

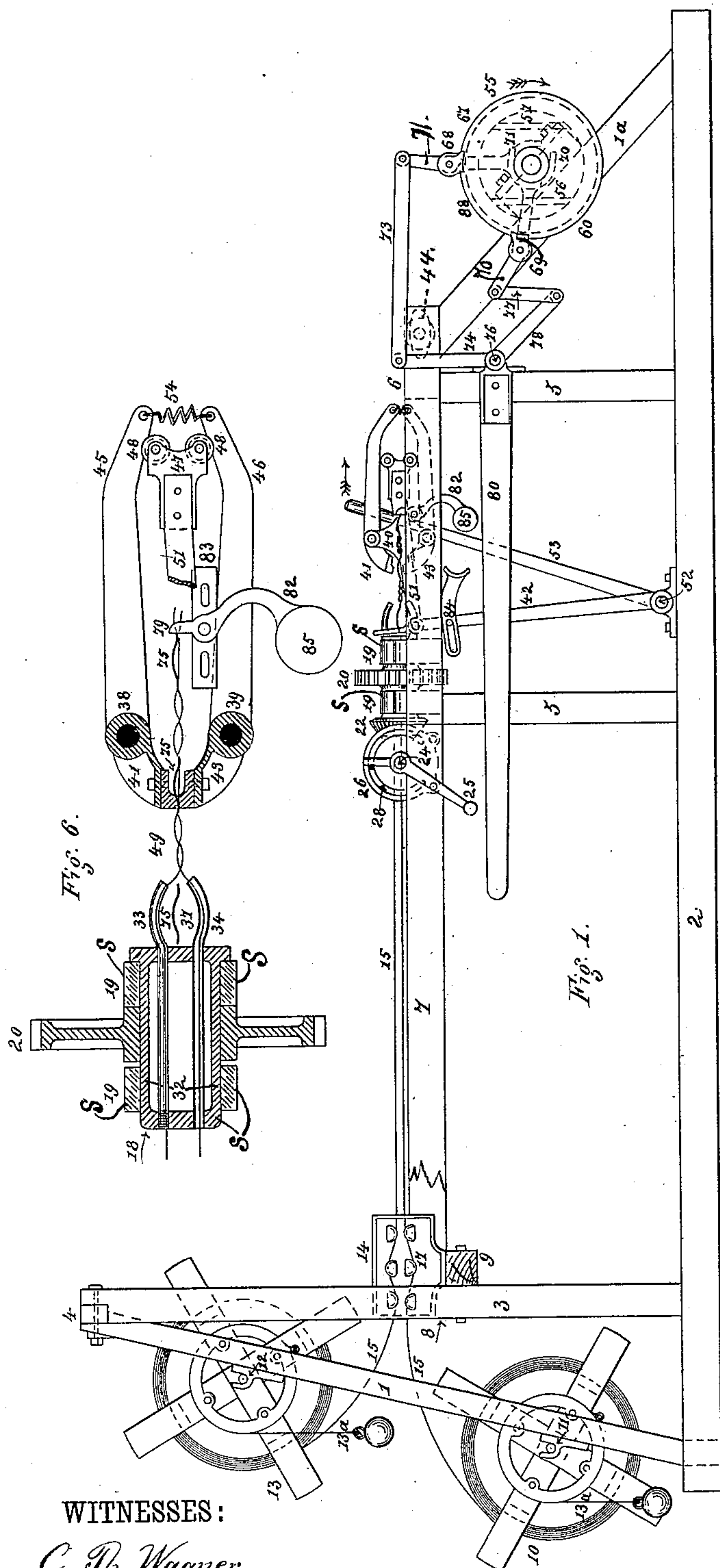
(No Model.)

3 Sheets—Sheet 1.

G. Q. ADAMS.
FENCE MAKING MACHINE.

No. 312,063.

