

No. 679,708.

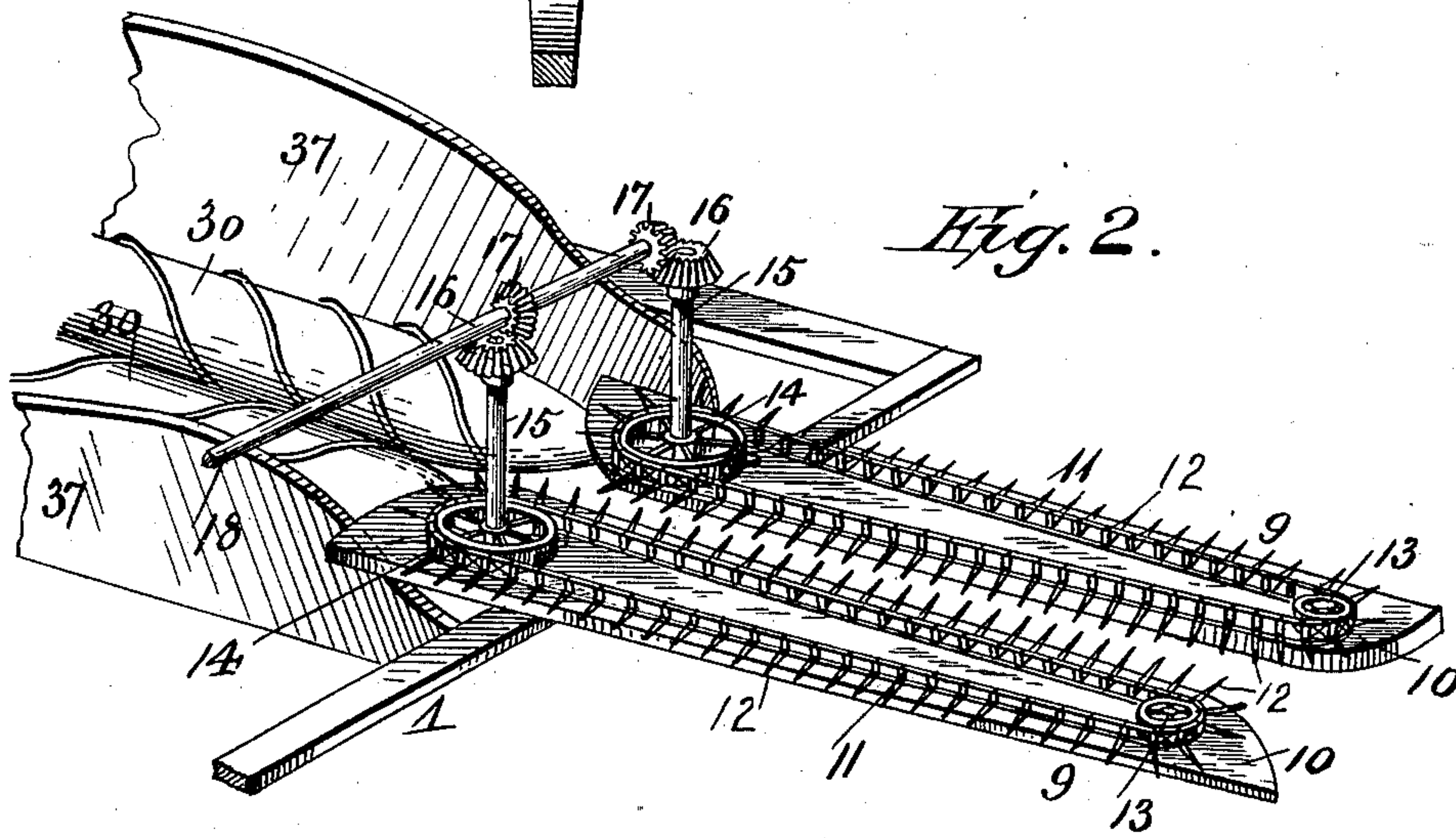
