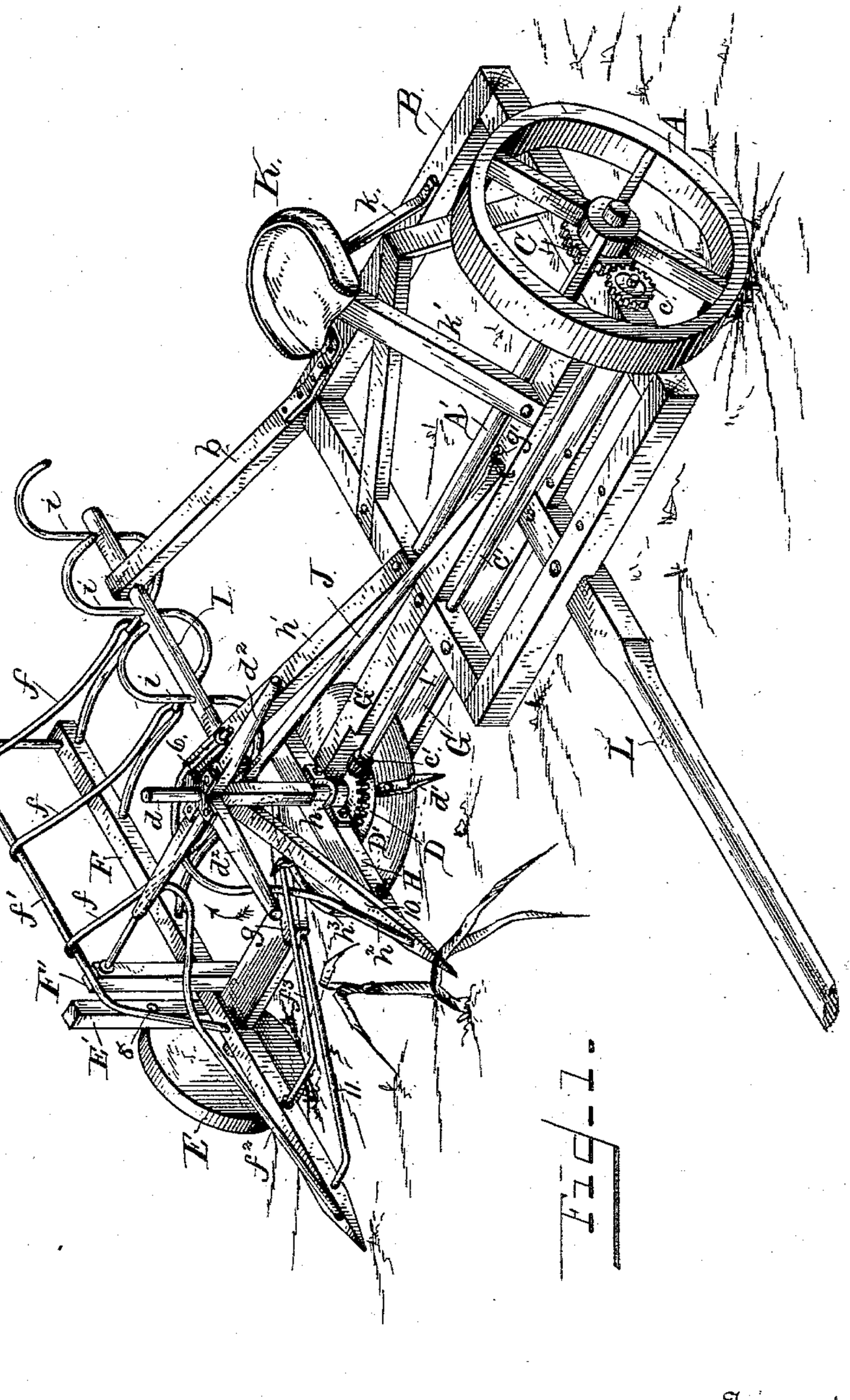
(No Model.) 2 Sheets—Sheet 1.

W. A. CONNER.

CORN HARVESTER.

No. 387,862. Patented Aug. 14, 1888.



Witnesses.
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A. G. Hopkins.

Inventor.
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By his Attorneys,
Hamilton & Trevitt.

