(No Model.)

E. H. RICE.

WIRE AND PICKET FENCE MACHINE.

No. 559,985. Patented May 12, 1896.

Fig. 2.

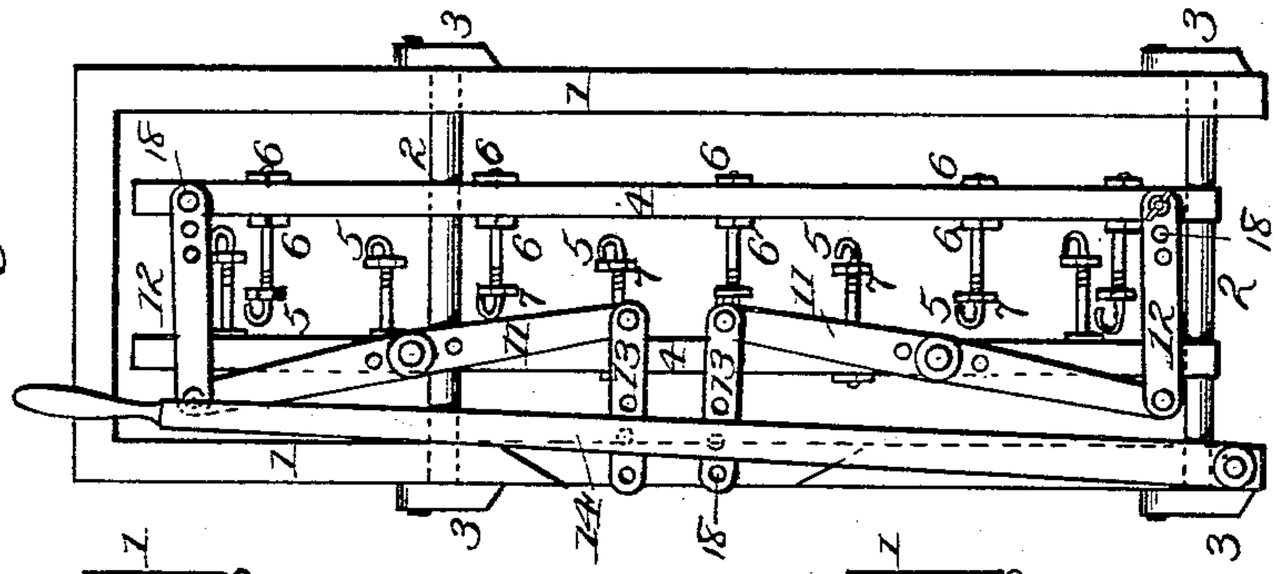


Fig. 5.

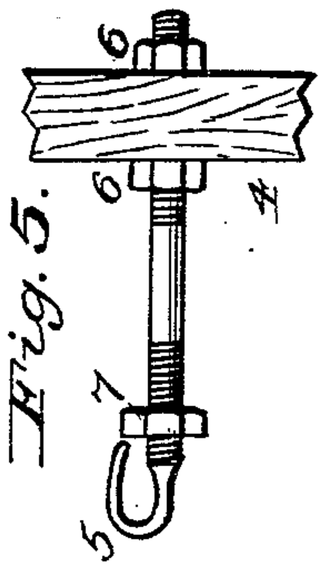


Fig. 3.

