

(No Model.)

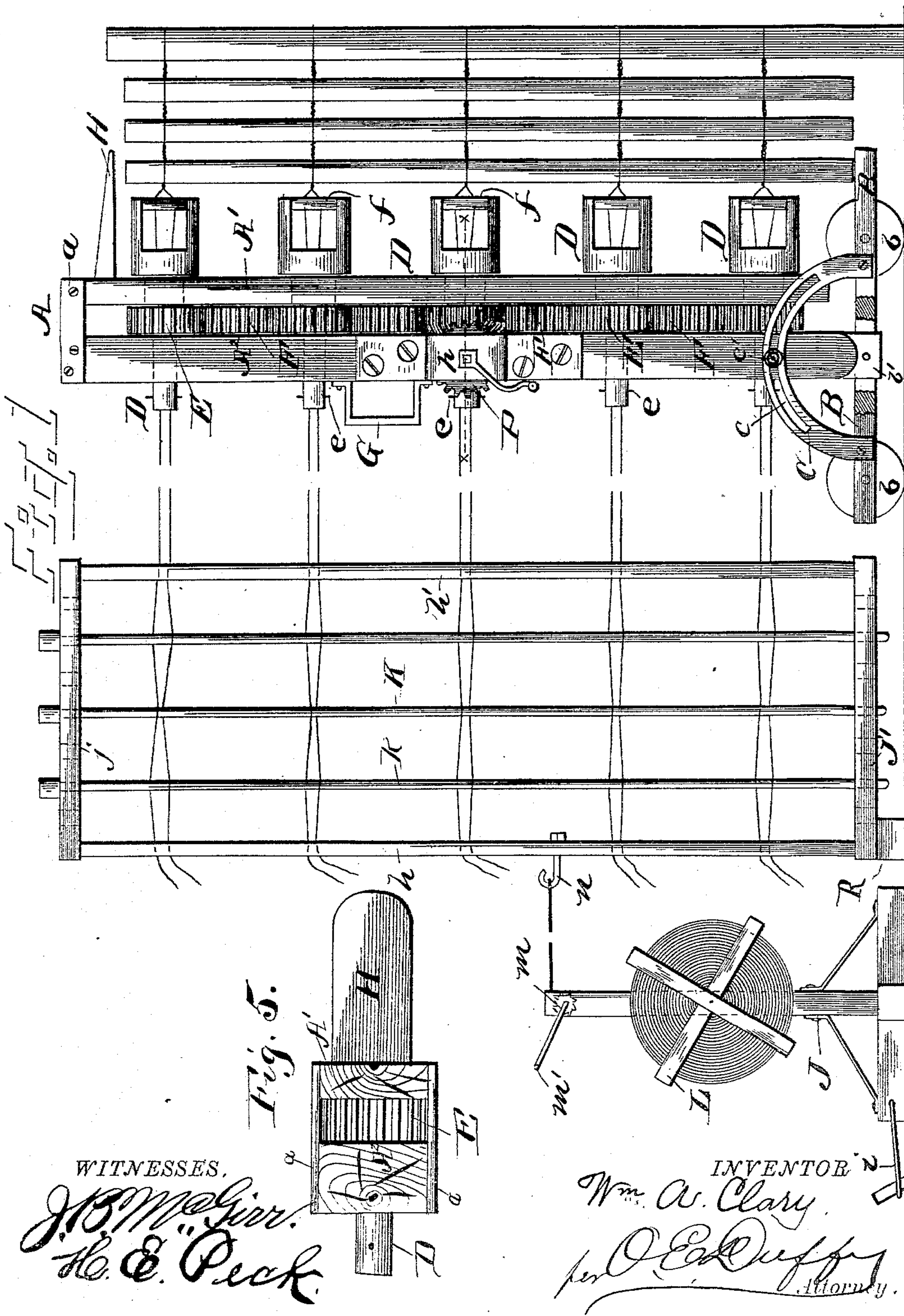
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W. A. CLARY.