(No Model.) 2 Sheets—Sheet 2.

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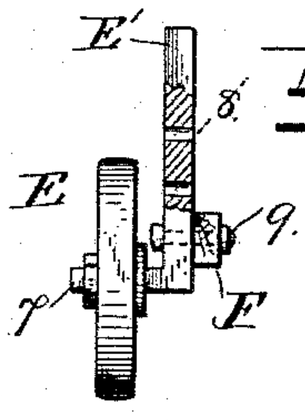

Fig. 2.

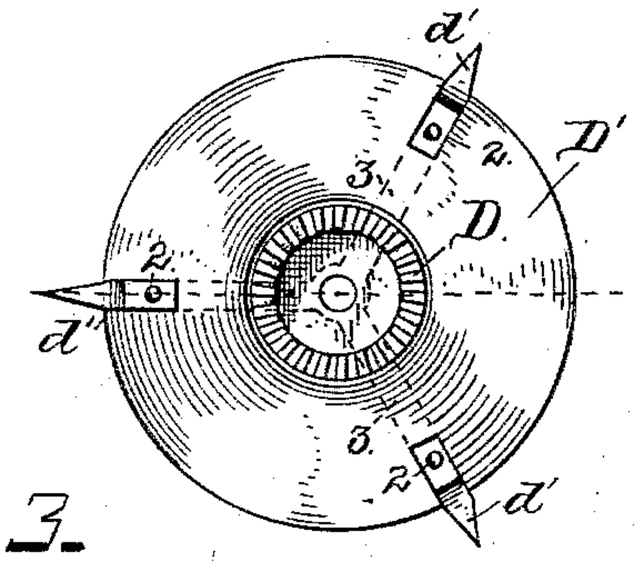

Fig. 3.

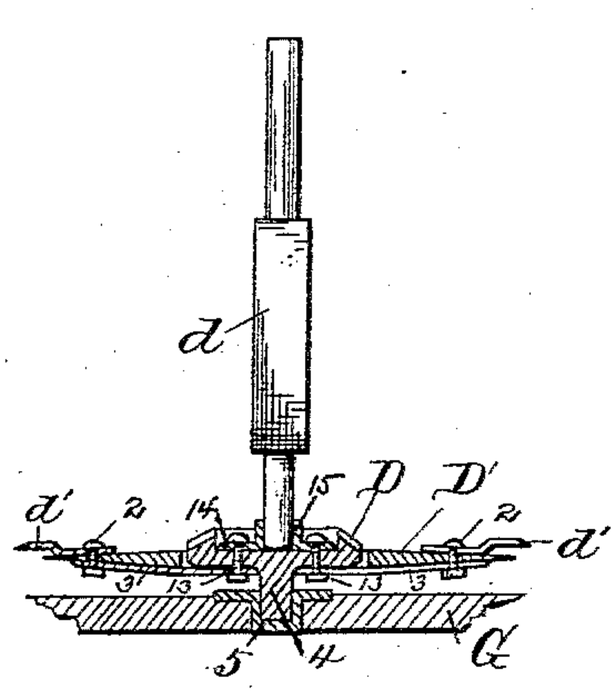

Fig. 4.

Fig. 5.