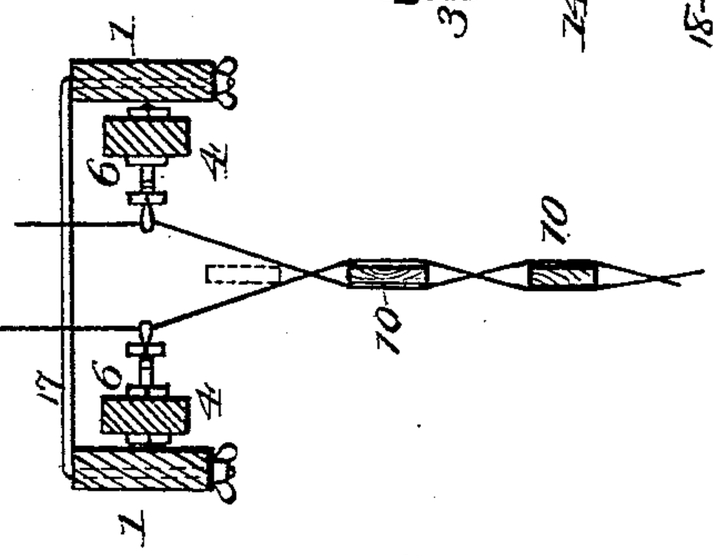


Fig. 4.

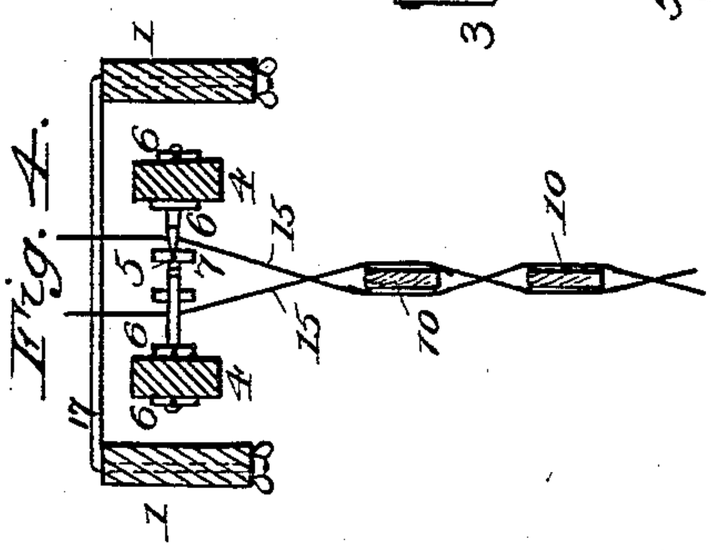
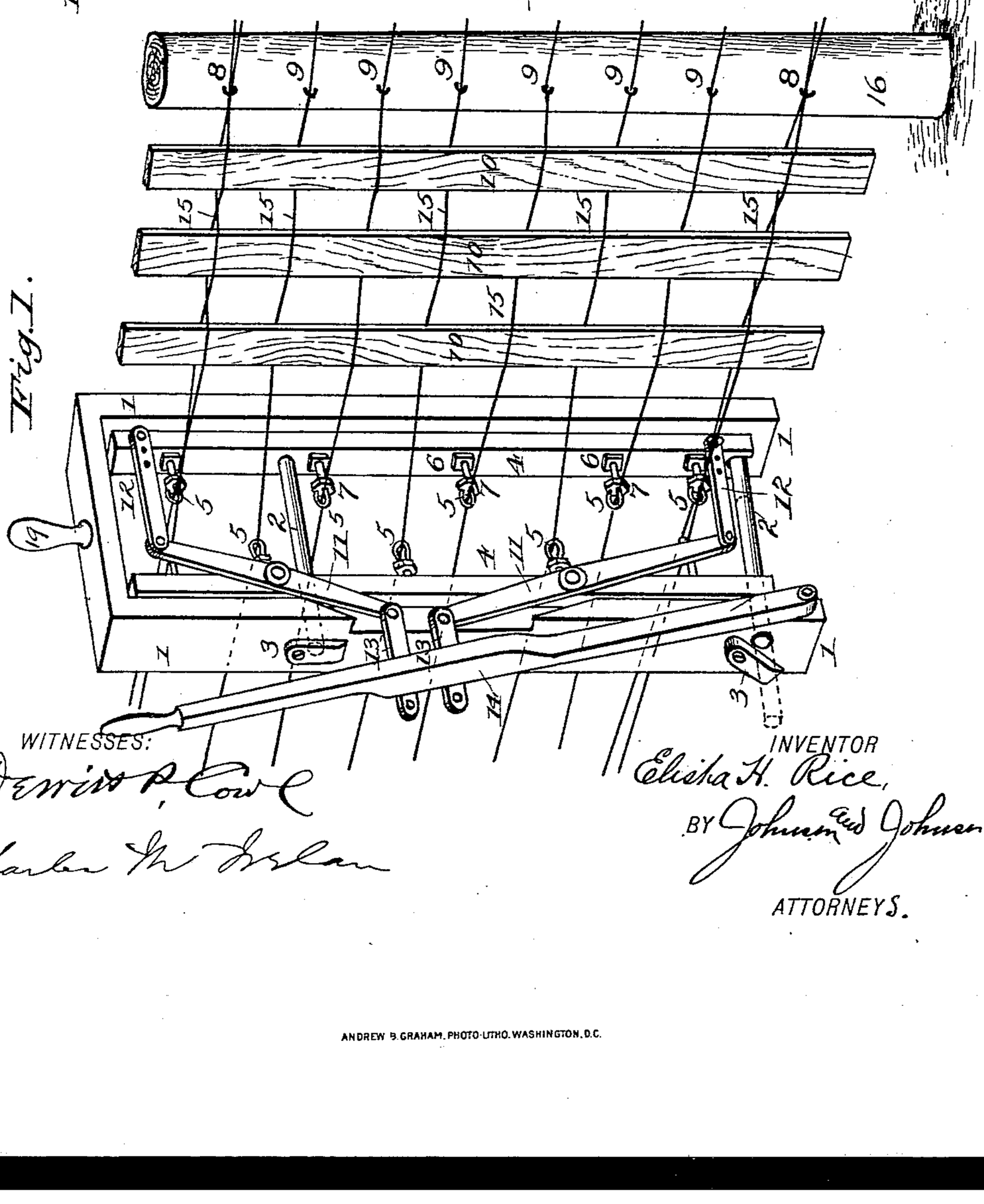