FENCE MACHINE.

No. 387,860.

Patented Aug. 14, 1888.



WITNESSES.

J. B. McGinn.
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INVENTOR

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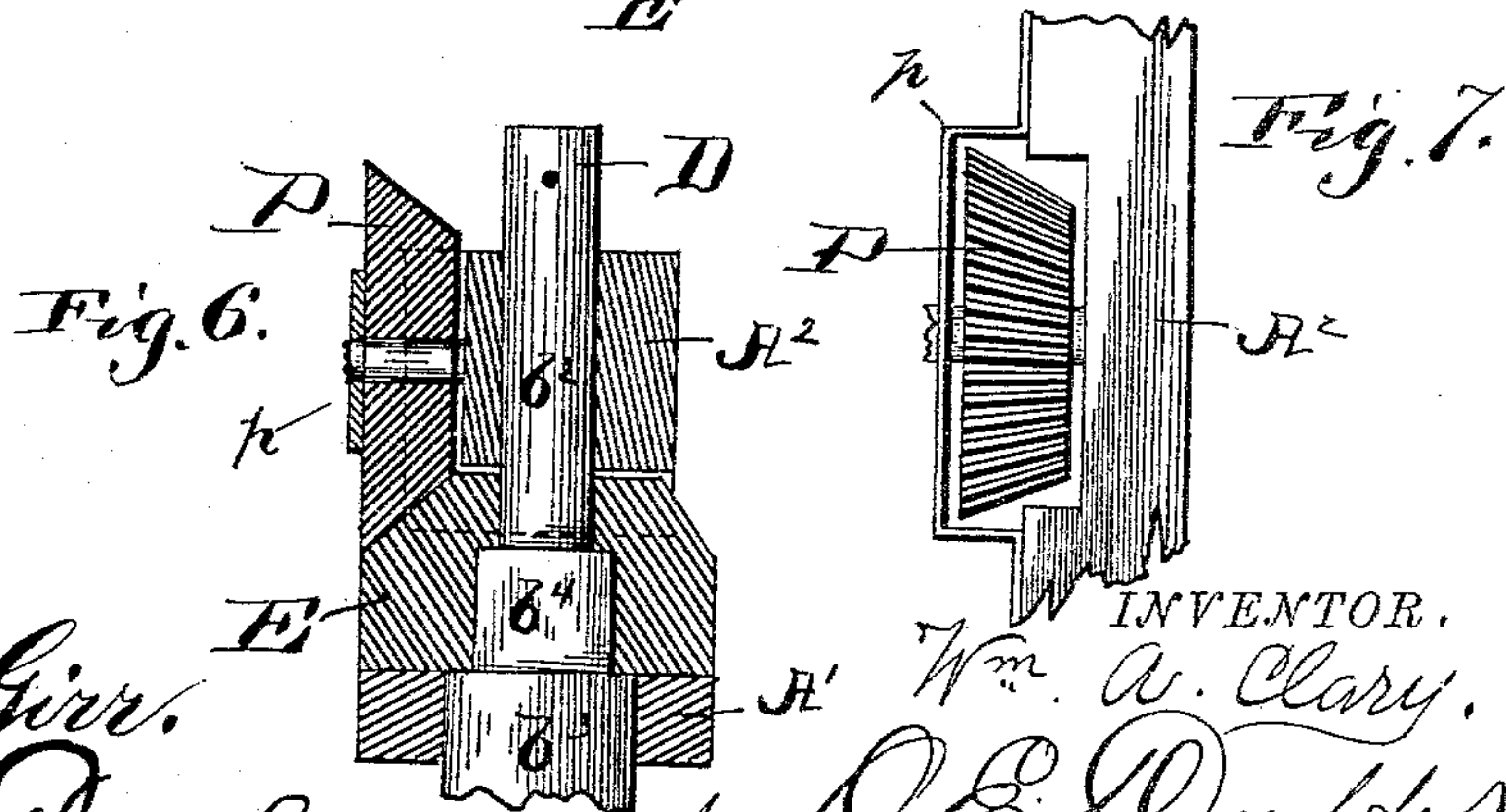
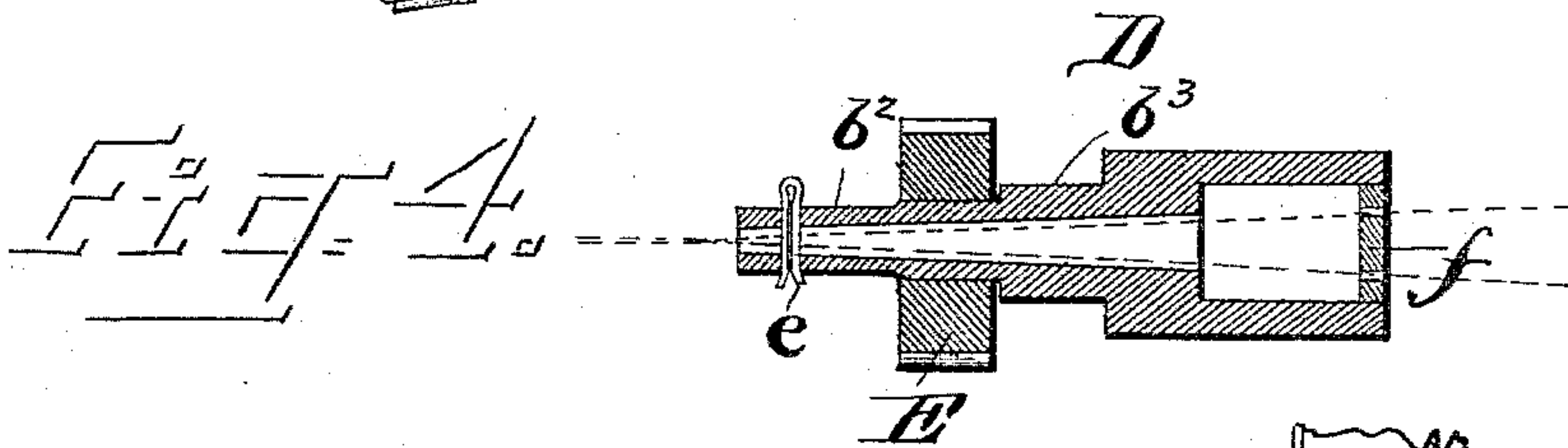
