

(No Model.)

3 Sheets—Sheet 1.

J. A. JEWELL.  
FENCE MACHINE.

No. 594,337.

Patented Nov. 23, 1897.

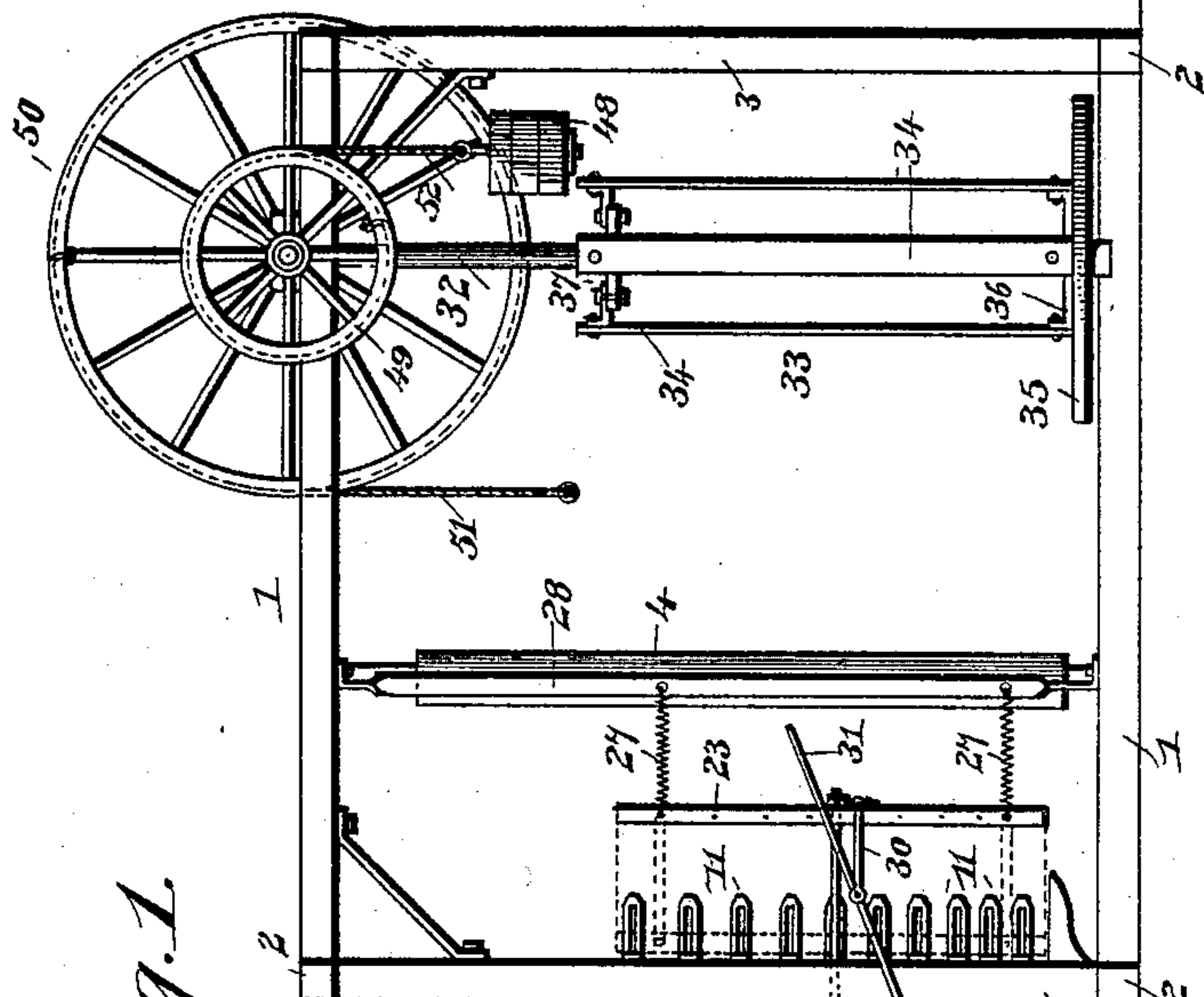


Fig. 1.

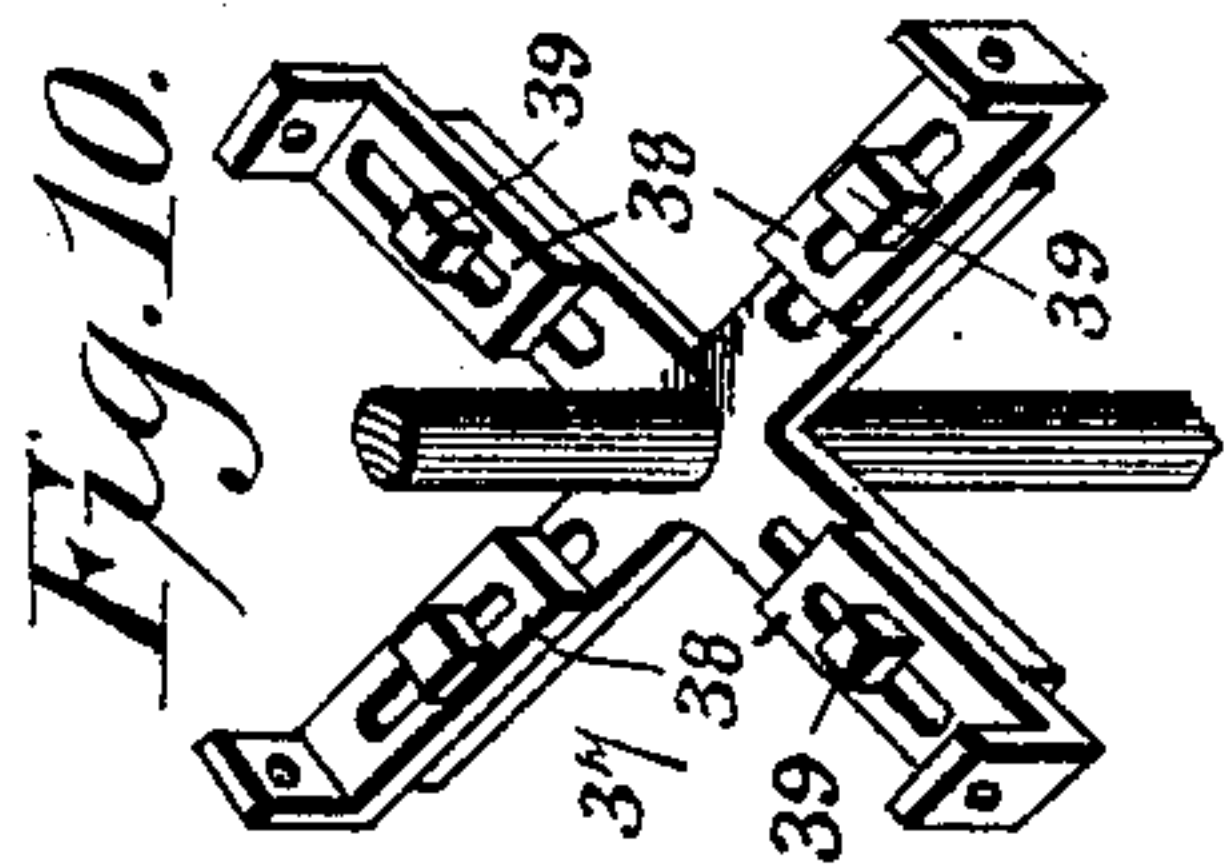


Fig. 10.

