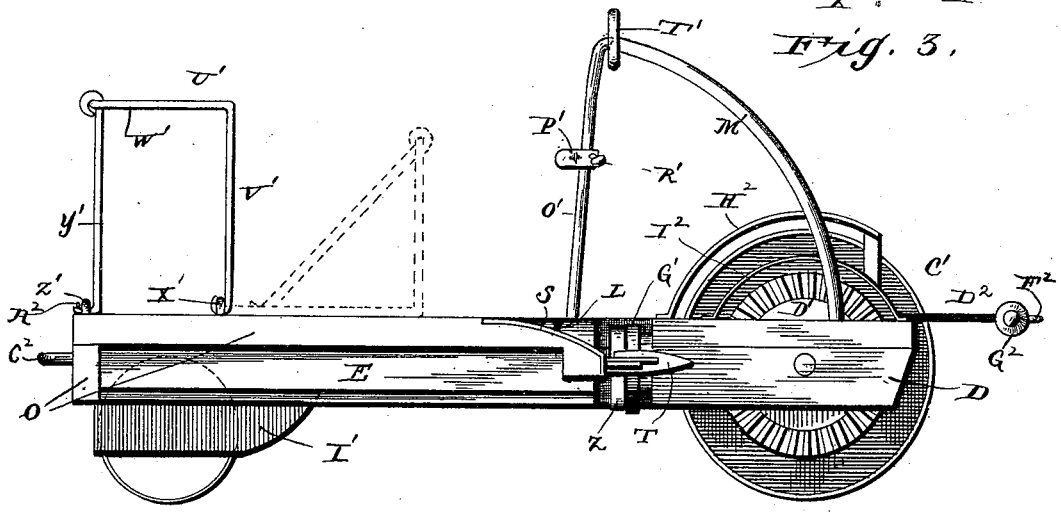

Fig. 3.

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(No Model.) 3 Sheets—Sheet 3.

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No. 420,939. Patented Feb. 11, 1890.

Fig. 4.

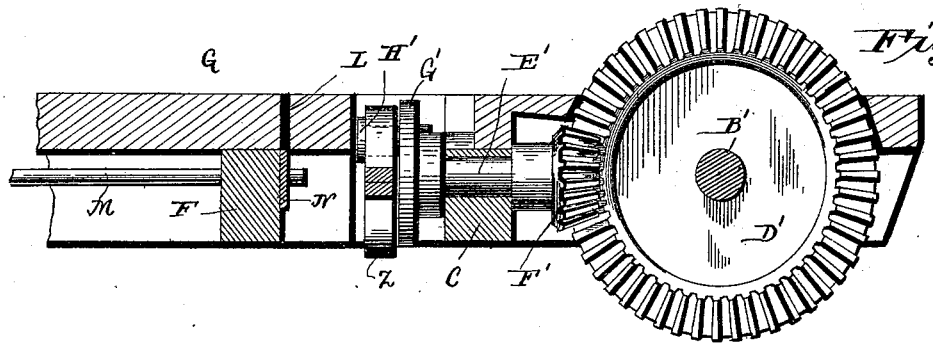


Fig. 6.

