

(No Model.)

J. D. LOVING.
FENCE MACHINE.

No. 570,938.

Patented Nov. 10, 1896.

Fig. 1.

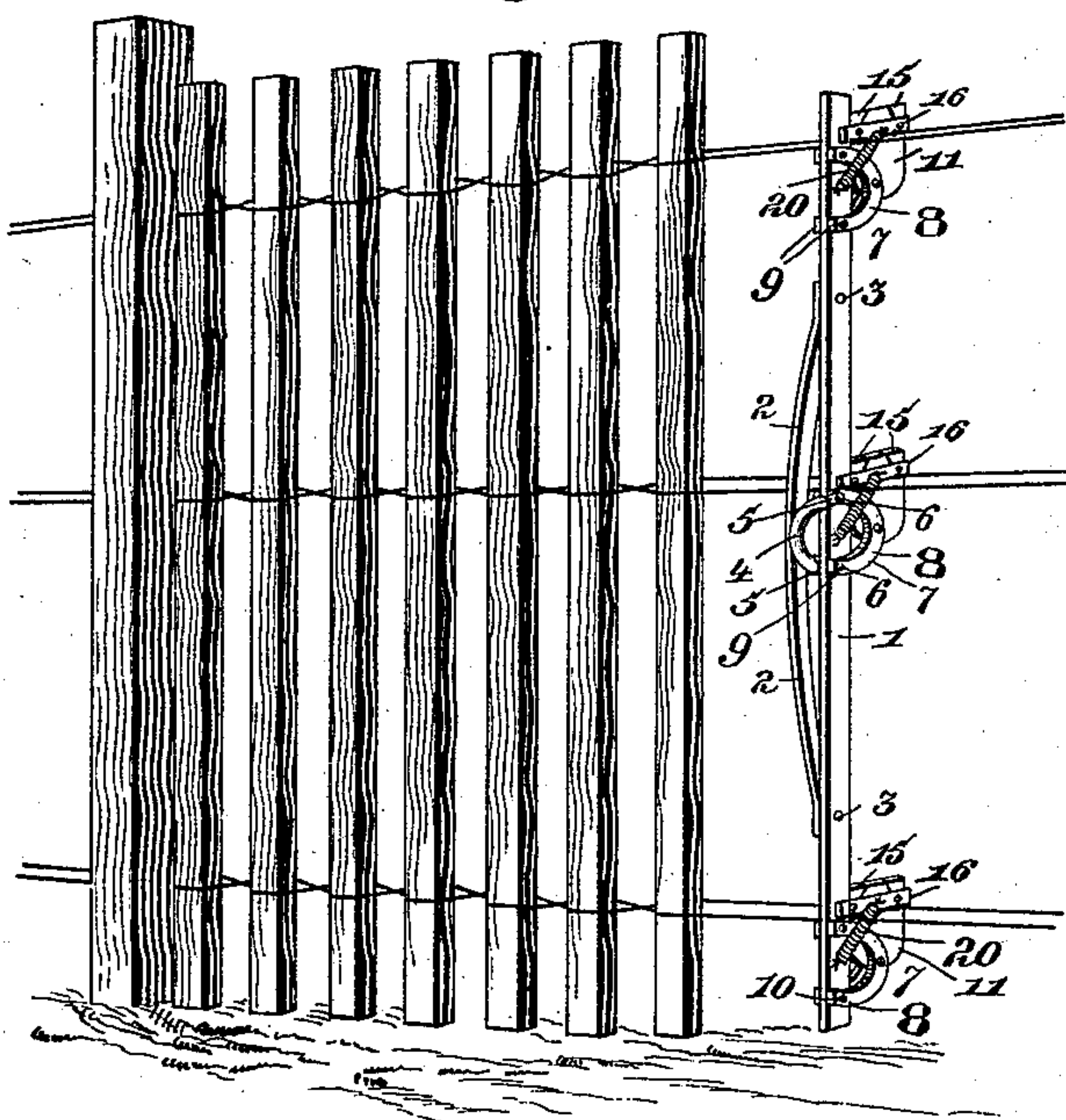


Fig. 4.