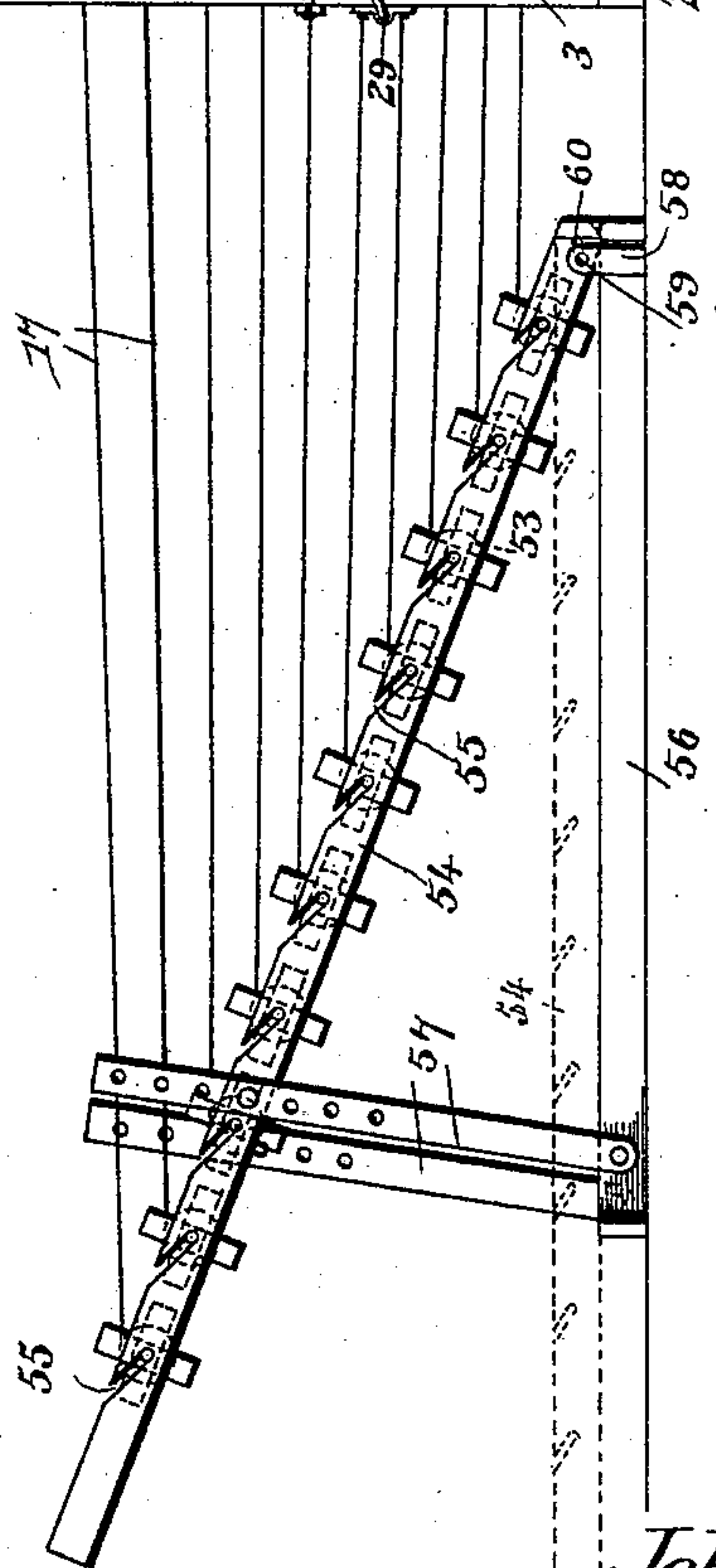
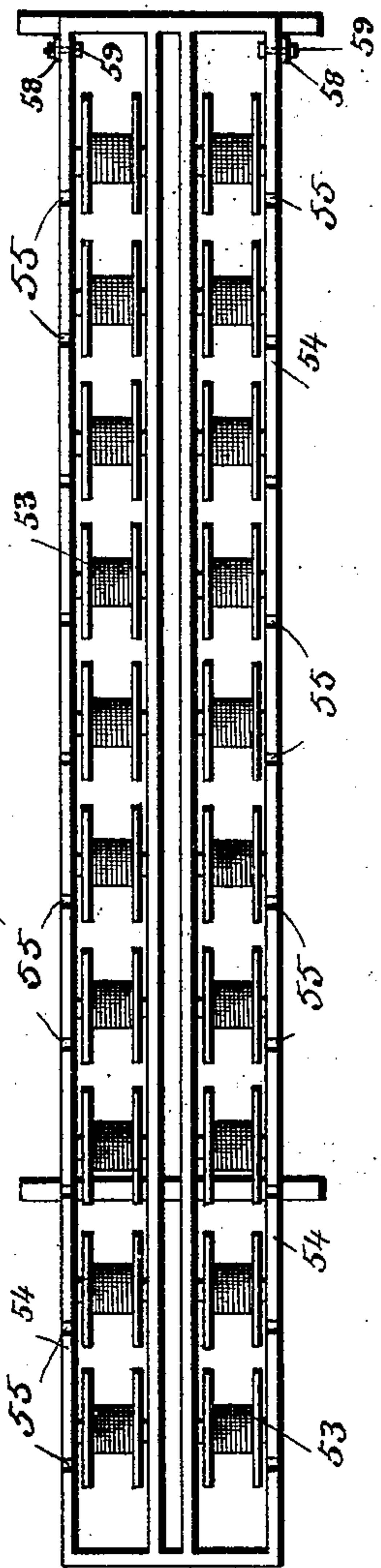


Fig. 11.