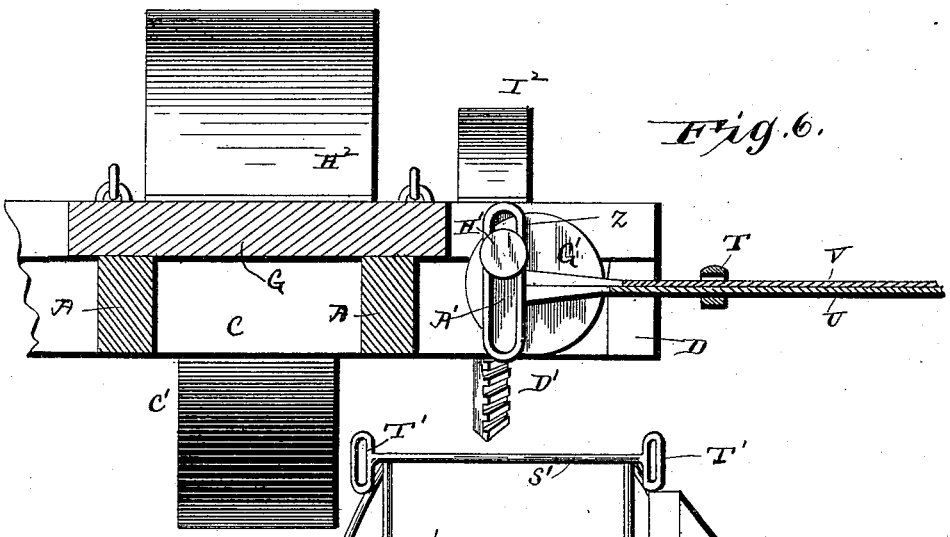
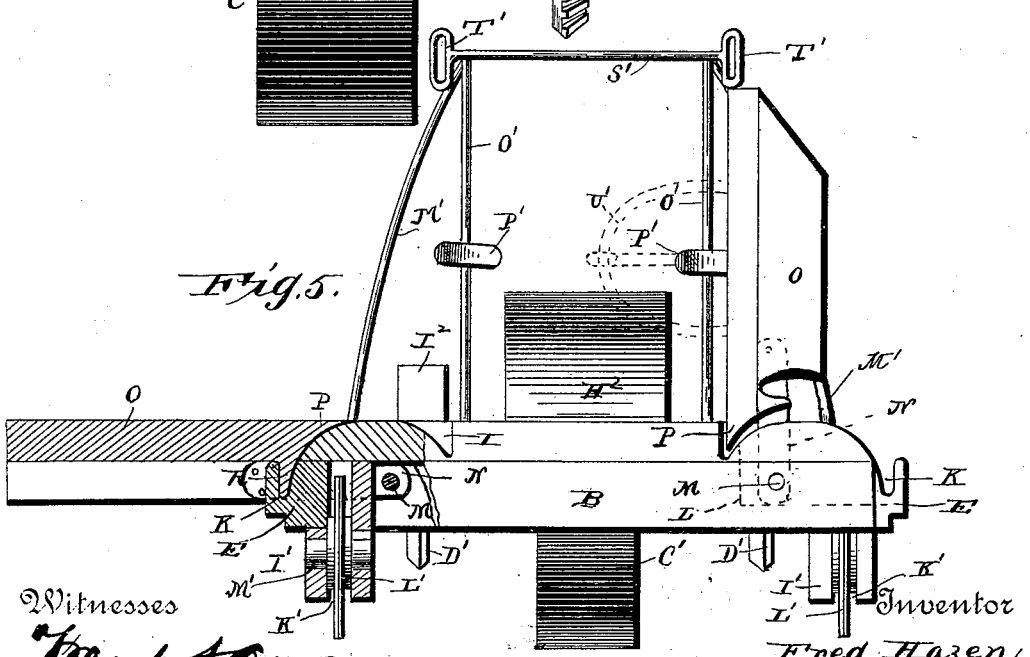


Fig. 5.



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UNITED STATES PATENT OFFICE.

FRED HAZEN, OF MARYSVILLE, OHIO, ASSIGNOR OF ONE-HALF TO SMITH N. McCLOUD, OF SAME PLACE.

CORN-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 420,939, dated February 11, 1890.

Application filed December 13, 1888. Serial No. 293,445. (No model.)

To all whom it may concern:

Be it known that I, FRED HAZEN, a citizen of the United States, residing at Marysville, in the county of Union and State of Ohio, have invented a new and useful Improvement in Corn-Harvesters, of which the following is a specification.

