

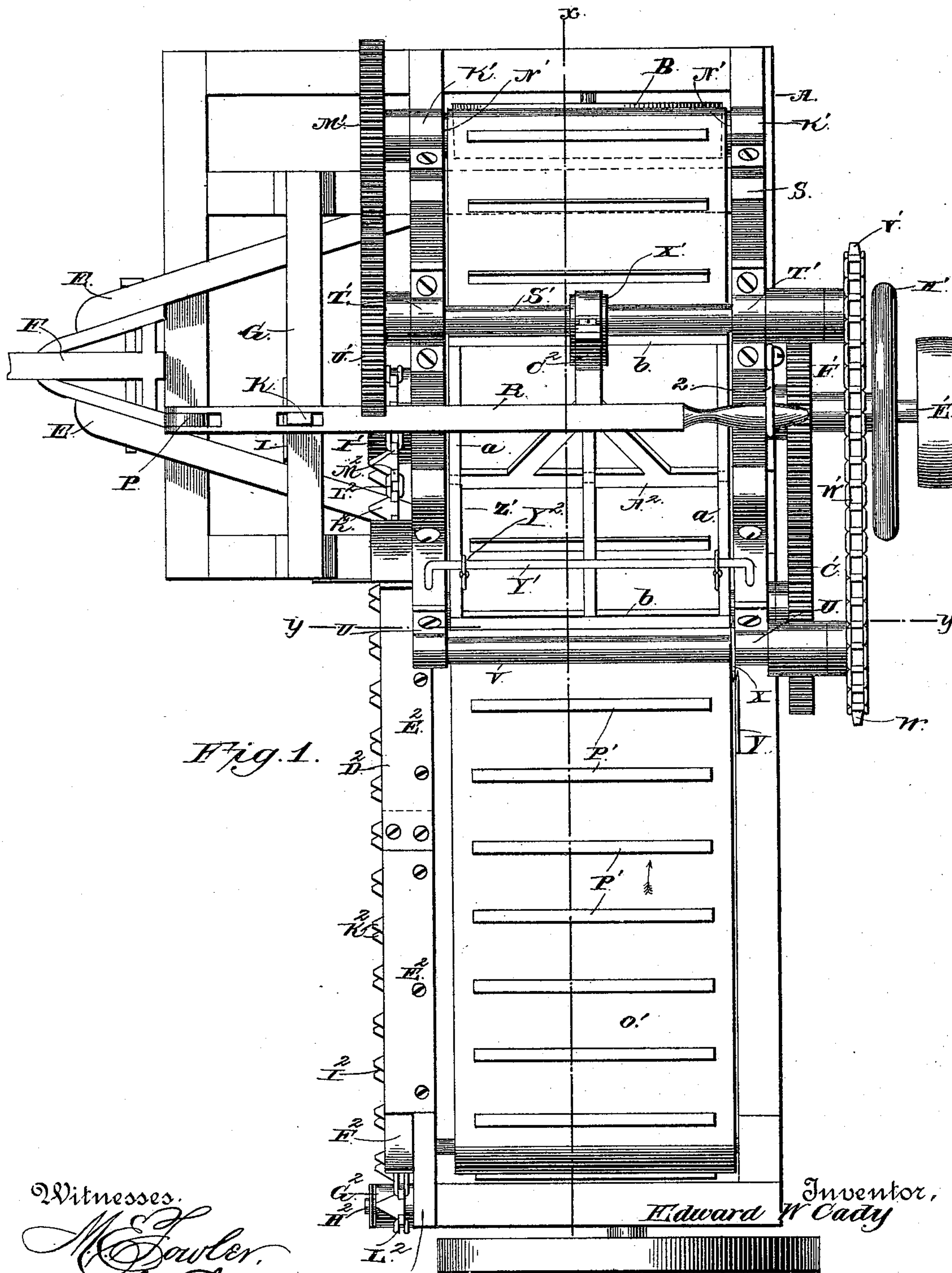
(No Model.)

4 Sheets—Sheet 1.

E. W. CADY.
CORN HARVESTER.

No. 396,538.

Patented Jan. 22, 1889.



Witnesses.