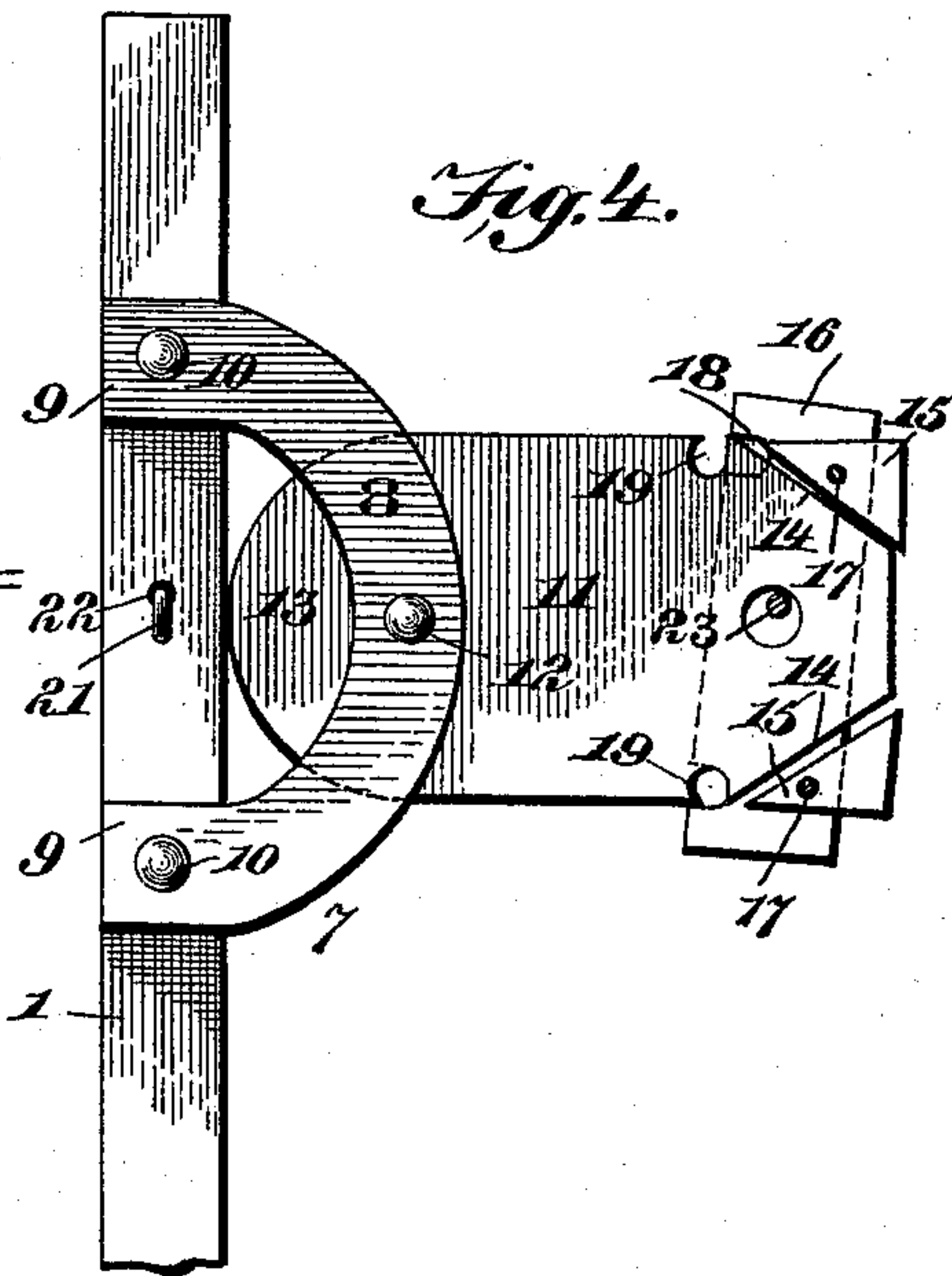


Fig. 2.

