

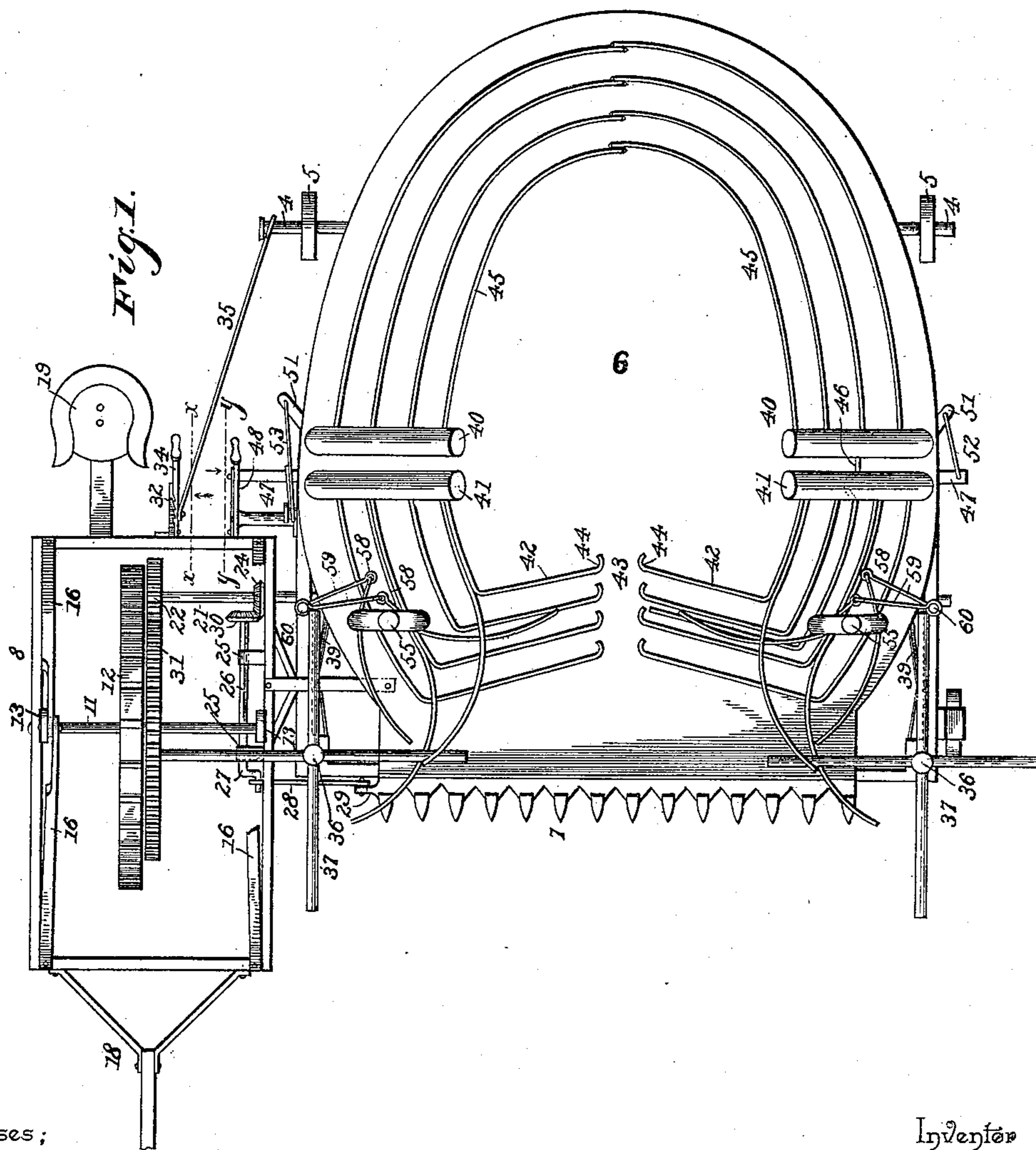
(No Model.)