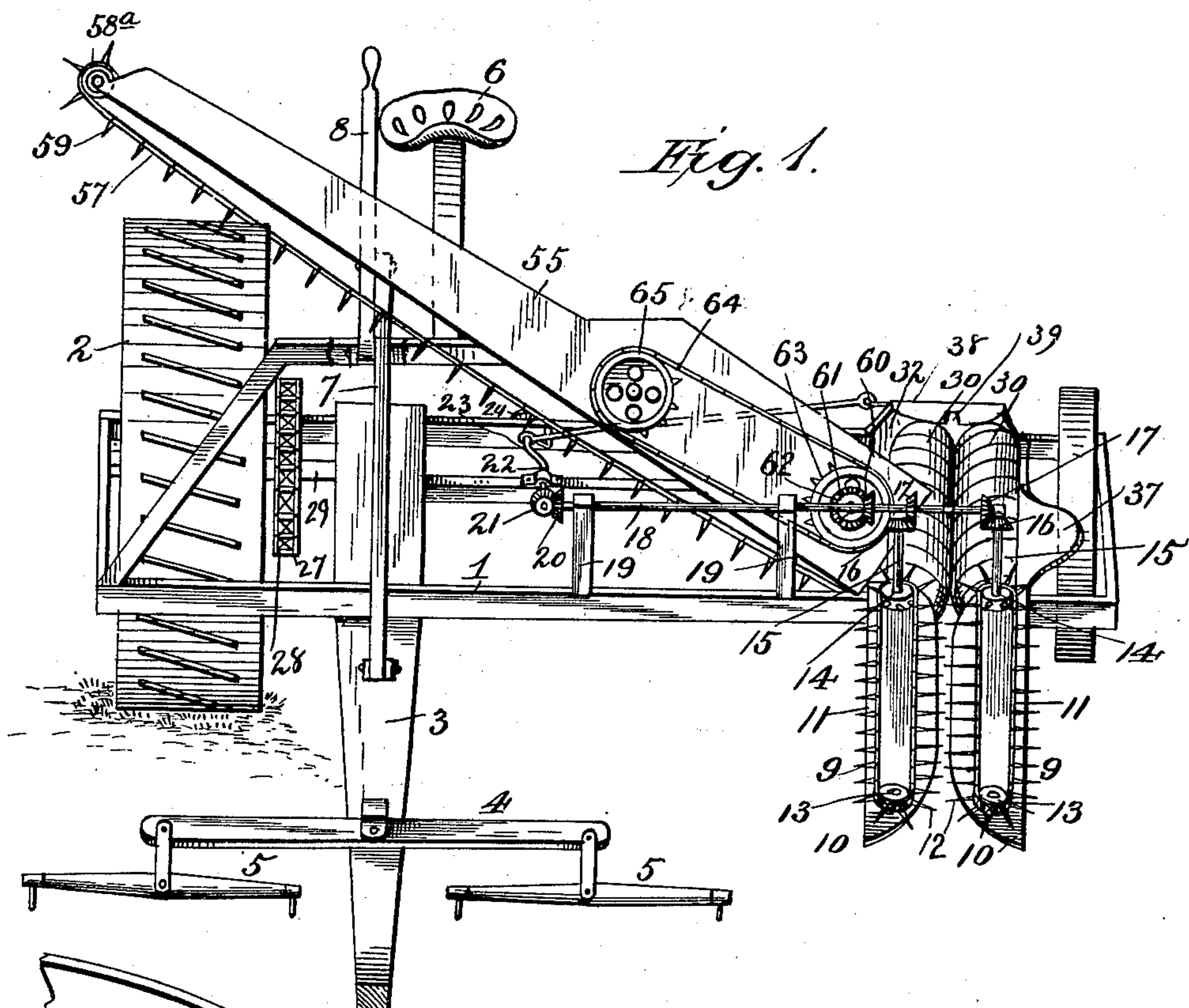
Patented July 30, 1901.

