

(No Model.)

2 Sheets—Sheet 1.

W. H. MARTIN.
HAND FENCE MACHINE.

No. 512,732.

Patented Jan. 16, 1894.

Fig. 1.

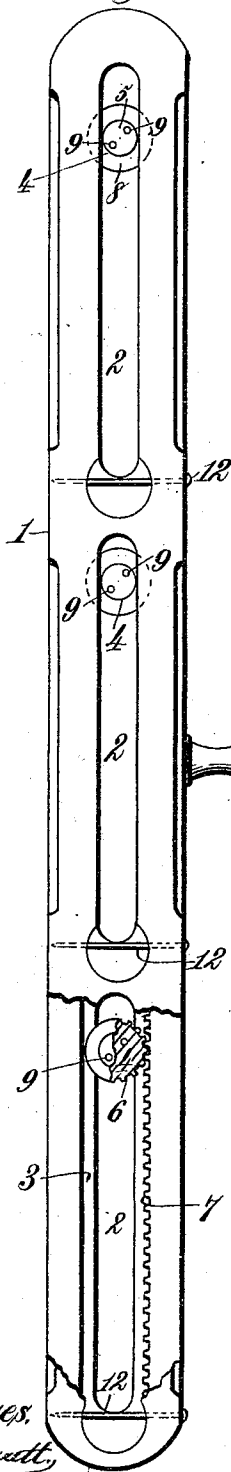


Fig. 2.

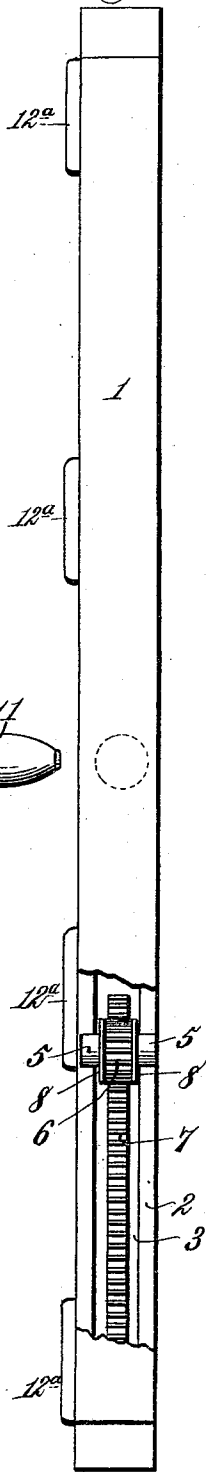


Fig. 3.

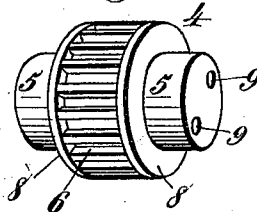


Fig. 4.

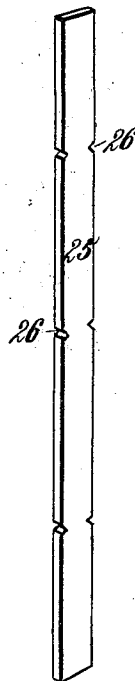
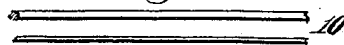


Fig. 5.



Witnesses,
John C. Smith,
J. W. Rea.

Inventor:
William H. Martin.
By James L. Norris,
Atty.