3 Sheets—Sheet 1.

J. H. LEDFORD.
CORN HARVESTER.

No. 494,640.

Patented Apr. 4, 1893.



Witnesses;

J. M. Withers.
H. S. Duwall

By *his* Attorneys,

C. A. Snow & Co.

Inventor
J. H. Leford,

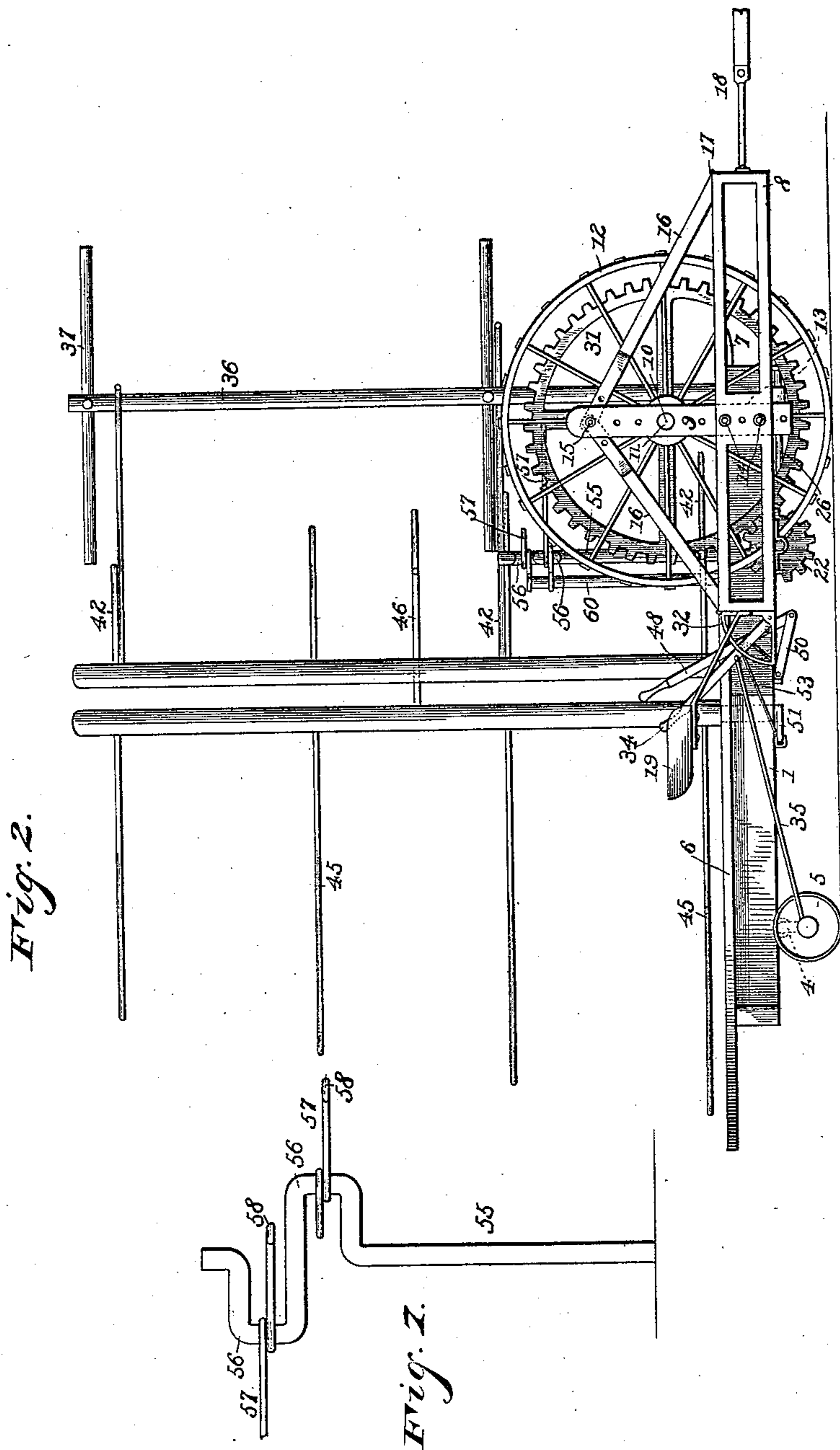