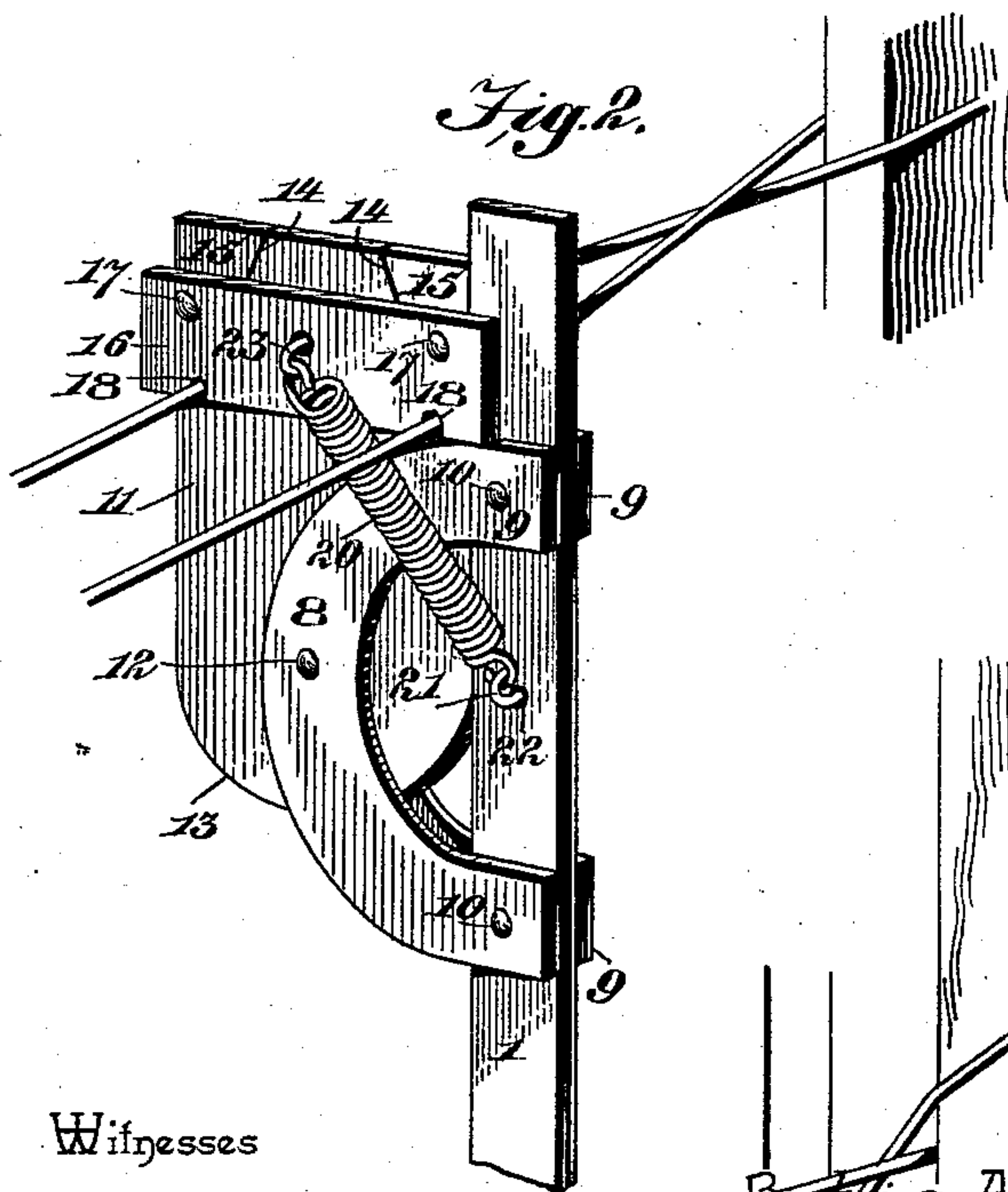