M. S. Fowler.
E. J. Siggers.

Inventor,

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C. A. Howard & Co.

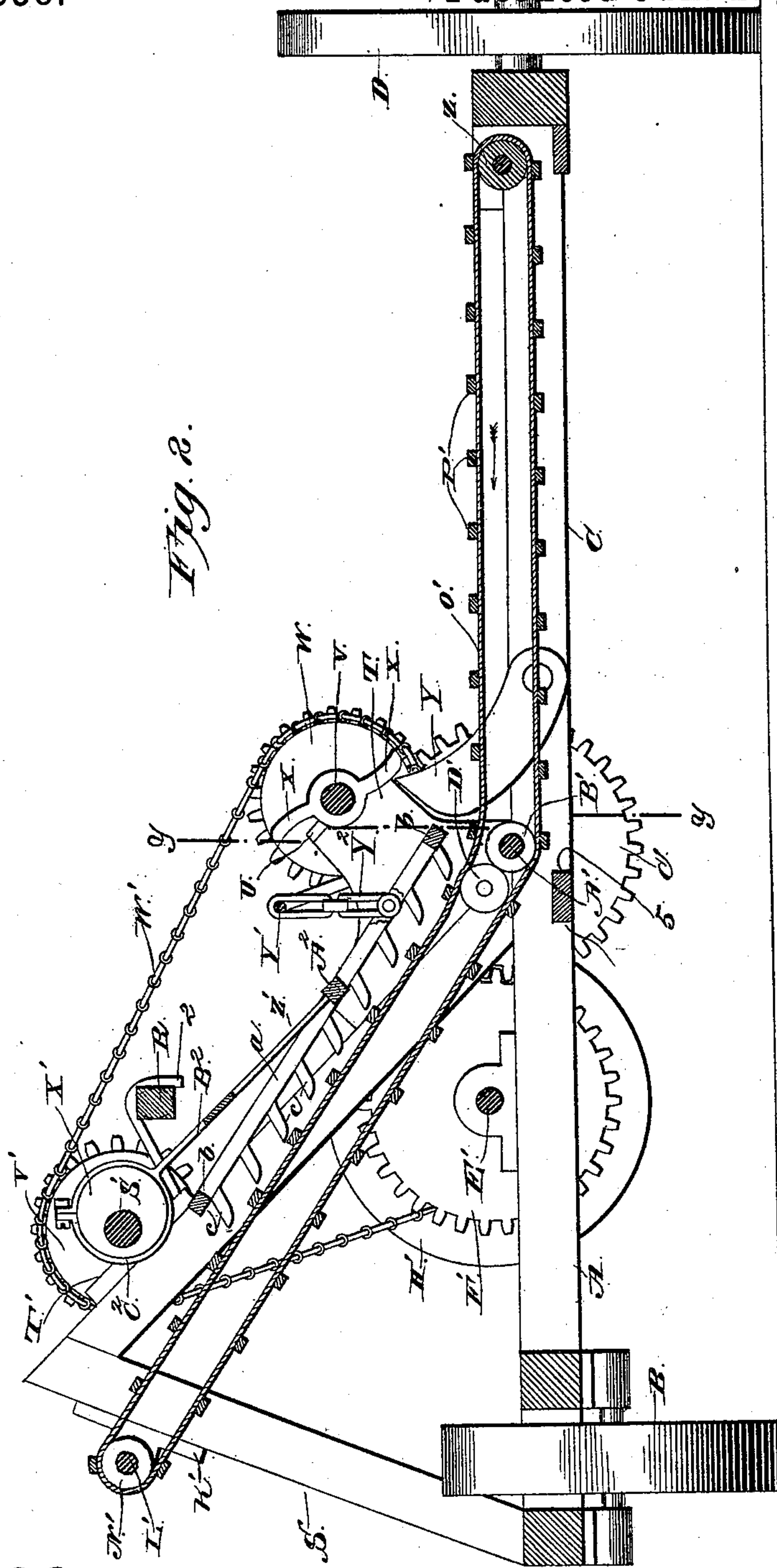
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4 Sheets—Sheet 3.

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Fig. 3.

