

(No Model.)

C. L. & M. EWING.
WIRE FENCE WEAVING MACHINE.

No. 551,204.

Patented Dec. 10, 1895.

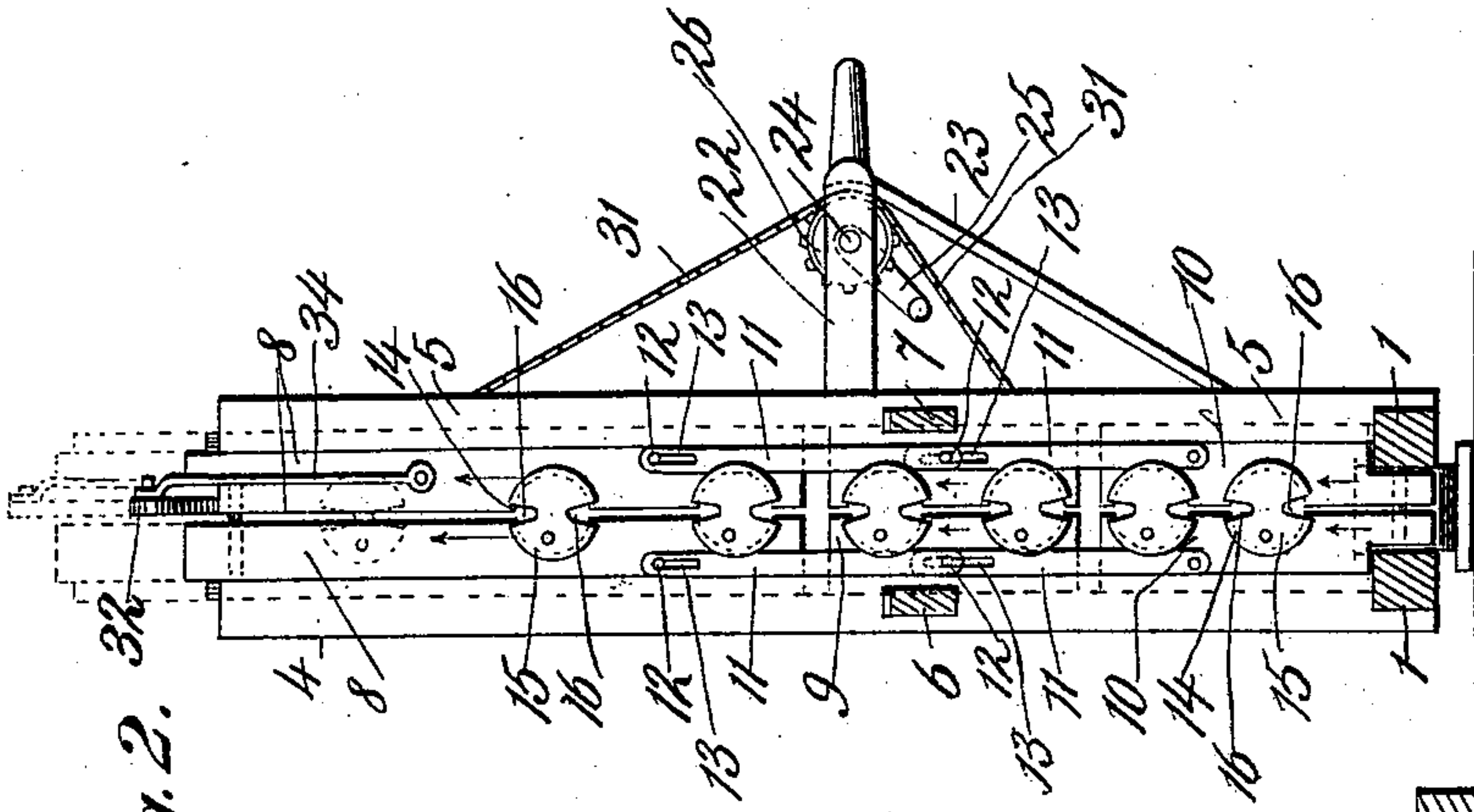


Fig. 2.