Fig. 1.



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UNITED STATES PATENT OFFICE.

ELISHA H. RICE, OF AUSTIN, TEXAS.

WIRE-AND-PICKET-FENCE MACHINE.

SPECIFICATION forming part of Letters Patent No. 559,985, dated May 12, 1896.

Application filed January 25, 1896. Serial No. 576,869. (No model.)

To all whom it may concern:

Be it known that I, ELISHA H. RICE, a citizen of the United States, residing at Austin, in the county of Travis and State of Texas, have invented certain new and useful Improvements in Picket-Fencing Machines, of which the following is a specification.

I have produced an improved machine for securing pickets in wire fencing, the wires having been secured to and stretched between the fence-posts and the machine applied to the wires and operated by hand to secure the pickets to the wires by an operation which places them in crossed relation to form loops within which the pickets are secured at the proper distance apart. The improved construction has the advantageous provision for allowing the machine to be conveniently applied to the wires after they have been stretched between the posts.

In my improved machine the device by which two strands of wire are crossed to form the picket-loops consists of two bars, of a length suited to the number of wires used in the fence, mounted to slide in parallel relation to each other upon guides, and each provided with hooks for holding these separate wires, the said bars being connected and operated to have equal movement toward and from each other to open and to hold the wires open to receive the picket and be closed to cross the wires upon and to clamp and to hold it in vertical position. The guide-rods are made removable to allow the machine to be placed over the wires, so that the latter can be secured in the hooks of the bars, and while the machine is being so placed the hook-containing bars are held in position without the guide-rods. In these particulars the use of the machine is greatly facilitated and adapted for fences having different number of wire strands, as I will now describe, and particularly specify the improvement in the claims concluding this specification.

