

No. 721,058.

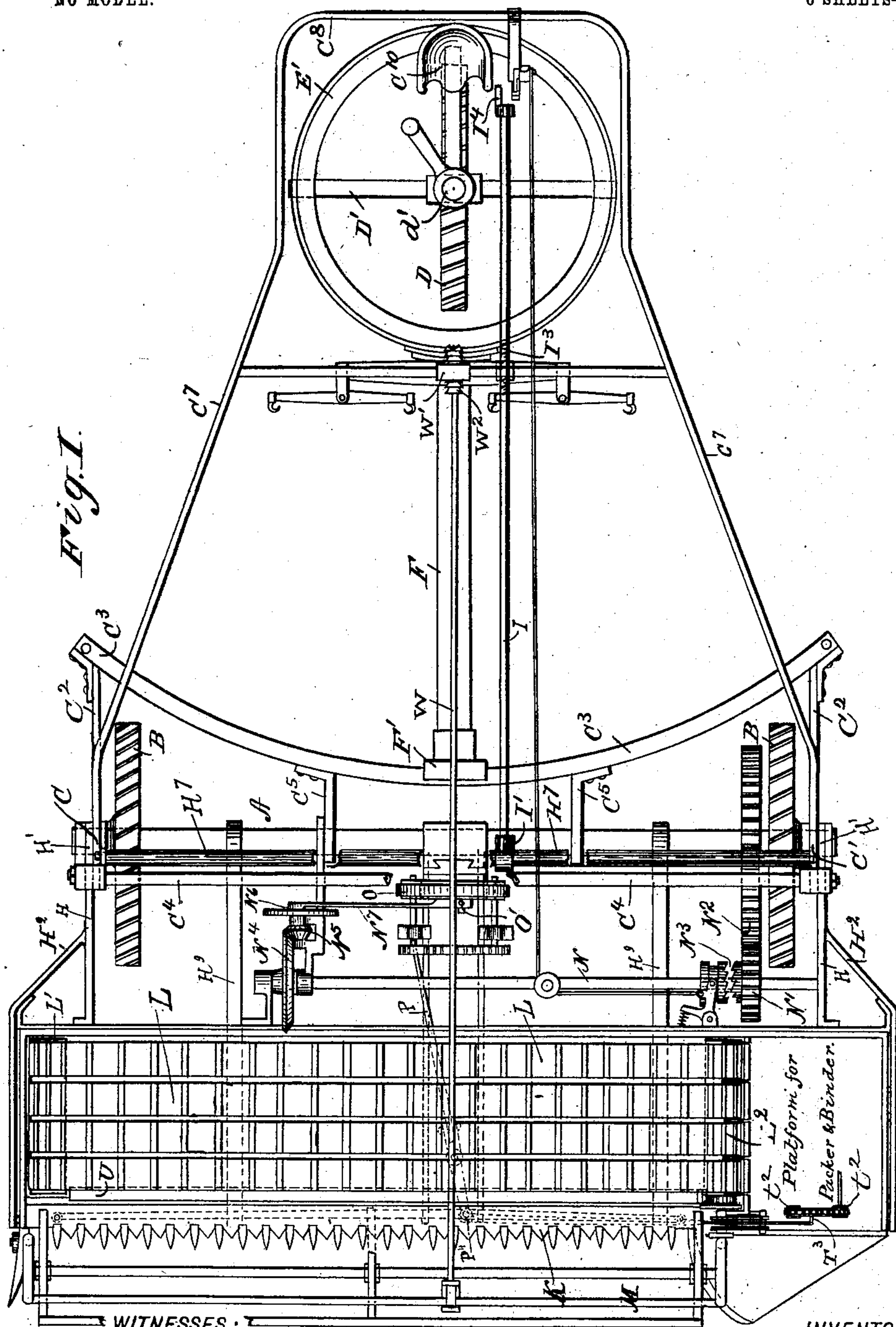
PATENTED FEB. 17, 1903.

E. A. MAINGUET.
HARVESTER.

APPLICATION FILED OCT. 8, 1901.

NO MODEL.