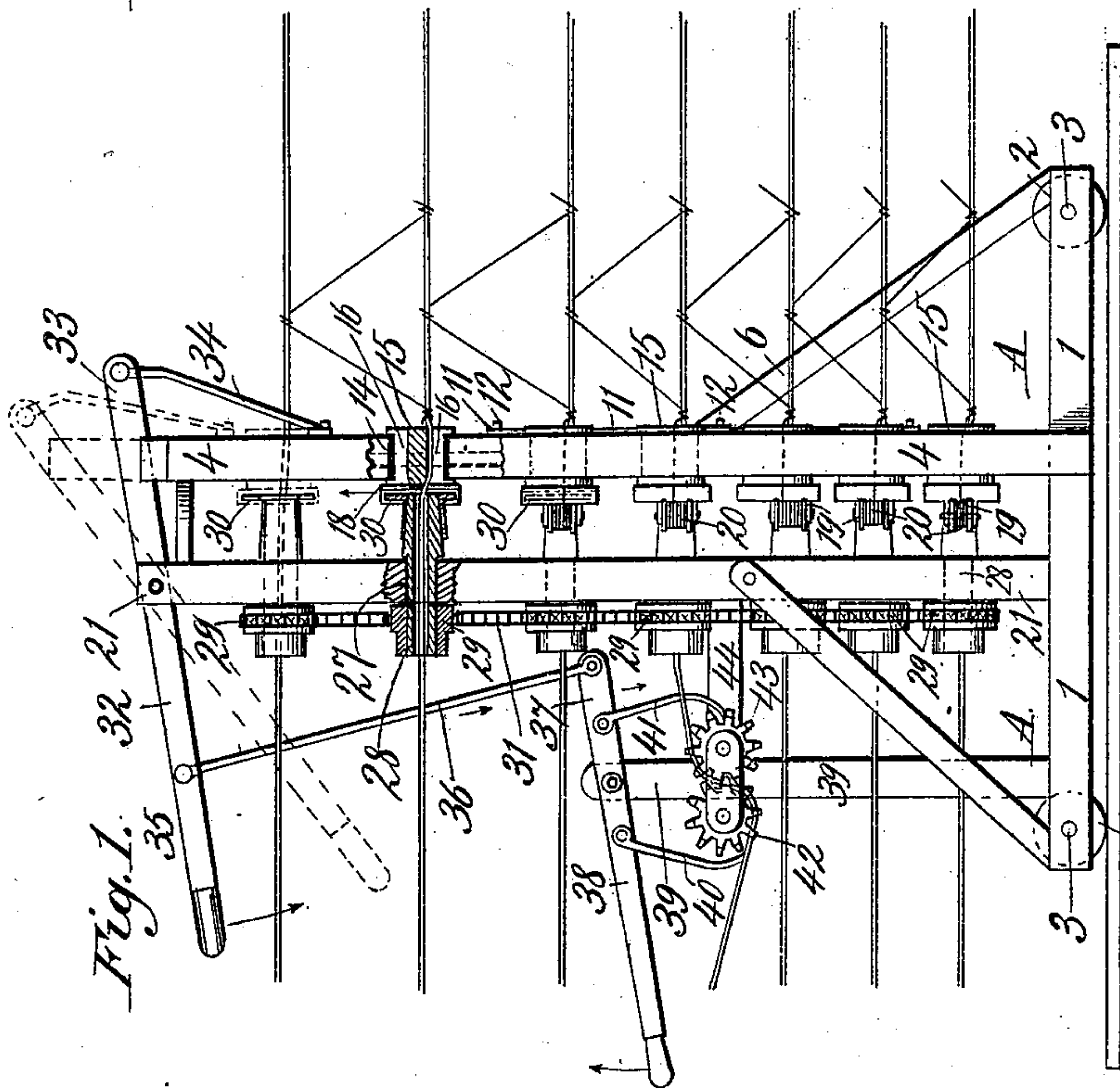


Fig. 1.