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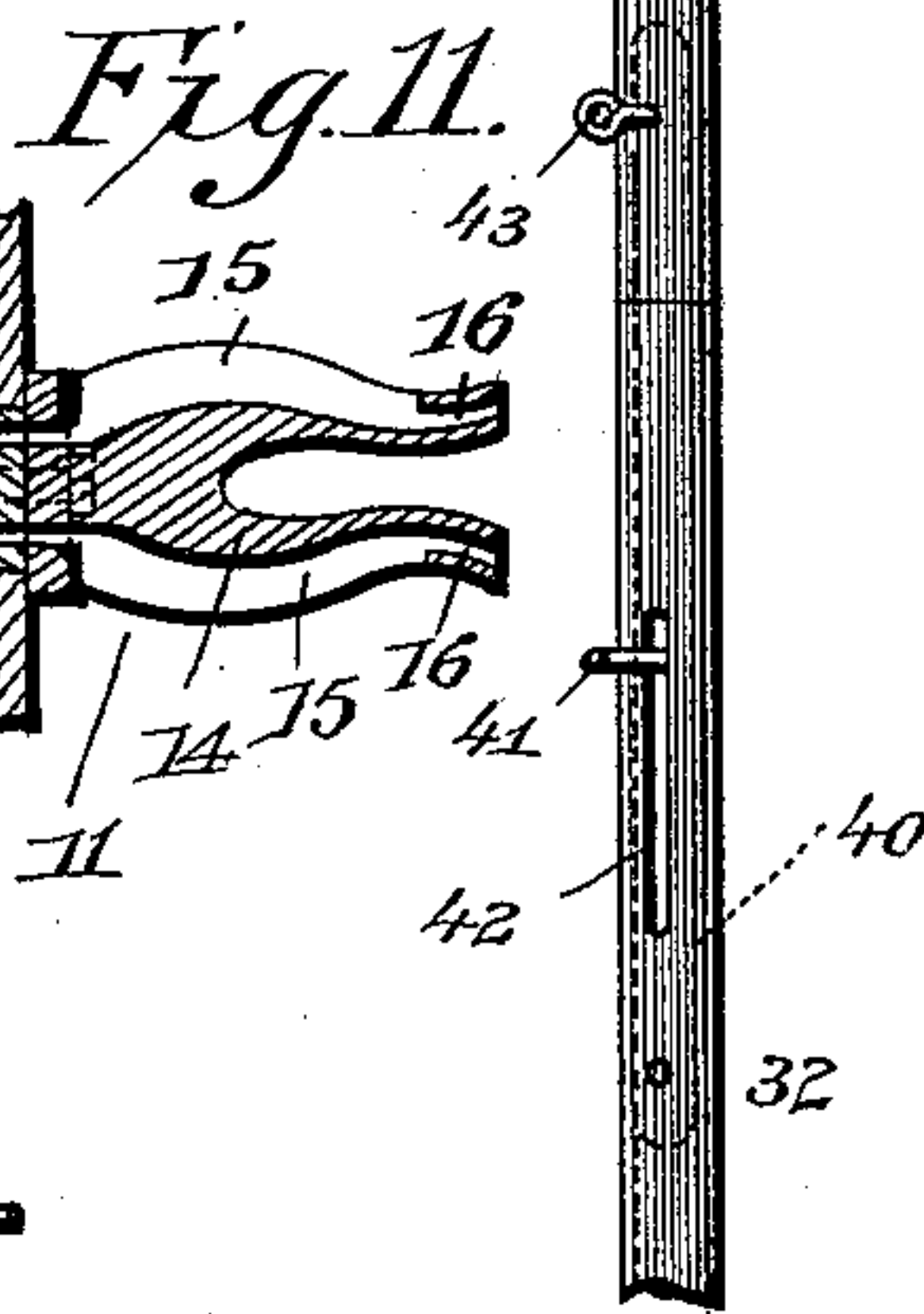