H. L. STEEL.
CORN HARVESTER.

(No Model.)

(Application filed July 12, 1900.)

4 Sheets—Sheet 1.



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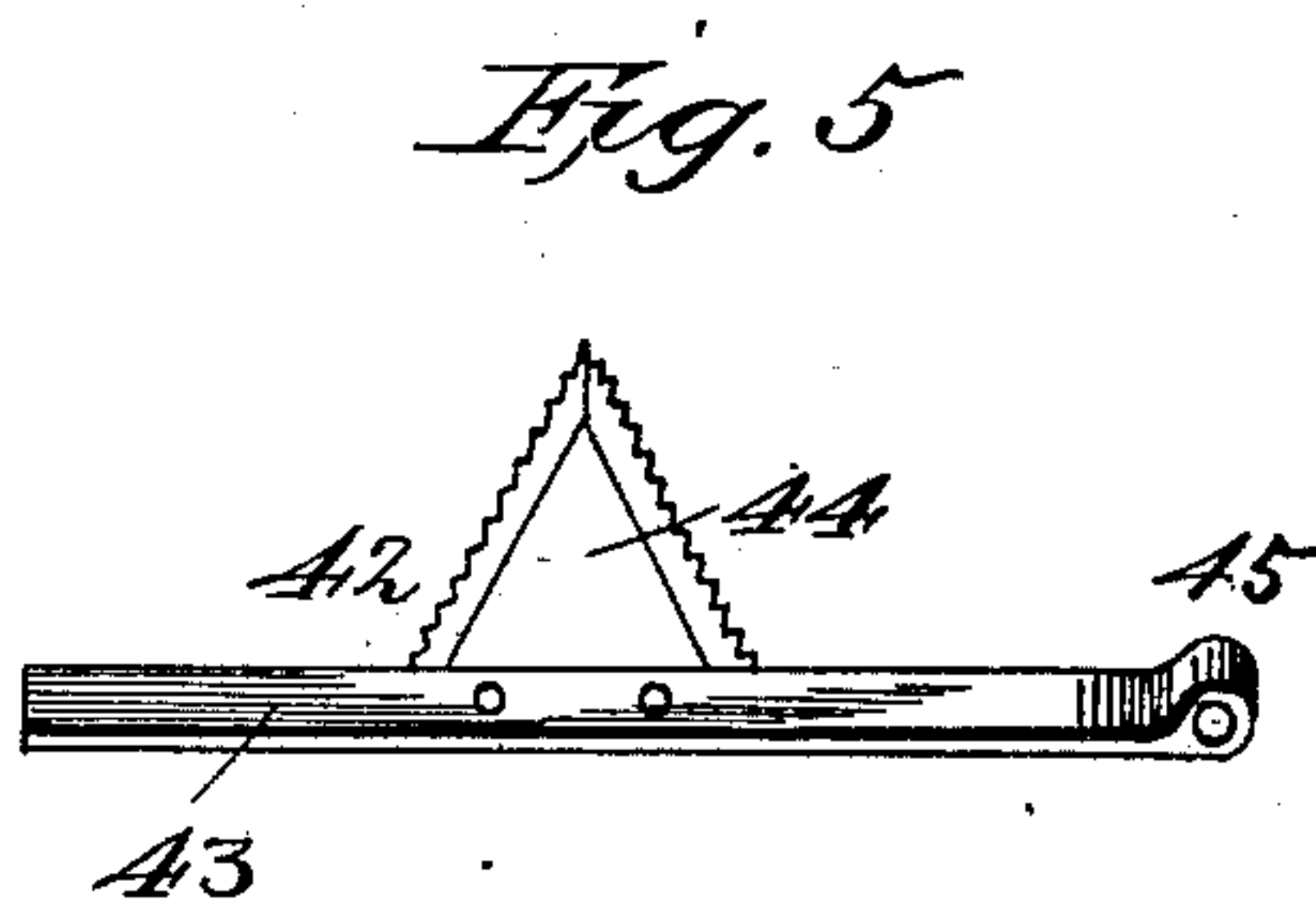