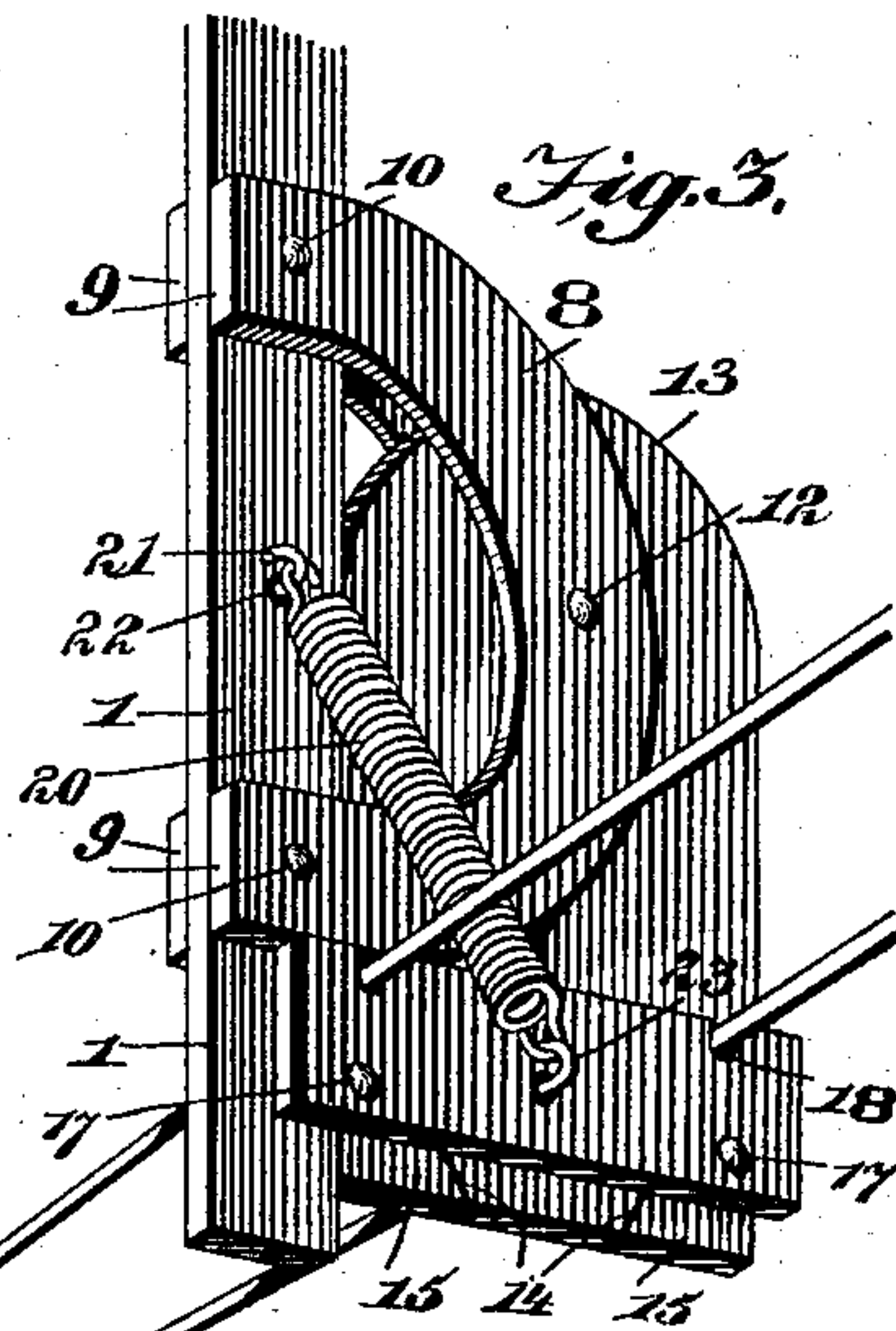