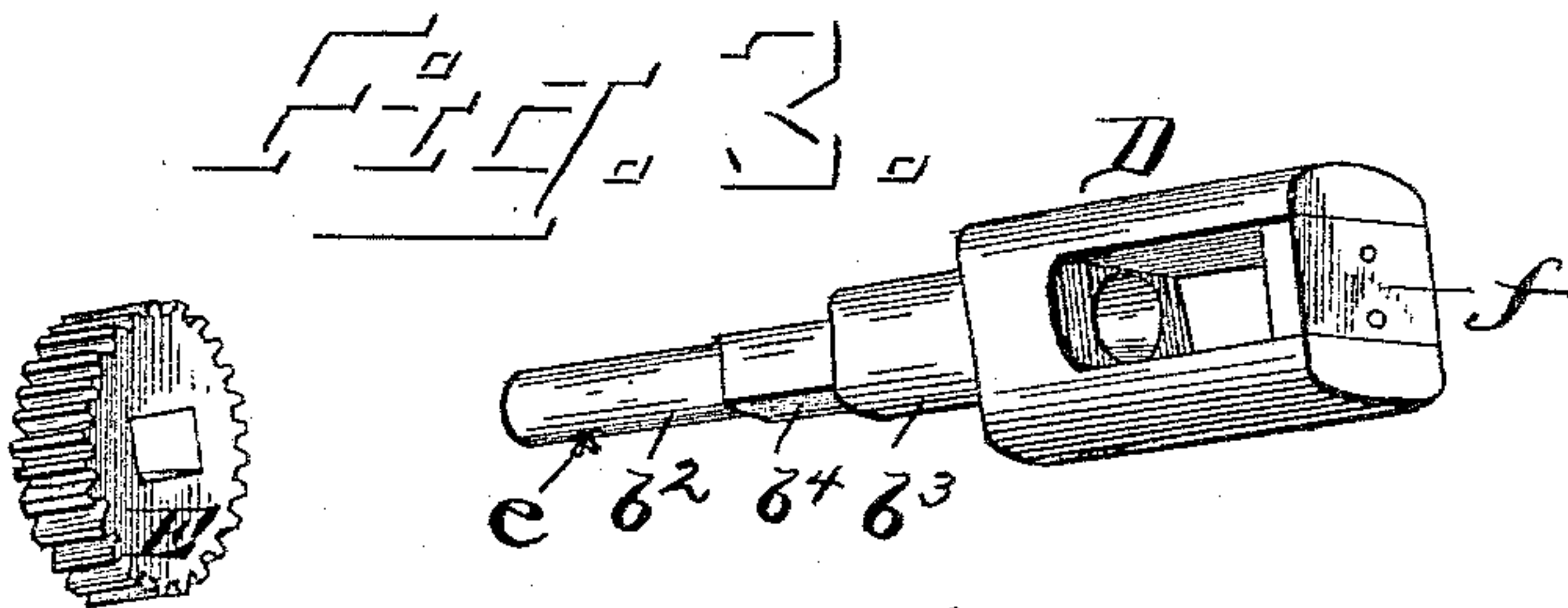
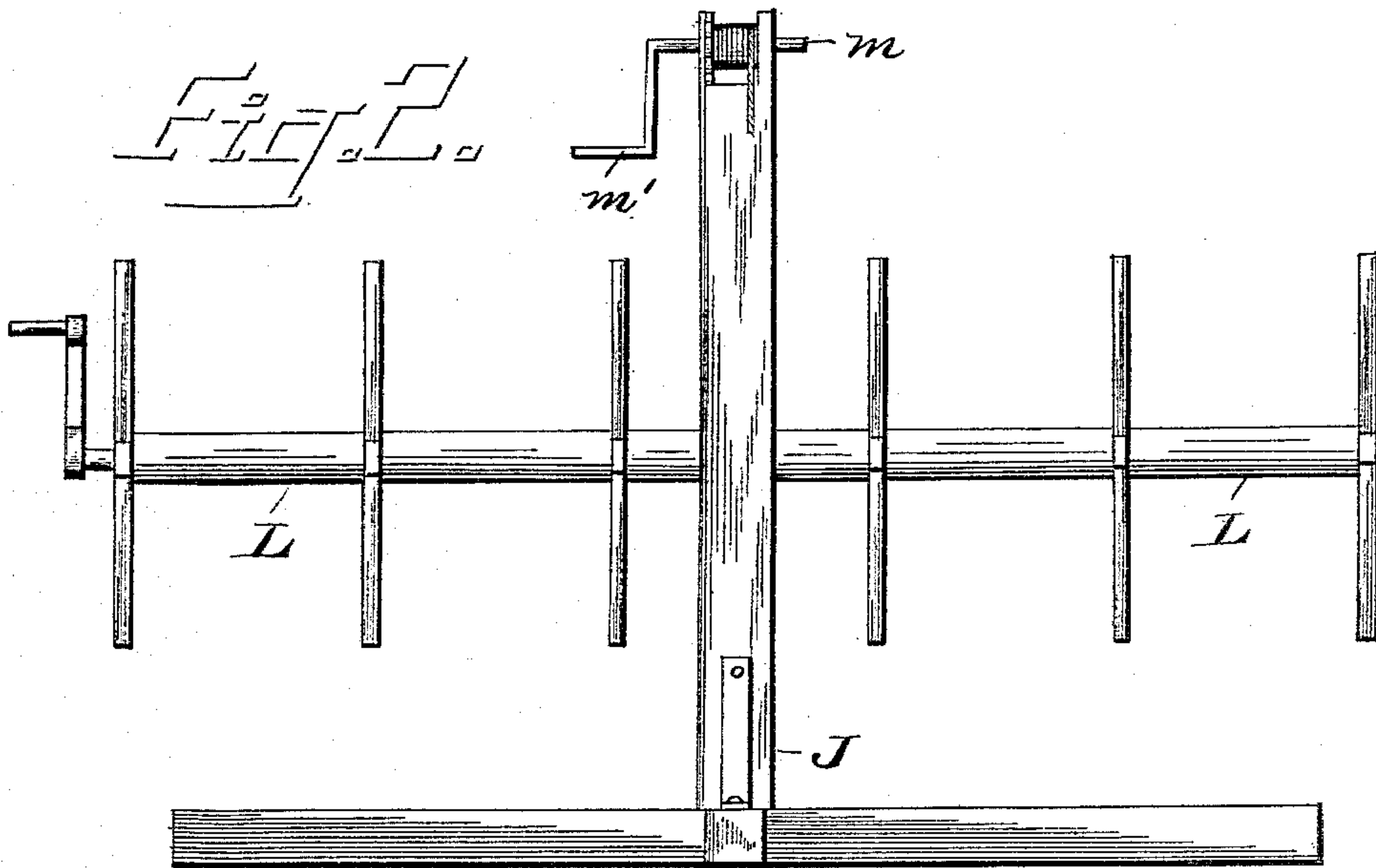
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UNITED STATES PATENT OFFICE.