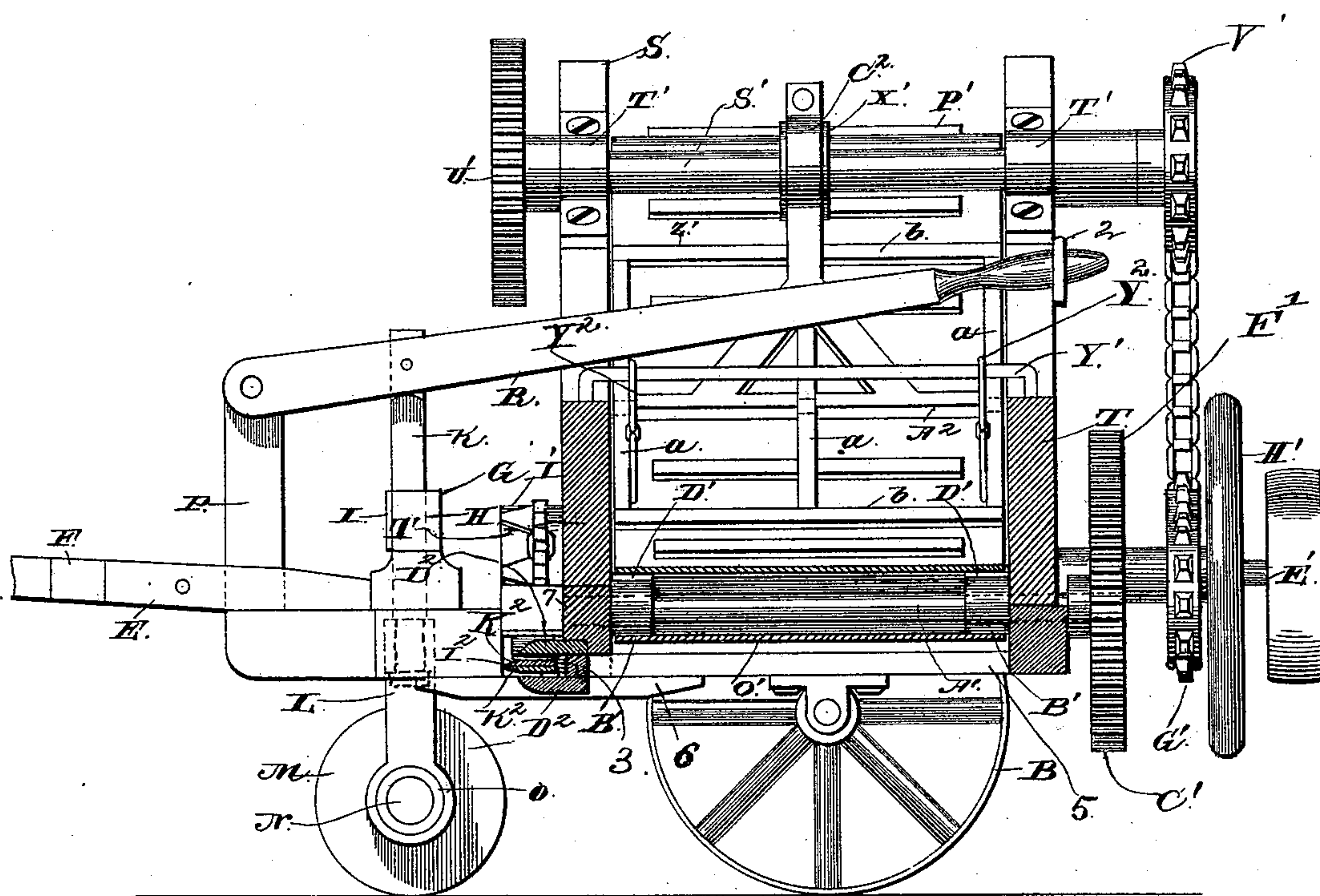
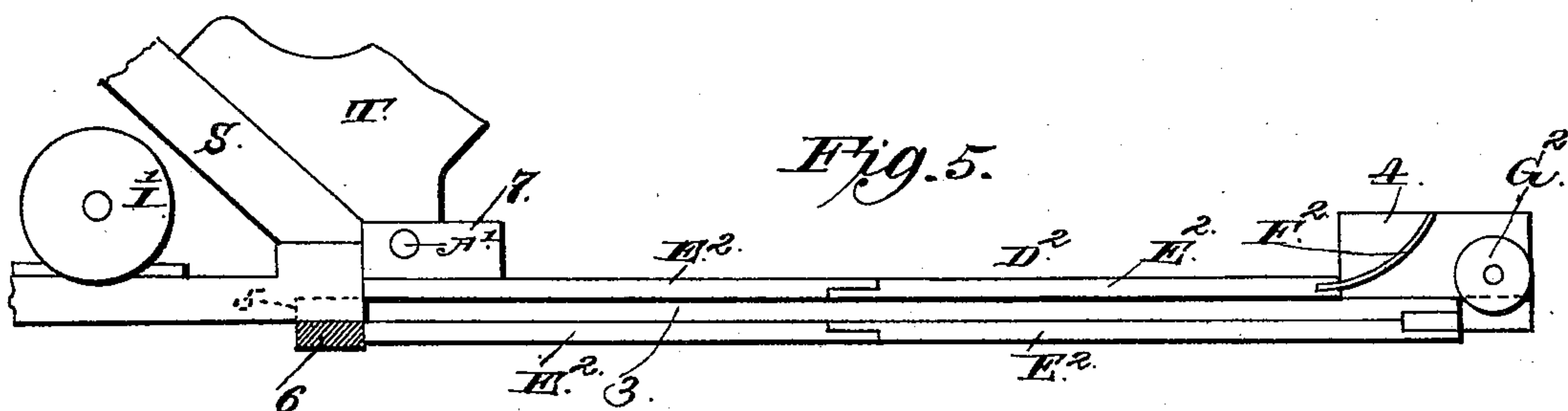