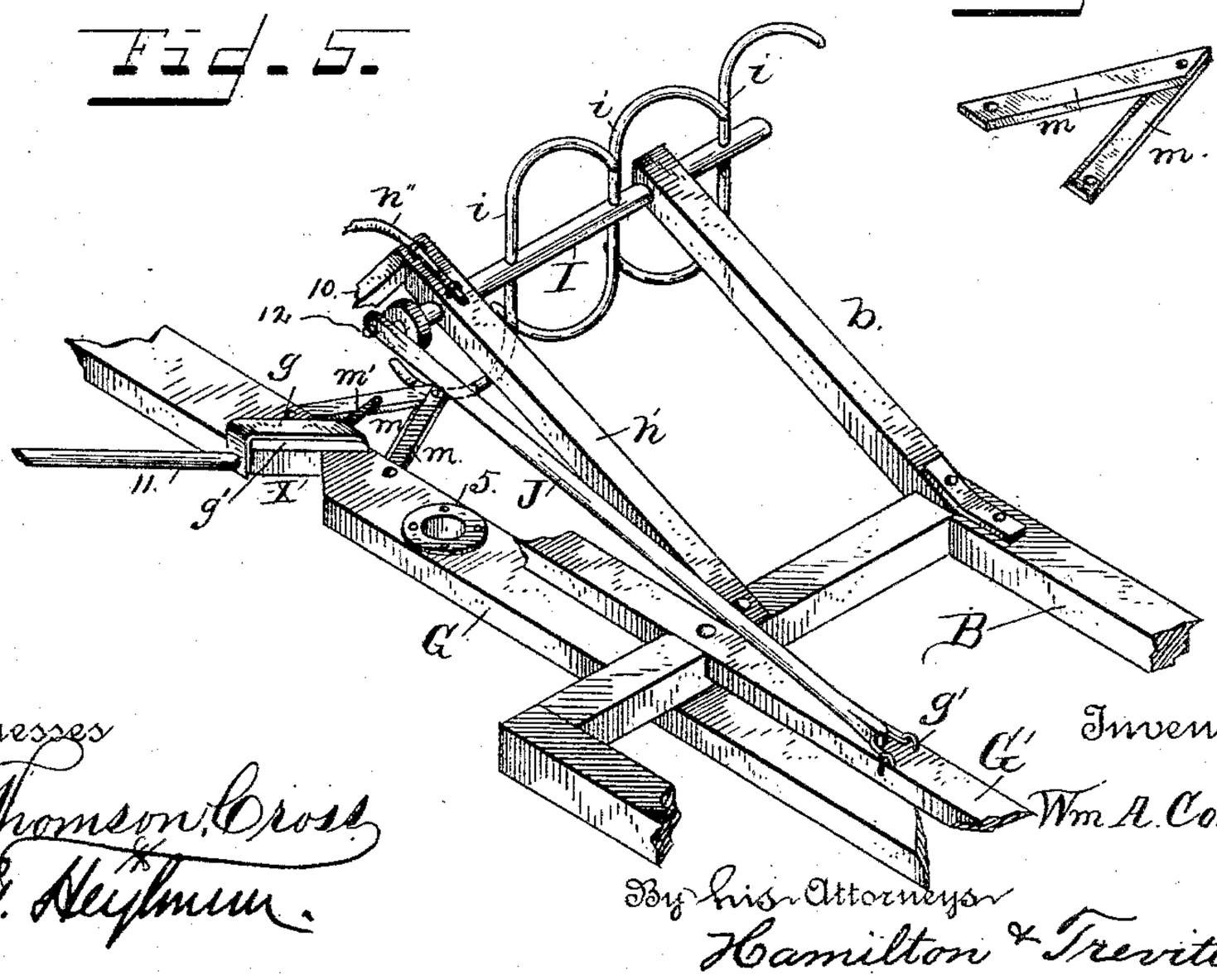

Fig. 6.

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UNITED STATES PATENT OFFICE.

WILLIAM A. CONNER, OF LINCOLN, NEBRASKA.

CORN-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 387,862, dated August 14, 1888.

Application filed February 4, 1888. Serial No. 262,989. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. CONNER, a citizen of the United States of America, residing at Lincoln, in the county of Lancaster and State of Nebraska, have invented new and useful Improvements in Corn-Harvesters, of which the following is a specification.

My invention has relation to improvements in corn-harvesters of that class used in cutting the stalks in the field; and the object is to provide an improved machine for cutting standing and fallen stalks and to carry them to a desired place for deposit, ready to be bundled or put into shocks.

My invention consists in the novel construction of parts and their combination, as will be hereinafter fully specified, and especially as the same is particularly pointed out and claimed, as provided by law.

I have fully illustrated my improvements in the accompanying drawings, wherein—

Figure 1 is a perspective view of the complete machine. Fig. 2 is a detail of the small wheel to support the inside portion of the machine, showing the standard with axle formed thereon. Fig. 3 is a plan view of the circular cutter mounted on and about the bevel gear-wheel, showing the gathering-fingers attached, to the cutter, and the arms of the gear-wheel, to which the cutter and fingers are attached, shown in dotted lines. Fig. 4 is a central transverse sectional view of the cutter, bevel-gear, and the sill with the bearing-step, also showing the reel-post. Fig. 5 is a perspective of the dropping mechanism, the long sill, and the auxiliary cutters. Fig. 6 is a detail of the auxiliary knives secured to and extending rearward from the sill.