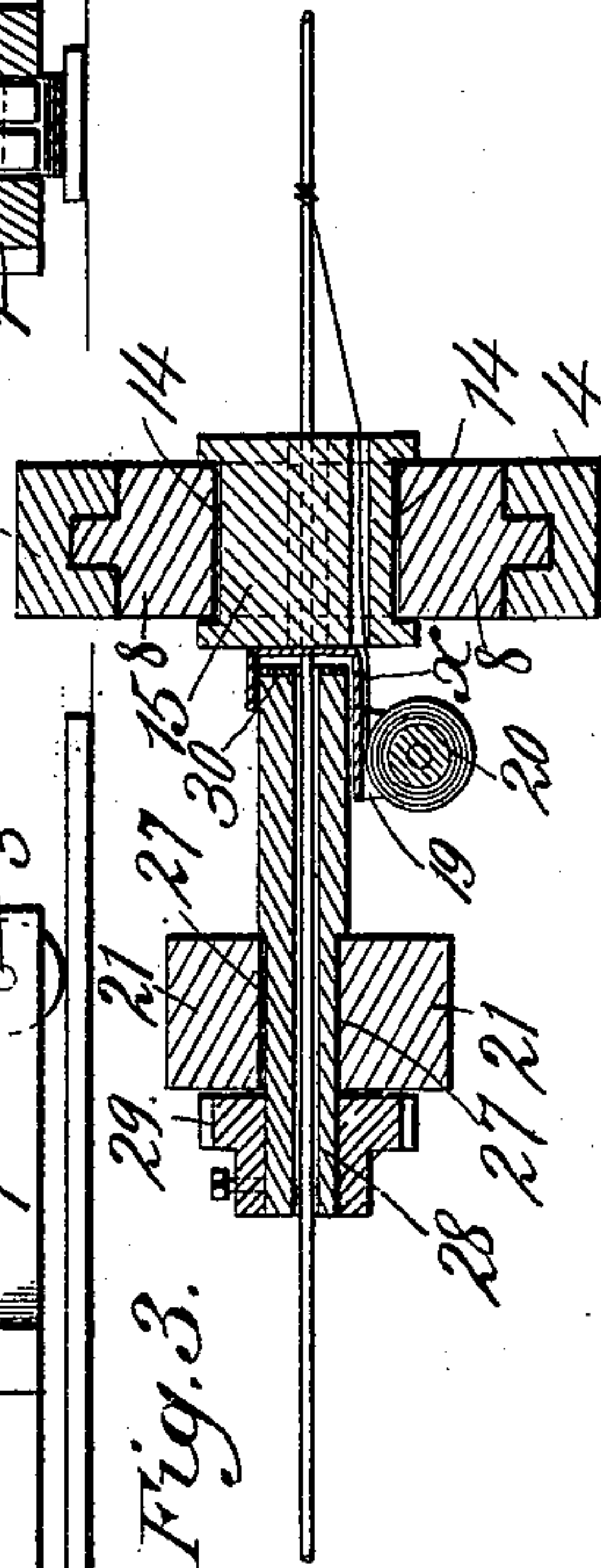


Fig. 3.