My invention relates to an improvement in corn-harvesters; and it consists in the peculiar construction and combination of devices that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a top plan view of a corn-harvester embodying my improvements. Fig. 2 is an inverted plan view of the same. Fig. 3 is a side elevation. Fig. 4 is a longitudinal sectional view taken on the line *x x* of Fig. 1. Fig. 5 is partly an end elevation and partly a vertical transverse section taken on the line *y y* of Fig. 1. Fig. 6 is a vertical transverse sectional view taken on the line *w w* of Fig. 1. Fig. 7 is a detailed view of a modified form of the cutter-plate. Fig. 8 is an edge view of a portion of the sickle-bar.

A represents a pair of parallel longitudinal beams, connected at their rear ends by a transverse beam B, the ends of which extend beyond the outer sides of the beams A for a suitable distance.

C represents a transverse beam of the same length as the beam B, which connects the beams A at a suitable distance from their front ends. A pair of longitudinal beams D are secured on the ends of the beam C and project forward therefrom. Arranged in line with the beams D are a pair of longitudinal side beams E, which have their rear ends secured on the ends of the beam B, and are connected near their front ends to the beams A by means of a pair of knees F. Openings of suitable length are formed between the approximate ends of the beams D E.

G represents a platform, which is arranged on the frame formed by the beams hereinbefore described, the said platform having at its front end the widened head portion H. The outer edges of the side portions of the platform in rear of the spaces between the beams D E are rounded on their upper sides and provided at the inner portions of their convex surfaces with longitudinal grooves I, and at the outer portions of their convex surfaces longitudinal grooves K are made in beams E. (See Fig. 5.) Transverse slits or openings L are formed near the front and rear ends of the convex sides of the platform, extending down into beams of the frame.

M represents a pair of longitudinal pintle-rods, which are arranged parallel with the beams E, and extend through openings in the beams B and in the knees F, and on the said pintle-rods, near their ends, are pivoted arms N, which extend through and operate in the transverse slits L.

O represents a pair of side platforms, which have their inner edges concave and provided with flanges P, adapted to enter the grooves I when the side platforms are in a vertical position, and with side flanges R, adapted to enter the grooves K when the side platforms are in a horizontal position. The said platforms are secured to the outer ends of the arms N, and are thereby pivotally connected to the sides of the central platform G.

The front end of each side platform is rounded and inclined downward, as shown, and said rounded portion is covered by a metallic plate S, the function of which is to prevent wear on the front end of the platform. Projecting from the front end of each side platform are a series of fingers T, of the usual construction, in which slide cutter-bars U and cutter-plates V, which are secured on the upper sides of the cutter-bars by means of bolts or screws W. The front edges of the cutter-plates are serrated, as shown, and the alternate serrations or teeth X have their edges beveled in opposite directions, as at *a b*, whereby they cut both ways. At the inner end of each cutter-bar is a vertical yoke Z, provided with a vertical slot A′.

B′ represents a driving-shaft, which is journaled in suitable bearings near the front ends of the beams A and D. To the central portion of the said shaft is secured a driving and supporting wheel C′, having a broad tread. The upper side of the said wheel extends through an opening in the head of the platform. Rigidly secured to the shaft B′ are a pair of beveled gear-wheels D′, which are arranged

between the beams A and D and face outward in opposite directions and have their upper sides also extending through openings in the head-platform.

E′ represents a pair of longitudinal shafts, which are journaled in bearings near the ends of the beam C. To the front ends of the said shafts are keyed beveled pinions F′, that engage the wheels D′, and rigidly secured to the rear ends of the said shafts are crank disks or wheels G′, having the wrists H′, which work in the vertical slots A′ of the yokes, and thereby cause the cutter-bars and cutter-plates to reciprocate when the machine is drawn forward, as will be very readily understood.

Under the rear corners of the main frame are arranged a pair of runners or shoes I′, the front ends of which are curved upward, as shown. Vertical longitudinal openings K′ are made in the rear ends of the said runners, and in the said openings are arranged circular disks or wheels L′, which are mounted on shafts M′, secured in the sides of the runners, the edges of the said disks or wheels being beveled on opposite sides, and thereby adapted to cut into the ground, so that the runners or shoes will slide upon the ground and support the rear corners of the machine and cause the disks or wheels L′ to cut so deeply into the soil as to effectually prevent sidewise movement of the machine, and thereby direct the same in a straight line parallel with the rows of standing corn, the machine having its main platform arranged between a pair of such rows of corn and its side platforms extended in line with and across the rows of corn, so that as the machine advances the cutting apparatus at the front ends of the side platforms will cut two rows of corn simultaneously, as will be very readily understood.