6 SHEETS—SHEET 1.



WITNESSES:
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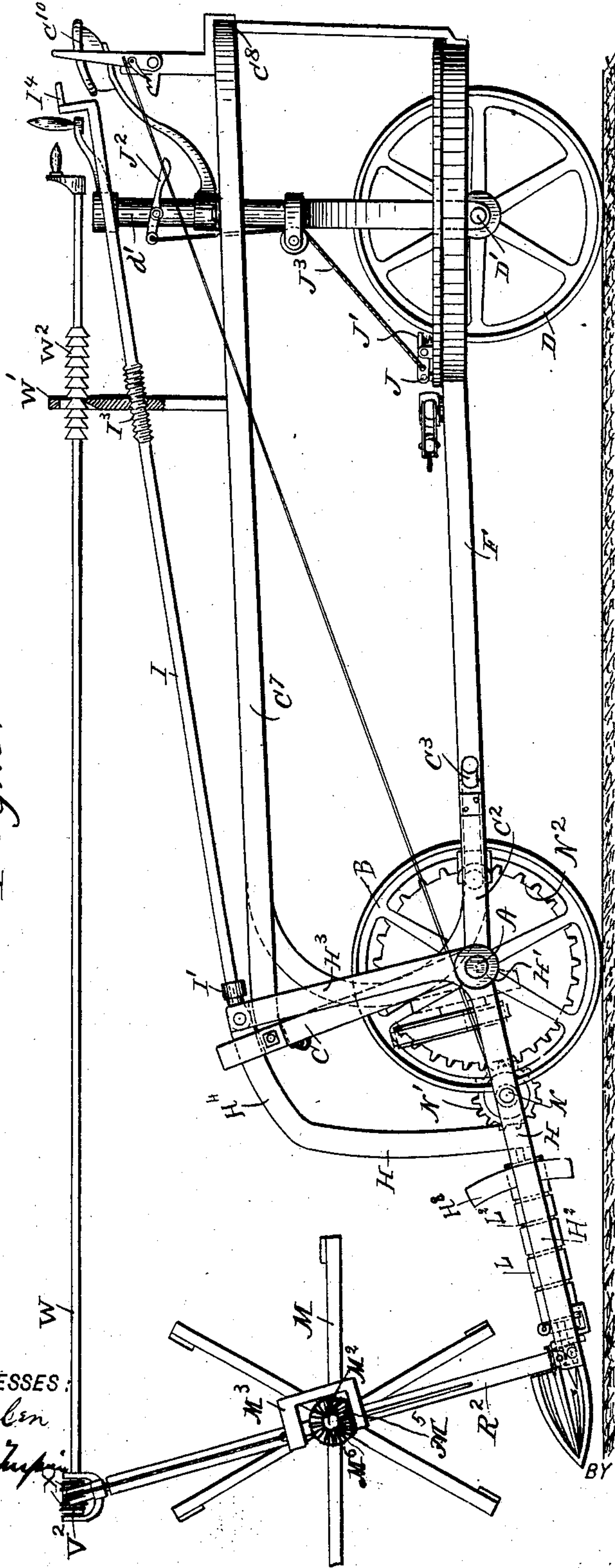
HARVESTER.

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6 SHEETS—SHEET 2.

Fig. 2.



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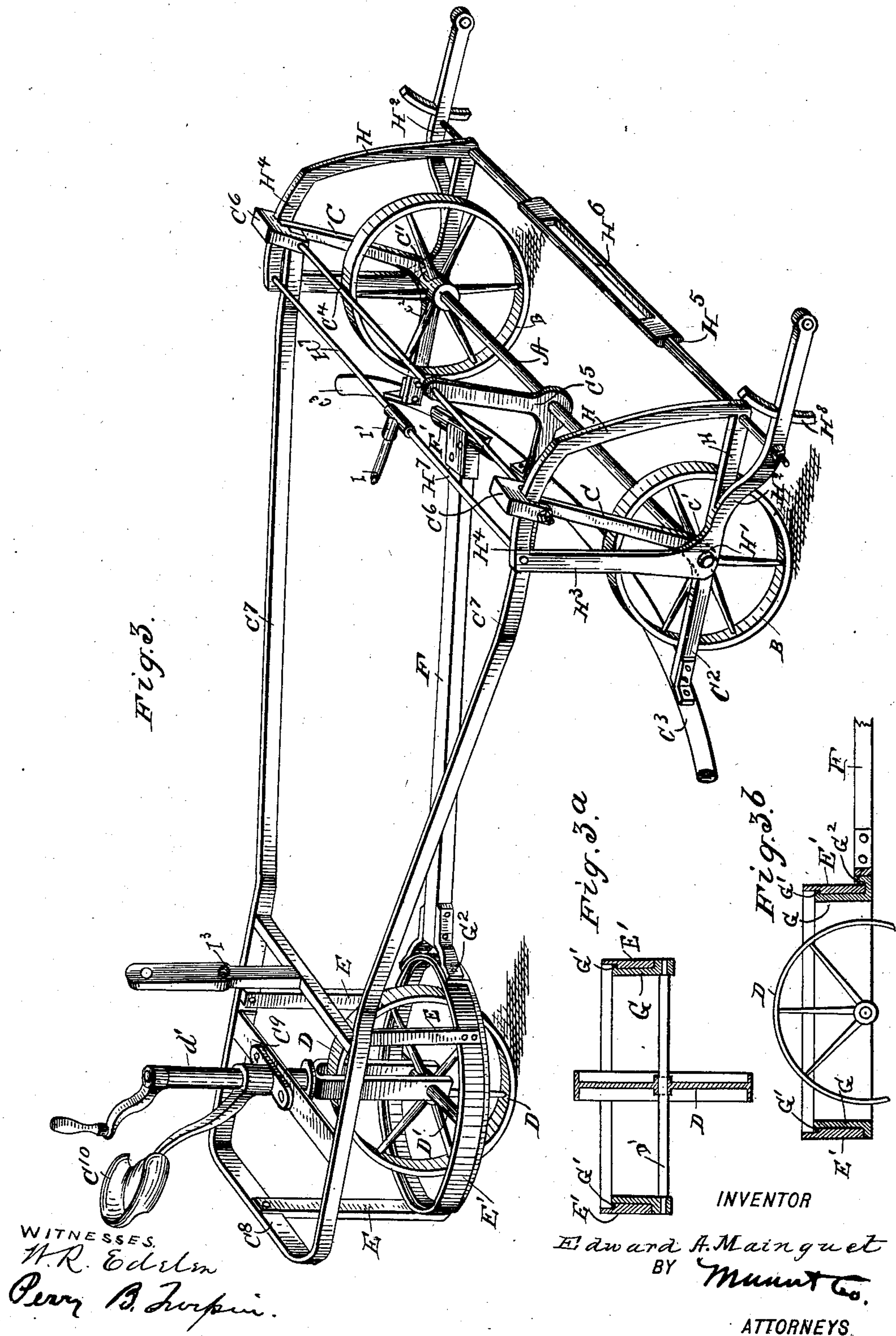
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6 SHEETS—SHEET 3.