Fig. 5.



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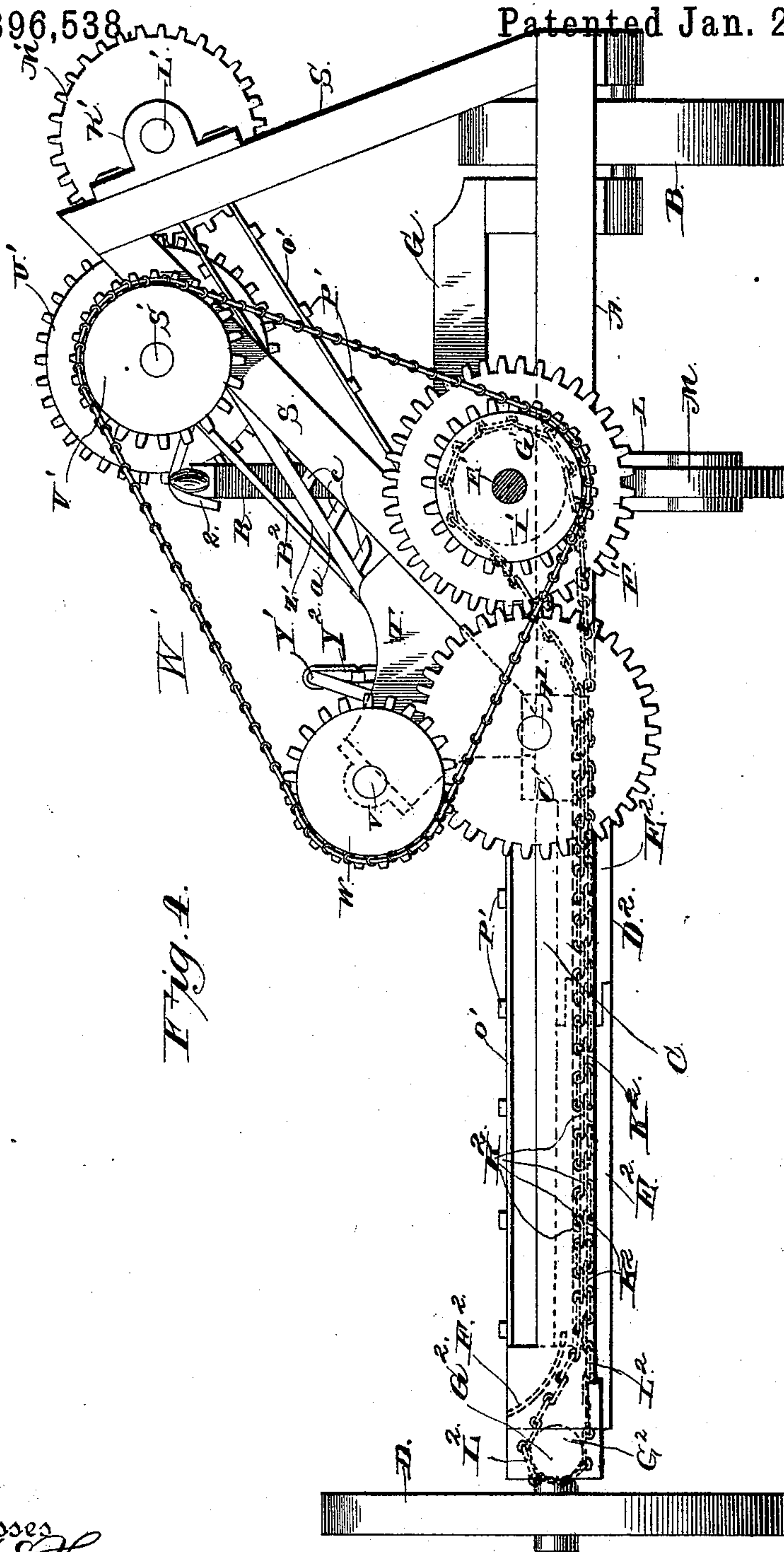
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4 Sheets—Sheet 4.