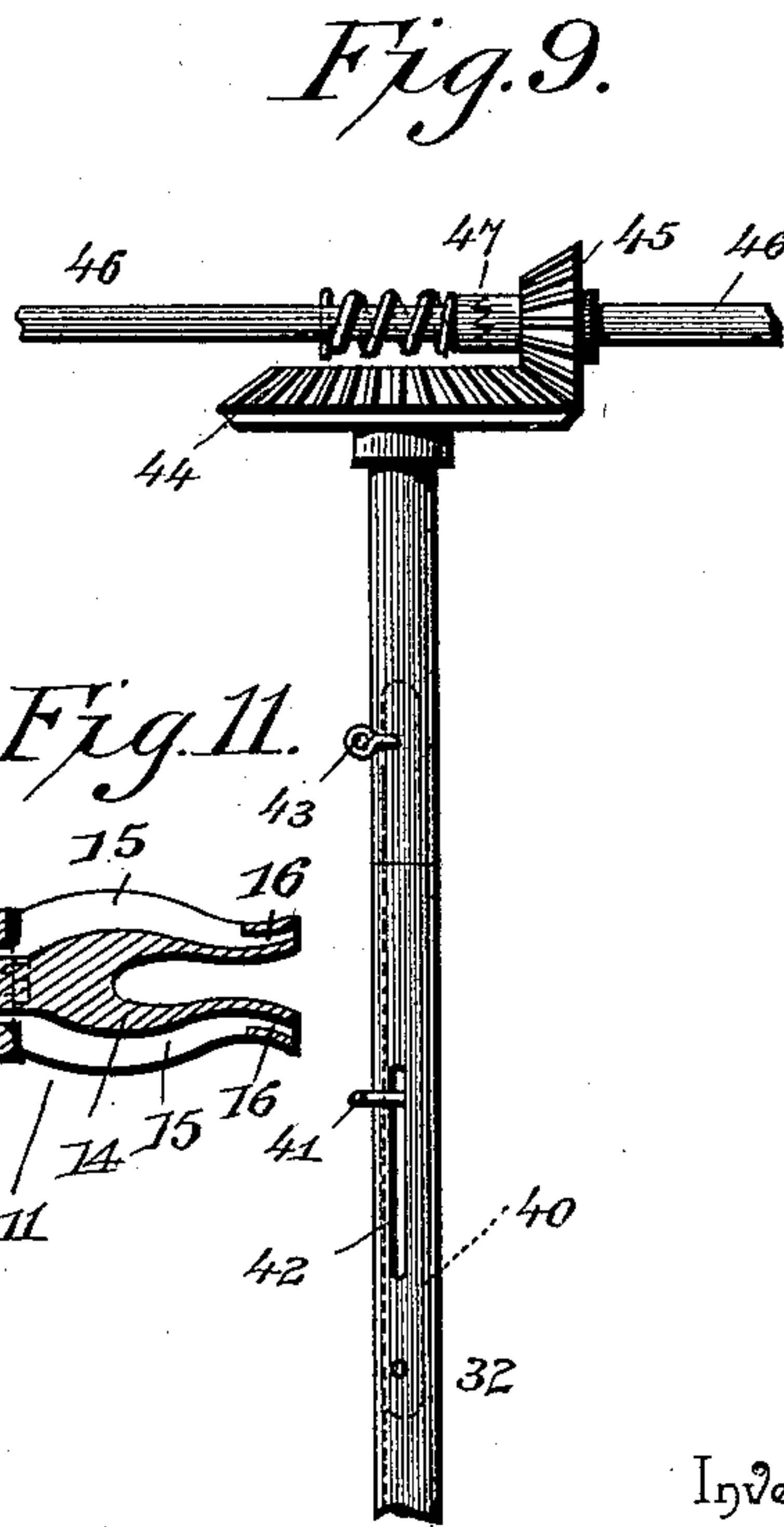
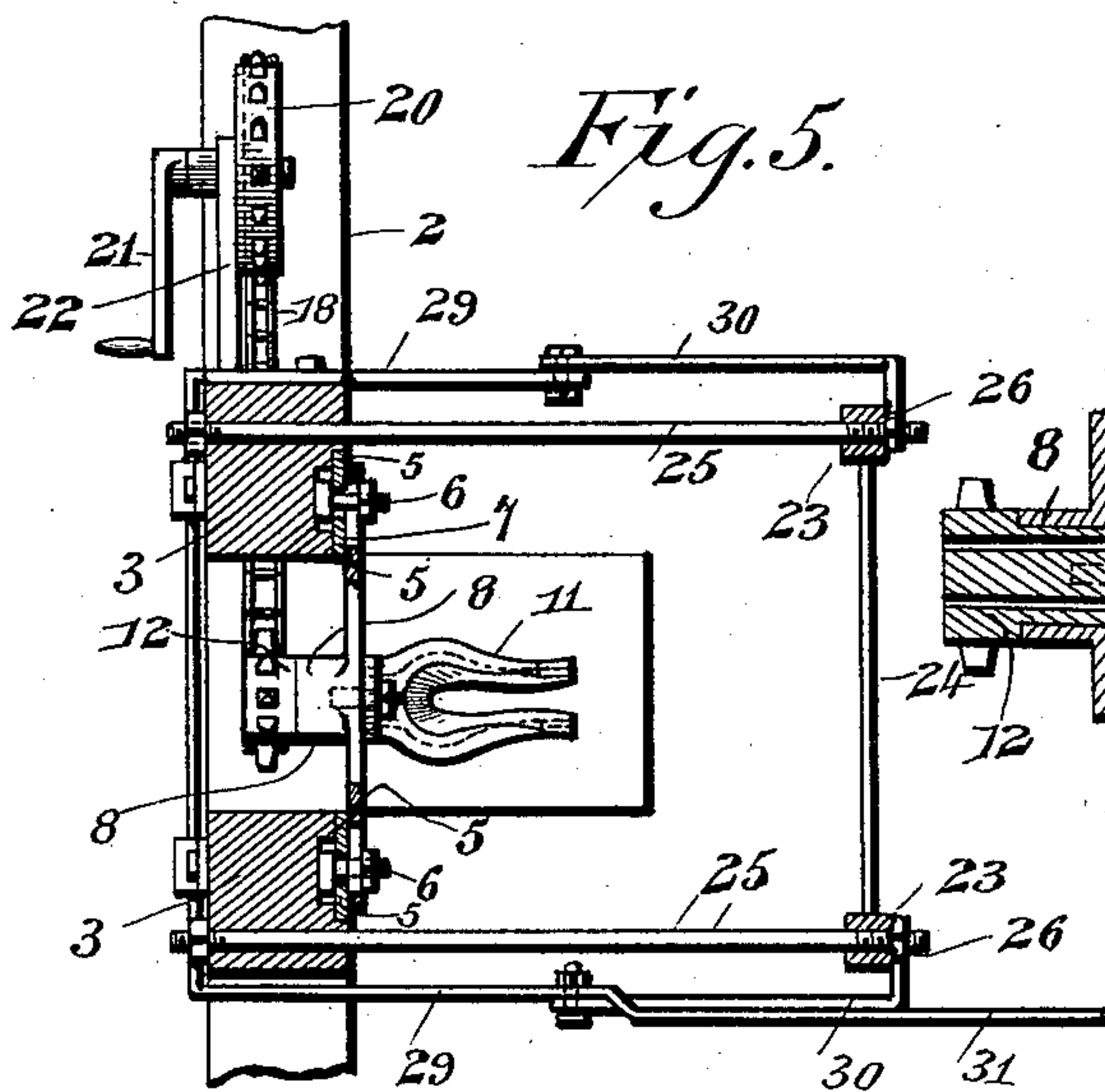
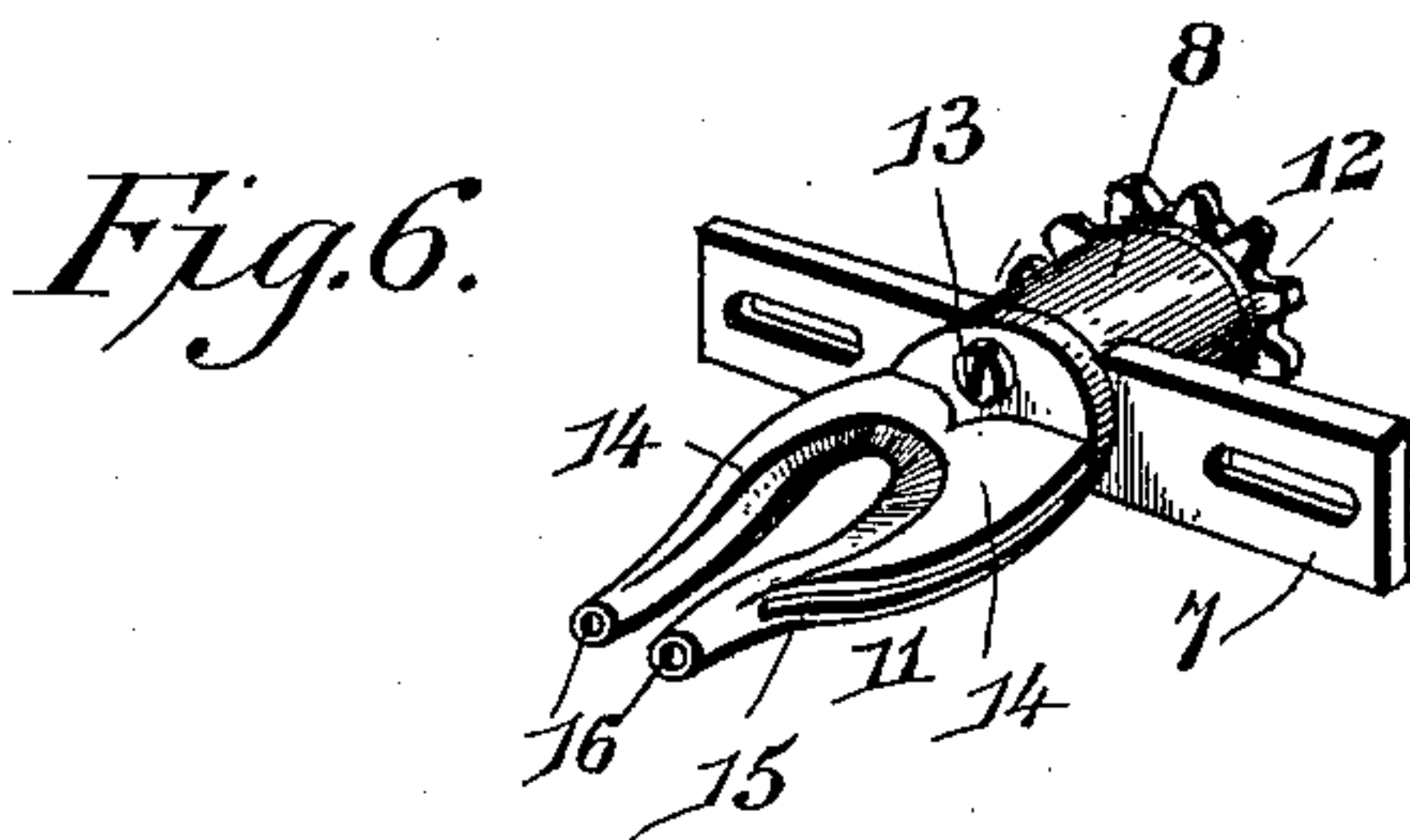