In the drawings the same parts appearing in the different figures are designated by the same notations, and reference being thereto had, A designates the driving-wheel rigidly mounted on an axle, A′, having bearings in the side pieces of the rectangular frame B, and held against lateral movement by any of the usual means adapted for that purpose. Mounted on the driving-axle and secured to the drive-wheel is a cog-wheel, C, which meshes with a smaller cog-wheel, *c*, rigidly mounted on the end of the line-shaft C′, mounted on bearings in the frame and held against lateral movement by any of the common means adapted to the purpose. This line-shaft C′ extends beyond the frame, as at 1, and has fixed on its ends a small bevel gear-wheel, *c′*, which meshes with a bevel gear-wheel, D, to which the circular cutter D′ is secured. The cutter D′ is secured to the bevel gear-wheel D by bolts or rivets 2 projected through the outer ends of the arms 3, extending from the wheel D, the bolts 2 also being utilized to secure in position small gathering-prongs *d′*, which engage with the cornstalks and press them against the cutter as it revolves. The bevel gear-wheel D is formed with a downward-projecting journal, 4, having bearing in a step, 5, fixed in the long sill G, hereinafter described, substantially as seen in Fig. 4 of the drawings.

To the upper face of the gear-wheel D, secured by means of bolts 13, is a plate, 14, having a vertical sleeve, 15, in which is rigidly secured the lower end of the reel-post *d*, and to the upper end or part of the reel-post is detachably secured the reel 6, having arms d^2, which rotate in the direction indicated by the arrow, and impelled by the motion of the gear-wheel D, and serve to strike the cut stalks back upon the skeleton frame or apron and dropper.

The wheel E supports the side of the machine opposite to the main or driving wheel, and is mounted on a spindle, 7, projected from a standard, E′, which standard is provided with a number of bolt-holes, 8, through which a bolt, 9, is projected, and engages with its threaded end in a threaded hole in the side of the side bar, F. By fixing the bolt 9 in the different holes of the standard that side of the machine will be correspondingly raised or lowered and the stalks cut shorter or longer.

The letter G designates a sill which connects with the rectangular frame at the inner side, and has its outer end securely fixed to or mortised in the side bar, F, substantially as seen in the drawings. This sill forms the connection between the main frame and the side bar, with the wheel on that side, and it carries the cutting mechanism, as shown. At *x* a V-shaped notch is formed in the front edge of the sill to permit the stalks to be forced against the rotating knife, and on the one side of this notch, opposite to the step 5, is secured a block, *g′*, having a metal plate, *g*, secured thereon, the edge of the plate lying flush with the edge of

the notch, as shown, the purpose being to prevent wear and damage to the wall of the notch.

F designates a straight side bar secured on the outer end of the sill G, and extending backward to constitute means for supporting the skeleton apron and forward to constitute a guard or guide, substantially as shown in the drawings. In the side bar is vertically secured a rectangular supporting-rod, f', which gives additional support to the apron-frame by being lodged on the upper end of the upright F', as shown.

The letters f designate the bars or fingers forming the skeleton apron, on which the stalks are deposited when cut. These bars f have one end secured in the side bar, F, and project inwardly, are bent back on themselves, as shown, and being carried upward have their ends hooked on the bar f'. The knuckles at the inner ends of these bars project far enough inward to lap with the ends of the fingers of the dropper. These bars f constitute the frame or apron which receives the cut stalks from the cutting mechanism. At the projecting forward end of the side bar, F, is secured one end of a rod, f^2, which is carried upward, backward, and inward, and then bent outward, and has its threaded end adjustably secured in the upper end of the upright F' by means of an inside and outside nut.