WILLIAM A. CLARY, OF NORTH FORK, TENNESSEE.

FENCE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 387,860, dated August 14, 1888.

Application filed April 30, 1888. Serial No. 272,345. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. CLARY, of North Fork, in the county of Henry and State of Tennessee, have invented certain new and useful Improvements in Fence-Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

My invention relates to an improvement in machines for constructing wood and wire fences.

The object of my invention is to provide an improved fence-making machine provided with an improved wire tension or tightening device, and which shall be exceedingly simple and cheap in construction and quick, easy, and effective in operation.

With these ends in view my invention consists in certain novel features of construction and combinations of parts, more fully described hereinafter, and particularly pointed out in the claims.

Referring to the accompanying drawings, Figure 1 represents a side elevation of my complete device, illustrating a portion of the completed fence. Fig. 2 is a front elevation of the reel carrying the wire. Fig. 3 is a perspective view of one of the twistors, its gear-wheel being shown detached. Fig. 4 is a longitudinal section of a twister. Fig. 5 is a top plan of the wire-twisting machine, showing the shield or flange. Fig. 6 is a section on the line $x x$, Fig. 1, showing the bevel-gearing for rotating the twistors; and Fig. 7 is a detail view of the rear upright, showing the manner of mounting the main bevel-gear in said upright.

My improved fence-making machine is composed of a vertical wire-twisting machine, a wire tightening or tension device, and the reel carrying the wire.

I will first describe the wire-twisting machine.

In the drawings, the reference-letter A indicates a vertical fence-wire-twisting machine composed of two parallel uprights, $A' A^2$, secured together and a suitable distance apart by one or more cross-pieces, a , and the wire-

twisting machine is supported and carried by a horizontal piece or frame, B, provided with slotted ends, in which are journaled a pair of wheels, $b b$, by which the device is movably supported. The supporting frame B is centrally provided with a vertical aperture, which receives a tenon or tongue, b' , formed on the lower end of one of the uprights $A' A^2$, and said tenon is pivotally secured in the vertical slot or aperture, to allow the machine a limited vertical movement, for the purpose hereinafter to appear. A slotted segment or brace, C, is secured at its ends to the supporting-frame B, and extends upwardly and bears against the sides of the vertical posts or uprights, and is provided with a curved slot, c , through which a set-screw, c' , secured to one of the uprights of the machine, extends, and in which it is confined, thus bracing the machine and keeping it in a vertical position when working over inequalities or undulations in the surface of the ground.