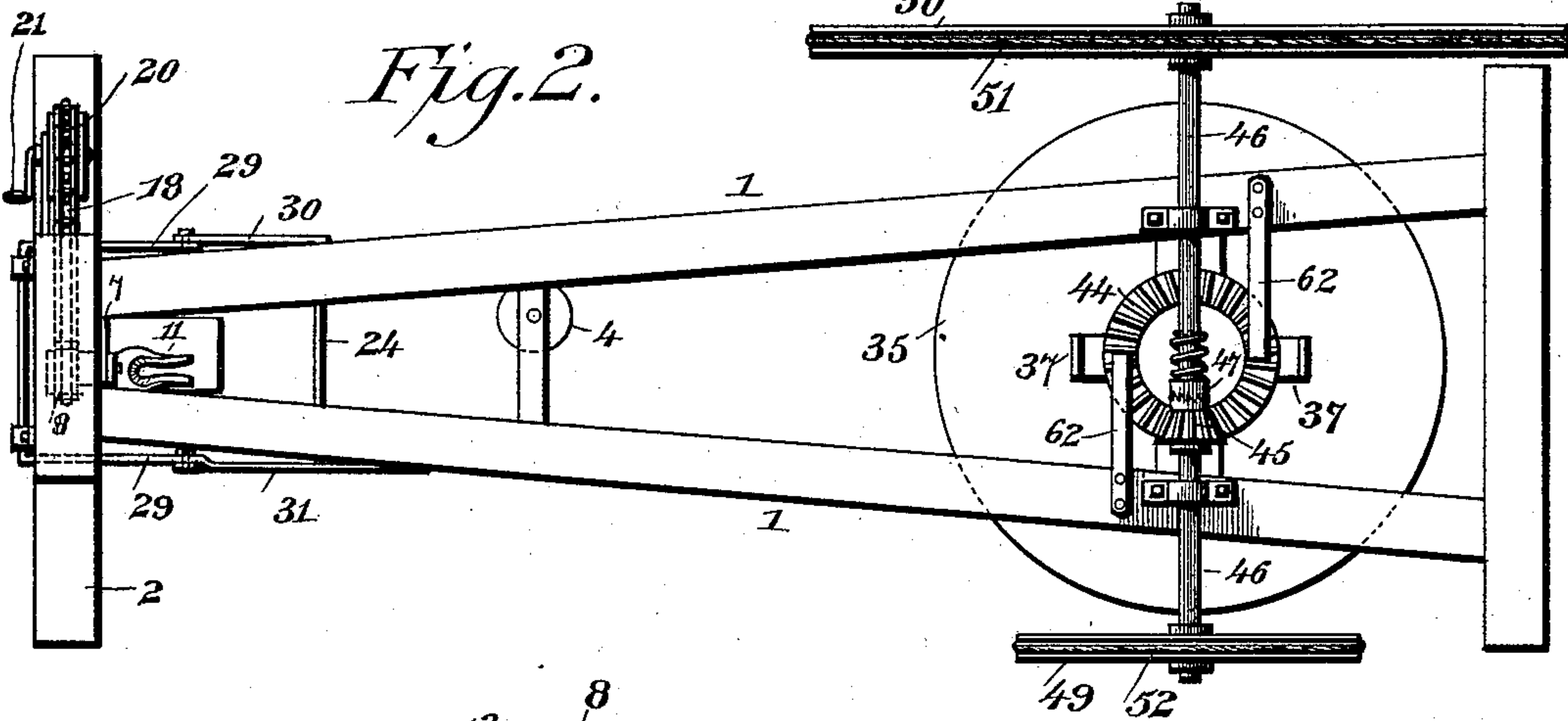
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3 Sheets—Sheet 3.