Referring to the accompanying drawings, Figure 1 shows in perspective a portion of a picket-fence and the fencing-machine connected with and mounted upon the wires in position to operate them to receive and to clamp the pickets. Fig. 2 is a side view of the fencing-machine, the hook-containing bars being shown in closed position. Fig. 3 shows in horizontal section the hook-containing bars in the positions they occupy when opening the wires to receive the pickets. Fig. 4 is a like section showing the hook-containing bars in closed relation to cross the wires upon the picket to clamp it, and Fig. 5 shows one of the wire-containing hooks.

The frame consists of two bars 1 1, connected and firmly braced together at one end, which is the top of the machine, the lower ends of the bars having only removable cross connections for a purpose which I shall presently state. In holes in these bars horizontal rods 2 2 are loosely fitted at the lower and near the upper end of the frame, and are held in position by buttons 3 3 on the outer sides of the bars, as seen in Fig. 2, so that these rods can be removed and replaced, and when so removed and the hook-containing bars are in open position, as seen in Fig. 3, the machine can be placed vertically over the wires in position to conveniently engage them in the hooks of the wire-crossing bars.

Upon the guide-rods are mounted two bars 4 4, each provided at their upper and lower ends with hooked stems 5 5, which stand horizontally inward toward each other in different planes, so that the hooks will pass and lap each other when the bars are moved toward each other. These hooked stems are screw-threaded and made adjustable in the bars by nuts 6 6, while the hooks are provided with nuts 7 to close them to retain the wires in the hooks. These top and bottom hooks are arranged to engage separate strands of wire secured together in the same post by staples 8, as seen in Fig. 1, so that they will be bound closely together upon the picket at its upper and at its lower ends, while intermediate hooks are disposed to engage wires which are separately secured in the post by staples 9. In the operation of these hook-containing bars it will be understood that they place each wire on alternate sides of the pickets 10 and bind them in vertical parallel relation between the wires, as I shall presently more particularly state.

The compound lever device for operating the hook-containing bars consists of two levers 11 11, each mediately pivoted to one of the hook-containing bars near its upper and its lower ends, and which levers are pivotally

connected to the upper and lower ends of the other hook-containing bar by links 12. The other or inner ends of these mediately-pivoted levers 11 are pivotally connected to a hand-lever 14 by links 13 13. The levers 11 are pivoted to the edge of one of the hook-containing bars, and the hand-operated lever is pivoted to the lower end of the frame-bar and stands in vertical relation thereto with its handle upward at the side of the machine, so that the links 13 13 stand horizontal and connect the said levers 11 11 in the middle of the length of the hook-containing bars, whereby the latter are caused to have equal movements toward and from each other to cross the wires. It will be understood that the desired number of wires are properly secured to the permanent fence-posts, one of which, 16, is shown, so that the wires will give at one end to compensate for the take-up by the loops formed to receive and to hold the pickets; but at the same time the wires will be held sufficiently taut to properly bind the pickets. To place the machine upon and over the wires for use, the guide-rods are pushed out, or partly so, from between the frame-bars by turning aside one of the buttons, as seen in Fig. 1. The tie-rod 17, which connects and prevents the spreading of the lower ends of the frame-bars, is disconnected at one end, and the lower link 12 is disconnected at one end, so that the frame at its lower end is open and can be placed vertically over the wires from the top in position at right angles to the line of the fence and with the wires between the hook-containing bars. The guide-rods are then put in place and the lower link connected to the hook-bar. In this position the wires are placed in the hooks of one of the movable bars and confined in said hooks by the nuts. The other wires are in like manner secured to the hooks of the other movable bar, and the device is ready for the operation of placing and securing the pickets. In this operation the pulling of the handle-lever toward the operator causes one of the hook-containing bars to be moved away from him, pulling the wires with it, while the other hook-containing bar will be forced away from the operator, pulling its connected wires with it, thereby crossing the wires in their relation to the post or the picket so that the next picket can be placed between the crossed wires. By reversing the movement of the hand-lever the wires will be closed upon and clamp the picket and again opened and crossed to receive another picket. All the wires are in this way operated at once, so that all are equally bound upon the pickets as each one is put in place. It will be understood that the device is moved along and upon the wires the distance between each picket. Provision is made by holes 18 in the compound lever connections for adjusting the relative movements of the hook-containing bars, and the hooks themselves may be adjusted so that the wires may be properly and tightly bound upon the pickets. As the hook-containing bars must pull equally on all the wires from the top to the bottom ones, the movements of the bars will be in parallel relation to each other, and they are made to move easily over the guide-rods. The provision for adjusting the extent of the movements of the hook-containing bars is particularly advantageous in adapting the device for operating with greater or less number of wires, and to suit wires of greater or less distance apart. In spreading the wires to receive the pickets each one put in will take up some wire and as the wires are fixed to the post at the starting-point the other end must be connected or held so as to give, but at the same time hold the wires sufficiently tight to make a good fence, the wires drawing through the staples of all the posts to give the necessary quantity for the pickets in a way well understood. The hooks are arranged on both bars in the same vertical plane, but in different planes horizontally.