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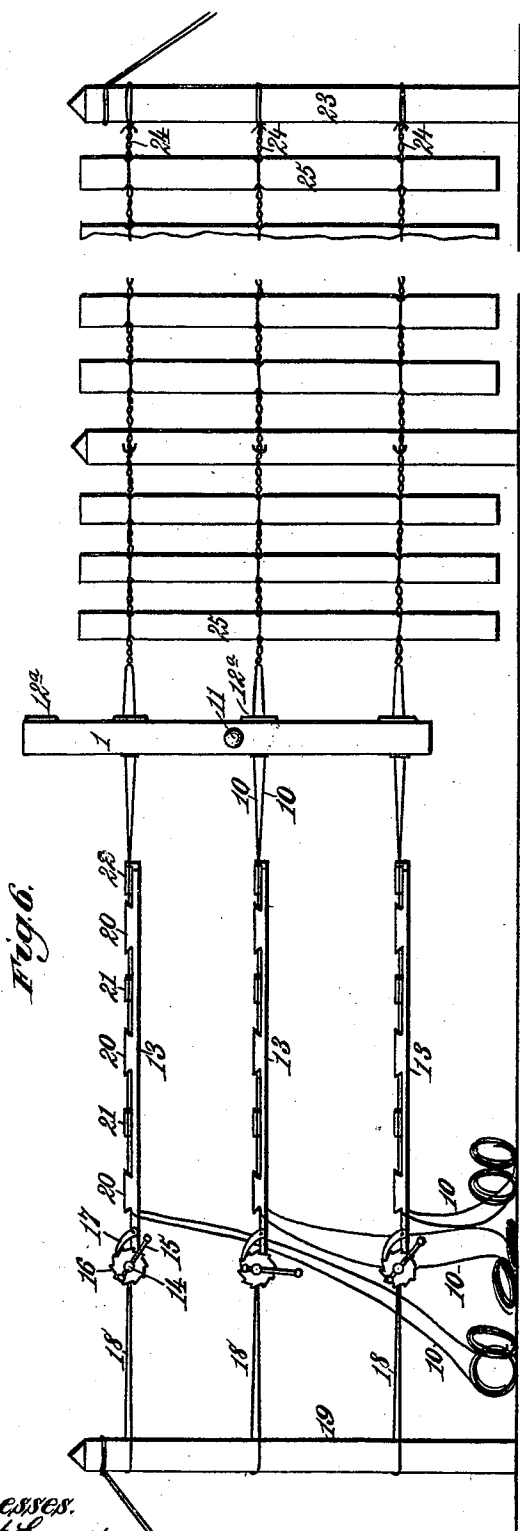


Fig. 6.

Witnesses.
Robert Smith,
J. W. Rea.

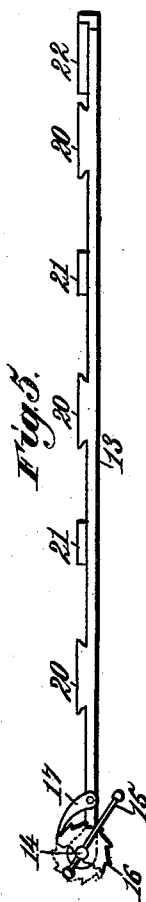


Fig. 5.

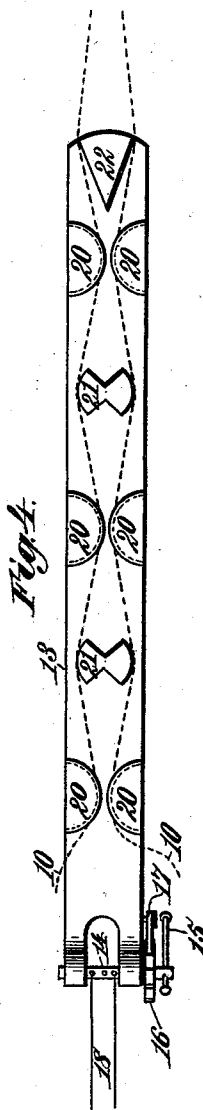


Fig. 4.

Inventor:
William H. Martin.
By Samuel L. Norris, atty.

UNITED STATES PATENT OFFICE.

WILLIAM H. MARTIN, OF MOBILE, ALABAMA.

HAND FENCE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 512,732, dated January 16, 1894.

Application filed April 20, 1893. Serial No. 471,116. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. MARTIN, a citizen of the United States, residing at Mobile, in the county of Mobile and State of Alabama, have invented new and useful Improvements in Fencing-Machines, of which the following is a specification.