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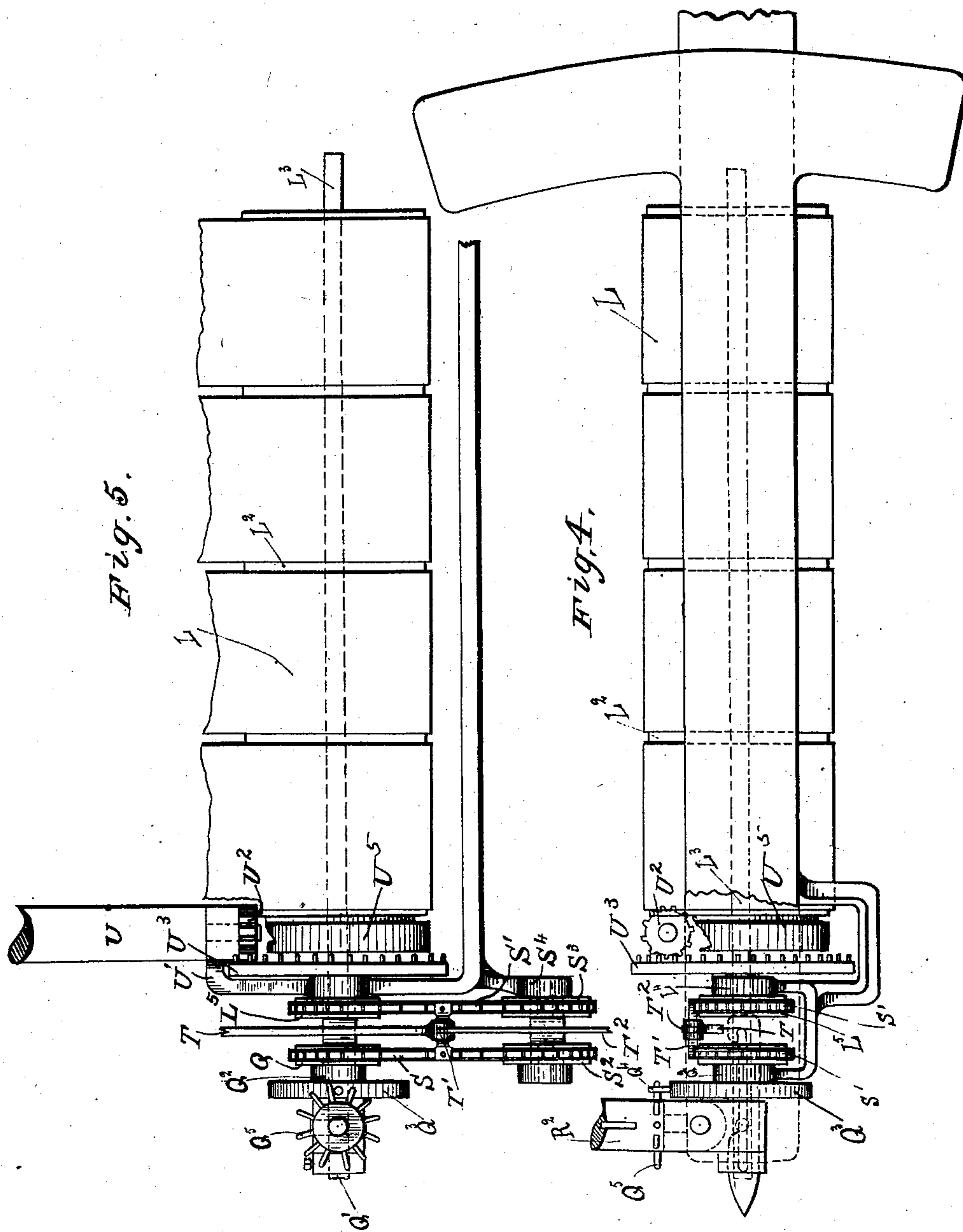
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6 SHEETS—SHEET 4.