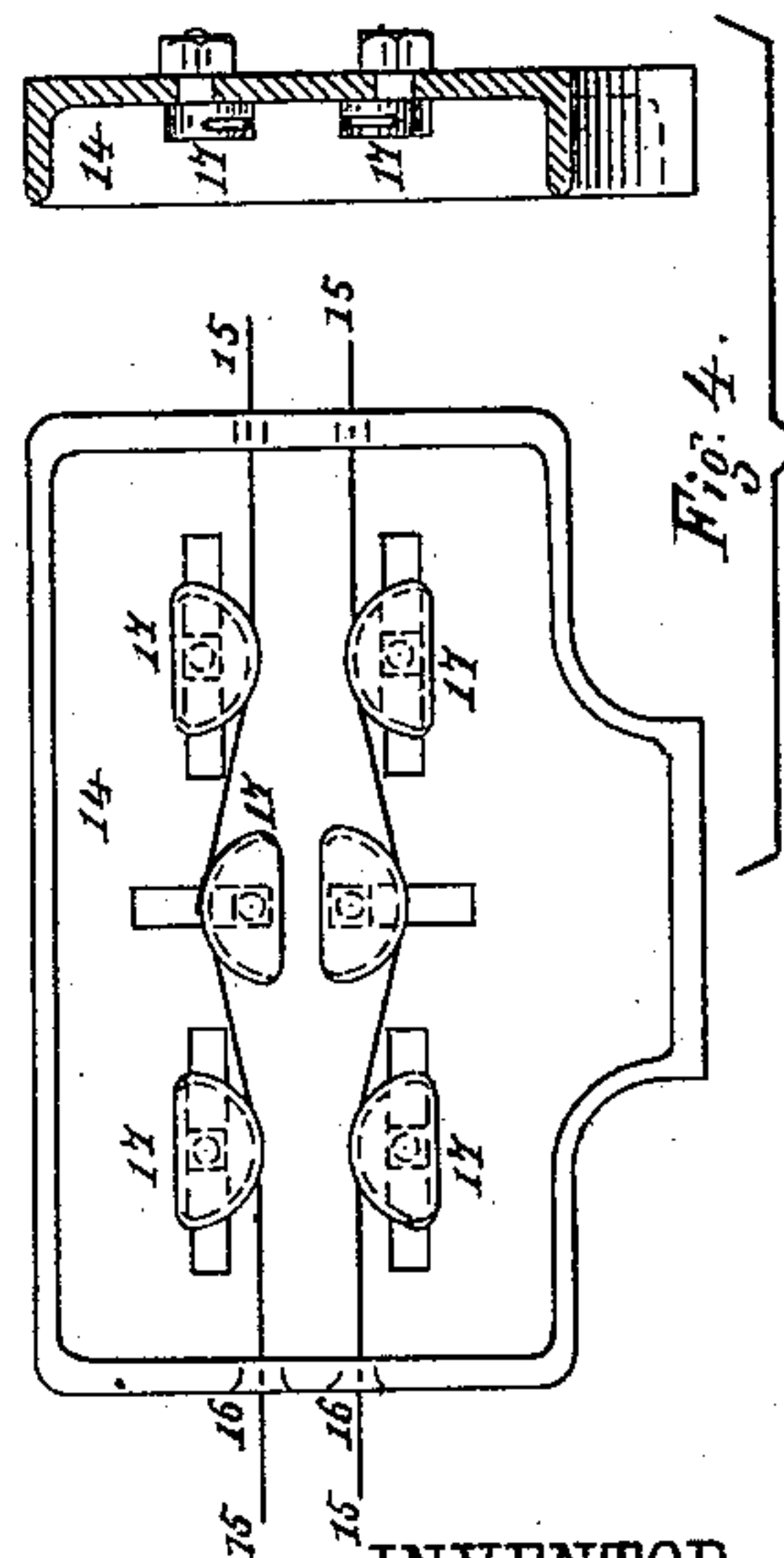
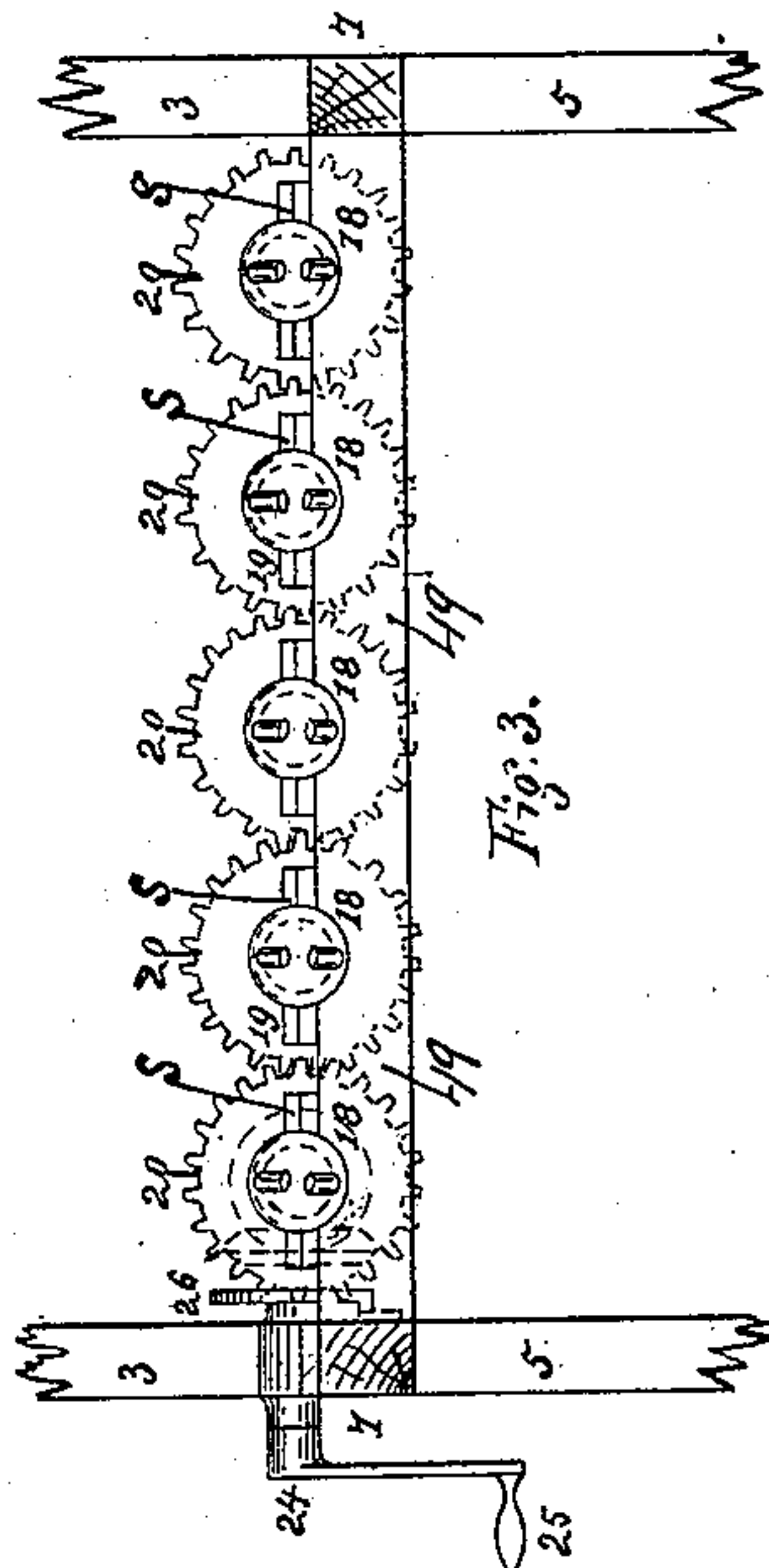
Patented Feb. 10, 1885.