The vertical parallel posts of the machine are provided with a vertical series of horizontal aligned or registering apertures, the apertures in the front post, A' , being preferably of somewhat greater diameter than those in the rear post, A^2 , and each of said apertures is adapted to receive a horizontal wire-twister, D, composed of a hollow spindle extending through and projecting beyond its pair of aligned apertures in the two vertical bars of the machine.

The rear or wire-receiving end of the twister-spindle is rounded to form a journal or bearing-surface, b^2 , to rotate in its aperture through the rear vertical bar, A^2 , and near its front portion the spindle is provided with another bearing-surface, b^3 , to work in the aperture in the front vertical post, A' , and between said rounded bearing-surfaces the spindle is provided with a squared portion, b^4 , upon which a spur-wheel, E, is mounted, and which is located in the space between the inner faces of the upright posts. A pin, e , extends through the rear end of the spindle, which projects beyond the rear upright post, for the purpose of holding the spindle in the apertures and for separating the wires as they enter the spindle. The opposite front projected or discharge end of the spindle is enlarged and provided with

an outwardly-flaring bore, and two opposite sides of the enlarged discharge end are longitudinally slotted, as shown, and the discharge end is partially closed by a cross-piece, *f*, provided with two openings for the passage of the pair of wires fed through and twisted by each spindle.

Between each gear-wheel on the twisters and the gear-wheel on the adjoining twister in the vertical series are located the gears *F*, working loosely in the space between the upright posts and meshing with the spindle-gears on each side.

At about the vertical center of the loom the rear upright post is recessed on one side, and an outwardly-bent strap, *p*, secured to the post at its ends, extends over said recess, forming a space in which is journaled a bevel-gear, *P*, the spindle or axis of which extends through and beyond the strap and is provided with a crank whereby the same is operated, and said bevel-gear is adapted to mesh with bevel-gearing formed with the gear-wheel on one of the twisters. Thus it will be readily seen that when the crank is turned all the twisters will be rotated through the medium of the bevel-gears and the intermeshing spur-wheels.

A flange or shield, *H*, projects forwardly from the top of the front upright post of the loom over the wire-discharging ends of the twisters to protect the same from rain or falling objects. A handle, *G*, is secured to the rear upright post of the vertical wire-twisting machine, by which the same is more easily handled. The forward end of the pivoted support *B* extends a suitable distance beyond the forward wheel, *b*, to form a rest or support for the bottom of the pickets when being placed in position.

The wire tension or tightening device is composed of a rectangular frame, the vertical end pieces, *h h'*, of which are provided with a vertical series of apertures arranged in pairs, the number of pairs being preferably equal in number to the number of twisters in the vertical loom, and the top and bottom pieces, *j j'*, of the tension-frame are also provided with registering or aligned apertures for the admission of tension-bars *K*, for the purpose hereinafter seen. The tension-frame is provided with one or more supports, *R*.

The reel-support *J* is firmly secured in position, preferably by securing the link *i* to a post or the like, and the horizontal reel *L*, carried by the support, is divided into vertical sections preferably equal in number to the number of twisters employed in the vertical loom. The upper end of the loom-support is bifurcated, and a shaft, *m*, is journaled in said upper end and extends through the bifurcated portion, and is provided with a hand-crank, *m'*, at one end. In said bifurcated end the shaft is provided with a reel, to which is secured one end of a rope, chain, or the like, the opposite portion of said rope being secured to a hook, *N*, projecting from the rear end piece of the tension-frame.