I have shown the hook-containing bars as mounted upon removable guide-rods in the frame, and I prefer this construction as being a convenient way of supporting said hook-containing bars, so that the frame can be put over the wires as I have stated; but it is obvious that the hook-containing bars may be otherwise guided and supported within the frame so long as the latter is adapted to be placed over the wires with the latter between the hook-containing bars.

When the machine is applied to the wires, the operator holds it in position by the top handle 19 and grasping the lever 14 spreads and crosses the wires, so that a man can place a picket beween them at the crossing, and in this way the pickets are secured the desired distance apart to the wires between the posts. The placing of the machine across or straddling the wires gives the advantage of preventing the tendency of the machine to tilt, as the pressure in forcing the wires tight upon the picket is distributed equally on each side of the machine. If desired, the machine can be mounted upon wheels, so as to move it easily along on the wires as the pickets are fixed; but the machine being comparatively light can be easily moved along the wires.

The way the hook-containing bars are mounted and connected to the compound lever device gives the important advantage of applying the full force of the lever to bind the wires upon the picket, and gives to each hook the same pressure in forcing and holding its contained wire upon the picket, because the movements of the lever device are only restrained by the pressure of the hook-containing bars upon the wires.

I claim as my improvement—

1. In a picket-fencing machine, the combination with the frame having the removable cross guide-rods, of a pair of bars mounted to slide upon said guide-rods, and provided with hooks standing toward each other in differ-

ent horizontal planes, and a lever-operating device pivotally connecting the said pair of hook-containing bars and the frame, whereby the machine is adapted to be placed over the fence-wires and the hooks connected therewith in the way described.

2. In a picket-fencing machine, the combination with the frame-bars connected at their lower ends by the removable tie-rod and having coincident holes, the rods 2, 2 retained in said holes by the buttons 3, 3, the bars 4, 4 loosely mounted upon said rods, each bar having hook-stems fastened therein by nuts 6, 6, each hook-stem screw-threaded and having a nut 7 to close said hook, and suitable means for connecting and operating said pair of hook-bars, substantially as described.

3. In a machine of the character described, the combination with the frame having cross-rods, of a pair of bars mounted upon said rods, each bar having a series of hook-stems, a pair of levers each mediately pivoted to one of said bars, a link for each lever connecting its outer end with the other bar, a hand-lever pivoted to the frame and a pair of links connecting the meeting ends of said mediately-pivoted levers and the hand-lever, substantially as described.

4. In a picket-fencing machine, a pair of bars each containing a series of adjustable hooked stems, a lever device consisting of the compound connections and the hand-lever, the said lever connections being adjustably connected to said bars and to said lever, and a guide-support for said parts, as described.

In testimony whereof I have hereunto signed this specification in the presence of witnesses.

ELISHA H. RICE.

Witnesses:
J. R. HOUSEWORTH,
S. M. HOUSEWORTH.