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UNITED STATES PATENT OFFICE.

EDWARD W. CADY, OF ROCKWELL, IOWA.

CORN-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 396,538, dated January 22, 1889.

Application filed April 12, 1888. Serial No. 270,389. (No model.)

To all whom it may concern:

Be it known that I, EDWARD W. CADY, a citizen of the United States, residing at Rockwell, in the county of Cerro Gordo and State of Iowa, have invented a new and useful Improvement in Corn-Harvesters, of which the following is a specification.

My invention relates to an improvement in corn-harvesters; and it consists in the peculiar construction and combination of devices that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is a top plan view of a corn-harvester embodying my improvement. Fig. 2 is a vertical longitudinal sectional view taken on the line $x x$ of Fig. 1. Fig. 3 is a vertical transverse sectional view of the same on the line $y y$. Fig. 4 is a rear elevation with the fly-wheel and rear pulley removed. Fig. 5 is a front elevation of the platform-frame and adjacent parts with the cutter removed.

A represents a main rectangular frame, in one side of which is journaled a supporting-wheel, B. From the opposite side of the frame A projects a platform-frame, C, to the outer end of which is journaled a grain-wheel, D, that is in line with wheel B.

E represents a pair of hounds, which project from the front end of the frame A, and between the said hounds is pivoted the rear end of a tongue, F. A bar, G, is arranged transversely on the frame A, near the front end thereof, and is provided at a suitable distance from its inner end with a vertical opening, H.

I represents a plate, which is bolted to the front side of the bar G, and serves to cover the front side of the recess or opening H.

K represents a vertically-movable bar, which is guided in the recess or opening H, and has its lower end swiveled to a frame, L, provided with a pair of depending arms having transverse openings in their lower ends.

M represents a supporting roller or wheel, which is provided on opposite sides with projecting trunnions or spindles N, that are journaled in collars or sleeves O, the latter being secured in the openings in the swiveled frame.

P represents a standard, which projects vertically from the front end of the frame A. To the upper end of this standard is pivoted

a lever, R, and the said lever is pivotally connected to the upper end of the bar K. By means of this lever the said bar may be moved vertically in the cross-bar G, so as to raise or lower the front of the frame, as will be readily understood. The rear end of this lever is engaged by a hook, 2, pivoted to the rear side of an inclined frame, S, which is erected on the main frame at the inner end of the platform-frame. This hook 2 holds the lever in its normal position, and when it is desired to raise or lower the caster-roller the hook is disengaged from the lever, as will be readily understood. The inner side of said frame S is arranged at an angle of about forty-five degrees, or any other suitable angle. At the lower and inner side of the said inclined frame is secured a pair of knees or standards, T, having bearings U on their upper sides, in which is journaled a shaft, V. To the rear end of the said shaft is secured a sprocket-wheel, W, and to the said shaft, just in advance of the rear bearing thereof, is secured a revolving cutter having a pair of curved radial blades, X.