Fig. 3.



Witnesses

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JAMES D. LOVING, OF BOWLING GREEN, KENTUCKY.

FENCE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 570,938, dated November 10, 1896.

Application filed July 28, 1896. Serial No. 600,829. (No model.)

To all whom it may concern:

Be it known that I, JAMES D. LOVING, a citizen of the United States, residing at Bowling Green, in the county of Warren and State of Kentucky, have invented a new and useful Fence-Machine, of which the following is a specification.

This invention relates to machines for wiring wood fencing and constructing fences of longitudinal wires or cables and vertical pickets, the latter being bound in between the strands or companion wires by crossing the latter between them.

An object of the invention is to provide a machine for the purpose aforesaid which will be light, easily manipulated, durable, compact in the disposition of its parts, comprise a minimum number of elements, admit of the fence-wires being quickly and easily placed in position or removed, and which in part will be automatic in its action after the twist-ers pass a central or intermediate point.

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 perspective view of a section of picket fencing, showing it in course of construction and the improved machine in operative relation. Figs. 2 and 3 are detail views of a wire-twister as seen from opposite sides and in its extreme positions. Fig. 4 is a detail view showing the manner of moving the parts to provide for the insertion or the removal of the wires.

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

The improved machine is illustrated as provided with three wire-twisting devices, one at each end and one at or about the center. In this construction the machine is adapted to simultaneously and with one either

upward or downward movement of the hand cross top, bottom, and central wires between the pickets. When desired, however, only the top and bottom wire-twisting devices need be engaged with wires, or the machine may be provided with top, bottom, and as many intermediate twisting devices as may be desired.

1 is the frame, which consists of a straight flat bar, as shown, and 2 is a curved brace-bar bolted at its ends to the bar 1, as indicated at 3, and not only serving, by reason of its curvature, to strengthen said main bar 1, but also providing a hand-grasp, should such be desired in the operation of the device.

4 is the operating-handle or hand-grasp by means of which the frame 1, carrying the wire-twisters, is reciprocated vertically up and down parallel with the pickets of the fence and across the path of the fence-wires in the operation of crossing said wires. The terminals 5 of this handle or hand-grasp 4 are slightly curved, so as to rest the one against one face and the other against the other face of the frame 1, to which they are bolted or riveted, as shown at 6. When a wire-twisting device is, as shown in the drawings, located at or about the center of the frame 1, the ends of the handle rest against the adjacent faces of and are bolted or riveted to a curved bridge piece or plate carrying the central wire-twister, the bolts or rivets in such case passing through both the terminals of the handle and the inner ends of said bridge-plate.

The devices for crossing the wires so as to secure the pickets in position, and located at the bottom and top of the frame 1 and intermediate thereof, are each of identical construction. Therefore it will be necessary only to describe one in detail.

7 represents a bridge, which serves as a bearing and support for the wire-twisting mechanism. This bridge is composed of a pair of curved plates 8, which are bolted or riveted at their ends 9 to opposite sides of the frame 1, as at 10, so as to practically straddle said frame. A plate 11 is rockingly pivoted at 12 between the bridge-plates 8, and has a curved inner end 13, which, as the frame is reciprocated while the wires are gripped by the twister, operates and obtains a bearing on the adjacent edge of the frame 1, and op-

erates with a pair of springs, presently to be described, to cause the throw of the twisting device to one side or the other of the bridge with such positive, uniform, and rapid movement as to insure the crossing of the wires. The outer end of this plate 11 is formed with inclined edges 14, which serve as slideways upon which wedge or tapering dogs 15 move and to which the clamp-plates 16, one on each side of the plate 11, are pivoted, as at 17. Notches 18 are formed in the inner or rear edges of the clamp-plates 16 and similar but reversely-disposed notches 19 in the respective side edges of the plate 11, at the base of the inclined portions thereof. Within these notches are held the wires to be crossed. A pair of spiral springs 20 are connected at their respective ends in any suitable manner to the portion of the frame 1 adjacent to the bridge and to the clamp-plates 16 and the adjacent portion of the rocking plate 11. The drawings show a preferred mode of securing the spring connection between the frame and the wire-twisting mechanism by passing a link or eyed rod 21 through a hole 22 in the frame 1, to the ends of which link or rod one end of the respective springs is connected, the other ends of said springs being similarly connected to another link or eyed rod 23, passed through holes in the clamp-plates 16 and the rocking plate 11. In this arrangement the links or eyed rods have rocking bearing in said holes, by which means undue friction in the oscillatory movements of the parts is avoided and the sidewise oscillation of the springs as the twisters are either raised or lowered is provided for.