In constructing a fence with the herein-described device, after the posts have been placed in position the vertical wire-twisting machine placed at the beginning post, with the discharge or flaring ends of the twisters facing the post, the tension-frame is then placed a suitable distance to the rear of the loom, and then the reel-support is secured in position to the rear of the tension-frame by driving a stake or the like through the link *i*. The wire is then unwound from the reels and passed through the apertures in the end pieces of the tension-frame, two wires being located on each division of the reel and the wires from each division being passed through a separate pair of apertures in the tension-frame. After the wires have been passed through the tension-frame, the wires from each pair of apertures in the same are passed through a separate twister and secured to the beginning post. After the wires have been loosely passed through the tension-frame, the tension or tightening bars *K* are inserted in the apertures in the top and bottom pieces of said frame, so that every alternate wire will pass on one side of each post and the intervening wires will pass on the opposite side, and every wire will pass from one side of one post to the opposite side of the next post, and so on. Thus it will be seen that the wires are woven in and out between the bars, and that when pulling force is exerted upon the tension-frame the wires will be stretched tight. When the wires have been secured to the post and the tension-bars placed in position, and it is desired to tightly stretch the wires and begin constructing the fence, the free end of the rope on the reel in the upper portion of the reel-support is secured to the hook *N* of the tension-frame, and the reel-shaft *m* is rotated by the crank to wind up said rope, thus drawing the tension-frame toward the reels and tightly stretching the wires.

It should be observed that by this improved wire-tightening device the wires are all simultaneously and uniformly stretched and tightened by a single operation and by rotating one shaft.

The further operation of the vertical wire-twisting machine will be readily understood, as it is similar to those heretofore in use. The bevel-gear is rapidly rotated by the crank, thus rotating the twisters in one direction and twisting the wires the desired amount. A picket is then placed in position between the wires, and then the bevel-gear is rotated in the opposite direction, thus operating the twisters to twist the wire in the opposite direction, and so on until the desired length of fence has been built.

What I claim is—

1. The herein-described wire-twisting machine, comprising the uprights located a suitable distance apart and provided with a vertical series of registering apertures, one or more cross-pieces connecting said uprights, a supporting-frame carried by wheels and upon which the uprights are pivotally mounted,

twisters extending through said apertures in the uprights, each of said twisters consisting of a hollow spindle provided with bearing-surfaces to operate in the uprights and having an angular portion between said bearing-surfaces, gear-wheels mounted on said angular portions of the twisters and located in the space between the inner faces of the uprights, gear-wheels meshing with said gears on the twisters and journaled in the space between the uprights, the gear on one of said twisters being also provided with a bevel-gear, and a bevel-gear provided with a crank, whereby the twisters are rotated, as set forth.

2. In a wire-twisting machine, the combination of the uprights suitably secured together and provided with a vertical series of registering bearings, a supporting-frame carried by wheels and on which the uprights are pivotally mounted, twisters provided with bearing-surfaces operating in said bearings, gear-wheels located between the uprights and mounted on said twisters between their bearing-surfaces, gears meshing with and connecting the gears on the twisters, the gear on one of said twisters being also provided with a bevel-gear, an outwardly-bent strap secured to an upright and extending over a recess in

the same, and a bevel-gear journaled in said recess and meshing with the bevel-gear on the twister and provided with a crank, as set forth.

3. The herein-described twister, consisting of a hollow spindle provided with a flaring or enlarged discharge end, a cross-piece extending across said end and provided with a pair of apertures for the passage of the wire, said hollow spindle being provided with two bearing-surfaces, and a squared or angular portion located between said bearing-surfaces to receive a gear-wheel, substantially as described.

4. The combination, with a wire-twisting machine, of a tension-frame composed of end and bottom pieces, said end pieces being provided with apertures, and tension-bars extending across the frame and removably held in said top and bottom pieces, the wire passing through said apertures in the end pieces and in and out between the tension-bars, as described.

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

WILLIAM A. CLARY.

Witnesses:

GEO. W. CONWAY,
R. P. DIGGS.