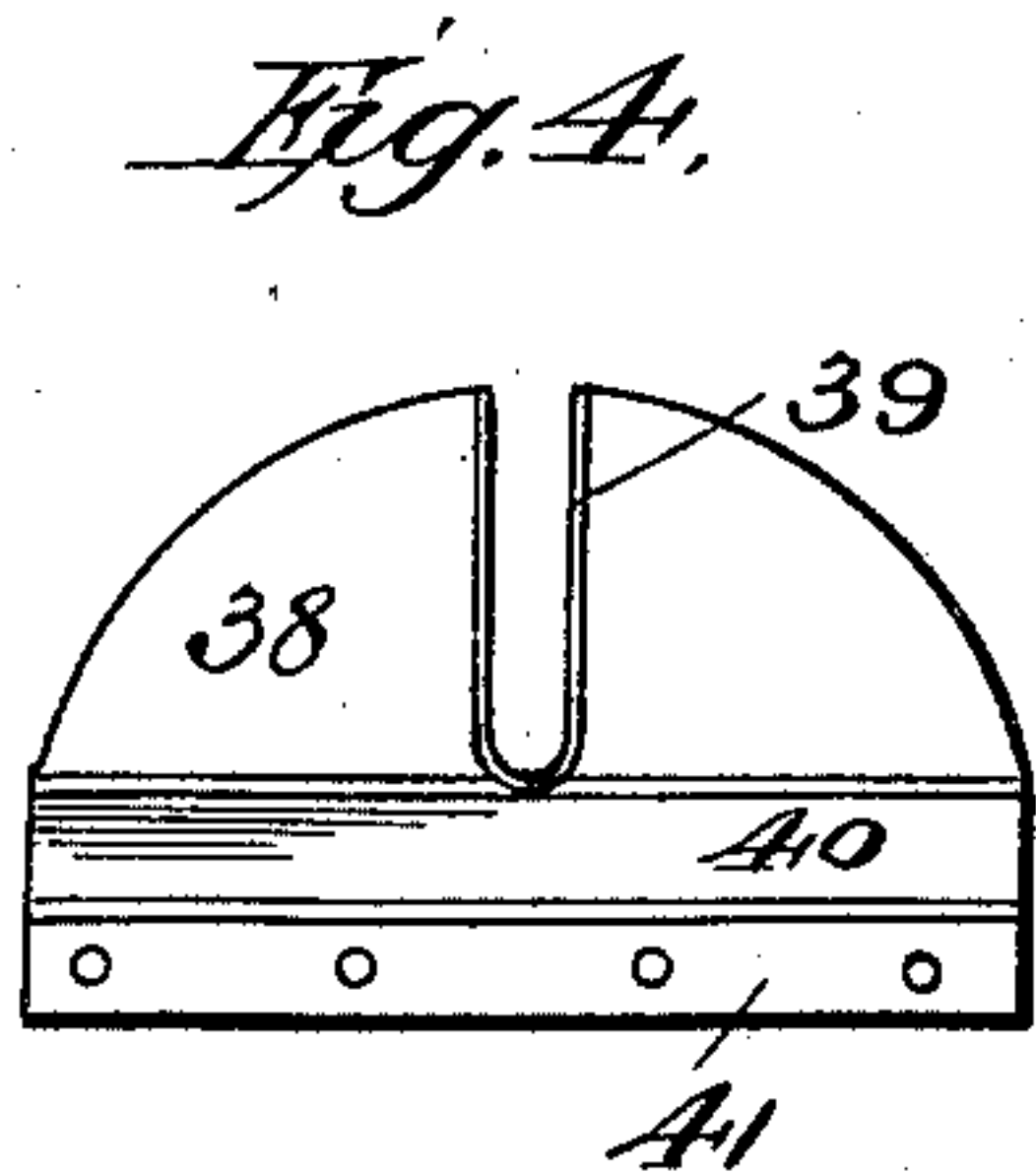
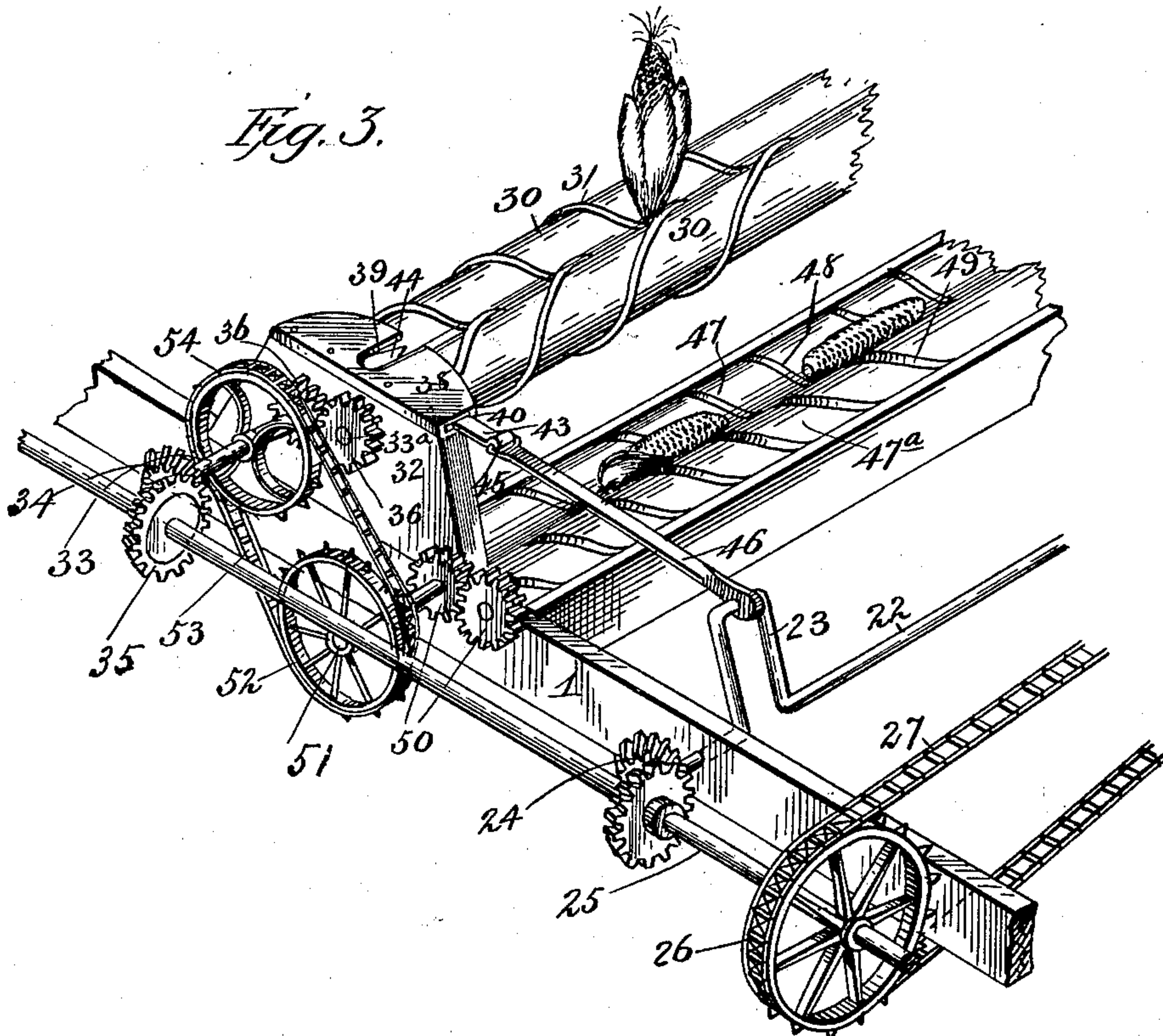
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4 Sheets—Sheet 2.