Y represents a stationary cutter, which is secured to the rear side of the platform-frame, at the inner end thereof, and is arranged at such a relation to the revolving cutter that the blades or arms of the latter are adapted to move across the front side of the said stationary cutter and in close proximity thereto, so as to effect a shear cut between the opposing edges of the stationary and revolving cutters, as will be readily understood.

Z represents a roller, which is journaled transversely in the outer end of the platform-frame.

A' represents a shaft, which is journaled transversely at the inner end of the platform-frame and is provided near its ends, on the inner sides of the knees or standards T, with friction-rollers B', which are made of rubber or other suitable material. The rear end of the said shaft is journaled between the meeting edges of the rear sill of the platform-frame and the knees, and projects beyond the rear side of the frame and is provided with a spur-wheel, C', while its front end is journaled in a bearing, 7, secured to the front bar or sill, 3, of the said frame.

D' represents a pair of friction-rollers,

which are journaled on the interior surfaces of the inclined frame, and are arranged in planes which are somewhat higher than those of the rollers B', and said rollers D' are in frictional contact with said rollers B', so that when the latter are rotated they impart rotary motion to the rollers D', as will be readily understood.

A shaft, E', is journaled in suitable bearings on the frame A below the inner side of the inclined frame. To the said shaft is secured a spur-wheel, F', that meshes with the wheel C', and at a suitable distance in rear of the wheel F' is a sprocket-wheel, G', and on the same shaft is a fly-wheel, H'. To the front end of the said shaft E' is keyed a pulley, I'.

K' represents a pair of bearings, which are secured on the outer side of the inclined frame, at the upper end thereof, and in the said bearings is journaled a transverse shaft, L', which has a spur-wheel, M', at its front end.

N' represents a pair of friction-rollers, which are secured to the shaft L', near the ends thereof.

O' represents an endless belt, which passes over the roller Z, and over the rollers on the shaft L', the lower ply passing below the rollers on the shaft A' and the upper ply above the rollers D', the said endless belt being thereby arranged throughout the entire length of the platform-frame and of the inclined frame and performing the functions both of the platform-conveyer and elevating-conveyer ordinarily employed in harvesting-machines. The said endless belt is provided on its exterior surface at suitable regular distances apart with transverse slats or cleats P'.

S' represents a transverse shaft, which is journaled in bearings T' on the upper side of the inclined frame. To the front end of the said shaft is secured a spur-wheel, U', which meshes with the wheel M', and to the rear end of said shaft is secured a sprocket-wheel, V'.

W' represents an endless sprocket-chain, which connects the wheels W, G', and V', and thereby imparts the rotary motion of the shaft E' to the cutter-shaft V and the shaft S'. To the center of the latter shaft is secured an eccentric, X'.

Y' represents a cross-bar, which is arranged transversely over the knees or standards T'.

Z' represents an overhung walking-rake, the construction of which is as follows: a represents three longitudinal bars, which are arranged parallel and at suitable distances from each other and have their extremities connected by cross-bars b. The said bars a are provided on their under sides with projecting engaging-teeth c.

A² represents a rock-shaft, which is journaled transversely on the upper side of the walking-rake, near the center of the same. From the said rock-shaft projects a pitman or arm, B², which is connected to the eccentric X' by means of an eccentric-strap, C².

D² represents a pair of longitudinal plates, which are arranged on the front side of the platform-frame. The said plates are arranged one above the other and at a suitable distance apart, and each of the said plates is made in a series of detachable sections, E², which are lap-jointed and are bolted to the upper and lower sides of the front bar, 3, of the platform-frame, and the front journal-box, 4, of the roller Z is secured on the upper side of the said bar, at the outer end of the same.