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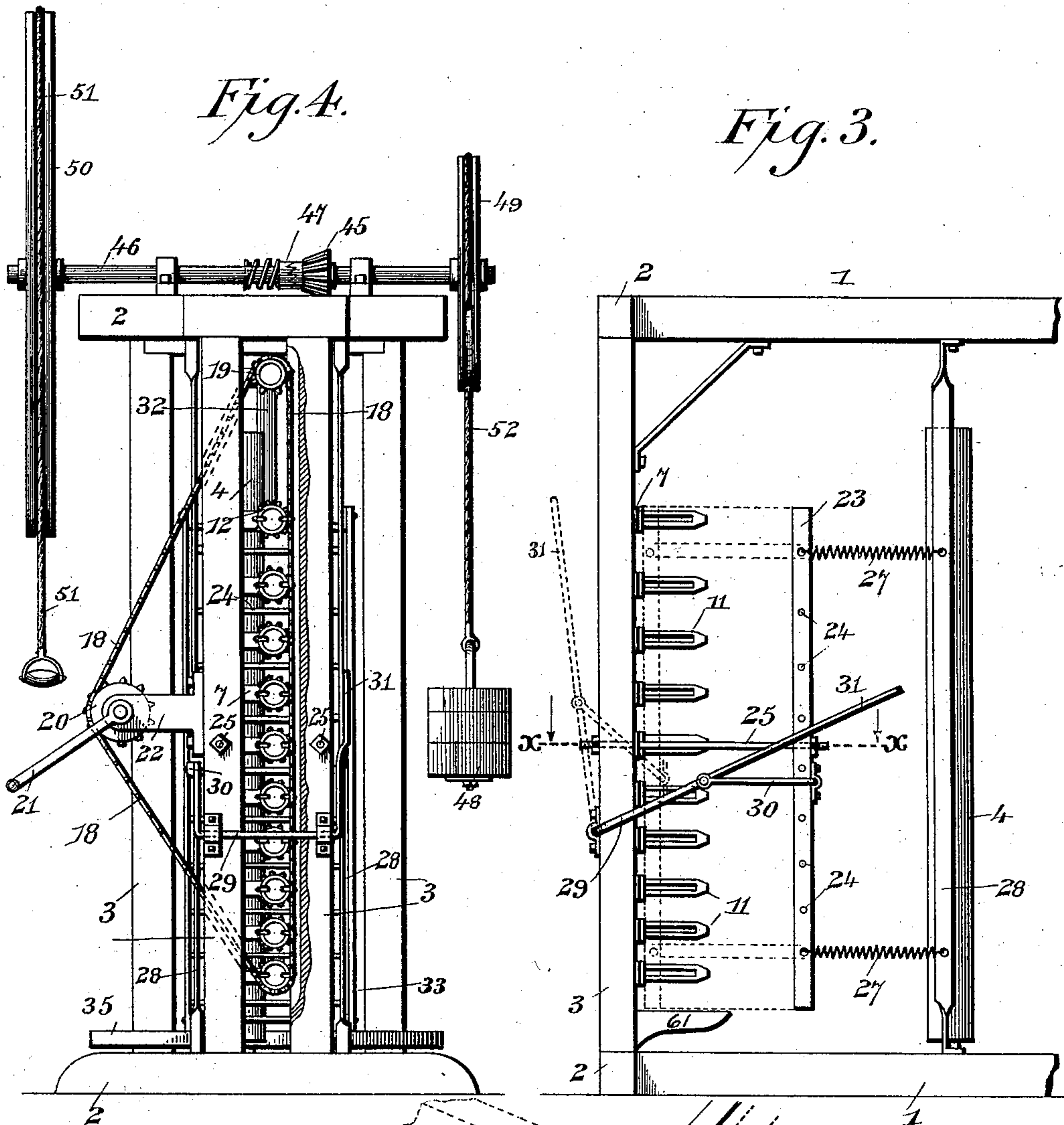
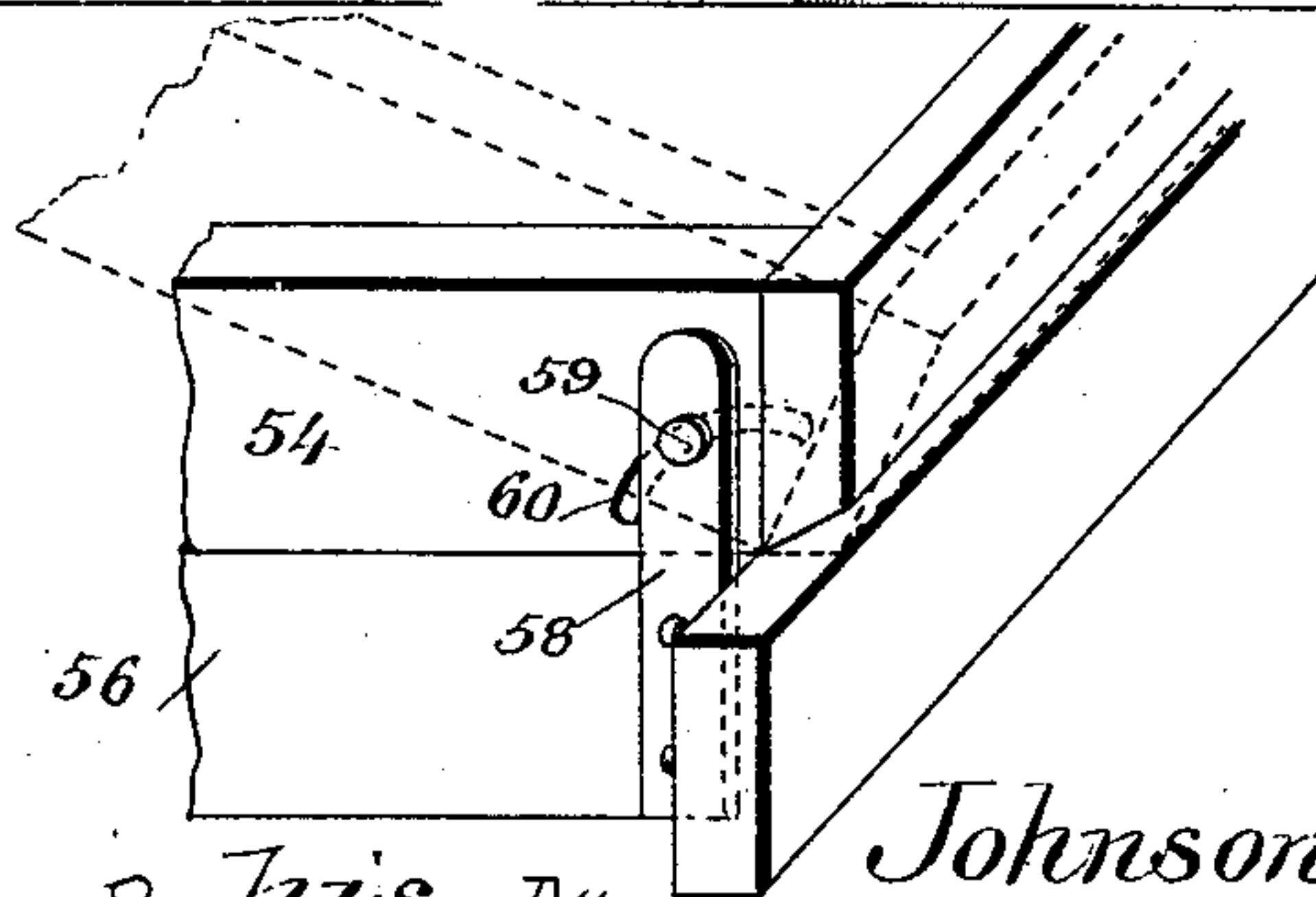


