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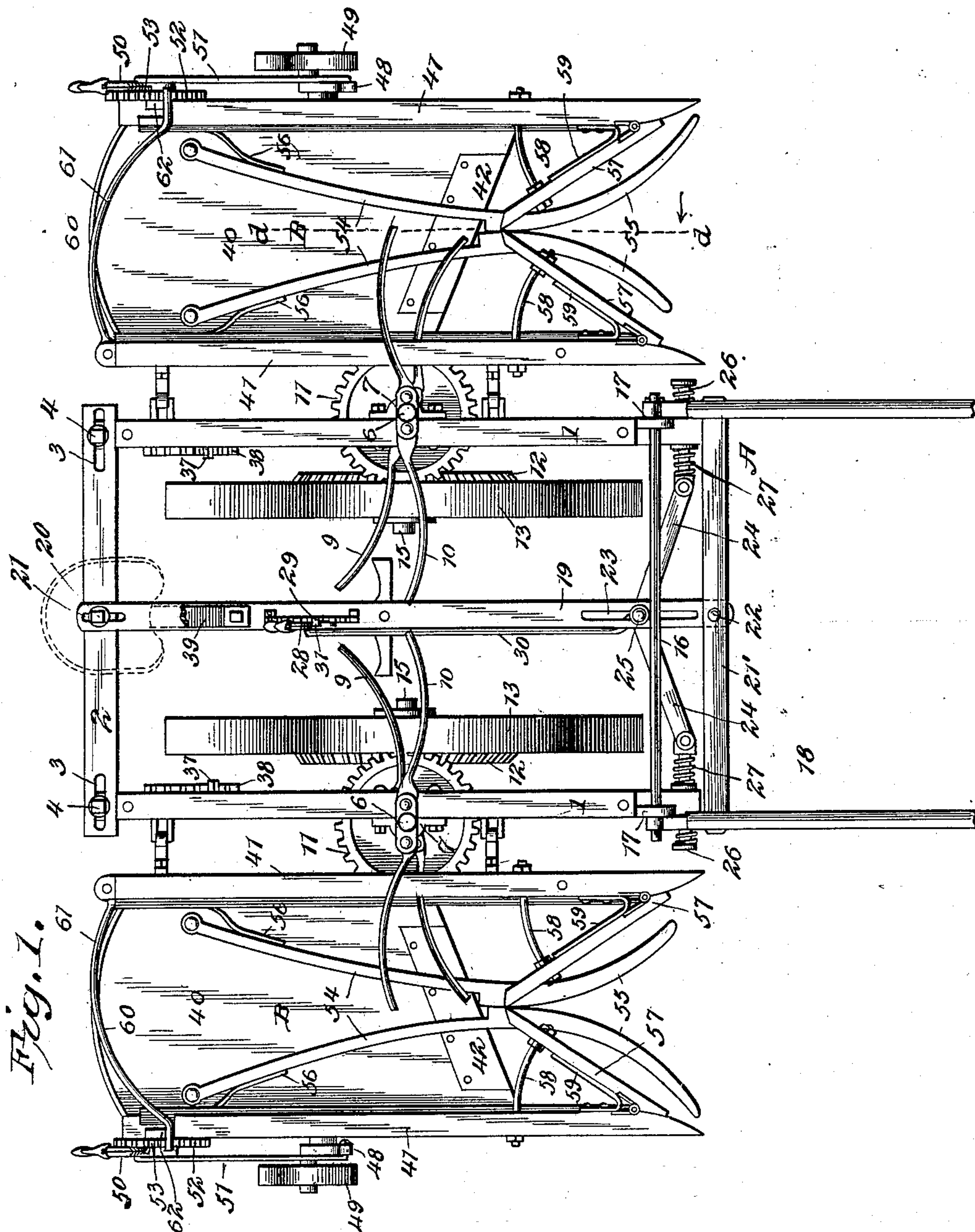
Patented Nov. 13, 1900.