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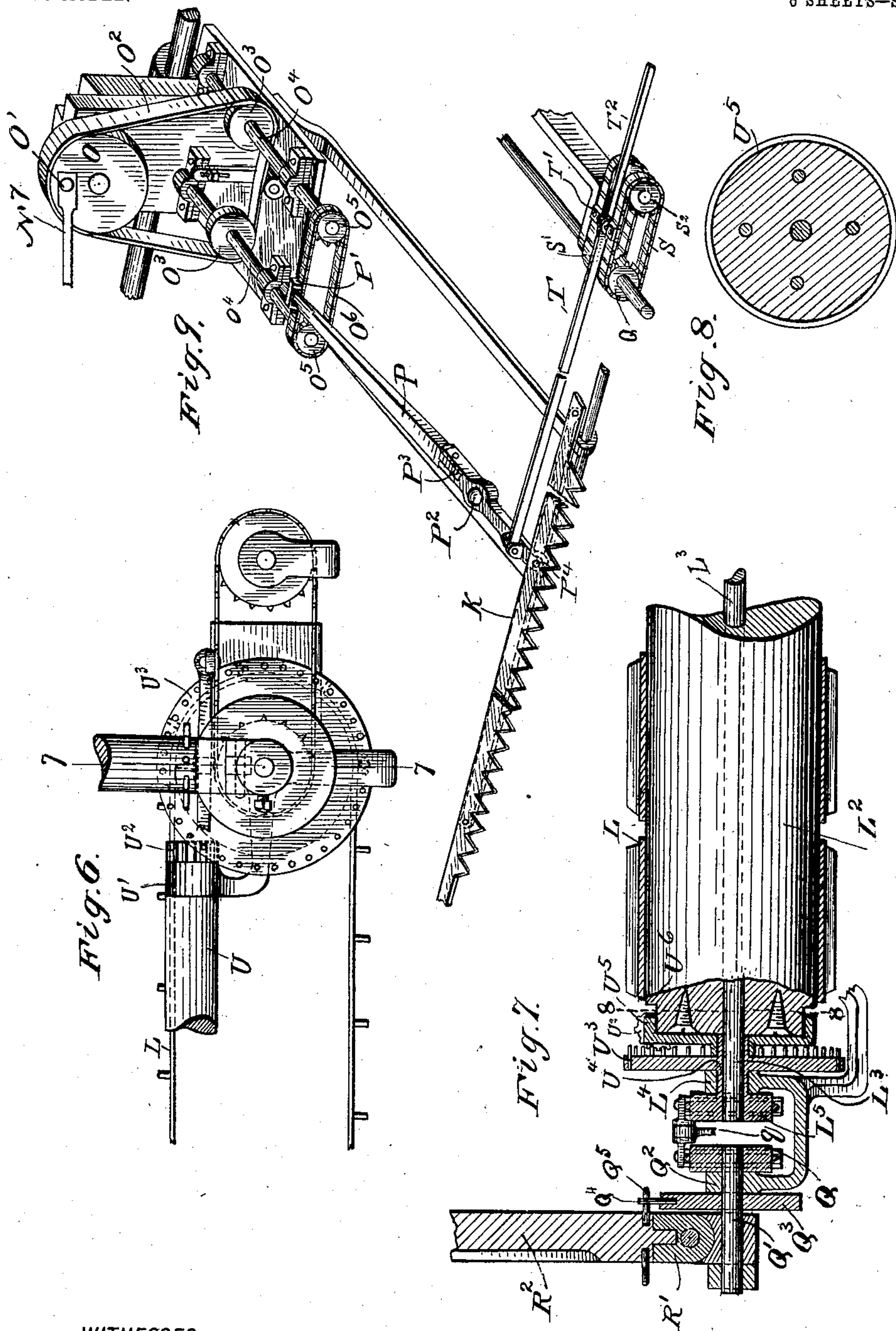
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6 SHEETS—SHEET 5.



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6 SHEETS—SHEET 6.