Fig. 8.



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# UNITED STATES PATENT OFFICE.

JOHNSON A. JEWELL, OF OTTAWA, KANSAS.

## FENCE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 594,337, dated November 23, 1897.

Application filed March 30, 1897. Serial No. 630,001. (No model.)

*To all whom it may concern:*

Be it known that I, JOHNSON A. JEWELL, a citizen of the United States, residing at Ottawa, in the county of Franklin and State of Kansas, have invented a new and useful Fence-Machine, of which the following is a specification.

This invention relates to machines for constructing wire-and-picket fencing and rolling the same into bundles when completed, both operations being performed simultaneously, and the rolling or bundling mechanism serving to advance the fencing as the pickets are bound in between the strands of the cables.

One of the principal features of the invention is the construction whereby the pickets are enabled to be readily and quickly placed in position between the strands and are advanced to a point so as to be secured by twisting the strands therearound.

Another feature of importance is the peculiar construction of the reel, whereby it can be quickly removed from the bundle or roll of fencing, placed in position, or disconnected from the machine, and in combination therewith of actuating mechanism tending to constantly exert a tension upon the cables or fence-wires, so that after a picket has been bound in between the strands and the completed fence moved forward the bundling mechanism will automatically wind up the fencing and prevent any slack therein.

For a full understanding of the merits and advantages of the invention reference is to be had to the accompanying drawings and the following description.

The improvement is susceptible of various changes in the form, proportion, and the minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention an adaptation thereof is shown in the accompanying drawings, in which—

Figure 1 is a side elevation of a wire-fence machine constructed in accordance with this invention, showing it rigged and as it will appear when in operation. Fig. 2 is a top plan view of the fence-machine. Fig. 3 is a side elevation thereof. Fig. 4 is a front view. Fig. 5 is a plan section on the line *xx* of Fig. 3. Fig. 6 is a detail perspective view of a

wire-twister. Fig. 7 is a top plan view of the frame bearing the spools of wire forming the strands and cables of the fencing. Fig. 8 is a detail view of the pivotal joint between the spool-bearing frame and its supporting-base. Fig. 9 is a detail view of the upper portion of the reel-shaft, the intermeshing gearing between it and the power-driven shaft, and showing the joint which admits of the reel being removed or readily placed in position. Fig. 10 is a detail view in perspective of the upper support for the slats or ribs forming the reel. Fig. 11 is a sectional detail of a wire-twister and its mountings.

Corresponding and like parts are referred to in the following description and indicated in the several views of the accompanying drawings by the same reference-characters.

The framework of the machine may be of suitable construction and design, and, as illustrated, is composed of upper and lower longitudinal bars 1, corresponding transverse bars 2, and uprights 3, the several bars being firmly connected at their points of juncture. The rolling or bundling mechanism is located at the rear end of the machine and the wire-twisting mechanism at the front end, and at an intermediate point is arranged a guide-roller 4, against which the completed fencing bears on its way to the bundling or rolling mechanism.

The front uprights 3 have vertical grooves in their rear sides over which extend plates 5, which are secured to the rear sides of the said uprights and have spaces between their inner edges in which operate bolts or like fastenings 6, by means of which plates 7 are secured to the uprights in the required adjusted position. These plates 7 bear the wire-twisting devices and are formed with bearing-sleeves 8, in which the wire-twisters are journaled so as to rotate freely when in operation. By loosening the bolts or fastenings 6 the plates 7 can be adjusted vertically to any required distance apart or to any point corresponding with the position of the cables in the completed fencing, and after the wire-twisters have been moved to the required place they are fixed by retightening the fastenings 6 previously loosened. The wire-twisters consist, essentially, of two parts, a holder 11 and the twisting-wheel 12, the two



being secured together by bolts or fastenings 13. The twisting-wheel has a toothed portion and a hub, the latter obtaining a bearing in the sleeve 8 and retained in place by the flanged base of the holder at one end of the bearing-sleeve and the toothed portion at the opposite end. The wire-holder appears in the form of a yoke and comprises a base and arms 14, the latter having grooves 15 in their outer edges communicating with eyes 16 at the extremities of the said arms. The grooves 15 communicate at their inner ends with openings extending through the twister-wheel and which provide passages for the parallel strands 17, comprising the cables or fence-wires. The inner edges of the arms 14 are beveled from opposite sides to prevent binding of the pickets between them and whereby ample clearance is afforded for the free movement of the parts. The several twister-wheels are actuated by a sprocket-chain 18, engaging with their toothed portions, and this sprocket-chain passes over an idler 19 at the upper end of the frame and adjustably secured thereto in precisely the same manner as any one of the twisters to admit of its adjustment to take up wear in the sprocket-chain and prevent the formation of any slack. A drive-gear 20, having a crank 21, is journaled in a bracket 22, secured to one of the front uprights, and the sprocket-chain 18 passes thereover and receives its initial movement therefrom, the power being transmitted to the wire-twisters in the manner set forth.

The picket spacer and adjuster consists of vertical bars 23, connected by transverse rods or bars 24, which are disposed so as to come between adjacent wire-twisters near the top and bottom edges of the fencing. Guide-rods 25 are secured at their front ends to the forward uprights 3 and extend horizontally and pass through openings in the vertical bars 23, and their rear ends are threaded and receive adjusting-nuts 26, which form stops to limit the rearward movement of the said bars 23. Coil-springs 27 connect the end portions of the bars 23 with corresponding bars 28, secured at their ends to the frame-bars 1, and these springs are of sufficient tension to retain the picket in place during the operation of the twisting mechanism. A bail 29 has its horizontal portion journaled to the front uprights 3 and its side portions connected by links 30 with the bars 23, and one of the side members of the bail is extended, forming a lever or operating-handle 31, by means of which the bail and the bars 23 are moved horizontally. When the free end of the lever 31 is moved forward to the dotted lines shown in Fig. 3, the bars 23 are within the plane of the holders 11, thereby admitting of a picket being passed between the arms 14, and when the said lever is moved rearward the transverse rods or bars 24 engage with the picket and carry it rearward and between the strands of the cables and into position to be secured by twisting the

strands about it upon operating the twisting mechanism, as will be readily understood.

The fence bundling or rolling mechanism comprises a shaft 32, a reel 33, and actuating mechanism. The reel consists of slats 34 and upper and lower supports, the lower support being a table 35 and a spider 36, to the bent ends of whose arms the slats 34 are attached. The upper support consists of a spider 37, having its arms slotted and extensions 38 adjustably connected to the slotted arms by bolts or fastenings 39, the slots 34 being attached to the extensions 38. After a roll of fencing of a required size has been attained the reel is loosened by slacking the fastenings or bolts 39 and moving the upper ends of the slats 34 inward, after which the reel may be removed by pulling upon the end provided with the table 35. The shaft 32 is jointed near its upper end and is tubular and is connected by means of a rod 40, extending across the joint and operating freely in one of the tubular parts, said rod 40 having a finger-grip 41 connected therewith and operating in a slot 42 to admit of the rod clearing the joint when liberated, a pin 43 serving to hold the rod projected across the joint when the parts of the shaft 32 are brought into alinement. A miter-gear 44 is secured to the upper end of the shaft 32 and intermeshes with a miter-pinion 45, mounted upon a transverse shaft 46 and caused to revolve therewith by means of a clutch 47, which latter provides for the turning of the shaft 46 to wind up the weight 48 on a grooved pulley 49, attached to one end of the said shaft, without imparting movement to the miter-pinion 45. A grooved wheel 50, of considerably larger diameter than the grooved pulley 49, is secured to the opposite end of the shaft 46, and a rope 51 is attached thereto and is wound thereon in an opposite direction to the cord or rope 52, bearing the weight 48, whereby as the weight lowers and the cord or rope 52 unwinds the cord 51 is wound upon the wheel 50. From the construction just described it will be seen that to elevate the weight it is only necessary to pull upon the rope or cord 51, which, unwinding from the wheel 50, turns the shaft 46 and winds the rope or cord 52 upon the pulley 49. The normal tendency of the weight 48 is to turn the shaft 46 and the shaft 32 through the intermeshing gearing, whereby the fencing as it is completed is wound upon the reel into a roll or bundle, from which it is removed first by loosening the joint formed between the parts of the shaft 32 and then by loosening the upper ends of the slats 34, so as to admit of the diameter of the reel being contracted, whereby it can be drawn easily from within the roll, as will be readily understood.