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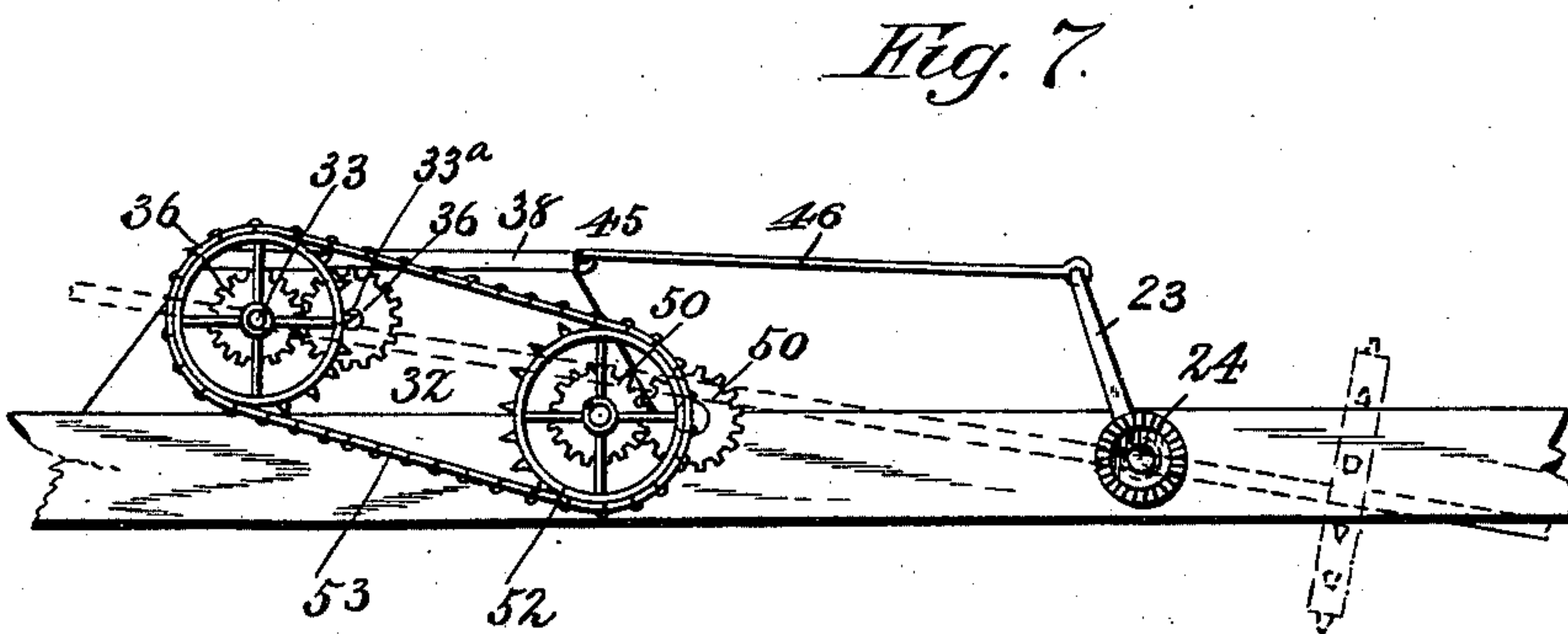
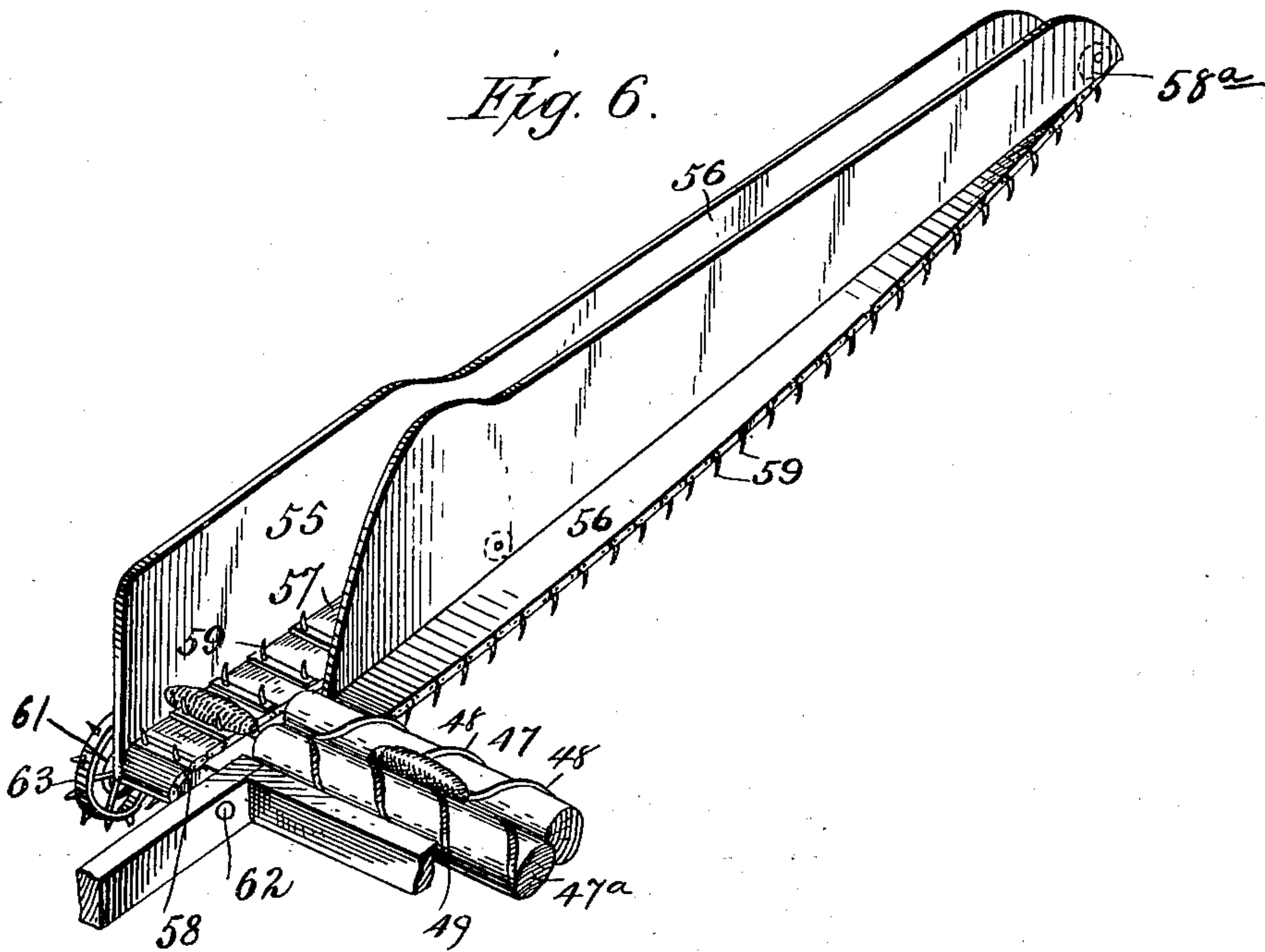
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4 Sheets—Sheet 3.