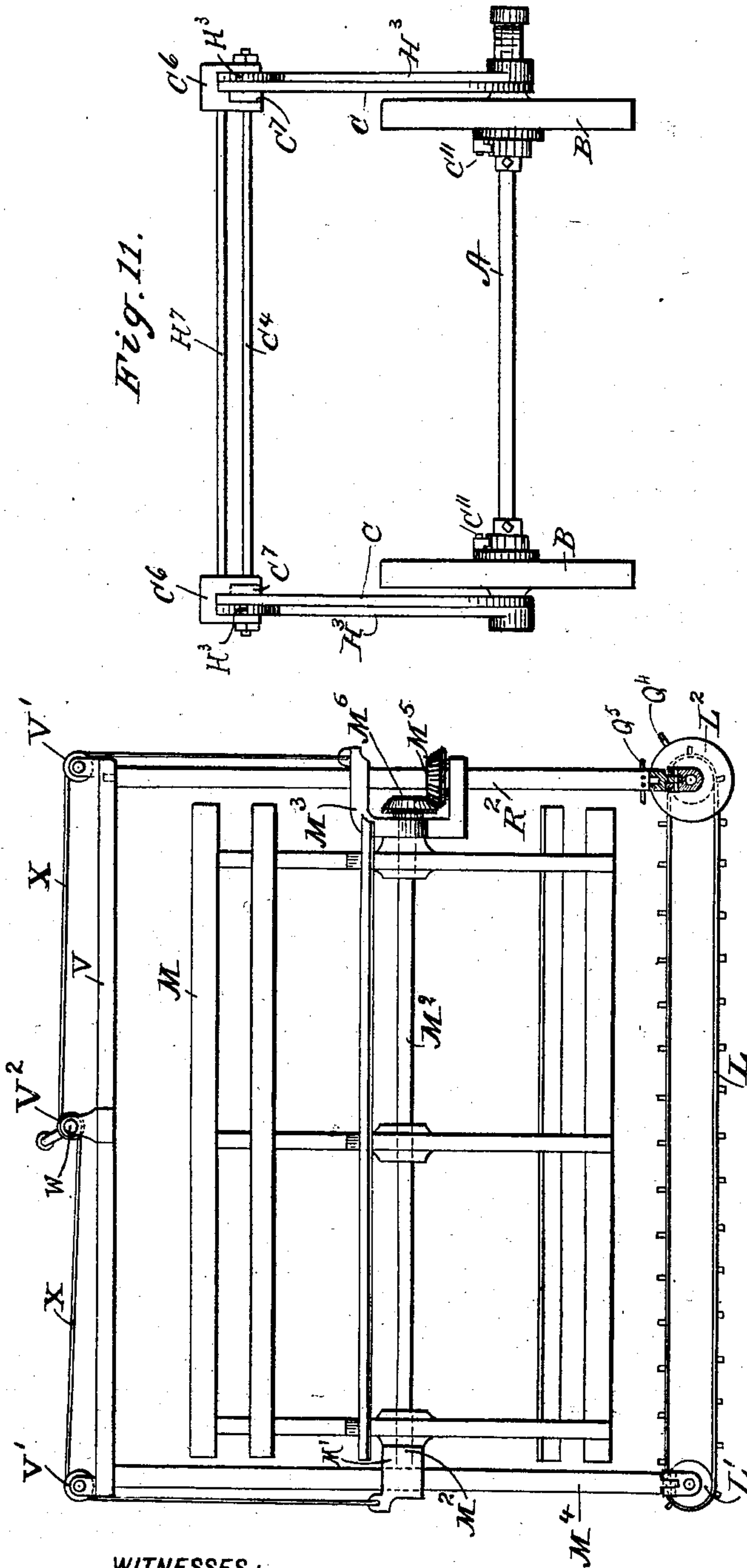


Fig. 10.

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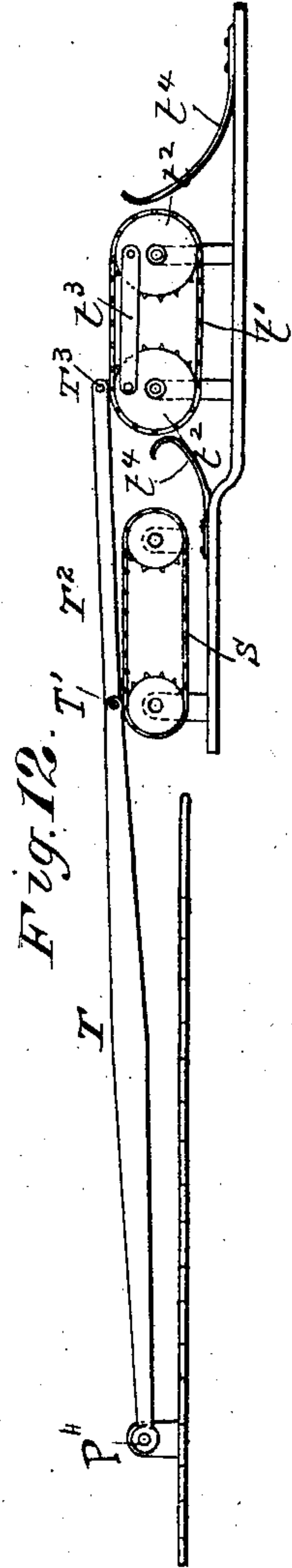


Fig. 12.

UNITED STATES PATENT OFFICE.

EDWARD A. MAINGUET, OF EVANGELINE, LOUISIANA.

HARVESTER.

SPECIFICATION forming part of Letters Patent No. 721,058, dated February 17, 1903.

Application filed October 8, 1901. Serial No. 77,989. (No model.)

To all whom it may concern:

Be it known that I, EDWARD A. MAINGUET, a citizen of the United States, residing at Evangeline, in the parish of Acadia and State of Louisiana, have made certain new and useful Improvements in Harvesters, of which the following is a specification.

My invention is an improvement in harvesters, and has for its objects, among others, to provide a novel construction of framing whereby the team may operate in rear of the cutting apparatus and to provide simple means for raising and lowering the cutting and binding apparatus; and the invention consists in certain novel constructions and combinations of parts, as will be hereinafter described and claimed.

In the drawings, Figure 1 is a top plan view, and Fig. 2 is a side elevation, of a harvester embodying my invention. Fig. 3 is a detail perspective view illustrating the main framing in connection with the front and rear wheels. Figs. 3^a and 3^b are detail sectional views of the turn-table. Fig. 4 is a detail side view of the parts shown in Fig. 5, and Fig. 5 is a detail top plan view of a portion of the carrier mechanism and illustrating the means for transmitting the motion to the reel and to the front roller for tipping the grain onto the carrier. Fig. 6 is a detail front elevation of the construction shown in Figs. 4 and 5. Fig. 7 is a detail vertical section on about line 7 7 of Fig. 6. Fig. 8 is a detail cross-section on about line 8 8 of Fig. 7. Fig. 9 is a detail perspective view illustrating the means for operating the cutter-bar and some of the parts connected therewith. Fig. 10 is a detail front elevation, part in section, showing the means for supporting, operating, and adjusting the reel. Fig. 11 is a detail front elevation of the main frame, its front wheels, &c.; and Fig. 12 is a detail view showing the means for transmitting direct motion to the packing and binding mechanism.

