(No Model.)

H. SNYDER, H. STAPLES & M. BARR.

SLAT AND WIRE FENCE MACHINE.

No. 395,853. Patented Jan. 8, 1889.

Fig. 1.

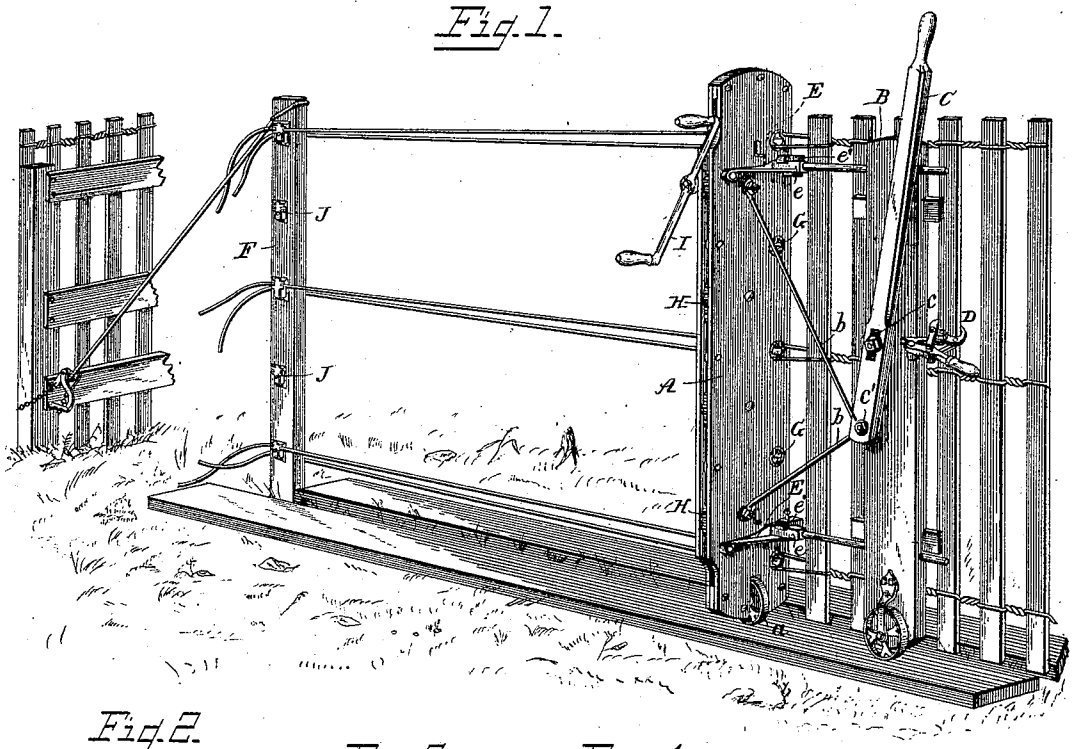


Fig. 2.

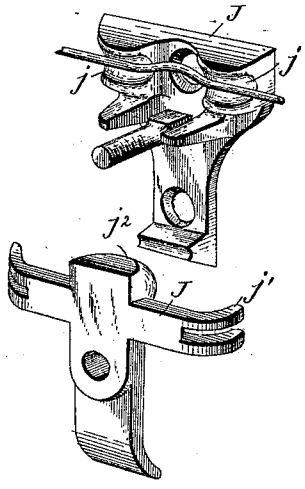


Fig. 3.

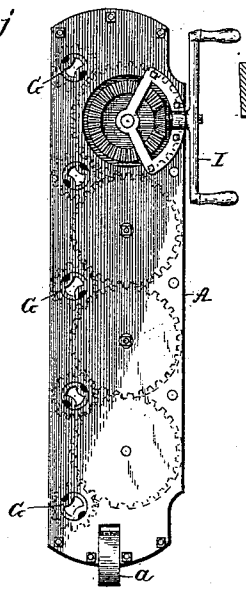


Fig. 4.

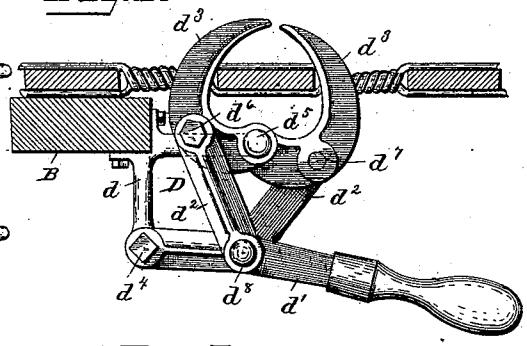
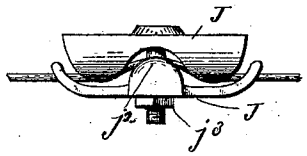


Fig. 5.



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UNITED STATES PATENT OFFICE.

HENRY SNYDER, HIRAM STAPLES, AND MATT BARR, OF BATTLE CREEK, MICHIGAN.

SLAT-AND-WIRE-FENCE MACHINE.

SPECIFICATION forming part of Letters Patent No. 395,853, dated January 8, 1889.

Application filed September 19, 1888. Serial No. 285,812. (No model.)

To all whom it may concern:

Be it known that we, HENRY SNYDER, HIRAM STAPLES, and MATT BARR, citizens of the United States, residing at Battle Creek, in the county of Calhoun and State of Michigan, have invented certain new and useful Improvements in Slat-and-Wire-Fence 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 improvements in machines for making slat-and-wire or picket fences of the class in which pickets are secured between strands consisting of two wires by twisting the wires together between the pickets, and particularly to that class of machines in which the fence is made at the point and in the position where it is to be permanently located.

The object of our invention is to provide a fence-machine which shall possess superior advantages over others which have preceded it as to simplicity, weight, durability, and strength.