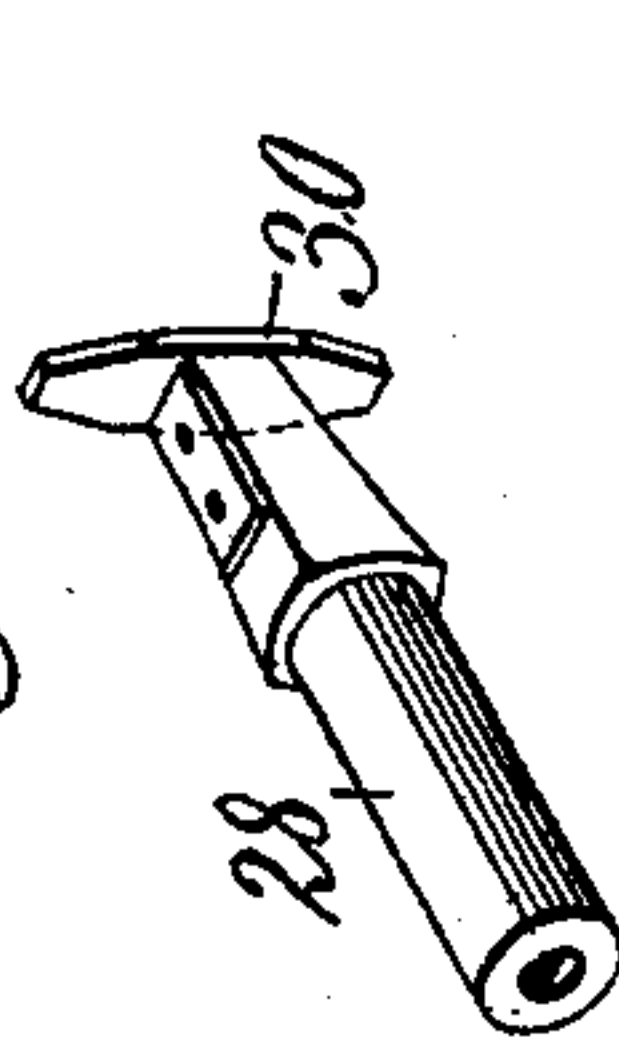


Fig. 4.

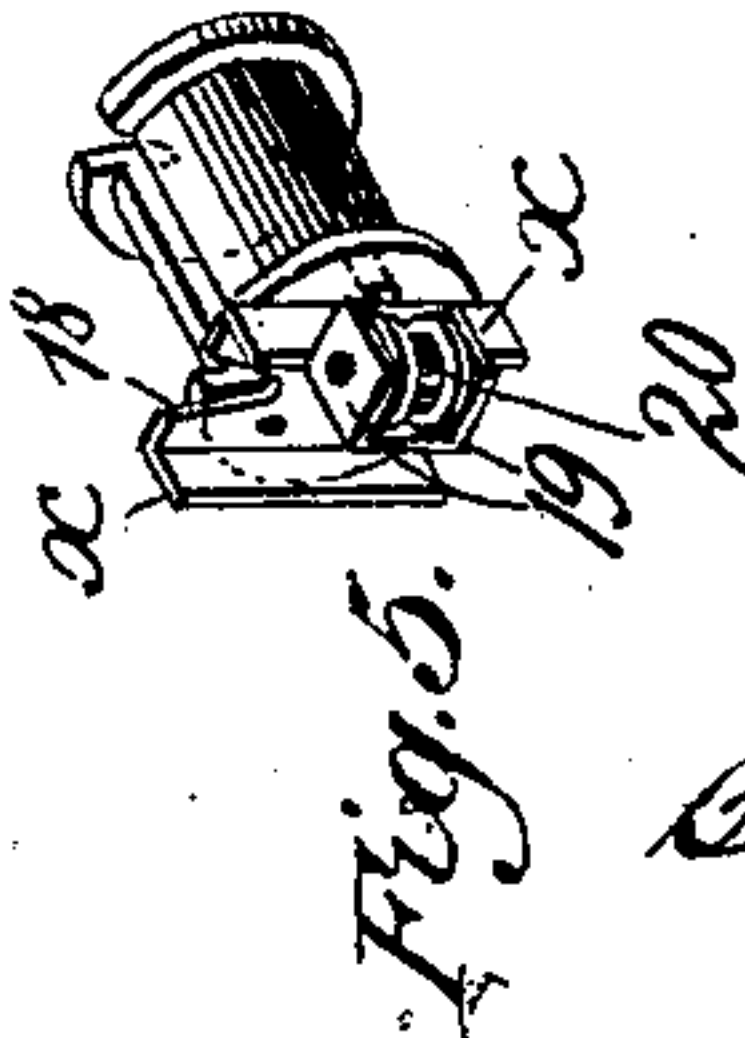


Fig. 5.