On the front end of the main platform are arranged a pair of guard-frames M′, at the inner ends of which are inclined rods or standards O′, on which are fitted adjustable knee-rests P′, the same being provided with set-screws R′, by means of which they may be secured on the rods at any desired adjustment. A rod S′ connects the rear upper ends of the guard-frames, and is provided at its ends with handles T′, for the purpose to be hereinafter described.

Near the rear end of each side platform is arranged a bundling-frame U′, the said frame having the arms V′ and the semicircular rearward-extending head W′ at the upper end of the said arms. The lower ends of the arms are hinged or pivoted to keepers X′ on the platform, and to an eye formed at the center of each head W′ is pivoted a supporting-rod Y′, the lower end of which is adapted to engage a keeper Z′ on the platform, and is provided with an opening to receive a pin A^2, whereby the rod may be secured in such manner as to support the bundling-frame in a vertical position on the platform. By disengaging the lower ends of the rods Y′ from the keeper Z′ the bundling-frames may be folded forward on the side platforms before the latter are turned upward vertically on the sides of the main platform. When a sufficient quantity of the corn has accumulated in one of the frames, it is tied into a bundle by hand and thrown from the harvesting-machine, either upon the ground or onto a wagon, which may be trailed in rear of the harvesting-machine and attached to clevises C^2 on the rear end of the main platform.

The guard-frame, with its handles and adjustable knee-rests, enables the operators to so firmly maintain themselves on the platform that there will be no danger of their falling onto the cutting apparatus and being injured thereby.

In practice one knee of each operator rests against one of the knee-rests p' and one hand grasps one of the handles T′, so that the liability of an accident by reason of an operator losing his balance is avoided.

D^2 represents a pair of rods, which have their rear ends pivoted to keepers E^2 on the main platform, near the front end thereof, the said rods extending forward from the platform and having hooks F^2 formed at their front end. Before bending the said rods to form the said hooks they are passed through a cross-bar G^2, which serves to maintain the rods parallel to each other. The traces of the horse or draft-animal are attached to the hooks F^2.

H^2 represents a curved guard supported on the platform and arranged over the wheel C′, and I^2 represents a pair of similar but smaller guards arranged over the wheels G′.

In some instances it may be found desirable to dispense with the serrated cutter-plates V and to substitute cutter-plates K^2, having plane front beveled sharpened edges, therefor. One of such cutters is illustrated in detail in Fig. 7, these cutters reciprocating like the ones illustrated.

Having thus described my invention, I claim—

1. The corn-harvester having the main platform, the side platforms hinged thereto, the cutting apparatus on the front ends of the side platforms, and the bundling-frames on the said side platforms, having bow-shaped horizontal portions with legs bent down therefrom and hinged at their lower ends to said platforms, whereby the bundling-frames may be folded against the said side platforms, substantially as described.

2. The combination, in a corn-harvester, with the main platform and the side platforms hinged thereto, of the bundling-frames hinged on the side platforms, having bow-shaped horizontal portions with legs bent down therefrom and hinged at their lower ends to said platforms, the supporting-rods Y′, hinged to the bundling-frames, and keepers on the side platforms to secure the lower

ends of the said rods, substantially as described.

3. The corn-harvester having the extended side platforms and the cutting apparatus at the front ends thereof, the guard-frames M′, the rods or standards O′ at the inner ends thereof, and the knee-rests on said rods or standards, substantially as described.

4. The corn-harvester having the guard-frames M′, connecting-rod S′, and supporting-rods O′, having adjustable knee-supports P′, substantially as specified.

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

FRED HAZEN.

Witnesses:
A. L. SPRAGUE,
N. E. LIGGETT.