J. H. ELICK.
CORN HARVESTER.

(Application filed May 1, 1900.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses
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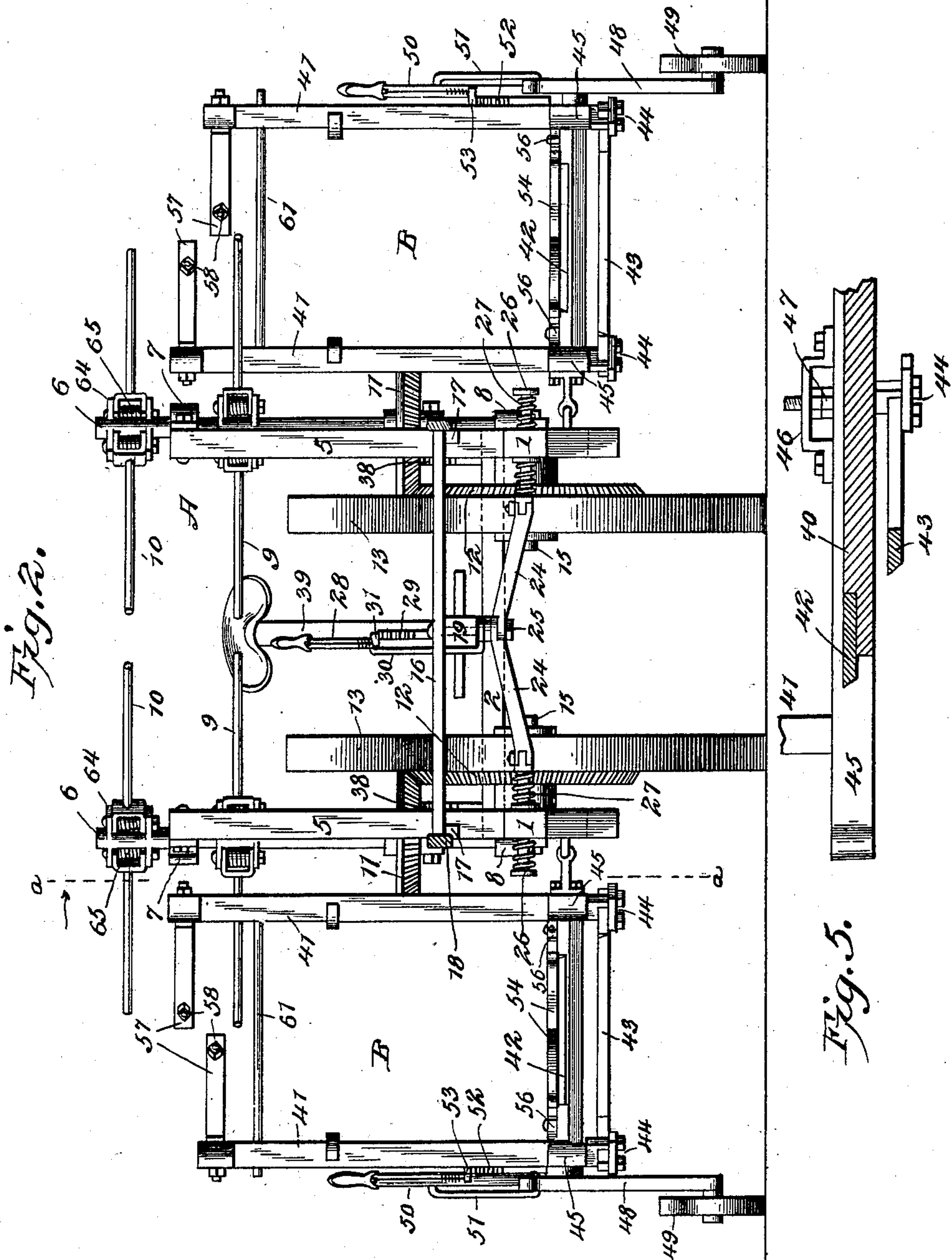
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3 Sheets—Sheet 2.