WITNESSES:

C. Ph. Wagner.

Christian Weber



(No Model.)

3 Sheets—Sheet 2.

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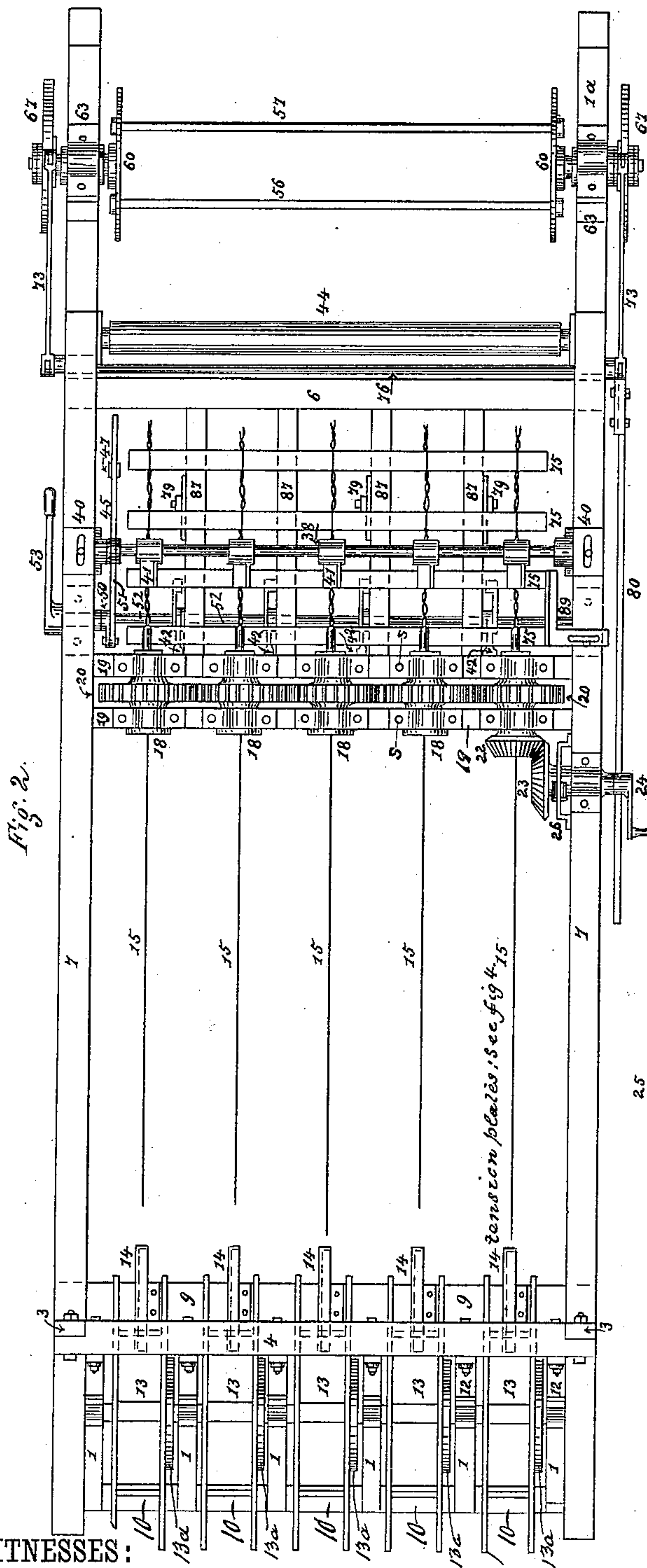