5 designates a bar forming a part of the inner side bar of the main frame and having its rear end secured to the rear sill of the platform-frame. The front end of this bar 5 is connected with the front portion of the side bar by a short bar, 6. At the ends of the upper plates, D², are curved guides F².

G² represents a pulley or roller, which is journaled on a projecting spindle, H², arranged at the front outer corner of the platform-frame.

I² represents an endless cutter, which comprises a series of cutter-plates, K², connected by means of links L², said plates and said links being arranged alternately, and the said plates being provided at the rear corners with ears M², which are bent over the ends of the links, and thereby serve to flexibly connect the cutter-plates thereto. The said endless cutter passes over the pulley or roller G² and the pulley I' on shaft E', thereby serving to connect the pulleys, and the said endless cutter is arranged between the said upper and lower plates and has its opposing sides in contact with each other, as shown.

The operation of my invention is as follows: The shaft E' is rotated by being geared or connected in any suitable manner to the driving-shaft of the apparatus. (Not shown.) The rotary motion of the shaft E' is communicated to the shaft A' and causes the rollers B' and D' to impart motion to the endless carrier and elevator belt and move the same in the direction indicated by the arrows in Figs. 1 and 2. Rotary motion is also communicated to the cutter-shaft V and to the shaft S', as before stated. As the said shaft S' rotates, it imparts motion to the eccentric and causes the latter to impart reciprocating motion to the walking-rake. The lower end of the said rake is connected to the cross-bar Y' by means of the links Y², which prevent the lower end of the rake falling against the carrier-belt, so as to injure the same or retard its movement. The teeth on the lower side of the rake at the end of each downward stroke of the rake engage one of the transverse slats or cleats P' of the carrier-belt and move upward there-with on the ensuing upstroke of the rake, the latter serving thereby to prevent the corn from slipping down on the inclined upper side of the endless carrier-belt. The shaft E' also communicates motion to the endless cutter, as will be readily understood, thereby causing the cutting-plates on the lower and upper sides of the cutter to move simultaneously in op-

posite directions, and thereby cut the standing cornstalks which are in the path of the machine. As the said stalks are cut, they fall rearward, by reason of the forward motion of the machine, onto the endless belt or apron, and as the latter moves it serves to carry the stalks with it and deliver them upon a suitable binding or bundling table. (Not shown.)

The revolving cutter and the stationary cutter on the rear side of the platform-frame serve to cut off the rearward projecting ends or tassels of the cornstalks, so as to prevent the same from binding in the machine and reduce them to a sufficient length to enable them to be carried upward by the inclined portion of the carrier-belt.

The roller or wheel M in the swiveled frame serves to support the front of the machine, and thereby relieve the necks of the draft-team from the strain, and by reason of the tongue being pivoted to the hounds in front of the machine this object is furthered. The lever R, which is connected to the vertically-movable bar or rod K, serves to raise and lower the said bar or rod to the desired position, so as to raise or lower the front of the harvesting-machine, as hereinbefore stated.

Having thus described my invention, I claim—

1. The combination of the main frame, the platform-frame, the inclined frame mounted on the main frame, the endless carrier-belt supported by said frames, the rake arranged over the belt and provided with downwardly-

projecting teeth, the shaft S', journaled in the inclined frame and above the belt, the eccentric on said shaft, the transverse rock-shaft in the rake, and the pitman connecting said rock-shaft and the eccentric, as set forth.

2. The combination of the main frame, the platform-frame, the inclined frame mounted on the main frame, the cross-bar Y' thereon, the endless belt supported by said frames and passing under the cross-bar, the shaft S' above the belt, the eccentric on said shaft, the rake arranged over the belt, the pitman extending between the rake and the eccentric, and the links depending from the cross-bar Y' and connected to the rake, as set forth.

3. The combination of the main frame, the platform-frame, the inclined frame mounted on the platform-frame, the endless carrier-belt supported by said frames, the transverse shaft V, mounted on said inclined frame and extending over the belt, the radial vertical cutters secured on said shaft, the stationary cutter secured to the inclined frame adjacent to the radial cutters and shearing against the same, and the rake supported by the inclined frame over the belt, as specified.

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

EDWARD W. CADY.

Witnesses:

C. E. McEWEN,
W. L. McEWEN.