

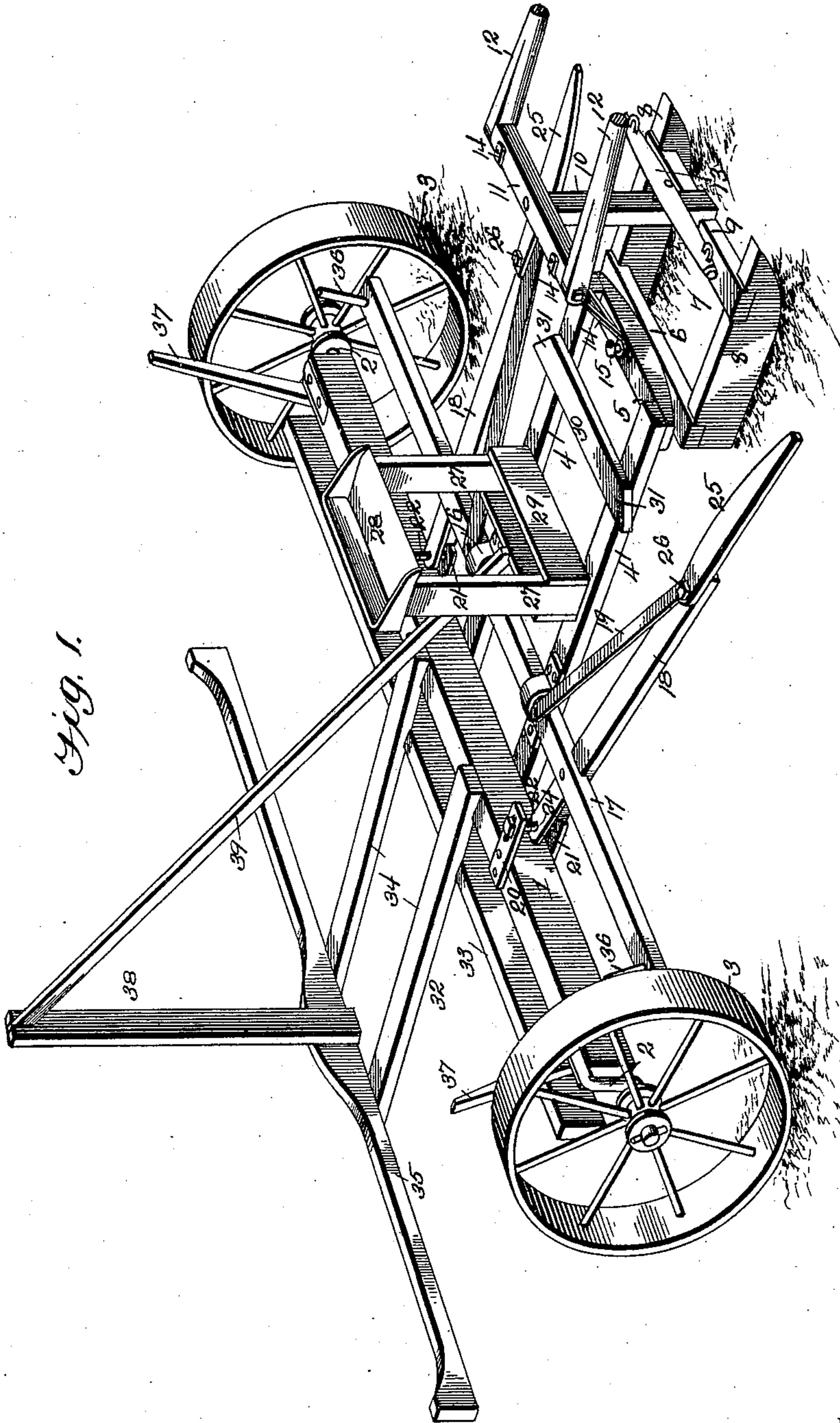
(No Model.)

2 Sheets—Sheet 1.

H. A. REEVES & M. W. BOMAN.
CORN HARVESTER.

No. 563,411.

Patented July 7, 1896.



Inventors

Henry H. Reeves and
Marion W. Boman.

By *John A. Smith* Attorneys.

Witnesses

John A. Stack
[Signature]

Cashow & Co.