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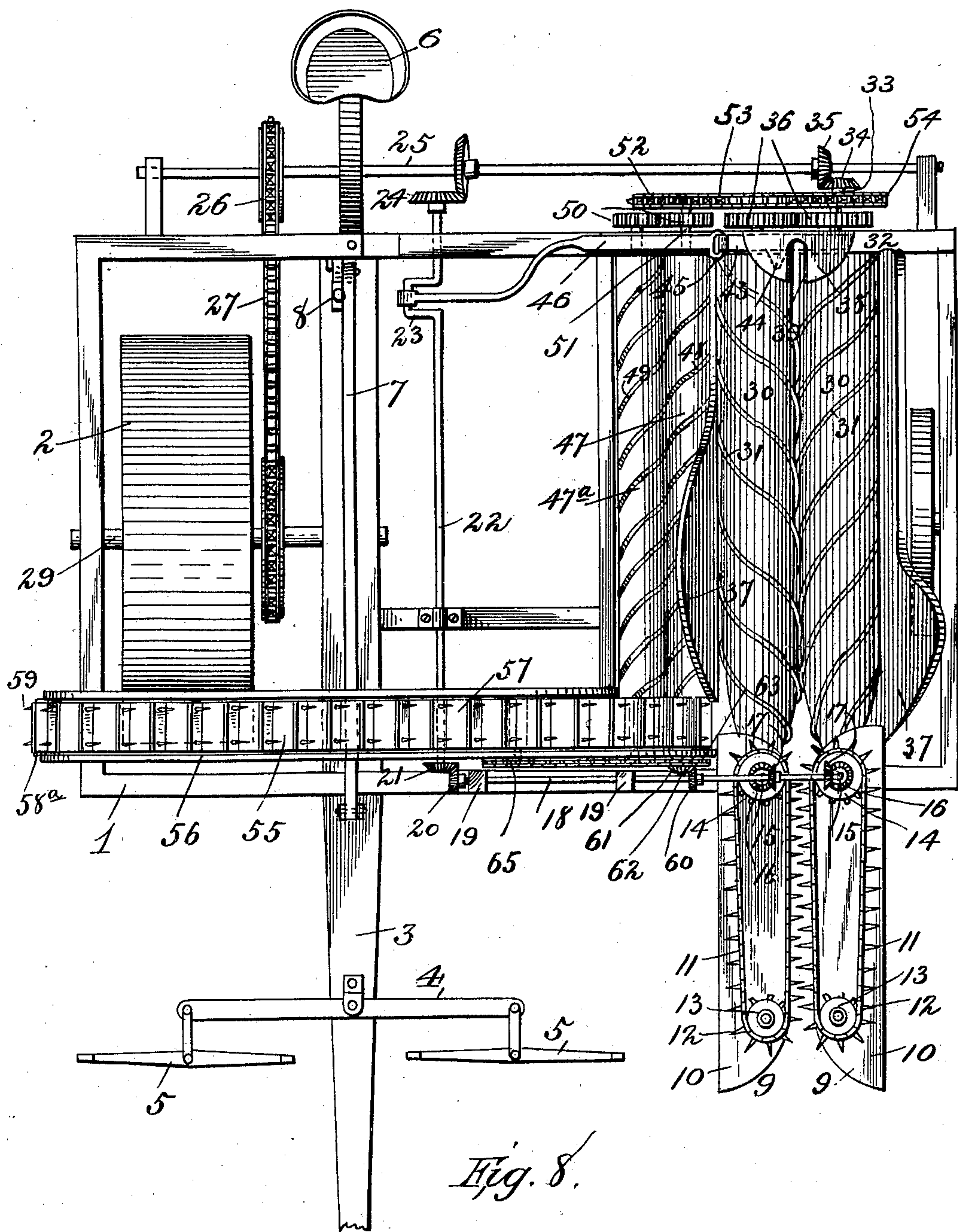
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(No Model.)