Fig. 2.

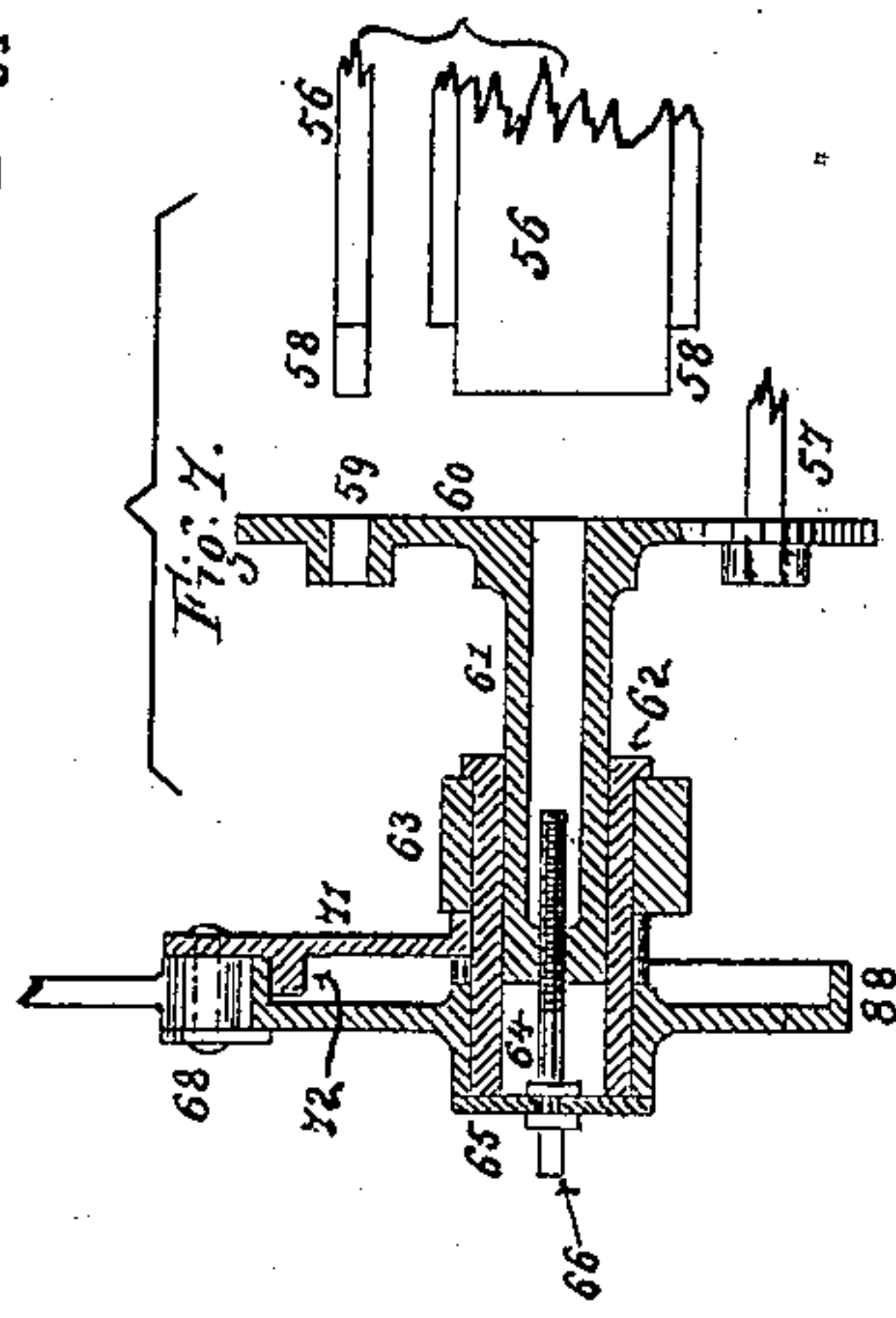


Fig. 4.