The object of my invention is to so improve and simplify the construction of hand fencing machines for wiring picket fences, as to greatly increase the ease and efficiency of operation in such machines, and to enable a fence of this character to be erected with more than usual speed.

My invention consists in features of construction, in novel combinations and relative arrangement of parts in the wire twisting machine and tension device, as hereinafter described and claimed.

In the annexed drawings, illustrating my invention, Figure 1 is a side elevation of my improved wire twisting machine, partly broken away. Fig. 2 is a partly broken away, edge view, of same. Fig. 3 is an enlarged view, of one of the wire twisting spools. Fig. 4 is a plan of the tension device. Fig. 5 is a side view of same. Fig. 6 represents the manner of employing the wire twisting machine and tension device in erecting picket and wire fences. Fig. 7 is a view of a notched fence-picket. Fig. 8 is a view of two fence-wires, of unequal diameters.

The numeral 1 designates an oblong frame (Figs. 1 and 2) having a series of longitudinally arranged slots 2, in its opposite sides. These slots 2 communicate with a series of elongated recesses 3, formed in the center of the frame, and which are somewhat wider than the slots. Each recess 3 receives a wire twisting spool 4, Fig. 3, having its ends provided with spindles 5, that turn freely in the slots of the frame. The central portion of each spool is of larger diameter than its ends or spindles, and is provided with gear teeth 6, that mesh with a rack 7, fixed in one side of the frame. At each end of the toothed portion of the spool are annular shoulders 8, that serve to retain the spool in the frame. Each spool 4 is provided with two longitudinal perforations 9, for the passage of the fence-wires 10 that are to be twisted into engagement with the fence pickets.

Although I have shown the frame 1, as provided with three wire twisting spools 4, it is obvious that the number of spools to be employed will depend upon the number of points at which the fence pickets are to be wired. It will be apparent that when the frame 1, is hung on the fence wires, which are to pass through the perforations 9, of the respective spools, a vertical movement of the said frame, either upward or downward, will cause the spools to rotate, by reason of their engagement with the racks 7, and thereby twist the wires. The frame 1, of the wire twisting machine may be provided with a handle 11, through which the required vertical movement may be effected. The frame 1 may be made in two parts, and provided with bolts at suitable intervals to hold it together, or may be made in one casting of malleable iron, the spool 4 Fig. 3, being cast separate. If the frame 1, should be made in one casting, the slots 2, are made as large as the spool's largest diameter, at either end of the slot to admit the spools from one side of the frame 1, as shown by the enlarged curve at the end of the slot 2. The pins 12, are to maintain the spools in the slots after having been placed in working position. The frame, as shown in Fig. 2, is provided with enlarged surfaces at the four points marked 12^a, which are used to hammer the pickets up tight in their places. The slot 2 is made of proper length to give one or more twists to the wire, as may be required, by the upward or the downward movement, and completes the twist, leaving the wires in exact position for receiving another picket.

The device for securing and maintaining a properly regulated tension of the fence wires while erecting the fence consists of a bar 13, Figs. 4 and 5, having a rotary spindle 14, journaled in one end. This spindle 14, may be rotated by means of a lever 15, at one end, and carries a ratchet wheel 16 engaged with a ratchet or stop-pawl 17 to prevent backward movement. A stay-wire 18 is to be attached to the spindle 14, in any suitable manner, as by passing it through holes therein, and is then passed around a stay-post 19, at a distance from the point where the construction of the fence is proceeding. The top of the tension bar 13 is provided, at proper in-

tervals, with a series of oppositely placed semi-circular guide blocks 20, arranged in pairs, and between which the fence-wires 10 are passed, the said semi-circular guides being alternated with centrally located guide blocks 21 having curved peripheries along which the said wires are extended in such a manner as to receive the required tension when the stay-wire 18, is properly tightened by rotating the spindle 14, at the end of the tension bar. A wedge shaped, wire spreading guide 22, is located at the end of the tension bar, nearest to the wire twisting machine and has its apex toward the adjacent pair of semi-circular guides. The peripheries of the several pairs of semi-circular guides 20, are undercut, as shown in Fig. 5, and are approached sufficiently to contract or draw the fence wires 10 together at these points, while the alternating guides 21 and 22 are so arranged as to expand the wires at intermediate points, thereby imparting the required tension.