A further object of our invention is to provide an improved gripping device for holding the machine stationary while the picket is being inserted and the strands of wire twisted.

A further object is to provide an improved means for operating the upright in which the twister is mounted, to provide an improved gage or regulating device for regulating and varying the distance between the pickets, and, finally, to provide an improved tension device.

We have illustrated in the accompanying drawings special means for carrying out our invention, in which—

Figure 1 is a perspective view of our machine with a picket inserted between the strands of wire ready for the twister to be operated. Fig. 2 is a perspective showing the two parts of our tension apparatus. Fig. 3 is an elevation of our twisting device, showing the operating-bar and gearing. Fig. 4 is a detail view of our clutch or gripping device, and Fig. 5 is a detail of our tension device with the two parts one upon the other and the wire inserted.

Referring now by letter, A is an upright twister-frame mounted upon rollers *a*, in which the twisting-gear is mounted.

B is a sliding bar connected to the twister-frame A by means of the iron brace *b* and the lever C. This lever C is fulcrumed at the two points *c* and *c'*, and is slotted at *c* to allow for unevenness in ground over which the fence is laid. The sliding bar B is also provided with a clutch or gripping device, D, whose function is to clutch a picket already woven for the purpose of holding the bar B stationary while the twister-frame A is moved forward, a picket inserted, and the twister operated. This clutch is preferably bolted or otherwise attached to the edge of the sliding bar B, as shown, and it consists of the supports *d*, the handle and operating-lever *d'*, the connecting-rods d^2, and the claws or grips proper, d^3. It is pivoted at d^4 and d^5 to the supports *d*, and is jointed at d^6, d^7, and d^8. Its operation is obvious.

Two L-irons, E E, are pivoted, as shown, upon the twister-frame A, and have cast upon them square lugs *e*, upon which a gage or regulating device, *e'*, works. The L-irons pass through holes in the sliding bar B, and thus linked together the two uprights A and B are always kept in direct line with one another. The L-irons are pivoted to A, so that the uprights may be free to move up and down over uneven ground independently of each other.

Our twisting device consists of a series of gear-wheels, G G, each having two perforations to receive the strands of wire, a second series of gears, H, intermeshing with the gears G, and a double-handled operating-lever, I, by which, through a pair of bevel-gears, motion is imparted to the wheels G G, and the wires are twisted. We have found it a great advantage to have the operating-lever double-handled, as it removes strain from the machine when the lever is operated.

As illustrated herein, our machine is adapted to twist five strands of wire; but it is obvious that any number may be employed. Three pieces of line-wire are preferably employed, one being arranged near the top, another near the bottom, and a third midway between these two. These pairs of wires are connected to the strong post F, which is temporarily braced

in any suitable manner, and to a starting-post of the usual construction. Upon the post F are fastened the tension devices J, there being one necessary for each wire employed—in the present instance six. This tension device is made in two parts, as shown in Figs. 2 and 5. The upper or concaved part is grooved at *j j*, and the projecting flange *j'* of its counterpart is slotted, as shown, to permit the wire to pass through it, and acts as a guide for the same. The convex portion j^2 is also slightly grooved on its upper face. As the wire is passed between these parts, it is bent, as shown, to produce resistance, and the same is regulated by means of the adjusting-nut j^3.

Our invention has now been sufficiently described, it is thought, to enable its operation to be readily understood. Assuming, then, that the line-wires have been passed through the twister-wheels, fastened to the starting-post, and made taut in the tension-clamps, and the clutch or gripping device fastened to the starting-post or a previously-woven picket, making fast the upright B, the operation is as follows: By a backward movement of the operating-lever C the twister-frame A is forced forward, the fulcrum of the lever being at *c*. When this is done, a picket is inserted between the strands of wire with which it is to be woven and the operating-lever C pushed forward, thereby drawing the upright A backward. In this movement the projection on the gage *e'* bears against the newly-inserted picket and forces it into place. When the picket is in its proper place, the twisting mechanism is operated by a movement of the double crank I, any desired number of turns being made. One picket has now been made a part of the fence. To proceed, release the clutch D from its hold upon the picket and force the lever C forward. The point *c'* now acts as the fulcrum, and the upright B is moved forward the distance of one picket and the clutch again fastened. This operation is continued until the fence is completed. Between each succeeding picket the twister-operating lever I is moved in the opposite direction, and a twist of the wire in the opposite direction is thereby given. This is to remove and avoid coiling and twisting of the strands in front of the machine.

Having now described our invention, we claim—

1. In a slat-and-wire-fence machine, the combination, with a twister-frame, of an upright parallel thereto, L-irons pivoted to the twister-frame and having a sliding connection with the upright, and a lever for operating the twister-frame and upright, whereby independent movement of the twister-frame and upright over rough and uneven ground is permitted, substantially as described.

2. In a slat-and-wire-fence machine, the combination of an upright twister-frame, an upright flexibly connected to the twister-frame, and a lever connecting the two, slotted at its bearing upon the upright to permit independent movement of the uprights, substantially as described.

3. A tension device for wires, consisting of two relatively-adjustable parts, one convex and the other concave, the former fitting upon the latter to hold the wire taut, each part suitably grooved for the passage of the wire, and the convex part having a slotted overlapping flange for guiding the wires, substantially as described.

4. In a slat-and-wire-fence machine, the combination of a twister-frame and upright so connected together that they may be moved toward and from one another, the upright being provided with a clutch or gripping device consisting of the brace *d*, the handle *d'*, connecting-rods d^2, and claws d^3, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

HENRY SNYDER.
HIRAM STAPLES.
MATT BARR.

Witnesses:
BELLE A. HOPKINS,
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