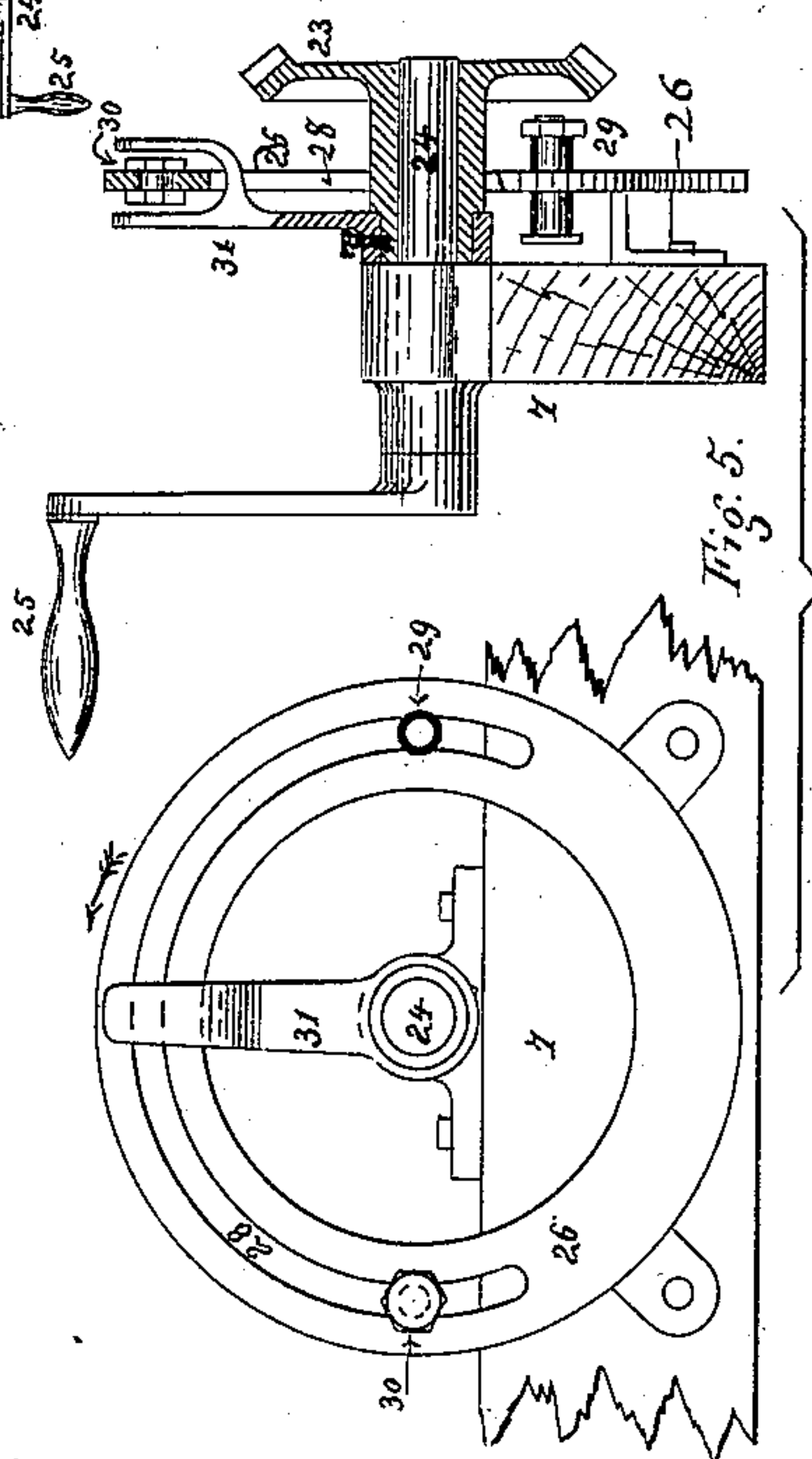


Fig. 5.