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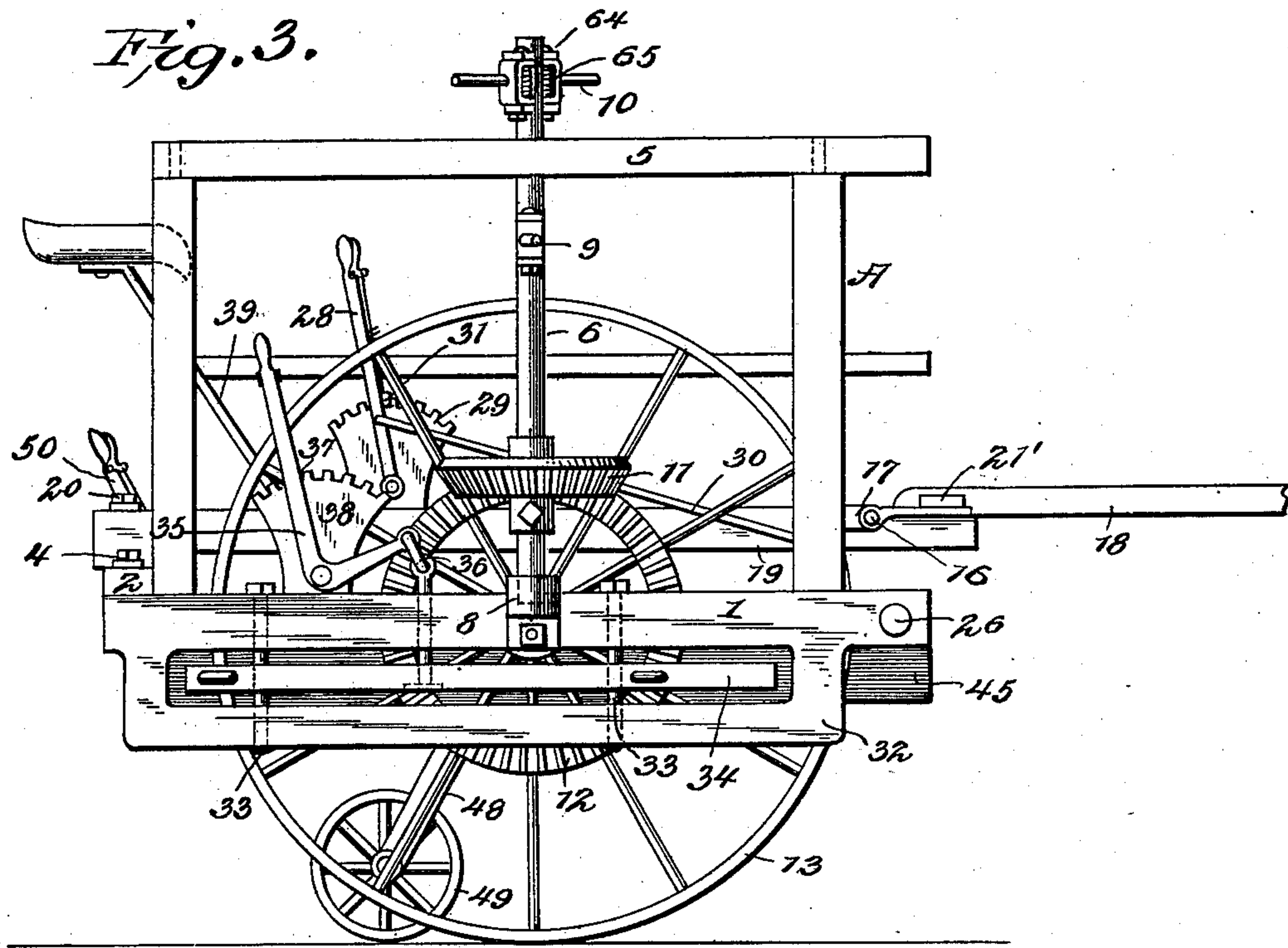
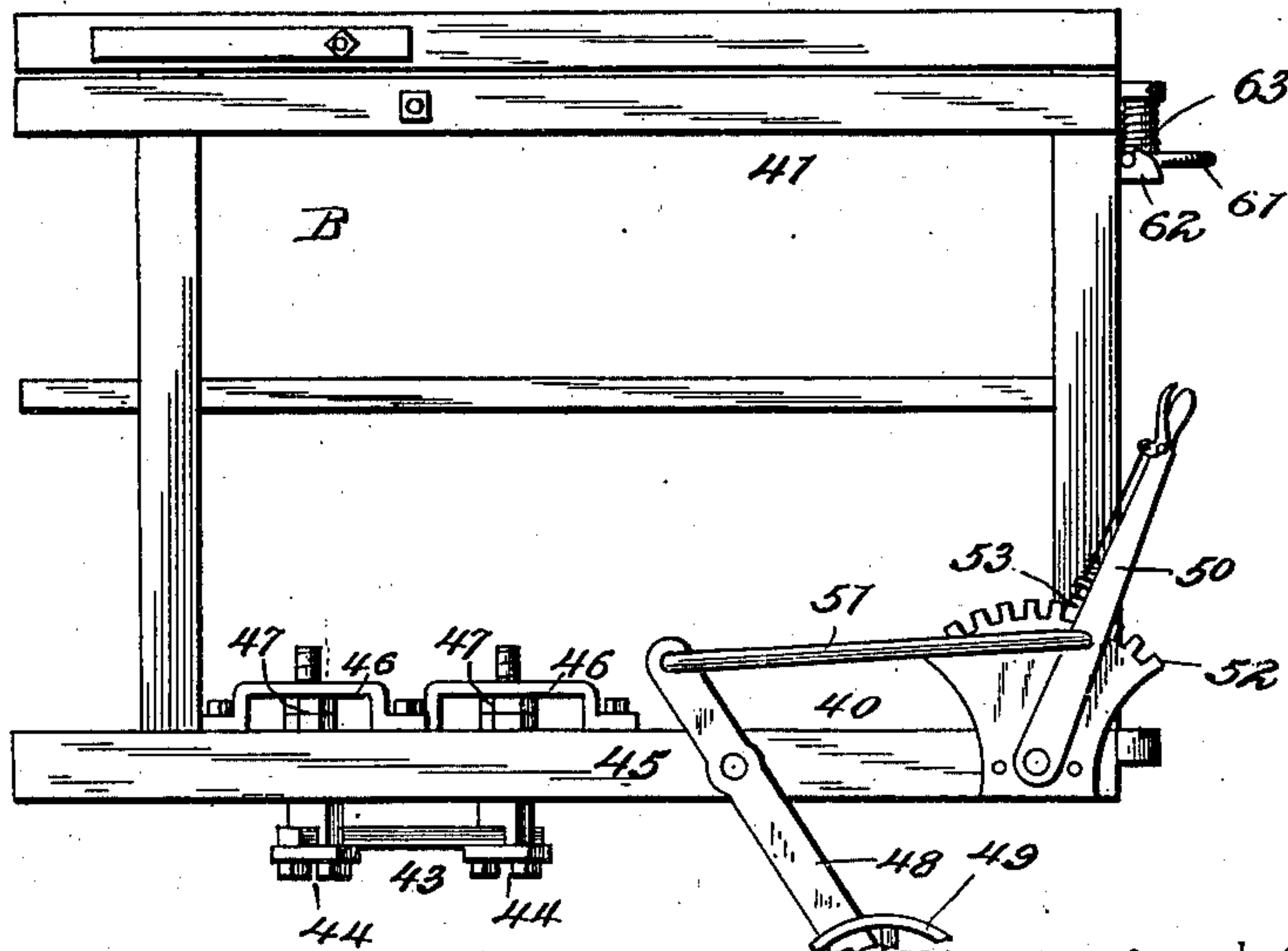