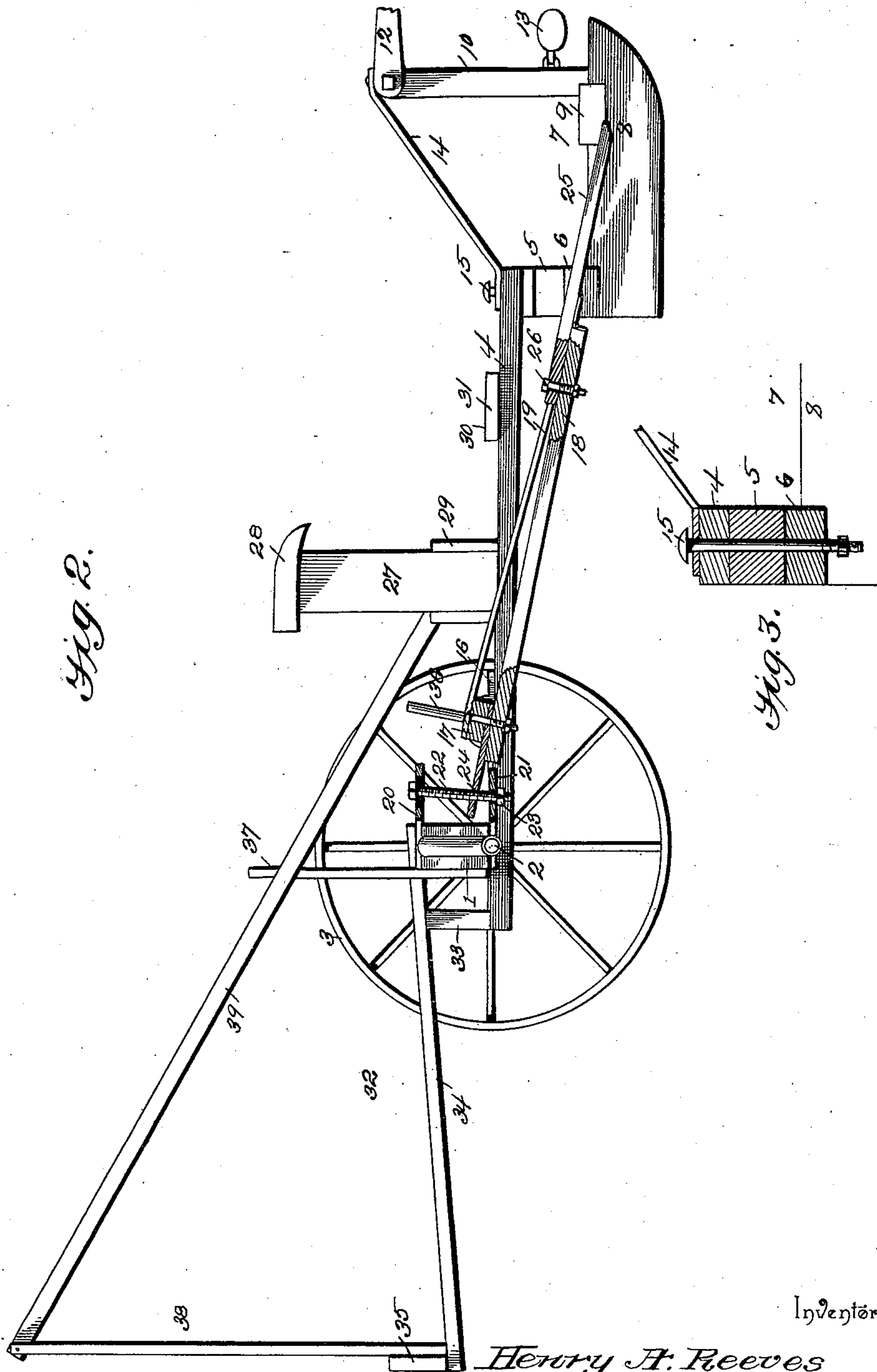
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UNITED STATES PATENT OFFICE.

HENRY A. REEVES AND MARIAN W. BOMAN, OF PLYMOUTH, ILLINOIS.

CORN-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 563,411, dated July 7, 1896.

Application filed February 2, 1895. Serial No. 537,117. (No model.)

To all whom it may concern:

Be it known that we, HENRY A. REEVES and MARIAN W. BOMAN, citizens of the United States, residing at Plymouth, in the county of Hancock and State of Illinois, have invented a new and useful Corn-Harvester, of which the following is a specification.

Our invention relates to corn-harvesting machines; and the objects in view are to provide a simple, efficient, light-running structure capable of being drawn by a single horse; to provide means whereby the frictional contact of the runners with the soil is decreased as the load increases, by causing the stalks to counterbalance the weight of the front portion of the machine; to provide a machine having shearing cutters which engage the stalks and sever the same with the minimum resistance and without tending to elevate or uproot the same, and, furthermore, to provide means for adjusting the various parts of the machine to secure the most efficient operation thereof and adapt the mechanism to the character of the crop to be cut.