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George Q. Adams
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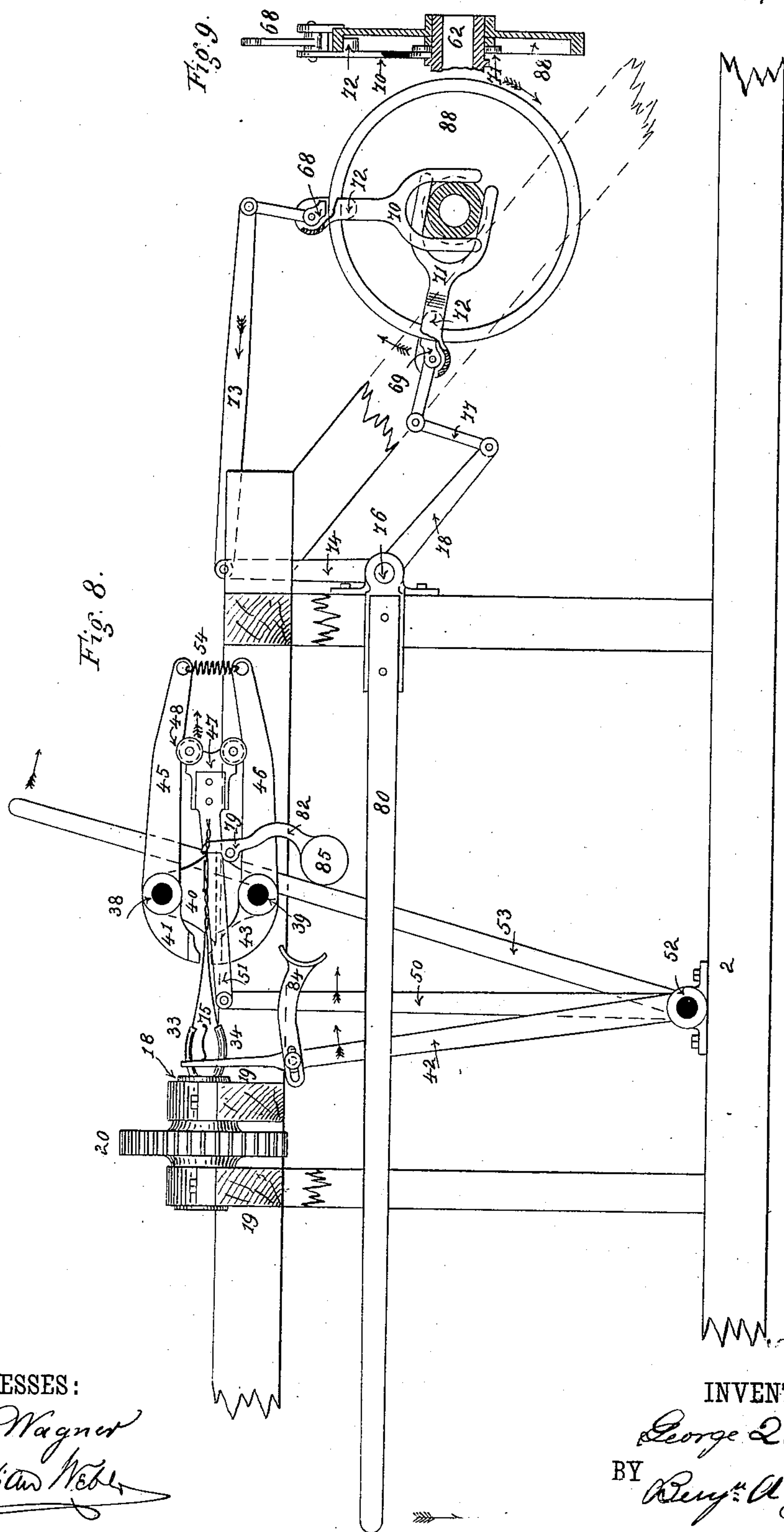
(No Model.)

3 Sheets—Sheet 3.

G. Q. ADAMS.
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No. 312,063.

Patented Feb. 10, 1885.



WITNESSES:

C. D. Wagner
Christian Weber

INVENTOR

George 2. Adams
BY Rev^d. A. Darg

ATTORNEYS

UNITED STATES PATENT OFFICE.

GEORGE Q. ADAMS, OF QUINCY, ILLINOIS, ASSIGNOR TO THE A B C FENCE COMPANY OF NEW YORK.

FENCE-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 312,063, dated February 10, 1885.

Application filed April 1, 1884. (No model.)

To all whom it may concern:

Be it known that I, GEORGE Q. ADAMS, a citizen of the United States, and a resident of Quincy, in the county of Adams and State of Illinois, have invented a certain new and useful Improvement in Fence-Making Machines, of which the following is a specification.

The object of my invention is to produce a machine for making picket fence wherein the strips of wood or metal are fastened together by means of wire.

Referring to the drawings, Figure 1 is a side elevation of my machine; Fig. 2, a plan view of same; Fig. 3, a section in front of twisting-heads; Fig. 4, tension-plates in detail; Fig. 5, adjustable stop in detail; Fig. 6, twisting-head and gripping device in detail; Fig. 7, reeling device in detail. Fig. 8 represents a longitudinal section of part of the machine. Fig. 9 is a section of reel-feeding device.

Similar figures refer to similar parts throughout the several views.

The frame of the machine consists of the bottom timber, 2 2, uprights 3 3, which are joined together at the top by cross-piece 4, and thereby form a support for the upper end of inclined timbers 1, the lower end of which rests on a cross-timber of the frame. The horizontal supporting-timber 7 7 rests on the uprights 5 5 and cross-timber 9, and is further secured by bolts to the uprights 3 3 at 8, and the side frames thus formed are held together by cross-timbers 9 and 6.