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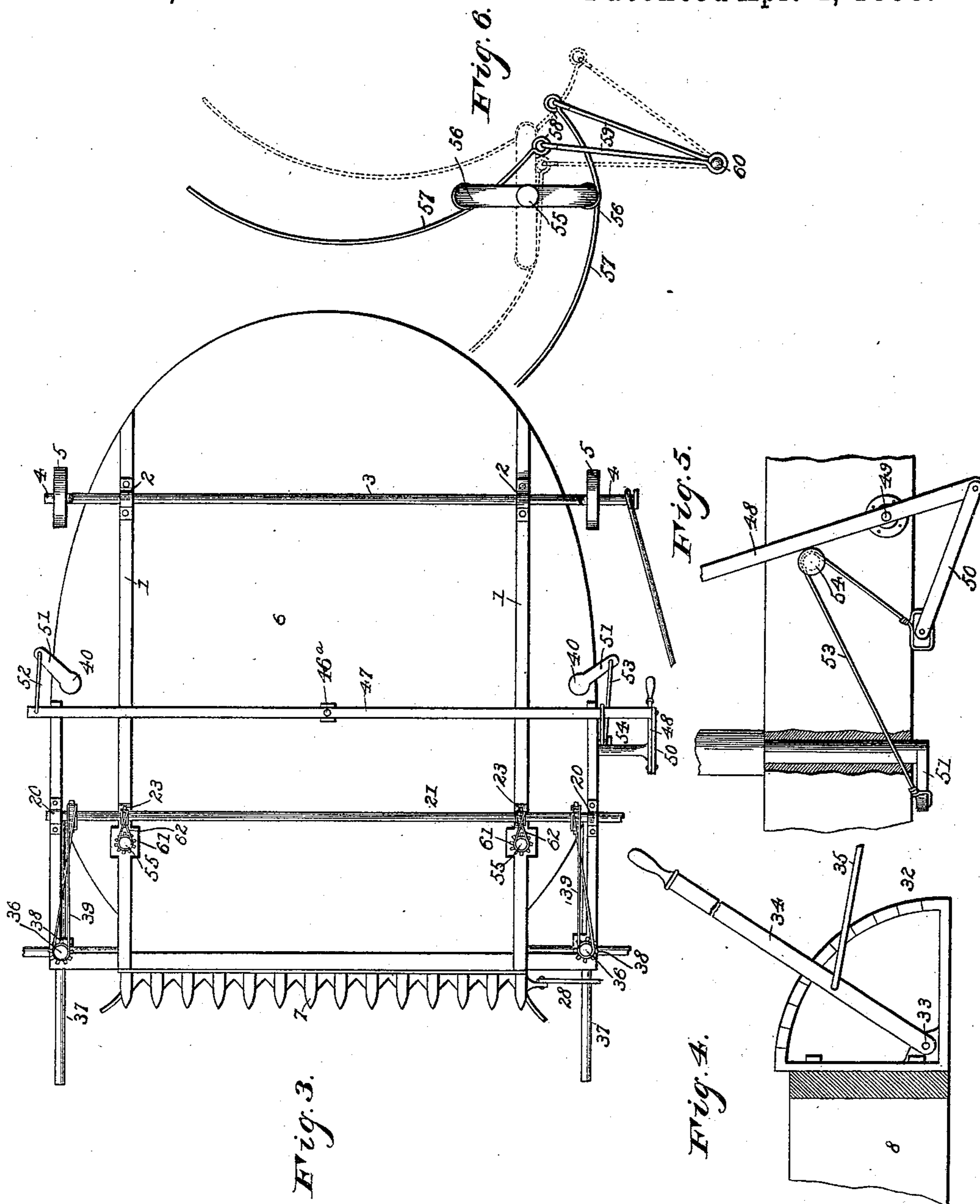
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J. H. LEDFORD.
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UNITED STATES PATENT OFFICE.