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN HENRY ELICK, OF DECATUR, INDIANA.

CORN-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 661,735, dated November 13, 1900.

Application filed May 1, 1900. Serial No. 15,074. (No model.)

To all whom it may concern:

Be it known that I, JOHN HENRY ELICK, a citizen of the United States, residing at Decatur, in the county of Adams and State of Indiana, have invented a new and useful Corn-Harvester, of which the following is a specification.

My invention is an improved corn-harvester of the class adapted for cutting standing corn-stalks, gathering the same into bundles, and discharging the bundles onto the ground at suitable points.

One object of my invention is to effect improvements in the means whereby the harvesting-machine adapts itself to uneven surfaces when in operation.

Another object of my invention is to effect improvements in the means whereby the cutting mechanism may be adjusted vertically, so as to cut the corn at any desired height above the ground.

Another object of my invention is to provide improved means for laterally adjusting the machine, so that the same may be widened or narrowed to accommodate itself to the space between the rows of corn.

Another object of my invention is to provide improved means for guiding the corn-stalks to the cutter-blades as the machine advances between the rows.

With these and other objects in view my invention consists in the peculiar construction and combination of devices hereinafter fully set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a top plan view of a corn-harvesting machine embodying my improvements. Fig. 2 is a front elevation of the same. Fig. 3 is a side elevation of the same with one of the cutting-frames removed on the plane indicated by the line *a a* of Fig. 2. Fig. 4 is a detail side elevation of one of the cutting-frames. Fig. 5 is a detail longitudinal sectional view of the same, taken on the line *d d* of Fig. 1, illustrating the relative arrangement of the upper and lower cutting-blades.

In the embodiment of my improved corn-harvesting machine I provide a draft-frame A and cutting-frames B, one or more, which are adapted to be disposed on the sides thereof and to which draft is applied through the draft-frame. I will first describe the latter.

The side bars 1 are connected together at their rear ends by a cross-bar 2, the latter being provided at its ends with adjusting-slots 3. Bolts 4 in the said slots pass through the rear ends of the bars 1 and connect said bars 1 to the cross-bar 2 and adapt the rear ends of said bars 1 to be adjusted laterally toward and from each other, as will be understood. Vertically-disposed frames 5 rise from the side bars 1, and vertically-disposed shafts 6 have their upper ends journaled in bearings disposed centrally on said frames, as at 7, and the lower ends of said shafts are journaled in bearings 8, bolted on the outer sides of the side bars 1. The said shafts 6 carry sweep-arms 9 10, which will be more fully described hereinafter, and said shafts are also provided with beveled gears 11, which engage similar gears 12, fast with traction and supporting wheels 13, the axles of which are secured to and project inward from the side bars 1, as at 15. A draft-bar 16 is attached to the front sides of frames 5, as at 17, or in any other suitable manner, and a pair of thills 18 are attached to the said draft-bar. A draft-beam 19 is secured at its rear end to the center of the cross-bar 2 of the draft-frame by a bolt 20, which operates in a longitudinally-disposed slot 21 in said draft-beam, and the front end of the said draft-beam is secured to the center of the cross-bar 21', which connects the thills by a bolt 22 or in any other suitable manner. The said draft-beam is provided near its front end with an elongated slot 23. A pair of toggle-jointed levers 24 are connected at their inner ends to the draft-beam by their pivotal bolt 25, which operates in the slot 23. The outer ends of said toggle-jointed levers are pivotally connected to bolts 26, which extend outwardly therefrom and pass through and are guided in openings near the front ends of the side bars 1. Bearing-springs 27, which are here shown as coiled springs, are disposed on the said bolts on the outer and inner sides of the said bars 1 and bear against the latter and against offsets, as nuts or the like, with which said bolts are provided. A lever 28 is fulcrumed to a sector-plate 29, which is secured to and extends vertically from the draft-beam, and said lever is connected to the pivotal bolt 25 of the toggle-lever 24 by a rod 30. The said lever is pro-

vided with the usual spring-pressed dog (indicated at 31) to engage the sector-plate and lock said lever in the required position. It will be understood that when the lever is
 5 caused to move the inner ends of the toggle-jointed levers forwardly said toggle-jointed levers will move the side bars 1 and frame 6 outwardly, thereby widening the draft-frame, and that when the said lever is moved in the
 10 reverse direction said toggle-jointed levers will move said side bars and frames inwardly, thereby narrowing the draft-frame. Hence the said draft-frame is adapted to be widened or narrowed, as may be required, to adapt the
 15 machine to the width of the space between the corn rows. The function of the springs 27 will appear hereinafter.