Pivoted onto the frame-piece 1 by bearings 11 are five wire-reels, 10. Above the said reels 10, and pivoted to same frame, 1, by bearings 12, are five other wire-reels, 13. The reels are constructed in the usual manner, and are intended to hold the wire for wiring the pickets together and to prevent the wire from unwinding too rapidly. I attach a brake, 13^a, to the one side of each reel-frame.

Fastened to the cross-timber 9 are five tension-plates, 14, through which the wires 15 15 from the reels 10 and 13 pass before engaging with the operating parts of the machine. The said wires 15 15 enter the plates 14 through guide-holes 16 16, thence over and under adjustable tension blocks or pins 17 17 in plate 14, passing out through corresponding holes in the other end of the said plate, and from

there enter the twisting-head 18. The object of these tension-blocks is to increase or decrease the tension of the wire between said plates 14, and the operative parts of the machine, and thereby enable the fence to be woven more evenly. The twisting-heads 18 (five in number) are journaled in bearings on two cross-timbers, 19. The said twisting-heads are connected together and revolved simultaneously by spur-gear wheels 20 20, fastened on the center of the twisting-heads, (see Fig. 6,) and the bevel-gear 22, fastened to one end of one of the twisting-heads and gearing into the bevel-gear 23, secured to crank-shaft 24, journaled on supporting-frame 7, and the whole operated by the crank 25. The twisting-head 18 consists of the hollow cylindrical casing 32, closed at both ends, (see Fig. 6,) and provided with two hollow twisting-arms, 33 34, one above the other, and extending through the case, and fastened to head 18 at one end and protruding from the other as two arms. The protruding arms are curved, as shown, to enable the picket to be easily fed in between the said arms 33 and 34 in space 37.

On the inner side of the frame-timber 7, and surrounding the crank-shaft 24, is a disk, 26, fixed to said frame 7, having therein a circular slot, 28, into which the adjustable stop-pin 30 is placed, (see Fig. 5,) and movable pin 29.

Upon the hub of the bevel-gear 23 is fastened a forked arm, 31, of sufficient length to pass radially beyond the circular slot 28, and the fork is spread apart, so as to pass by the heads of the adjustable stop 30, but engage with the movable pin 29 and convey it along the circular slot 28 in disk 26. The object of this device is to limit the revolutions of the crank-shaft to one or one and a half revolution. The operation is, viz: The pin 29 resting in the termination of the circular slot 28, the forked arm 31, starting forward in direction of arrow, leaves the pin 29 and passes the adjustable pin 30, making the revolution or complete circle. The forked arm 31 then coming in contact with the pin 29, it will convey said pin along the slot 28 until it comes to rest against the adjustable stop 30, causing all the mechanism connected therewith to come to a rest, and having made a whole revolution and

a part of another. The motion of the crank being then reversed, the pin 29 remains against the stop 30 until the forked arm 31 makes one revolution, and, passing the stop 30, comes in contact with the pin 29, conveying same along the slot 28 to the terminus of said slot, when all comes to a rest again and ready for the operation to be repeated.

In front of the twisting-heads upon the frame-timber 7 are fastened adjustable bearings 40, in which the shafts 38 39 (see Fig. 6) are journaled.

Secured to shaft 38 are five curved arms, 41, and lever-arm, 45, and secured to shaft 39 are five other curved arms, 43, and lever-arm, 46. The curved arms 41 43 are for gripping the wires and holding them while the twisting of the wires takes place. The curved arms 41 43 are set or placed on their respective shafts 38 39, directly over the wires, one above and one below, and are forced together and grip the wire by the levers 45 46, which are secured to said shafts, and forced apart by the carriage 47, traveling back and forth between said levers, and coming in contact with the curve or angle on end of said levers 45 46, and the said levers are held together by spring 54. The carriage 47 is provided with anti-friction wheels 48, and is operated from the rock-shaft 52 by lever-arm 50 and connecting-rod 51. The shaft 52 is journaled to frame 2 2, and has the feed-arms 42 and lever-arm 50 attached thereto, and is rotated by the hand-lever 53, also attached to said shaft 52. The arms 41 43 are provided with gripping-blocks secured to said arms by screws, to enable the blocks to be replaced when worn or broken without removing arms 41 43.

The winding-wheel 55, onto which the woven or wired pickets are wound, consists of two bars or timbers, 56 and 57, with a tongue, 58, at each end, which enter the slot 59 in the movable disks 60, which are placed at each side of the machine. To these disks 60 are attached the shafts 61, which pass into the sleeves 62, journaled in the bearing 63 and upon the frame 1*. The extreme ends of the shafts 61 are provided with threaded screws 64, which pass through the outer caps, 65, of the sleeves 62, and the protruding end 66 is made square, so that the screw 64 may be easily turned. Now, by turning the screw 64, the disks 60 are drawn away from the bars 56 57, and they can be easily removed from the roll of woven fence, when so desired. The bars are easily replaced by inserting the tongue 58 of the bars in the slots 59 of the disks 60 and forcing the said disks up against the shoulders of the bars by screws 64.