JAMES H. LEDFORD, OF LA FAYETTE, KENTUCKY.

CORN-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 494,640, dated April 4, 1893.

Application filed February 8, 1892. Serial No. 420,744. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. LEDFORD, a citizen of the United States, residing at La Fayette, in the county of Christian and State of Kentucky, have invented a new and useful Corn-Harvester, of which the following is a specification.

This invention relates to improvements in corn-harvesters; the objects in view being to provide a cheap and simple machine adapted to automatically cut, take up and form into shocks, standing corn; and to subsequently deliver the same.

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

Referring to the drawings:—Figure 1 is a plan of a harvester constructed in accordance with my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a bottom plan view of the platform. Fig. 4 is a section on the line $x-x$ of Fig. 1. Fig. 5 is a section on the line $y-y$ of Fig. 1. Fig. 6 is an enlarged detail in plan of one of the packer-shafts, and its packers. Fig. 7 is a side elevation of the same.

Like numerals of reference indicate like parts in all the figures of the drawings.

1 designates a pair of longitudinal side beams, which are provided near their rear ends with bearings 2, in which is journaled a transverse axle 3, having its extremities bent to form cranks 4, carrying ground-wheels 5. The beams 1 support a table or platform 6, somewhat oval in plan, and at the front end of which there is located an ordinary harvesting or cutting mechanism 7.

At one side of the mechanism just described, a rectangular frame 8 is located, from the opposite longitudinal sides of which rise vertical standards 9. Each vertical standard is provided with a bearing 10, for a transverse axle 11, upon the center of which latter a ground-wheel 12 is mounted, the axle moving therewith. The standards 9 are mounted in ways, 13, formed in the side bars of the frame 8, and may be raised and lowered and secured at any desired elevation, through the medium of adjusting-bolts 14, passing through the said side bars and standards. Above and below the bearings 10 the standards 9 are provided with a series of perforations, and to any one

of the same through the medium of bolts 15, are connected the overlapping ends of opposite pairs of inclined braces 16, hinged as at 17 to the opposite end bars of the frame 8. From this description it will be obvious that the frame, as a whole, may be lowered or raised from the ground. The frame is provided with any ordinary draft-appliance, as 18, and at its rear end is furnished with a seat 19 for the accommodation of the driver.

In bearings 20, formed upon the under sides of the main frame work, near the front end of the platform, a shaft 21 is journaled for rotation, the outer end of the shaft extending beyond the platform into the frame 8, at which point it carries a gear 22, rigidly mounted thereon. Opposite the beams 1 the shaft 21 carries sprockets 23, and within the frame 8 and adjacent to the side bar thereof, a small pinion 24. In bearings 25, projecting inward from the inner side bar of the frame 8, is a longitudinally-disposed shaft 26, terminating at its forward end in a crank 27. This crank 27 is connected with the inner end of the cutter-bar 29, by means of a link or pitman 28. The rear end of the shaft 26 carries a small pinion 30, which gives motion to the crank-shaft and is in turn rotated by the small pinion 24, by which it is engaged. The shaft 21, which rotates the pinion 24, is driven through the medium of its gear 22, which in turn is driven by a master-gear 31, fixedly mounted upon the axle 11 for rotation therewith. At one side of the driver's seat a segmental rack-bar 32 is located, and at one side of the same there is fulcrumed as at 33 a hand-lever 34, best shown in Fig. 4. This hand-lever is connected to the extended portion of one of the cranks 4 of the axle 3, by means of a pitman or connecting-rod 35. See Fig. 1.