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UNITED STATES PATENT OFFICE.

CLEMENT L. EWING AND MILTON EWING, OF JEROMEVILLE, OHIO.

WIRE-FENCE-WEAVING MACHINE.

SPECIFICATION forming part of Letters Patent No. 551,204, dated December 10, 1895.

Application filed July 25, 1895. Serial No. 557,165. (No model.)

To all whom it may concern:

Be it known that we, CLEMENT L. EWING and MILTON EWING, of Jeromeville, in the county of Ashland and State of Ohio, have invented certain new and useful Improvements in Wire-Fence-Weaving Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to that class of fence-making machines in which a series of wires are woven or twisted in zigzag form upon parallel fence-wires.

The invention consists in the improved mechanism hereinafter fully described for shifting the twisting-spools carrying the weaving or connecting wire alternately from one fence-wire to the next adjacent fence-wire, in improved means for automatically imparting an intermittent progressive movement to the entire machine along the line of fence, and, further, in novel devices for adjusting the twisting-spools to compensate for variations in distance between the upper parallel fence-wires.

In the accompanying drawings, Figure 1 is a view in perspective of a machine embodying our invention. Fig. 2 is a front elevation of the machine, showing the means for adjusting the twisting-spools vertically. Fig. 3 illustrates the wire supporting and twisting devices detached. Fig. 4 is a detail view of the shaft of the twisting-wheel; and Fig. 5 is a detail view of the twister-spool and vertical wire bracket.

The frame A of the machine consists of parallel bars 1, supported at their ends upon rollers 2, mounted upon transverse shafts 3.

4 and 5 indicate parallel uprights secured to the base A and braced thereto, respectively, by diagonal braces 6 and 7. These uprights 4 and 5 are each grooved on their inner sides throughout their length and serve as a guideway for a series of slides 8, 9, and 10, formed with tongues fitting the grooves of the uprights. The slides 8, 9, and 10 are normally separated from one another, as shown, and connected loosely by metallic straps 11, secured by headed pins or nails 12, the upper ends of the straps being formed

with vertically-elongated slots 13 to permit a limited vertical play.

Each of the slides is provided with one or more circular bearings 14, within which are supported a series of twisting-spools 15. Each of said spools is formed with diametrically-opposite longitudinal grooves 16 to receive the fence-wires, and with a through-opening at one side of the axial center of the spool to receive the weaving-wire. Upon the inner head of each spool 15 is secured a sheath device or flanged guide. (Shown clearly in Fig. 5.) Each of these guides is slotted at its ends 18 to coincide with the ends of the grooves in the spools, and each guide is provided with right-angular parallel flanges *x*, between which the heads of the twisting-spools operate. Projecting from one of the flanges *x* of the guide and preferably formed integral therewith is a bracket 19, within which is mounted a bobbin 20, carrying the weaving-wire.

In rear of the uprights 4 and 5 and between the bars 1 is arranged an upright 21, braced at its upper end to the uprights 4 and 5, and near its lower end to the base A, and provided with a laterally-projecting arm or bracket 22, braced by a diagonal brace 23. The bracket 22 serves as a support and bearing for a crank-shaft 24, having a handle 25 and carrying a sprocket-wheel 26.