The winding-reel 55 is revolved by a rotating gripping device. It consists of the grasping-pawls 68 69, fulcrumed onto the forked arms 70 71. The pawls act on the circumference or periphery of the wheel 88 and draw the forked arms 70 71 forward, bringing the lugs 72 to bear against the inner circumference of the rim of the wheel 88, grasping it firmly

and moving same forward in direction of arrow. The forked ends of the arms 70 71 fit around the axle of sleeve 62. The pawl 68 is operated by connecting-rod 73 and arm 74, and the pawl 69 is operated by connecting-rod 77 and arm 78. The arms 74 78 are attached to shaft 76, which is rotated by the arm 80. The reel 55 has a similar rotating device at both ends, so that the tension on the rolls of fence will be equal, and both devices are operated by the lever 80 and rock-shaft 76. The object of the double pawl on each side of the machine is that a forward motion is imparted to the wheel 88 by either a downward or upward motion of the lever 80.

The operation of the machine is as follows: After the wires 15 15 leave the reels 10 13 they pass through the tension-plates 14, to and through the twisting-heads 18 between the gripping-arms 41 43, along over the idle-roller 44 to the reel 55, where they are fastened. When this is done, the lever-arm 53 is moved in direction of arrow. The gripping-arms 41 42 will close and hold the wires together. After this is done the twisting-heads are revolved by means of the crank 25. This movement twists the two wires together at 49. After this is done the lever-arm 53 is moved back in place and a picket, 75, placed in between the two curved protruding arms 33 34, against the gage 89. The lever 53 is again moved forward in direction of arrow, moving the feed-arms 42, attached to said shaft 52, in same direction, and thereby pushing the picket from between the twisting-arms 33 34 to and between the said gripping-arms 41 43, the said gripping-arms at the same time closing upon and holding the wires upon both sides of the picket. When this is done, the crank 25 is again turned in the opposite direction, and the twisting-arms 33 34 again twist the wires on the other side of the picket. When the picket is thus secured, the feed-arms 42 are moved back in place and the said picket moved forward by the reeling device, which is operated by the movement of lever 80 until it comes against the fulcrumed stop 79. Another picket is then placed between the twisting-arms 33 34 and the operation above described repeated. The fulcrumed stop 79 is pivoted to an adjustable plate, 83, placed in the timbers 87, and is weighted on the lower end of lever-arm 82 at 85. This weight always keeps the stop perpendicular, except when the picket is passing over same, and when the said picket is past it comes back to its former position by the gravity of the weight. For retaining the stop 79 in a fixed position to gage the space of the pickets uniformly, I have an adjustable arm, 84, attached to arms 42. Now, when the said lever 42 brings the picket under the gripping-arms 41 43, the said arm 84 engages with the weight end 85 of the stop 79 and holds it firmly until released by moving the lever 42 back to its former position.

Although I show five sets of reel-arms, tensions, plates, twisting-head, and grippers, I do

not confine myself to that number, as more or less may be used.

What I claim is—

1. In a fence-machine with twisting-heads, 5 the curved detachable arms or thimbles 33, extending forward of the case 32, through which the wire 15 is passed before twisting, substantially as for the purpose specified.

2. The shaft 24, bevel-gears 23 and 22, gears 10 20, and twisting-heads, in combination with arm 31, movable pin 29, stop-pin 30, and disk 26, provided with slot 28, substantially as for the purpose set forth.

3. The gripping-arms 41 43, secured to shafts 15 38 39 and operated by arms 45 46, carriage 47, connecting-rod 51, and lever 50, substantially as for the purpose specified.

4. The stop 79, with weighted lever 82, pivoted to adjustable frame 83, in combination 20 with frame 87, adjustable arm 84, and feed-arms 42, pivoted on frame 22, substantially as for the purpose specified.

5. The disk 60, with slots 59, and shafts 61,

with threaded screws 64, and sleeve 62, in combination with the bars 56 57, with tongues 58, 25 substantially as for the purpose specified.

6. The pawls 68 69, in combination with wheels 88, arms 70 71, lugs 72, connecting-rods 73 77, and arms 74 78, rock-shaft 76, and lever-handle 80, substantially as for the purpose 30 set forth.

7. In a picket-fence-weaving machine, the frame 1 2 3 4 5 6 7, wire-reels 10 13, with automatic brake 13^a, tension-blocks 14, twisting-heads 18, with twisting-arms 33 34, gripping- 35 arms 41 43, and winding-reel 55, all constructed as described, and operated substantially as and for the purpose specified.

Signed at New York, in the county of New York and State of New York, this 22d day of 40 March, A. D. 1884.

GEORGE Q. ADAMS.

Witnesses:

C. TH. WAGNER,
HENRY CREAMER.