In commencing the erection of a fence by means of the appliances above described, a starting post 23, Fig. 6, is set up at the required point, and securely braced, as shown. To this post 23 the fence wires 10 are securely attached in pairs and at properly regulated heights according to the length of the pickets to be employed. Each pair of fence wires 10 is passed through the perforations 9 of one of the wire twisting spools 4 in the frame of the wire twisting machine. A preliminary twist is imparted to the fence wires at 24, Fig. 6, by moving the frame 1, of the wire twisting machine upward so as to cause the racks 7 to rotate the wire twisting spools. The fence picket 25 is then inserted vertically between the wires of each pair, and hammered by the hammer extensions 12^a, Figs. 2 and 6, in contact with their twisted portion, and then by moving the wire twisting machine vertically downward to rotate the wire twisting spools 4, in reverse direction, other twists, one or more in number, according to the length of the slot 2, will be formed in the wires, and thereby secure the picket firmly in place. Another picket is inserted and the operation of the wire twisting machine is repeated as before, an upward movement, or a downward movement of the machine, as the case may be, preceding and succeeding the insertion of each picket. Meanwhile, the several tension bars 13, one for each pair of fence wires have been placed in position on the wires 10 beyond the vertically operating wire twisting machine, as shown in Fig. 6, and have been connected by their respective stay-wires 18, to the stay-post 19, at a distant point. By rotating the several spindles 14 so as to wind the stay wires 18 thereon, the required tension of the fence wires 10 can be secured and maintained through their engagement with the guides 20, 21 and 22, as already explained.

To aid in properly setting all the fence

pickets at a uniform height, or with even tops, each picket 25, Fig. 7 may be provided with one or more notches 26, to mark the point or points where it is to be engaged with the fence wires. Each picket may have only one of these notches to indicate where it should be engaged with the top pair of wires, or there may be notches for each pair of wires, as preferred.

All the fence wires, 10 may be of the same thickness, if preferred, or I may employ, in each pair, one wire of larger diameter, and one smaller wire, as shown in Fig. 8, so that the small wires will make all the twist and fasten the pickets to the large wires which will thus be left substantially straight and in good shape to be used again, if necessary.

The machine is easily and quickly handled, it is adapted for very rapid operation and is capable of twisting the wires securely as fast as the pickets can be placed between them in their proper places.

What I claim as my invention is—

1. In a hand fence machine, the combination of a vertical frame having a series of vertically elongated recesses provided with opposite vertical slots, vertical racks in one side of the said recesses, and longitudinally perforated wire twisting spools located in the said slotted recesses and provided with gear teeth meshing with said racks, substantially as described.

2. In a hand fence machine, the combination of a vertical frame provided with a handle and having vertically elongated recesses provided with opposite vertical slots, longitudinally perforated wire twisting spools located in said recesses and provided with gear teeth, and with spindles that project into the slots of the frame, and racks that mesh with the gear teeth of said spools, substantially as described.

3. A tension device for hand fence machines, consisting of a bar having a series of oppositely placed semi-circular guide-blocks arranged in pairs, and alternating with a series of centrally located guide blocks, said guide blocks being adapted to exert tension on the fence wires, and said bar provided at one end with a spindle for attachment of a stay-wire, substantially as described.

4. In a tension device for hand fence machines, the combination with a bar 13 having a rotary spindle mounted at one end, of a series of semi-circular guides 20 arranged in pairs along opposite sides of said bar and centrally located guides 21 and 22 alternating with the pairs of semi-circular guides, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM H. MARTIN.

Witnesses:

JOHN H. TINDALL,
ERASTUS S. PERRYMAN, Jr.