In supporting the cutting, carrying, reeling, packing, binding, and other portions of my device I prefer to employ a supplemental tilting frame, carried by the main frame and arranged to be tilted on its connection therewith to adjust the said devices up or down, as may be desired. This construction is best

shown in Figs. 1, 2, and 3 and will now be described.

The axle A, operated by the main drive-wheels B, provided at C' with pawls and ratchets, (see Fig. 11,) supports also the main frame, which includes the front uprights C, which are provided at C' with bearings for the axle or shaft A and also provided with rearwardly-extending arms C², projecting to the rear from the bearings C' and carrying the transversely-extending arc bar C³, which is preferably curved in cross-section and is secured at its front side to the arms C², so the said arc bar can be embraced by the slide on the front end of the perch or pole presently described.

Two braces C⁵, as shown in Fig. 1, consist of angular bars, located between the uprights C and connected with the cross-rod C⁴, extend thence to the axle A, and thence rearwardly to the arc bar and operate to give stability and strength to the whole construction. Instead of using two braces, as shown in Fig. 1, I may in some instances employ a single central brace, as shown in Fig. 3.

The upper ends of the uprights C are formed with heads having laterally-extending portions C⁶, which are notched in their under sides to receive the tilting frames, hereinafter described, and also to receive the top bars C⁷ of the main back frame. These bars C⁷ may be bent from a single piece of metal, as shown in Fig. 3, to provide the rear top bar C⁸ and are connected in advance of the bar C⁸ by a cross-bar C⁹, which supports the driver's seat C¹⁰, and also has a bearing for the shaft d' of the frame of the steering-wheel D, said shaft d' having a crank-handle by which it may be turned to swing the perch-pole from side to side. Hanger-bars E depend from the bars C⁷ and C⁸ and connect at their lower ends with a circle E', which forms a track for the turn-table, which carries the steering-wheel D and the tongue or pole F. The turn-table includes a ring G, which turns within the circle E', is shouldered at G' to overlies a portion of the circle E', and is provided with a portion G², which turns up outside the lower edge of the circle E' and to which is connected the rear end of the pole F, as shown in Figs. 3, 3^a, and 3^b.

The steering-wheel D has its axle or shaft D' journaled in the ring G and has the shaft of its fork-frame journaled in the cross-bar C⁹ of the main frame. By this means the perch-pole may be shifted from side to side along the arc bar C³ by the operation of the shaft d' of the steering-wheel, or the said perch-pole may be also shifted by the movements of the team from side to side under the control of the operator. At its front end the pole F is provided with a slide F', which adjusts along the arc bar C³ and partially embraces the said arc bar from the rear side thereof and so operates to hold the perch-pole to the arc bar, as desired. The tilting frame H is pivoted at H' upon the axle A and has the forwardly-projecting bars H², the rear upright bars H³, and the arc bars H⁴, which slide within the guide-slots of the heads C⁶ of the front bars of the main frame. The opposite bars H² are connected by a cross-bar H⁵, which is slotted at H⁶ at its center for the passage of the lever, which operates the whole apparatus, as presently described. As shown in Fig. 1, the bars H² and H³ support the whole mechanism of the harvester, and in order to provide for adjusting such devices up or down to set them at different heights I furnish means for rocking the tilting frame to raise and lower the cutting, carrying, reeling, packing, binding, and other devices. To this end I provide the shaft I, connected, preferably, by swiveling at I' at its front end to a cross-bar H⁷, which connects the upper rear ends of the arc bars H⁴ of the tilting frame. The screw-thread of the shaft I is threaded at I³ in a bearing mounted on the main frame and has its rear end provided with a crank-handle I⁴, by which it may be turned. By this construction it will be noticed the operator can raise and lower the tilting frame by the proper operation of the screw I³, which screw will also operate to hold the tilting frame in any position to which it may be adjusted.

In the practical use of my invention the horses are hitched on opposite sides of the perch-pole and in connection with the ring or circle of the main frame, as will be understood from Figs. 1, 2, and 3; also latch J, Fig. 2, is arranged to lock the turn-table in position to hold the perch-pole straight or in central position, as shown in Fig. 1, the latch J being pressed into locking position by the spring J' and a foot-lever J² being connected with the latch by means of a rope J³, so it can be operated to release the latch whenever desired.

The cutter-bar K, the carrier L, and the reel M, binder, and coacting parts are supported by the forwardly-extending portions of the tilting frame, and in transmitting motion to said parts I employ a counter-shaft N, having a pinion N' meshed with a gear N² on the shaft A. This pinion N' is clutched at N³ to the shaft N, the clutch being under the control of the operator, and the shaft N is provided with a gear N⁴, meshed with a pin-

ion N⁵ in connection with a crank N⁶, which is connected by a pitman N⁷ with a crank O' on a pulley O, (see Fig. 9,) which pulley is connected by a belt O², which runs the pulleys O³ on shafts O⁴, which support sprocket-wheels O⁵, around which is passed the chain O⁶, to which is connected at P' the rear end of a lever P, which lever being pivoted at P², suitably jointed at P³ to obviate the motion up and down, and conveniently connected at its front end P⁴ with the cutter-bar K to reciprocate the said bar and by this special construction to run across two or more fingers by a long stroke of the cutter-bar, as will be understood from Figs. 1 and 9 of the drawings.

