

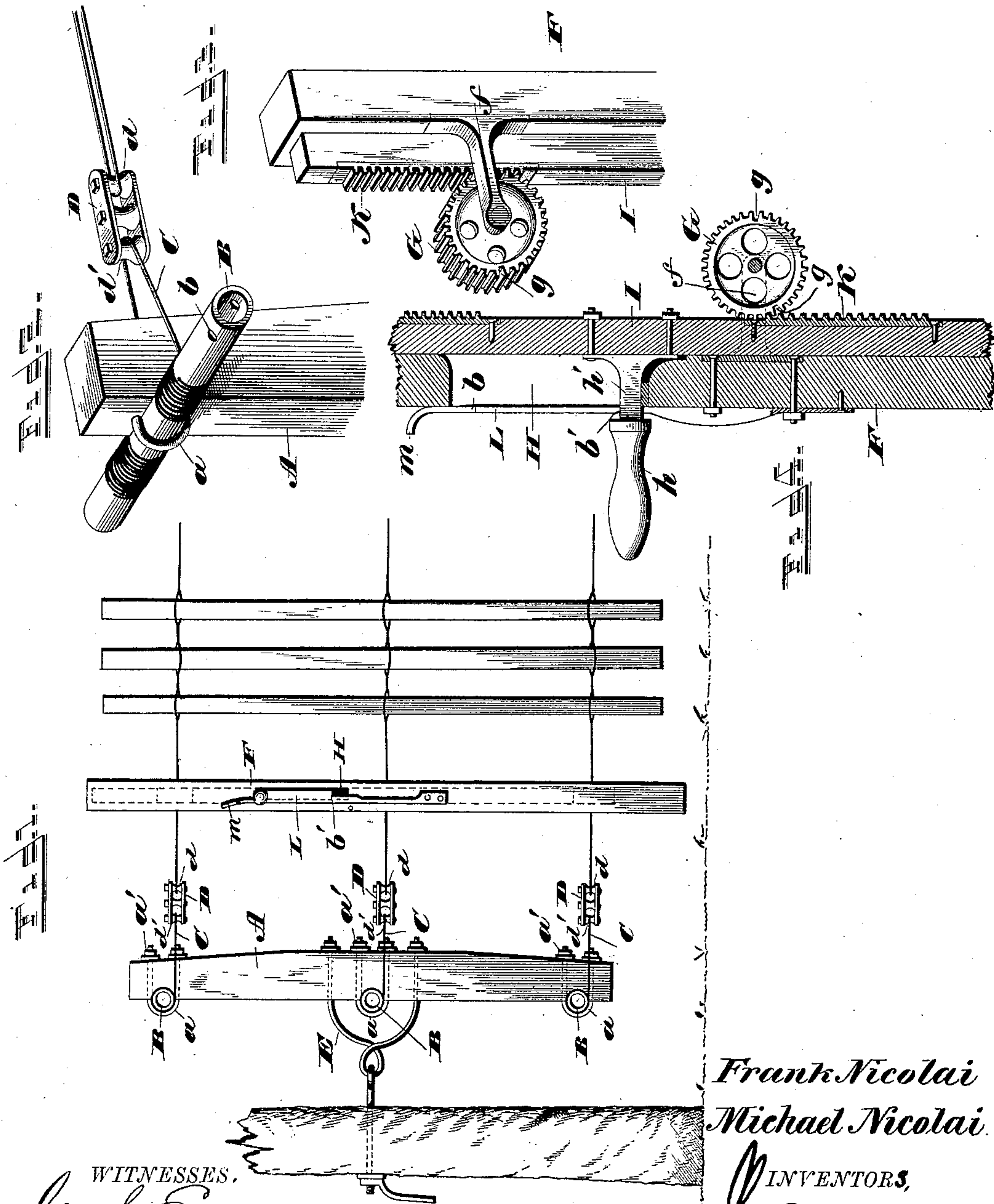
(No Model.)

F. & M. NICOLAI.

FENCE MACHINE.

No. 397,814.

Patented Feb. 12, 1889.



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FRANK NICOLAI AND MICHAEL NICOLAI, OF BENTON, INDIANA.

FENCE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 397,814, dated February 12, 1889.

Application filed November 28, 1888. Serial No. 292,128. (No model.)

To all whom it may concern:

Be it known that we, FRANK NICOLAI and MICHAEL NICOLAI, citizens of the United States of America, residing at Benton, in the county of Elkhart and State of Indiana, have invented a certain new and useful Improvement in 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Our invention relates to certain new and useful improvements in wire-fence machines, such as are used in making up wire-and-picket fences, the object thereof being to provide a simple, cheap, and effective apparatus for weaving in the field fences composed of two strands of wire twisted about the slats or pickets to hold them in place, the invention comprising a twisting apparatus and tension device, as will be hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a side view of a fence-machine constructed in accordance with our improvement. Fig. 2 is a detail perspective view of the tension device. Fig. 3 is a detail perspective view of one of the twister-heads. Fig. 4 is a detail vertical sectional view of the twister.