G' designates a brace secured across the rectangular frame and having its inner end projected, as shown, and has secured thereto a head-piece, H, which has a rearwardly-extending upwardly-rising lifting-piece, 10, secured to it at its front end, the rear end of the piece 10 being secured to the end of the support which holds the dropper. To give additional support to the head-piece, a box-strap, h, is fixed on its side and arranged to embrace the reel-post, as shown. A guiding-bar, h^2, similar in shape to the guiding-bar f^2, is secured at one end to the point of the piece 10, and the other end is secured to the brace or support h'. A brace-rod, 11, extends from the point of the side bar, F, to the sill G, to hold the point steady, and guards or guide-rods f^3 and h^3 are secured, respectively, to the side bar, F, and head-piece H, which bars f^3 and h^3 are adjustably secured in their seats by means of threaded nuts and have their inner ends free and arranged adjacent to the notch in the sill.

I designates the dropper bar or axle, pivotally mounted on the ends of the supports h' b, fixed to and extending from the frame B in an outward and upward inclined direction. In the bar I is secured a requisite number of reversely-curved fingers, i, the ends of which are arranged to extend a distance past the knuckles of the bars of the apron. To the forward end of the dropper-bar is fixed a wheel having an eccentric-pin, 12, having connected to it a pitman, J, which has its other end secured to a loop, g', journaled on the brace-piece G', and thus allowed a reciprocating movement.

Attached to the sill G, to embrace the scope of the notch x, and extending rearwardly, are two rearwardly-converging knives, m m, consisting of blades sharpened on their inner edges and pivotally secured together at their rear ends, as shown, with the front ends secured to the lower edge of the sill, and to prevent them from upward movement I attach to the rear side of the beam G a spring, m', the force of which bears on the knives and keeps them from bending upward. The object of the knives is to cut the stubbles shorter after they escape from under the sill past the rotary knife.

The driver's seat K is supported by the props k, resting upon the rear end of the frame B, and k', resting upon the frame-brace G'.

The tongue L is connected by means of a tongue-bolt to the front end piece of the frame B and to the beam G, which said end piece and beams are provided with several bolt-holes, as shown, for the reception of the tongue-bolt, and thus permits the tongue to be moved either from or toward the drive-wheel to accommodate the draft to rows of different widths.

In operation the side bar, F, and head-piece H run straddle the row, and their points, passing under the fallen stalks, and with the the assistance of the guiding-bars, straighten the same into line. The prongs or gathering-fingers, as the cutter revolves, come into contact with the stalks thus lifted and the standing stalks and press them backward, with the assistance of the arms d^2, into the notch in the sill G and against the plated block, where they are then cut by the rotating cutter D, and then, by means of the arms d^2, pressed backward onto the apron and dropper. The dropper, while being thus loaded, is held in position and prevented from dropping the stalks by the driver pressing his foot upon the end of the pitman-rod, where it is connected to the loop. When loaded, the dropper will unload by the force of gravity, simply by the driver removing his foot from the pitman-rod.

What I claim is—

1. In a corn-harvester, the combination, with the carrying-frame and its wheels, one of which is a driving-wheel provided with a gear-wheel, of the line-shaft having gear to mesh with the gear of the driving-wheel and a bevel-gear on its other end, a bevel-gear mounted on a vertical axis and arranged with the gear of the line-shaft, a circular cutter secured on the bevel-gear with vertical axis and provided with gathering-fingers projecting beyond the edge of the circular cutter, substantially as described.

2. In a corn-harvester, the circular cutter composed of a disk with a circumferential cutting-edge provided with gathering-fingers projected beyond the circumferential cutting-edge thereof, substantially as described.

3. In a corn-harvester, the combination of the bevel gear-wheel D, the cutter D', composed of a disk with a circumferential cutting-edge, secured to the wheel D and provided

with gathering-fingers d', projecting beyond the cutting-edge, and a reel, d^2, mounted on the axis of the wheel D, substantially as described.

4. In a corn-harvester, a rotating dropper formed of the bar I, having a crank in its end, and reverse curved fingers i, radially projecting therefrom and oppositely disposed, and pitman J, pivoted at one end to the crank on the bar and at the other end to loop g' on the frame, substantially as described.

5. In combination with the rotary stalk-cutter, the beam G, formed with a V-shaped notch, x, having a plated block arranged on the edge of the wall of the notch farthest from the cutter, and the converging knives m, secured to the lower edge of the beam directly in the rear of the notch x, to cut the stubble, substantially as described.

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

WILLIAM A. CONNER.

Witnesses:
E. R. CONNER,
A. G. GREENLEE.