As shown in Fig. 9, the front end P⁴ of the lever P is suitably constructed to receive the pitmen running the cutter-bars, being also connected near the same point P⁴ (see Figs. 9 and 12) with the long pitman T, running on a straight line the chains S and S', it being understood that the portions T and T² of said pitman may be jointed at T', which special device will be hereinafter described. It will thus be noted that the cutter-bar is operated by means of the axle from the supporting and traction wheels of the machine, and, as will be described, the carrier, the grain-tipping roller, and the reel are operated by connections with a pitman attached at the end of the lever P.

The carrier L is preferably composed of a series of narrow belts suitably slatted and is supported on rollers L' and L², Figs. 4, 5, 6, and 7. The roller L² is fixed to an axle or shaft L³, journaled at L⁴ in a suitable bearing. To this shaft L³ is fixed the sprocket-wheel L⁵; so is the toothed wheel U³ and cap or thimble U⁵. A similar sprocket-wheel Q is arranged concentrically with the sprocket-wheel L⁵ and spaced apart therefrom, as shown at q. The same wheel Q has its shaft Q' journaled in a bearing Q² and extended to form a support for the step R', in which the drive-shaft R² of the reel is journaled at its lower end, as best shown in Fig. 7. To the shaft Q' is fixed a pin-gear Q³, provided with one pin Q⁴, which meshes with pins Q⁵ of the shaft R². This shaft R² gives motion to the reel M, receiving its own motion from the gear Q⁵ and pin Q⁴, as will be more fully described hereinafter.

The sprocket-wheels Q and L⁵ are meshed by chains S S', which are spaced apart and are carried by the wheels Q and L⁵ and by similar wheels S² and S³, arranged in alignment with the wheels Q and L⁵, similarly spaced apart and supported in a bearing frame, as shown in Fig. 5. A pitman T, which is suitably connected at one end with the front end of the lever P, (see Figs. 9 and 12,) is secured at its other end to a cross-head T', which is secured to the chains S S' and extends between the said chains, as shown in Figs. 4, 5, 7, 9, and 12, so the reciprocation of the lever P can operate the chains S S', and so drive the sprocket-wheels Q and L⁵, as

will be understood from said figures. The sprocket-wheel Q, secured to the axle Q', turns at the same time the pin-gear Q³, which operates the axle R² of the reel. This cross-head T' also has connected with it one end of a pitman T², by which motion can be transmitted to the binding mechanism, which may be carried by the tilting frame on the platform to the left of the carrier I. (See Fig. 1.)

As the packing and binding mechanism form no part of the present invention, I have not thought it necessary to describe the same in detail hereinafter, giving only description of the mechanism of the sprocket-wheels t². (Shown in Figs. 1 and 12.)

The grain-tipping roller U is journaled in a bearing U' and extends along the front side of the carrier L, with its upper side a little above the level of the upper side of the carrier, and is designed in practice to turn rearwardly toward the carrier in order to tip the grain thereon. This roller U is provided with a pinion U², which is meshed by a toothed wheel U³ in connection with the roller L², so the sprocket-wheel L⁵ will impart movement to the roller L² and also to the roller U.

The reel M has its shaft M² journaled in bearings M' and M³, which are slidable vertically on the upright bar M⁴ and the shaft R², respectively, and the shaft M² is provided with a bevel-pinion M⁶, which meshes with a bevel-pinion M⁵, which is keyed to and slidable along the shaft R², the bearing-frame M³ operating to hold the pinions M⁶ and M⁵ properly in mesh. The upper ends of the bar M⁴ and shaft R² are connected by the top bar V, which supports two guide-pulleys V' and an intermediate drum V² on a shaft W.

Two cords X, connected reversely with the drum V², pass thence over the two pulleys V' and also are connected down with the two sliding bearings of the reel-shaft, so that by properly turning the drum V² by its shaft W the reel can be raised or lowered. (See Figs. 2 and 10.) The shaft W extends rearwardly from the reel through a bearing W', mounted on the main frame, and can be turned in said bearing and moved longitudinally therein as desired, being provided with circular ratchet-teeth at W² for holding it in any adjustment longitudinally.

As the parts M⁴ and R² of the reel-frame are pivotally supported at their lower ends, it is manifest that by the described construction I am able to tilt the reel forwardly or to the rear and raise and lower the reel, as may be desired.

In the operation of the invention it will be seen that the carrier and other apparatus may be raised and lowered to any desired degree, that the reel may be raised and lowered with the carrier and cutting apparatus, and can also be raised and lowered and adjusted back and forth independently of the said parts.

I provide the main wheels B with pawls and ratchets acting on the axle A in the usual manner, so the moving parts of the machine

will not be operated when the machine is backed.