Yoke-frames 32 are disposed below the side bars 1, vertical bolt-rods 33 connecting said
 20 side bars with the lower side of said yoke-frames. Bars 34 are adapted to play vertically in the spaces between the yoke-frames and the side bars 1 and are guided and supported on the said bolt-rods 33, the latter
 25 passing through openings in said bars. The draft-frame is provided with bell-crank levers 35, which are connected to the bars, as at 36, and serve to raise and lower said bars, as may be required, for the purpose presently
 30 described, and said bell-crank levers are provided with spring-pressed dogs, (indicated at 37,) which engage sector-plates 38, secured to the side bars 1, and on which the bell-crank levers are mounted. The seat-bar 39
 35 is supported on the draft-beam 30. It will be understood that the draft is applied through the thills and the draft-beam to the rear end of the draft-frame.

I will now describe the cutting-frames,
 40 which are attached to and operate upon the sides of the draft-frame. Each cutting-frame comprises a platform 40, from which rise vertical side frames 41. At the front end of the platform 40 is an obliquely-disposed cutting-blade 42. Another obliquely-disposed
 45 cutting-blade 43 is arranged below the cutting-blade 42 on the under side of the platform and somewhat in rear of the blade 42. Said lower cutting-blade 43 is attached at its
 50 ends to the lower ends of vertically-adjustable supports 44, the latter passing through openings in the side bars 45 of the platform and through keepers 46 and are provided with adjusting-nuts 47, which engage threaded portions of said supports 44, whereby the
 55 latter may be adjusted vertically, so as to adjust the lower cutting-blade 43 vertically below the platform, as may be required. Each of the cutting-frames is hinged at its inner
 60 side to one of the vertically-movable bars 34, whereby said cutting-frames are connected to the draft-frame. Each cutting-frame is provided on its outer side at a suitable point with a pivoted standard 48, which supports
 65 at its lower end a supporting-wheel 49. The upper end of said standard 48 is connected to a lever 50 by means of a rod 51. Said le-

ver 50 operates on a sector-plate 52 and is provided with a spring-pressed dog 53, which is adapted to engage the said sector-plate
 70 and lock said lever at any required position. It will be understood that by means of the lever 50 and rod 51 the inclination of the standard 48 may be changed as may be required to raise and lower the cutting-frame
 75 from the ground, and thus adapt the cutting-blades to cut the cornstalks as high above the ground as may be desired. The upper blades 42 serve to cut the cornstalks, and the lower blades 53 serve to cut the stubble of the corn
 80 and clear the same from the hills.

On the bottom of each of the cutting-frames is pivoted a pair of forward-extending guide-arms 54, the front portions of which are curved outwardly in opposite directions,
 85 as at 55, and are disposed on opposite sides of the cornstalks in the rows as the machine advances, said guide-arms serving to guide the cornstalks to the cutting-blades and to coact with the latter in the cutting of the
 90 cornstalks. Springs 56 bear against the outer sides of the guide-arms and keep the same in contact with the corn. Guide-arms 57 are pivoted or hinged at their front ends to the front ends of the side frames 41 of the cutter-
 95 frames at the upper portions thereof, said guide-arms 57 converging rearwardly and being provided with curved supporting-rods 58, which are concentric with the pivots or hinges of said guide-arms and operate in
 100 openings in the frames 41. Springs 59 bear against the inner sides of the guide-arms 57 and keep the same normally in the position shown in Fig. 1, said guide-arms serving by engaging opposite sides of the cornstalks in
 105 the rows as the machine progresses to centrally dispose the tops of the cornstalks, so that as the same are cut by the blades 42 the cornstalks fall rearwardly on the platform. The said guide-arms 57 also serve to prevent
 110 the cornstalks from falling forward after the same have been cut.