The upright 21 is provided with a series of bearings 27, arranged in the horizontal plane of the bearings 14 in the sliding blocks 8, 9, and 10 when the latter are in their normal position. Within each of the bearings 27 is supported the hollow shaft 28 of a twisting-wheel 29. The wheels 29 are sprocket-wheels and their shafts extend through and beyond the bearings 27 and are provided with cross-heads 30, adapted to rest between the flanges of the guide devices of the slides, as shown, the said guides being capable of a sliding movement on the heads 30 when the flanges of the guides are in a vertical position. The several sprocket-wheels 29 are connected by a sprocket-chain 31 with the wheel 26 upon the crank-shaft 24.

Upon the upper end of the upright 21 is fulcrumed a lever 32, the short arm 33 of which is pivotally connected to one end of a link 34, the opposite end of which is secured to the slide-block 8. The long arm 35 of the

lever is loosely connected by a link 36 with the short arm 37 of a lever 38 fulcrumed upon a post 39 rising from the base of the machine. The lever 38 is provided on opposite sides of
 5 its fulcrum with oppositely-operating gravity-pawls 40 and 41, adapted to alternately engage ratchet-wheels 42 and 43, supported upon stud-pins projecting from a bracket 44, said bracket being secured at one end to the up-
 10 rights 21 and at the other end to the post 39.

The operation of the machine thus described is as follows: The parallel fence-wires secured in the usual manner to posts are passed through the hollow shafts of the twisting-
 15 wheels and through the grooves of the spools 15. By rotating the crank-shaft 24 the several sprocket-wheels are rotated, and their motion is communicated through the headed shaft and guide device to the twisting-spools
 20 to entwine the weaving-wire of each spool around one of the fence-wires. Then by depressing the lever 32 the spools are thrown into contact with the next adjacent fence-wire, and the weaving-wire is, by the con-
 25 tinued rotary movement of the spools, twisted around it, thus uniting the adjacent fence-wires by a zigzag connecting-wire.

One of the fence-wires is passed around and between the ratchet-wheels 42 and 43, and by
 30 the operation of the lever 38 and the action of the pawls 40 and 41 the machine is moved along the line of fence, step by step, upon its rollers.

The slotted straps 11, in connection with
 35 the lever 32, attached to the slide 8, permit the latter to adjust itself to the upper wires of the fence, which are usually farther apart than the lower wires.

Having thus described our invention, what
 40 we claim as new, and desire to secure by Letters Patent, is—

1. In a fence building machine, the combination with a series of vertical slides formed with one or more bearings, of a series of twist-
 45 ing spools each provided with grooves to receive the fence wires and an opening for the

weaving wire, and provided with a flanged guide and a bobbin, an upright adjacent to said slides formed with bearings for the hol-
 low shafts of the twisting wheels, a series of
 50 sprocket wheels on said shafts, crossheads on said shafts adapted to rest within the guides of the twisting spools, and means for rotating said shafts and adjusting said slides, substantially as described. 55

2. The combination with the base and up-
 rights of the machine, of a series of vertically adjustable twisting spools each having a
 flanged guide and adapted to receive the fence
 and weaving wires, a series of twisting wheels
 60 mounted upon hollow shafts provided with heads cooperating with the flanged guides of the spools, pawl and ratchet mechanism, and levers for moving the machine along the line of fence, substantially as described. 65

3. The combination with the twisting wheels and their shafts provided with heads as de-
 scribed, of a series of slides carrying twisting
 spools and provided with an operating lever,
 and slotted straps connecting said slides, sub-
 70 stantially as described.

4. The combination with the grooved up-
 rights and slides supported thereby, and with
 an upright arranged parallel to said slides
 and supporting the twisting wheels, of twist-
 75 ing spools provided with flanged guides and bobbins, and a series of hollow shafts having heads cooperating with said flanged guides, means for rotating said shafts, and means substantially as described for moving the ma-
 80 chine upon its rollers simultaneously with the adjustment of said slides, substantially as described.

In testimony whereof we have signed this
 specification in the presence of two subscrib-
 85 ing witnesses.

CLEMENT L. EWING.
 MILTON EWING.

Witnesses:

HIRAM B. SWARTZ,
 JOHN C. McCLARRAN.