In transmitting motion to the binding mechanism it is preferred to employ the arrangement shown in Fig. 12, in which the pitman T communicates motion to the chains S S' and a connecting-pitman T² communicates motion by a cross-bar T³ (see Fig. 1) to a chain t', passed around two pulleys t². At the platform I secure two springs t⁴, which, operating on the pitman when close to the dead-center, will push the said pitman up and down as necessary, consequently facilitating the start and securing the same direction.

In operation to insure the movement of the parts in the proper direction in starting the machine motion in the proper direction may be imparted by hand to the reel or other moving part of the apparatus.

The cross-bar t³, connecting the two sprocket-wheels t², is designed to regulate the motion and relieve the strain of the chain when running around these wheels.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The improvement in harvesters herein described, comprising the main frame provided at its front end with upright portions and having at the lower ends of such portions bearings for the axle and rearwardly-projecting arms, and the transverse arc bar carried thereby, the tilting frame provided with forwardly-projecting portions, the carrying, cutting and reeling mechanism carried by the tilting frame, means connected with the tilting frame for tilting the same, the circle or ring carried by the main frame, the turntable operating in connection with said ring, the steering-wheel, and the perch-pole secured at its rear end to the turn-table and provided at its front end with a slide held to and movable along the arc bar, substantially as set forth.

2. In a harvester the combination of the main frame provided at its rear end with a turn-table and with a perch-pole connected with said turn-table and having at its front end a transverse arc bar, a tilting frame having a pivotal connection with the frame and the cutting, carrying and other mechanism mounted on the tilting frame, and means for tilting the said frame, substantially as set forth.

3. The combination in a harvester with the main frame, having the rear turn-table, the perch-pole connected therewith and transverse arc bar engaged by the swinging end of the perch-pole, of the tilting frame in advance of said transverse arc bar and having a rockable connection with the main frame, means for adjusting the tilting frame, and the carrier and cutting apparatus carried by the tilting frame, substantially as set forth.

4. In a harvester, the combination of the main frame having the top bars and provided

at the front end thereof with the depending bars, having at their upper ends, heads provided with guideways for the tilting frame, the guiding-wheel supported at the rear end
 5 of the main frame and the tilting frame having rockable connection with the main frame, and portions sliding in the guideways of the said depending bars, substantially as set forth.

10 5. In a harvester the combination with the main frame provided at its rear end with a turn-table and with a supporting-wheel, and at its front end with the axle and supporting-wheels and with the transversely-extending
 15 arc bar, the perch-pole secured at its rear end to the turn-table and provided at its front end with a slide engaged with and movable along the arc bar, and the frame carried at the front
 20 end of the main frame for supporting the carrier and other mechanism, substantially as set forth.

6. The combination of the main frame provided at its front end with a transverse arc bar and with a frame for supporting the cutting
 25 carrying and other mechanism, and at its rear end with a circle or ring, the turn-table carried by said ring, the steering-wheel turning in the main frame and having its axle connected with the turn-table and the perch-pole se-
 30 cured at its rear end to the turn-table and provided at its front end with a slide engaged with and movable along the arc bar, substantially as set forth.

7. The combination with the main frame
 35 provided at its front end with a transverse arc bar and with bearings for the axle, and with brace devices between said axle and arc bar, the axle and supporting-wheels, the tilting frame, the turn-table and the perch-pole
 40 secured to the turn-table and slidable along the arc bar, substantially as set forth.

8. In a harvester, the combination with the main frame having depending bars provided at their lower ends with bearings for the axle
 45 and with rearwardly-extending arms, and having at their upper ends heads provided with guides for the tilting frame, the tilting frame having its side portions provided with arcs sliding in the guides in said heads, means for
 50 tilting the frame, the turn-table and the sup-

ports therefor at the rear of the main frame, and the perch-pole secured at its rear end to the turn-table and provided at its front end with a slide engaged with and movable along the arc bar, substantially as set forth. 55

9. In a harvester, the combination with the main frame provided at its front end with a transverse arc bar and at its rear end with the turn-table, of the perch-pole secured at its rear end to the turn-table and slidable at
 60 its front end along the arc bar, and the steering-wheel having its axle connected with and movable with the turn-table, substantially as set forth.

10. In a harvester, the combination of the 65 main frame provided at its front end with means for supporting the cutter mechanism and at its rear end with the turn-table and the perch-pole secured at its rear end to the turn-table and movable laterally at its front
 70 end, substantially as set forth.

11. The combination in a harvester of the cutting apparatus, the carrier extended in rear of the cutting apparatus the rollers for said carrier, the smooth or unthreaded grain-tipping
 75 roller extending transversely in advance of the carrier, and gearing between said tipping-roller and one of the carrier-rollers, substantially as set forth.

12. In a harvester, the combination of the 80 reel, the carrier, the cutting apparatus, the lever apparatus connected with the cutting apparatus, the pair of parallel sprocket-chains, gearing between one of said sprocket-chains and the carrier, and the other one of said
 85 sprocket-chains and the reel-operating shaft, a cross-head connected with said chains, and a pitman connecting said cross-head with the lever apparatus, substantially as set forth.

13. The combination of the lever, the pair 90 of parallel sprocket-chains and their sprocket-wheels, the cross-head connecting said chains, the pitman connecting said cross-head with the lever, and a second pitman connected with said cross-head, substantially as set forth. 95

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Witnesses:

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