Further objects and advantages of this 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 corn-harvesting machine constructed in accordance with our invention. Fig. 2 is a side view, partly in section, of the same to show the means for adjusting the cutters and the stalk-guides. Fig. 3 is a detail vertical section through the point of connection between the front end of the framework and the supporting-sled.

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

The main frame of the machine comprises a transverse beam 1, provided with terminal spindles 2, upon which are mounted the ground-wheels 3, and parallel longitudinal beams 4, arranged adjacent to each other and upon opposite sides of the longitudinal center of the machine, said beams being secured near their rear ends to the under side of the main transverse beam and extending slightly in rear thereof, for a purpose hereinafter explained. These longitudinal beams are con-

nected at their front ends by the rocker 5, having a convex under surface to bear upon the rear transverse beam 6 of a sled 7, said sled having parallel runners 8, which are connected at their rear ends by said bar 6 and near their front ends by a similar bar 9. Rising from the front transverse bar 9 is a standard 10, to the upper end of which is secured a cross-piece 11, and pivotally connected to the extremities of this cross-piece are the rear ends of the shafts 12, this elevation of the rear ends of the shafts preventing the stalks, which are thrown inward or toward the machine, from forcibly depressing the shafts and interfering with the movements of the horse. The whiffletree 13 is connected to the standard 10 below the plane of the cross-piece 11. Furthermore, the laterally-extending portions or arms of the cross-piece are connected to the center of the rocker 5 by means of the inclined tension-braces 14, the connection between said braces and the rocker being by means of a bolt 15, which performs the function of a king-bolt, in that it forms the connection between the rocker and the rear bar of the sled, said connection being loose in order to allow independent lateral rocking movement of the sled and the main frame of the machine.

Mounted in bearings 16 upon the longitudinal beams 4, in front of the main transverse beam 1, is a rock-shaft 17, said shaft being reduced to form journals to fit in said bearings, and secured to the rock-shaft near their rear ends, and upon opposite sides, respectively, of the beams 4, are the knife-supporting arms 18, said arms inclining outward toward their front ends and extending in rear of the rock-shaft for adjustable attachment to the main beam 1. The knives or cutters 19 are also arranged in inclined positions, with their rear ends contiguous to and slightly above the plane of the beams 4, the rear ends of said knives or cutters being secured to the rock-shaft while their front ends are supported by the extremities of the arms 18. Upper and lower brackets 20 and 21 are carried by the main beam 1 contiguous to the rear ends or extensions of the supporting-arms 18, and are connected by adjusting-bolts 22, which engage openings in said brackets. The heads of these bolts bear upon the upper

surfaces of the upper brackets 20, and nuts 23 which are threaded upon the lower ends of the bolts bear against the lower surfaces of the lower brackets 21, the intermediate portions of the bolts, or those portions between said brackets, being threaded in perforations 24 in the extensions of the supporting-arms, whereby when the bolts are turned the inclination of the supporting-arms may be varied to bring the front ends of the knives or cutters at the desired distance from the surface of the ground. The openings in the upper brackets 20 are longitudinally elongated to accommodate the rocking movement of the shaft 17 during adjustment.

Hinged to the front ends of the supporting-arms are the stalk-guides 25, the same being extended in rear of their points of connection and being engaged by adjusting-bolts 26 which engage registering perforations in said extensions and in the supporting-arms, and by the adjustment of these bolts the front ends of the stalk-guides may be depressed at their free ends more or less below the plane of the supporting-arms to arrange them at the desired distance from the surface of the ground. The inner edges of these stalk-guides are rounded and inclined with relation to the longitudinal center of the machine, in order to bear against the outer sides of the stalks and draw them inward to pass between the longitudinal beams 4 and the relatively-inclined knives or cutters, and inasmuch as the knives or cutters cut inward or toward the machine it will be seen that the outward inclination of the stalks facilitates the operation. This is due to the fact that the weight of the tops of the stalks is utilized to prevent the stalks from being thrown over the machine by the pressure upon their outer sides. The guides 25 serve to pick up those stalks which have fallen outward.

Arranged upon the parallel beams 4 are the seat-standards 27, supporting the seat 28, a tool-box 29 being arranged below the seat and between said standards, and connecting said beams in front of the seat is a transverse bar 30, which serves as a foot-rest for the driver and is extended laterally to form deflectors 31, which are disposed contiguous to the outer surfaces of the beams 4 and are inclined outward toward their rear ends. These deflectors tend to throw the tops of the stalks outward just as the front ends of the knives or cutters come in contact therewith, in order to insure the prompt severance thereof. These deflectors are designed especially to affect the stalks at the inner sides of the rows, or those which incline inward or toward the machine.