4 Sheets—Sheet 4.



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UNITED STATES PATENT OFFICE.

HARRY L. STEEL, OF DAYTON, INDIANA, ASSIGNOR TO THE INDIANA DEVELOPMENT COMPANY, OF SAME PLACE.

CORN-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 679,708, dated July 30, 1901.

Application filed July 12, 1900. Serial No. 23,359. (No model.)

To all whom it may concern:

Be it known that I, HARRY L. STEEL, a citizen of the United States, residing at Dayton, in the county of Tippecanoe and State of Indiana, have invented new and useful Improvements in Corn-Harvesters, of which the following is a specification.

My invention relates to corn-huskers; and the objects of the same are to provide a machine of durable structure and of light draft designed to be drawn into a corn-field and to operate upon a single row of corn to feed the stalks into the machine, then to remove the ears of corn from the stalks without pulling the latter from the ground, husking the corn as it is removed from the stalks without shelling the same from the ears, and then conveying the husked ears up by an elevator to a discharge-chute.

Another object is to generally improve the feeding and husking mechanism in machines of this kind with a view to lightening the draft and simplifying the general structure.

I attain these objects by means of the structure shown in the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a front view of the machine. Fig. 2 is a perspective view of the gatherers and the front ends of the conducting-rollers. Fig. 3 is a perspective view of the conducting-rollers, the husking-rollers, and the connections for driving said rollers. Fig. 4 is a plan view of the stationary cutter-blade. Fig. 5 is a perspective view of the reciprocating cutter-blade. Fig. 6 is a perspective view of the elevator-chute. Fig. 7 is a side view of a part of the driving mechanism. Fig. 8 is a plan view of the machine.

The machine is mounted on wheels and designed to be drawn by horses, and the framework 1 is suitably constructed to sustain the working parts of the machine. The land-wheel 2 serves as the drive-wheel for the operative mechanism, the tongue 3 being secured to the frame and provided with the doubletree 4 and the singletrees 5. The driver's seat is designated 6. The framework 1 may be tilted by the lever 7, pivoted to the tongue and extending back to the lever 8, to which it is pivoted, said lever 8 being pivoted

at its lower end and the upper end of said lever 8 extending up to within reach of the driver.

As the machine is drawn over the field of standing corn the row of stalks pass into the machine between the gathering-prongs 9, said prongs consisting of the two base-boards 10, secured to the frame 1 and having curved divergent front and rear ends. Sprocket-chains 11, provided with fingers or flights 12, are mounted on the base-boards 10, the front ends of said chains passing around the idler sprocket-wheels 13, journaled in the base-boards 10, and the rear ends of said chains passing around the sprocket-wheels 14, keyed to vertically-disposed shafts 15, journaled in the base-boards 10 at their rear ends. The upper ends of the shafts 15 are provided with bevel-gears 16, in mesh with oppositely-disposed pinions 17, keyed to the horizontal shaft 18, journaled in standards 19, rising from the frame 1. A pinion 20 on the end of shaft 18 is in mesh with a pinion 21 on the end of a shaft 22, said shaft being journaled in the frame 1 and provided with a crank 23, the purpose of which will be hereinafter described, and upon the end of said shaft, outside the frame, a pinion 24 is secured, said pinion being in mesh with a bevel-gear on a shaft 25, carrying a sprocket-wheel 26, operated by a drive-chain 27, passing around a sprocket-wheel 28 on the axle 29 at the side of the land-wheel 2.

The conducting-rollers 30 are provided with spiral ridges 31, extending from end to end of said rollers, said spiral ridges having smooth rounded outer surfaces and the surface of the rollers between the ridges being smooth. The front ends of these rollers are reduced in size and journaled in the frame near the rear ends of the base-boards 10. As shown, the spiral ridges on one of the rollers 30 are disposed or arranged between the ridges on the other roller 30, and the rear ends of said rollers are journaled in an upright portion 32 of the frame 1, and on the outer end of one of the shafts 33 of said rollers a pinion 34 is secured, which meshes with a bevel-gear 35 on shaft 25. The two roller-shafts 33 33^a are provided with cogged wheels 36, in mesh with each other just outside the up-

right portion 32 of the framework. Fenders 37 are provided on each side the rollers 30. As the cornstalks enter between the gathering-prongs 9 the stalks are bent downward by the shaft 18 and in an inclined position are stripped of the corn as they pass back toward the rear by the rollers 30. The upper ends of the stalks are cut off by the reciprocating knife presently to be described, and the other portion of the stalks pass out behind the machine as it moves along.