At the opposite front corners of the platform, are journaled vertical rotatable reel-shafts 36, from which radiate series of reel-arms 37. See Figs. 1 and 2. The lower ends of these reel-standards extend below the platform and are there provided with sprocket-wheels 38, which are connected by twisted sprocket-chains or cross-belts 39, with the small sprockets 23^a of the shaft 21, whereby the said shafts are driven in opposite directions and the reel arms thus rotated to gather

the corn as the same is harvested. At the opposite sides of the platform are pairs of upwardly and inwardly inclined posts rising therefrom and spaced a short distance apart.

5 The rear post of each pair is designated as 40, and is journaled in the platform. The front post of each pair, designated as 41, is fixed or immovable. From the opposite front posts 41 extend a series of inwardly-disposed

10 or L-shaped wire-rods or arms 42, which terminate short of each other, near the middle of the platform, leaving a contracted space 43, at the opposite sides of which the rods 42 are inwardly-bent as at 44, so to offer no ob-

15 struction to the entrance of the corn. The rear posts 40 are provided with rearwardly-disposed curved rods 45, the rear extremities of which meet and slightly overlap at the rear central portion of the table. One of the

20 posts 40 is also provided with a forwardly-extending curved discharge rod 46, which is bent around the inner side of the adjacent post 41, and lies between two adjacent L-shaped rods 42, of the said post 41. By rea-

25 son of the posts 40 and 41 being upwardly and inwardly inclined, the frame work composed of wire rods approximates the shape of a truncated cone, and constitutes a cradle in which the shock of corn is formed. Pivoted

30 to the under side of the platform as at 46^a, is a transversely-disposed lever or bar 47, the extremities of which project beyond the table or platform, and said lever may be oscillated by means of a hand-lever 48, which is

35 fulcrumed near its lower end upon a stud 49, and at its upper end is within easy reach of a person occupying the seat 19. The lower end of the lever 48 is connected by a link 50 with the longer extremity of the fulcrumed

40 or pivoted bar 47. Below the platform or table 6, the posts 40 are provided with laterally-disposed rock-arms 51. The rock-arm of the outer post is connected by a link 52, with the shorter end of the pivoted bar 47, and the

45 rock-arm of the inner post 40 is connected to the end of the pivoted bar 47, by a wire or other flexible connection 53, best shown in Fig. 5. This latter connection, however, between the rock-arm 51 and bar 47, passes up and

50 around a loose pulley 54. Thus it will be seen that by manipulating the lever 48 the bar 47 may be oscillated, and the rear posts 40 turned outwardly or away from each other, thus opening the rear end of the cradle. The parts

55 may be returned to their positions through the medium of the same lever.

In rear of the cutting mechanism and the standards 36 of the reels, there is journaled a pair of vertically-disposed packing-shafts

60 55, best shown in Fig. 7. These packing-shafts are provided with oppositely-disposed cranked-portions 56, and in each cranked portion there is loosely fulcrumed or connected a curved packing-arm 57, the rear ends of

65 the packing arms projecting beyond the bars 42 and between the same, and adapted to force the stalks through the opening or space

43 of the cradle. The outer ends of the packing-arms 57 terminate in eyes 58, and each is connected by a link 59 with fulcrum-posts 60. 70

The lower ends of the packer-shafts 55, extending below the platform, are there provided with sprockets 61, which occur opposite or in front of the sprockets 23, heretofore mentioned as being mounted upon the 75 shaft 21. The sprockets 23 are connected to the sprockets 61, through the medium of crossed sprocket-chains 62, whereby motion is communicated from the shaft 21 to the vertical shafts 55 and thus the packers are oper- 80 ated in opposite directions, so as to feed the stalks as before described.

It will be obvious that various changes may be made in the manner of gearing the shafts together, or communicating motion from one 85 shaft to the other, and to such as herein shown I do not limit my invention, but hold that I may vary the details thereof in any manner within the scope of my claims.