A refers to the tension-bar, which is provided with three or more bails or staples, *a*, which pass through the same, and are provided at their ends with washers and adjusting-nuts *a'*, for adjusting or clamping said loops or bails upon a bar or tube, B. Beneath these bails or loops the tension-bar A is cut away to form a semicircular depression, and partially within said cut-away portion the rollers or tighteners B are placed. These tightening-bars B are provided at one or both ends with perforations *b*, through which a suitable lever can pass for turning or rotating the same to tighten the wire or cord C, secured to the bars B on each side of the tension-bar A. To the loop portion of the wires C are secured eveners D, having sheaves *d* and *d'*, and over the sheave or pulley *d'* the loop portion of the wire C passes, while the loop portion

of the wire which composes the fence is passed over the pulley *d* at the opposite end of the evener D. When the wires forming the fence are not looped, they may be twisted around the sheave or pulley *d* and attached to the central pulley. At the central portion of the tension-bar A is a twisted loop or bail, E, provided with an eye, with which an eyebolt engages, which eyebolt is adapted to be secured to a post, tree, or some other rigid object.

When it is desired to construct a wire or picket fence, the strands or wires, which are twisted about the picket, have their free ends secured to a post, said wires being first passed around the pulleys *d*. The tightener-bars B are then turned to tighten these wires, and after they are sufficiently tightened the nuts *a'* are turned to draw the tighteners B snugly into the semicircular depressions in tension-bar A and hold them against rotation with just sufficient force to maintain the desired tension on the fence-wires, but to allow them to rotate or slip within said depressions to compensate for the fence-wire that is gradually taken up by the addition of pickets.

The twisting device shown in Figs. 1 and 4 consists of a bar, F, which has attached at suitable points brackets *f f*, between which are journaled cog-wheels G, these cog-wheels having two teeth, both on the same side of the center of said wheels, cut deeper than the other teeth, as shown at *g*. The bar F is provided with a slot, H, through which passes a handle, *h*, having a flat shank, *h'*, which is secured to the reciprocating bar I by bolts, and this slot H is of substantially the same length as the rack-plate K, secured to the bars I, to engage and rotate the cog-wheels G when the bar I is reciprocated. To the edge of the bar F, to lie over the slot H, is secured a spring latch-bar, L, which is provided with notches *b* and *b'*, which hold the handle attached to the reciprocating bar I when it has reached its limit of movement. This latch-bar has its upper end bent outwardly to form a convenient thumb-piece, *m*, by means of which it may be thrown to one side to release the handle.

The operation of our improvement is as follows: A post (not shown) is fixed at any de-

sired point and the end of the fence-wires secured thereto in pairs or double, as preferred. The other ends of these fence-wires are then connected with the eveners D, carried by the
 5 tighteners B, which are secured to the tension-bar A, and the tension-bar is secured or anchored at any desired point. The tightener-rods B are then turned and the wires stretched and equally tightened, and the twist-
 10 ing device is then applied by setting it upon the wires which are placed in the recesses or deep-cut teeth *g g*. Now when the handle is either pushed up or down it will turn the cog-wheels half-way round to completely cross
 15 the wires. A picket is then inserted in place between the post and the twister and the spring-catch moved out of engagement with the handle, when the bar which carries the racks can be moved by the handle to cross
 20 the wires in an opposite direction to secure a picket without removing the twisting device from the wires.

We are aware that prior to our invention slotted cog-wheels have been employed for
 25 twisting wires, said cog-wheels being adapted to be operated by a rack-bar which engages with the cog-wheels, as shown in Patents Nos. 349,251 and 360,505; also, that an evener-bar in connection with a tightening device carry-
 30 ing pulleys, as shown in Patent No. 361,362, have heretofore been employed; and we do not therefore claim such devices, broadly; but,

What we claim as new, and desire to secure
 35 by Letters Patent, is—

1. In a machine for making picket fences, the combination of a bar, F, carrying brackets between which cog-wheels are supported, said bar having a slot through which an op-
 40 erating-handle passes, said handle being attached to a reciprocating bar having rack-teeth which engage with the cog-wheels, substantially as shown, whereby the reciprocating

movement of the rack-bar is limited by the length of the slot, substantially as shown, 45 and for the purpose set forth.

2. The combination, in a wire-and-picket-fence machine, of a wire-twisting device, consisting of a bar, F, having a longitudinal slot, H, a spring latch-bar having catches adjacent to
 50 the upper and lower end of the slot, with which the handle-bar engages, brackets supporting cog-wheels attached to the bar F, and a reciprocating bar, I, carrying rack-bars K, and a handle having a flat shank which passes
 55 through the slot in the bar F, substantially as shown, and for the purpose set forth.

3. The combination, in a fence-machine, of a tension device consisting of a tension-bar, A, provided with semicircular recesses at its
 60 rear edge, tightener-bars B, bails *a*, embracing the bars B, eveners D, having pulleys *d* and *d'*, and a bail or loop, E, at the center of the tension-bar A, substantially as shown, and
 65 for the purpose set forth.

4. In a tension device for constructing wire fences, a tension-bar, A, provided on its rear face with semicircular recesses, tighteners B, bails *a*, passing through the tension-bar on
 70 each side of said tighteners B, and looped to hold in position the tightening-bars B, the wire or connection C, secured to the rods B on each side of the bar A, and an evener, D, secured to the loop of the wire C, the bars B
 75 being adapted to be turned by a suitable lever and held against rotation by frictional contact with the tension-bar by the bails *a*, substantially as and for the purpose set forth.

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

FRANK NICOLAI.
 MICHAEL NICOLAI.

Witnesses:

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