After the stalks have been severed they fall to the rear over the rock-shaft and are caught by a skeleton frame or cradle 32, comprising a front bar 33, which is supported by the rearward extensions of the beams 4, parallel connecting-bars 34, which are attached at their front ends to the main beam 1 and

the front bar 33, and a rear bar 35, which is supported by the rear ends of the connecting-bars 34, the upper edge of the rear bar being concaved to prevent lateral displacement of the stalk-tops. The rock-shaft is provided with terminal upstanding guard-pins 36, and the main beam is provided with outwardly and upwardly inclined wheel-guards 37, to prevent the stalks from moving laterally and coming in contact with the ground-wheels; also, rising from the center of the rear bar of the skeleton frame or cradle is an upright 38, which is connected at its upper end with a fixed portion of the main frame—as, for instance, a connecting-bar between the seat-standards—by an inclined bar 39, which serves the function of a brace, and also as a partition-guard to prevent the severed stalks of one row from becoming entangled with those of the other row.

It will be seen that the skeleton shocking frame or cradle is supported solely by the main transverse beam at the extremities of which are arranged the ground-wheels, and that, therefore, the weight of the stalks deposited in the shocking frame or cradle partly counterbalances the weight of the front portion of the main frame, whereby when the shocking frame or cradle is fully loaded the weight thereof does not depress the front portion of the machine and thus add to the draft by increasing the frictional contact of the runners with the soil, but reduces said frictional contact and approximately balances the machine upon the ground-wheels. The result of this action is the reduction of the draft of the machine.

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

Having described our invention, we claim—

1. In a corn-harvester, the combination with a main frame and supporting-wheels, said frame including a main transverse beam and forwardly-extending longitudinal bars arranged upon opposite sides of the center of the frame, of a rock-shaft 17 mounted in bearings upon said longitudinal bars in advance of and parallel with said main beam, supporting-arms 18 secured at intermediate points to the rock-shaft, knives or cutters secured at their rear ends to the rock-shaft and at their front ends to the supporting-arms and inclining outward toward their front ends, stalk-guides carried by and extending in front of the supporting-arms, and adjusting devices supported by the main beam and connected to the rear ends of the supporting-arms whereby the inclination of said arms may be varied with the knives or cutters, substantially as specified.

2. In a corn-harvester, the combination with a main frame and supporting-wheels, said main frame including a transverse main beam

and forwardly-extending parallel bars arranged upon opposite sides of the center of the frame, of a rock-shaft mounted in bearings upon said longitudinal bars in advance of and parallel with the main beam, supporting-arms secured at intermediate points to the rock-shaft beyond the outer edges of the longitudinal bars, adjusting devices carried by the main beam and connected to the rearward extensions of the supporting-arms to vary the inclination of said arms with relation to a horizontal plane, knives or cutters secured at their rear ends to the rock-shaft and at their front ends to the supporting-arms, stalk-guides hinged to the front ends of the supporting-arms for movement at their front ends in vertical planes, and adjusting devices for varying the extent of deflection of the stalk-guides from the planes of the supporting-arms, substantially as specified.

3. The combination with a main frame and supporting-wheels, of forwardly-extending supporting-arms, knives or cutters arranged contiguous to the supporting-arms, stalk-guides hinged at points between their ends to the front extremities of the supporting-arms to swing in vertical planes, the upward-swinging movement of the front extremities of said arms being limited by the contact of the rear ends thereof with the upper surfaces of the supporting-arms, and bolts connecting

the rear ends of the guides with the supporting-arms to limit the downward-swinging movement of the guides, the extent of depression of the front extremities of the guides being regulated by the adjustment of the bolts, substantially as specified.

4. The combination with a supporting-frame and ground-wheels, the supporting-frame including a transverse main beam and forwardly-extending longitudinal bars, of cutting apparatus arranged in advance of the main beam and upon opposite sides of said longitudinal bars, parallel longitudinal bars extending rearwardly from the transverse main beam, a transverse bar arranged in rear of the main beam and equal in length therewith, a rear transverse bar supported by the bars at their rear ends and spaced from the bar, and a standard rising from the center of the rear bar and connected by a tension-brace with the frame, substantially as specified.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

HENRY A. REEVES.
MARIAN W. BOMAN.

Witnesses:

J. A. WEAR,
T. T. KENNEDAY.