It will be observed by reference to Fig. 1 of the drawings that the sweep-arms 9 10 at the upper ends of the vertically-disposed
 115 shafts 6 move rearward over the cutter-frames and that the same are efficient by reason of their said movement to engage the cornstalks while the same are being cut and to sweep the cornstalks rearward on the plat-
 120 forms 40 after they are cut. Gates 60, which connect the rear ends of the vertically-disposed frames 41, serve to retain the cut cornstalks on said platforms between the frames 41. Said gates comprise curved bars 61,
 125 hinged or pivoted at one end to one of the frames 41 and at the opposite ends engaging keepers 62. Springs 63 on the pivots of said gates keep the same normally closed and engaged by the keepers 62. It will be under-
 130 stood that by disengaging the said gate-bars from the keepers and moving said gate-bars rearwardly the cornstalks which have accumulated on the platforms of the cutting-

frames may be discharged therefrom in bundles on the ground. Each of the sweep-arms 9 10 is provided at its inner end with a hinged or pivot connection to the shaft 6, as at 64, 5 and is also provided with a spring 65, which while being strong enough to render the sweep-arms effective in sweeping the cornstalks rearward on the platforms of the cutting-frames, as hereinbefore described, adapting the said 10 sweep-arms to yield should they encounter an unyielding obstruction, and thus obviate danger of breaking said sweep-arms.

It will be understood from the foregoing and from an inspection of the drawings that 15 the cutting-frames are adjustable vertically independently of each other on the sides of the draft-frame and that by means of the vertically-adjustable yoke-bars, to which the inner sides of the cutting-frames are hinged, and 20 the vertically-adjustable supporting-wheels, which carry the outer sides of the cutting-frames, the latter may be also maintained in substantially horizontal positions, and the machine is thereby adapted to compensate for 25 inequalities of the ground.

The springs 26 27, which operate on the sides of the side bars 1 of the draft-frame, serve to normally maintain the draft-frame in the position shown in Fig. 1, while adapting 30 ing the same to move laterally to keep the cutting-frames disposed in operative relation to the rows of corn should the latter deviate slightly from straight lines. As here shown two of the cutting-frames are provided, one 35 on each side of the draft-frame, and when the machine is thus equipped the same is adapted for simultaneously cutting two rows of corn, the draft-frame being drawn by the horse between the rows of corn; but it will be understood that one of the cutting-frames may be 40 dispensed with in the event that it is only desired to employ the harvesting-machine for cutting one row of corn at a time.

The machine may be made of any suitable 45 size. Usually where the machine is to be employed for cutting only one row of corn at a time the draft-frame will be made smaller than would be necessary if the machine were to be equipped, as here shown, with two of 50 the cutting-frames.

Having thus described my invention, I claim—

1. In a corn-harvesting machine, the com-

bination of a draft-frame, a bar, and connections between said bar and the draft-frame, 55 to admit of the free vertical movement of said bar on the side of said frame, a cutting-frame hinged to said vertically-movable bar, said cutting-frame having a supporting-wheel at its outer side and means to adjust said 60 wheel vertically with relation to the cutting-frame and thereby vertically adjust the latter, substantially as described.

2. In a corn-harvesting machine, a draft-frame comprising side members, a cross-bar 65 connecting the rear ends of said side members, the latter being laterally adjustable on said cross-bar, toggle-jointed levers connecting the front ends of said side members, buffer-springs on the connections between 70 said toggle-jointed levers and said side members, the latter being movable independently of the former, and means to adjust and lock said toggle-jointed levers, in combination with cutting-frames attached to the sides of 75 said draft-frame and extending laterally therefrom, substantially as described.

3. In a corn-harvesting machine, a supporting-frame provided with a cutting-blade, in combination with forward-extending pivoted 80 spring-pressed guide-arms operative on opposite sides of the cornstalks and disposed on the bottom of the frame, the latter having vertical sides and elevated rearward converging spring-pressed guide-arms to engage the 85 upper portions of the cornstalks, revoluble sweep-arms operative over the said frame, and a gate to close the space between the vertical sides of said frame in rear of said cutting-blade, substantially as described. 90

4. In a corn-harvesting machine, a draft-frame comprising laterally-adjustable side members, toggle-jointed levers connecting said side members, means to adjust said toggle-jointed levers and to lock the same when 95 adjusted, and cutting-frames attached to the sides of the draft-frame and extending laterally therefrom, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in 100 the presence of two witnesses.

JOHN HENRY ELICK.

Witnesses:

R. S. PETERSON,
EARL B. ADAMS.