The operation of the improved wire-twister, as well as its construction, is very simple. It can be readily and cheaply constructed and easily and conveniently manipulated. The wires to be crossed are attached to the fence-post and supported in the usual manner, so as to admit of the automatic unreeling thereof as the fence is being built. The machine is placed in position on the wires with a pair of wires or strands comprising a cable located in the respective notches 19 of a plate 11, the clamp-plates 16 being alternately moved outward at their ends, so as to admit of the wires being passed into the notches 18 and 19. When placing the wires in position, one end of the clamp-plates is moved outward against the tension of the springs 20, said plates turning upon their pivotal connection 17, with the dog 15 at their opposite ends, and after the wire is placed in position the end moved outward is released and is drawn inward by the action of the springs 20. The opposite end of the clamp-plates is moved in a similar manner, the plates turning upon their pivotal connection 17, with the dog at the end of the plates first moved, and when the second wire is seated within the notches 18 and 19 the clamp-plates are released and the wires are retained in place in the respective notches by the retractile action of the springs 20.

The operator then grasps the handle 4 and draws the frame down or raises it, as the case may be, according to the position of the twisting mechanism relatively to the supporting-bridge. This act exerts tension on the wires contained within the notched portions already referred to and on the clamp-plates 16 and the plates 11, which plates 11 and 16 then rock on their pivotal and spring connections and turn over to a position the reverse of which they formerly occupied and against the opposite side edge of the bridges, thereby carrying with them the fence-wires held by the dogs and turning and crossing the wires, as will be readily understood. A picket is then placed between the wires and adjacent to their crossing. The operator then reverses the movement of the frame, which act restores the clamping devices to their former position and consequently again crosses the wires still clamped between the plates 16 and 11. The frame is then slid along the wires a sufficient distance and moved vertically to again cross the wires. Another picket is then placed in position, the frame is again moved vertically in the reverse direction, and another cross given to the wires. This operation of first either drawing down or raising the frame to cross the wires held by the clamp and rocking plates, then inserting a picket, then moving the frame in the reverse vertical direction to cross the wires against the picket, and then sliding the frame along the wires for a repetition of the operation is continued until the end of the line at which it is desired to construct the fence is reached, when the frame is removed from the wires and the ends of said wires fastened to a post in the usual manner.

From the foregoing it will be understood that the machine is labor-saving, holds the wires in place while positioning the pickets, can be easily and readily applied to or detached from the fence-wires, maintains the latter in working relation, and prevents them from accidental displacement while the machine is in service, and the machine is so constructed that it can be operated by one hand, leaving the other hand free to place the pickets in position after the wires have been crossed to secure the picket previously bound between the wires by crossing them in front thereof.

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

1. In a fence-machine, the combination of a frame, a plate having pivotal connection with the frame and adapted to have the wires applied thereto, and a spring connection between the plate and frame to throw the plate to one side or the other when turned to and moved slightly beyond a position in which a straight line will pass through the pivotal support of the plate and the points of attachment of the spring connection with the plate and frame, substantially as set forth.

2. In a fence-machine, the combination of

a plate having inclined slideways, a clamp having pivotal connection with the plate, and dogs pivoted upon the clamp and adapted to move upon the slideways, substantially as 5 and for the purpose described.

3. A fence-wire twister consisting of a frame, a notched plate rockingly mounted thereon, a clamp having a notched lower edge and having rocking bearing on said rocking 10 plate, and a spring connecting said clamp, rocking plate, and frame, substantially as and for the purpose set forth.

4. A fence-wire twister consisting of a frame, a plurality of bridge-pieces mounted 15 thereon, plates rockingly pivoted on said bridges and having curved inner ends and notched edges, clamp-plates having notched under edges and having rocking bearing on said rocking plates, springs connecting said 20 rocking plates, clamp-plates, and frame, and an operating-handle for vertically reciprocating said frame, substantially as and for the purpose set forth.

5. A fence-wire twister consisting of a frame, a plurality of curved bridge-plates con- 25 nected therewith, plates having rocking bearing on said bridge-plates and having curved rear ends and at their upper portions notched edges and inclined ways, dogs adapted to re- 30 ciprocate along said ways, plates located on opposite sides of said dogs and having notched under edges and rockingly connected with said dogs, eyed rods or links having rocking bearing in slots or holes in said frame and 35 notched plates, respectively, springs connected with said eyed rods or links, and an operating-handle attached to the frame for vertically reciprocating the same, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as 40 my own I have hereto affixed my signature in the presence of two witnesses.

JAS. D. LOVING.

Witnesses:

W. H. MILLER,
J. G. BURCH.