The frame bearing the spools 53, upon which the wire is wound, is made double, so as to support in transverse alinement the two spools containing the wires forming the companion strands of a cable, and consists of a frame 54,



whose longitudinal bars have inclined notches 55 to receive the journals of the spools, said notches inclining in an opposite direction to the strain upon the wires, whereby the spools 5 are held in place. The frame 54 has pivotal connection at its rear end with a base or platform 56, and its front end is capable of vertical adjustment to suit the height of the fencing being constructed and is held elevated by 10 pivoted braces 57, having connection with the front end of the base or platform 56 and having a series of openings through any one of which a pin or fastening passes and engages with the side bars of the frame 54. When 15 not in service, the frame 54 can fold upon the base 56, as clearly indicated by the dotted lines. Strap-irons 58 are secured at their lower ends to the base 56, and their upper ends receive fastenings 59, which operate in curved 20 slots 60, formed in the rear ends of the side bars of the frame 54, thereby admitting of the rear corner of the frame 54 engaging with the base or platform 56 at all stages of its adjustment, so as to be braced thereby.

When the machine is erected and in position for operation, the strands 17, comprising a cable, are threaded through the openings of the twister-wheels through the grooves 15 and eyes 16 and are secured to the reel 33. 30 The picket, which may be of wire, plain or barbed, or of wood, as required, is passed between the arms 14 of the holders 11 and is limited in its downward movement by resting upon a bracket-stop 61. The lever 31 is now 35 operated and moves the picket toward the rear end of the machine and in position to be bound in between the strands of the several cables by actuating the wire-twisting mechanism, which is effected by turning the crank 40 21 through the instrumentality of the mechanism herein described. After the picket has been secured between the strands the spacer and adjuster is returned to a starting position and another picket is placed in position and 45 is moved forward by operating the spacer and adjuster, this movement also serving to feed the fence the proper distance, the slack which would otherwise be occasioned being taken up by the reel, which is at all times under 50 tension in the manner set forth. In order to prevent the reel-shaft 32 from turning backward when winding the weighted or counter-balanced rope or cord 52 upon the pulley 49, pawls 62 are attached to the framework of 55 the machine and their free ends engage with the miter-gear 44, as clearly indicated in the drawings, Fig. 2.

Having thus described the invention, what is claimed as new is—

60 1. In a wire-fence machine, the combination of longitudinally-grooved uprights, longitudinal plates secured in parallel relation to the uprights and having their opposing edges spaced apart and extending over the 65 open side of the grooves, cross-plates bearing wire-twisters, and fastenings adjustably connecting the said cross-plates with the grooved

uprights and adapted to move in the spaces formed between the longitudinal and parallel plates, substantially as set forth. 70

2. In a fence-machine, the combination of uprights, a plate adjustably connected with the uprights and provided between its ends with a bearing-sleeve, a twisting-wheel having a toothed portion engaging with one end 75 of the bearing-sleeve, a holder having a base portion engaging with the opposite end of the bearing-sleeve, and means for securing the base of the holder to the hub of the twisting-wheel, substantially as and for the purpose 80 set forth.

3. In a fence-machine, the combination with the wire-twisting mechanism, of a picket spacer and adjuster comprising a bar having portions to extend across the line of fencing, 85 a guide for directing the bar in its reciprocating movements, an operating-lever, and a link connecting the operating-lever with the bar, substantially as set forth.

4. In a fence-machine, the combination with 90 the wire-twisting mechanism, of a picket spacer and adjuster consisting of a bar having portions extending across the line of fencing, a spring for moving the bar in one direction and holding the picket in place during 95 the operation of the wire-twisting mechanism, and an operating-lever for moving the bar backward and forward, substantially as set forth.

5. In a wire-fence machine, the combination 100 with the wire-twisting mechanism, of a picket spacer and adjuster comprising a bar, a guide-rod directing the bar in its reciprocating movements and provided with a stop to limit its movement, a spring for holding 105 the bar against the stop of the guide-rod, and an operating-lever for moving the bar, substantially as set forth for the purpose described.

6. In a fence-machine, the combination with 110 the wire-twisting mechanism, of a picket spacer and adjuster comprising parallel bars, transverse rods connecting the bars and extending across the line of fencing to engage with and move the pickets, and an operating- 115 lever for moving the bars backward and forward, substantially as set forth.

7. In a fence-machine, the combination with the wire-twisting mechanism, of a picket spacer and adjuster comprising parallel bars, 120 actuating mechanism for reciprocating the bars, transverse rods connecting the bars and adapted to engage with and move the pickets, and springs acting upon the parallel bars and normally tending to move them away from 125 the wire-twisting mechanism, substantially as set forth.

8. In a fence-machine, the combination with the wire-twisting mechanism, of a reel to receive the completed fencing comprising slats 130 and end supports, one of the supports appearing as a spider and rigidly secured to the reel-shaft, end extensions having the slats secured thereto and slidingly mounted upon the arms



of the spider, and means for adjustably connecting the said end extensions with the arms of the spider, substantially as set forth for the purpose described.

5 9. In a fence-machine, the combination with the wire-twisting mechanism, of a reel to receive the completed fencing, a shaft for receiving and supporting the reel and comprising sections which are jointed, actuating  
10 mechanism applied to the shaft for turning the reel, and a rod slidably mounted in one of the sections of the shaft and adapted to move therein to admit of the joint separating and to be projected across the joint to stiffen and  
15 strengthen it when the parts of the shaft are brought into alinement, substantially as set forth.

10 10. In a fence-machine, the combination with the wire-twisting mechanism, of a reel to receive the completed fencing, a shaft having the reel mounted thereon and comprising separable parts, a rod slidingly mounted in one of the parts of the shaft and having a finger grip or extension projecting through a  
25 longitudinal slot formed therein, means for

securing the rod to the opposite section and holding it projected, and actuating mechanism for turning the shaft and reel, substantially as set forth.

11. In a fence-machine, the combination 30 with the wire-twisting mechanism, of a reel adapted to receive the completed fencing, a shaft supporting the reel, a second shaft, intermeshing gearing between the two shafts for transmitting motion from one to the other, 35 a clutch mechanism between the said second shaft and the power-transmitting gearing to admit of the second shaft turning backward for storing power, and a counterbalanced rope or cord adapted to be wound upon a pulley 40 or part of the second shaft, substantially as set forth.

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

JOHNSON A. JEWELL.

Witnesses:

CYRUS SMITH,  
J. D. COULTIS.