The operation will be obvious from the pre- 90 vious description, which has been given in connection therewith; but in order that the same may be thoroughly understood, it may be briefly stated as follows:—The machine is dragged along, the height of the same being 95 first regulated as desired, and the corn-stalks are severed at a proper point by the reciprocating knives 29, located in the cutting mechanism 7. As the stalks are severed, the fall against the inner branches of the L-shaped 100 wires 42, and are disposed by them toward the narrow passage-way 43, through which they are aided by the revolving packers 57. The stalks are gathered and presented in a compact mass to the knives of the cutters, 105 through the medium of the usual reels located at the opposite front corners of the framework. This operation is continued until the cradle becomes full, when the machine is stopped, and the shock formed within the 110 cradle is tied, in this instance by hand, but if desired knotting mechanism of any ordinary character may be employed. The operator now grasps the lever 48, oscillating the same so as to open the rear end of the cradle, and 115 as the same opens the shock thus formed is forced by the discharge-arm 46 rearwardly over the edge of the table. The discharging of the shock is further facilitated by the lowering of the rear end of the platform or table 120 6, through the medium of the hand-lever 34, which is operated at a proper moment so as to incline the table or platform to the rear. The truncated cone-shape given the cradle, as a whole, serves to closely confine the up- 125 per portions of the corn-stalks while their lower portions are let somewhat loose, so that after the shock is tied and discharged, it will be obvious that the same will flare toward its base or lower end, and will the more readily 130 stand in the field.

Having described my invention, what I claim is—

1. In a harvester, the combination with a

platform, and a wire cradle surrounding the same, the front of the cradle being provided with a reduced converged opening of a pair of opposite oppositely-cranked packer-shafts, 5 located at opposite sides of the opening packer-arms loosely connected between their ends with the cranked portions of the shafts, said packer-arms taking between the wires of the cradle, and serving to feed the stalks to the 10 opening fulcrum-posts located opposite the packer-shafts and connecting-rods between the fulcrum-posts and ends of the packer-arms, substantially as specified.

2. In a harvester, the combination with the 15 platform, of a cradle, formed by a series of wire rods, posts for supporting the rods, said rods having their forward ends inwardly-bent as at 42 and terminating at opposite sides of the center of the cradle, forming an entrance 20 thereto, cutting mechanism located in front of the table, means for opening and closing the rear end of the cradle, packers located at opposite sides of the entrance of the cradle, means for operating the same, and rotatable 25 reels located in rear of the cutting mechanism and in front of the packers, substantially as specified.

3. In a harvester, the combination with the platform or table, of the opposite upwardly 30 and inwardly inclined posts 40, the series of curved rods 45 extending rearwardly therefrom, the discharge rod 46 extending forward from one of the posts and means for oscillating the posts in opposite directions, substantially as specified. 35

4. In a harvester, the combination with the

platform or table, of the opposite front, upwardly and inwardly inclined posts 41, and the opposite rear similarly inclined rotatable posts 40, the rearwardly curved wires 45 overlapping at their rear ends and extending from 40 the posts 40, means for oscillating the posts 40, the discharge rod 46 extending forwardly from one of the posts 40, and the series of wire rods 42 L-shaped and extending forwardly 45 from the posts 41 and having their adjacent ends abruptly bent as at 44, substantially as specified.

5. In a harvester, the combination with the platform, the frame-work for supporting the 50 same, the opposite pairs of upwardly and inwardly inclined posts 41 and 40, the latter being pivoted, the rods 45 curved and extending rearwardly from the posts 40, and the L-shaped rods 42 extending forwardly from the posts 41, 55 of the rock-arms 51 located at the lower ends of the posts 40, the rod 47 pivoted as at 46^a to the under side of the platform, the link 52 connecting the rock-arm of one post with the bar 47, the pulley 54, the wire passing over the 60 same and having its ends connected to the remaining rock-arm and bar 47, the hand lever 48 fulcrumed as at 49, and the link 50 connecting the lower end of the lever with the said bar 47, substantially as specified. 65

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

JAMES H. LEDFORD,

Witnesses:

THEO. BUATHELL,
JOHN W. PAYSON.