Secured to the upright 32 is a stationary knife-blade 38, Fig. 4, consisting of a semicircular plate having a recess formed centrally therein and the edges of the recess sharpened to form cutting edges 39. Back of the recess a guideway 40 is formed in the blade, and a flange 41 is provided with perforations through which the attaching-screws pass to hold the blade in position on the upright 32. The reciprocating cutter 42 consists of a bar 43, fitted to work in the guideway 40 and having a V-shaped blade 44 attached thereto, said blade having saw-teeth thereon. On one end of the bar 43 an eye 45 is formed, and to this eye is connected a pitman 46, the opposite end of which is connected to the crank 23. The recess in the blade 38 is located above the central point between the rollers 30, and as the tops of the stalks are fed into the recess in the blade 38 they are cut off. The ears of corn after being stripped from the stalks fall upon the husking-rollers 47 47^a, the fenders 37 being properly shaped to convey the ears from one set of rollers to the other. The roller 47 is provided with a spiral ridge 48, and the roller 47^a has a spiral groove 49, into which the ridge 48 fits. The husks are drawn downward between these rollers as they are revolved, and the ears of corn are conveyed by the spiral ridge and groove to the elevator. The rollers 47 47^a are revolved by means of the cogged gears 50, and the shaft 51 of the roller 47 is extended beyond the framework 1 and has fitted thereto a sprocket-wheel 52, connected by a sprocket-chain 53 to a sprocket-wheel 54 on the shaft 33 of one of the rollers 30.

As the ears of corn drop upon the rollers 47 47^a and are husked they are carried toward the front end of the machine to the elevator 55. This elevator consists of a chute 56, within which a traveling apron 57 is mounted to move upon the rollers 58 58^a, journaled in the frame at opposite ends of the chute. The apron 57 is provided with curved fingers 59, which catch the ears as they are fed by the rollers 47 47^a into the elevator and carry said ears up to discharge them from the upper end of said chute into a wagon or receptacle. The elevator-apron 57 is operated by means of a bevel-pinion 60 on shaft 18, said pinion 60 meshing with a similar pinion 61 on the shaft 62 of the roller 58, said shaft having secured thereto a sprocket-wheel 63, connected by a sprocket-chain 64 with a sprocket 65 on the end of a shaft passing through the chute 56,

said shaft having a roller thereon to support the apron 57 and prevent its sagging.

The operation of my invention is as follows: 70
As the stalks enter the gathering-prongs they are carried back to the rollers 30. The stalks are engaged by the rollers 30 when in an almost vertical position and are forced down and carried back by the rotation of the rollers toward each other and the flanges thereon and the ears snapped off. When the stalks reach the rear end of the rollers, the part still projecting above is cut off by the reciprocating cutter 42. The unhusked ears of corn 80 will pass to the husking-rollers 47, husked, and conveyed by the spiral grooves and ridges on said rollers to the lower end of the elevator-chute, which elevator carries them out of the machine. 85

It will be obvious from the foregoing that the machine as a whole is simple in construction, of comparatively light draft, owing to the fact that the stalks are not handled, and that the spiral formation of the rollers serve to carry the corn to the place desired with less friction than would result if chains or conveyers were used. 90

Having thus described my invention, what I claim is— 95

1. In a device of the class described, the combination with gathering-chains bearing fingers, of conductor-rolls and means for driving said chains and said rolls, of a reciprocating cutter mounted at the rear end of said rolls and located to automatically sever the cornstalks caught between the said rolls, a crank-shaft, a pitman connecting said crank-shaft and said cutter, and means for operating said crank-shaft, substantially as described. 100 105

2. In a device of the class described, the combination with conductor-rolls, of gathering-chains bearing fingers and located to catch the cornstalks and bring them within reach of said conducting-rolls, means for driving said gathering-chains and said rolls, a reciprocating cutter located at the rear of said rolls and constructed to sever the stalks held by said conducting-rolls, means for automatically reciprocating said cutter, husking-rolls mounted parallel to said conducting-rolls and constructed to husk the corn as it passes from the conducting-rolls, substantially as described. 110 115

3. In a device of the class described, the combination with conductor-rolls and means for driving them, of a reciprocating cutter mounted at the rear end of said rolls and located to sever the stalks engaged by said rolls, a crank-shaft, a pitman connecting said crank-shaft and said cutter, and means for driving said crank-shaft, substantially as described. 120 125

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HARRY L. STEEL.

Witnesses:

JOSEPH G. ROSS,
J. F. MARKS.