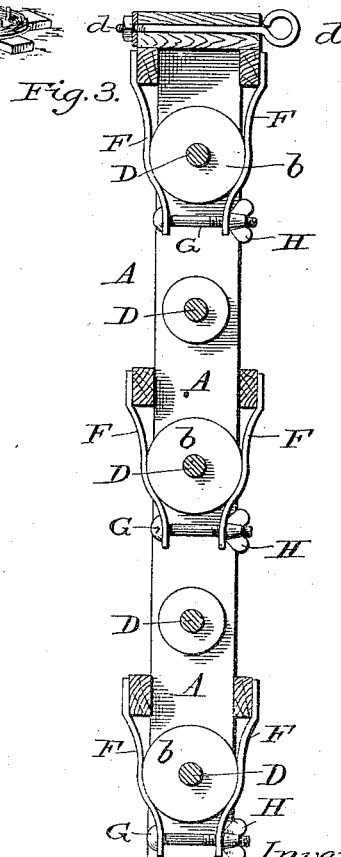
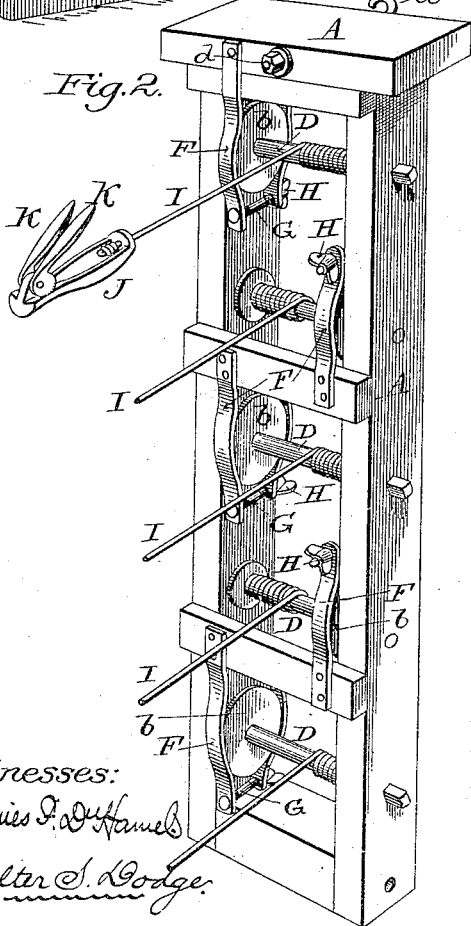
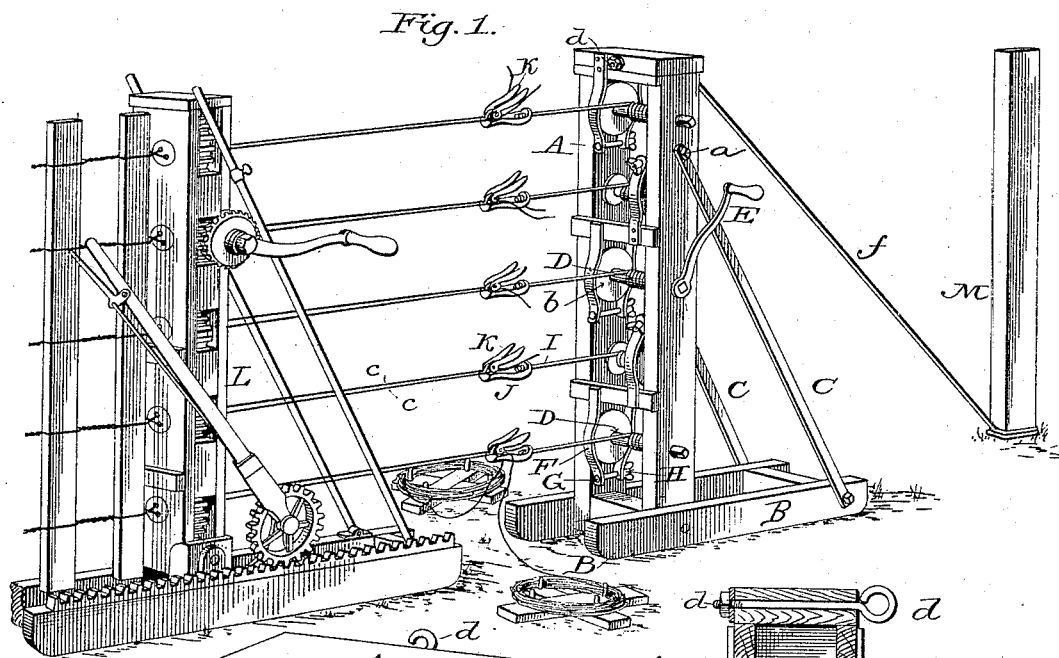


M. C. HENLEY.

# TENSION DEVICE FOR FENCE MACHINES.

No. 342,010.

Patented May 18, 1886.



Witnesses:  
James F. Duff  
Walter S. Dodge.

Inventor:  
Micajah C. Henley,  
by *Dodger & Co.*  
his Attys.

(No Model.)

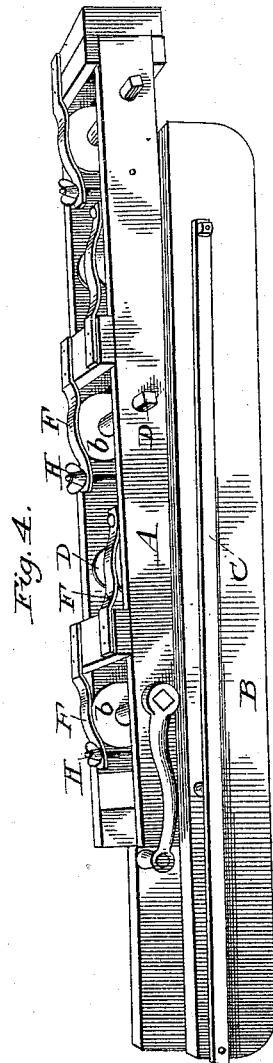
2 Sheets—Sheet 2.

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# UNITED STATES PATENT OFFICE.

MICAJAH C. HENLEY, OF RICHMOND, INDIANA.

## TENSION DEVICE FOR FENCE-MACHINES.

SPECIFICATION forming part of Letters Patent No. 342,010, dated May 18, 1886.

Application filed March 27, 1886. Serial No. 196,842. (No model.)

*To all whom it may concern:*

Be it known that I, MICAJAH C. HENLEY, of Richmond, in the county of Wayne and State of Indiana, have invented certain new useful Improvements in Tension Devices for Fence-Machines, of which the following is a specification.

My invention relates to machines for making that class of fencing in which the palings or pickets are held between wires carried in pairs on opposite sides of the palings and twisted between the same.

The invention consists in a tension apparatus to be used in connection with any weaving or twisting machinery such as is now in common use, which tension device will be hereinafter explained and claimed.

In the annexed drawings, Figure 1 is a perspective view of the tension apparatus as set up for use in connection with suitable twisting machinery; Fig. 2, a larger view of said apparatus alone; Fig. 3, a vertical sectional view of the same; Fig. 4, a perspective view of the machine folded for transportation or storage.

The purpose of this invention is to produce a device which shall cause each line or double strand of wires to be placed under a like tension, and which shall pay out the several lines of wires at just the rate required to compensate for the amount taken up in twisting, the tension device being placed at a considerable distance from the point where the twisting is begun, and requiring no attention until the twisting machinery works its way close to said tension apparatus.

The construction of the twisting machinery constitutes no part of the present invention; hence said machinery, which is merely shown to aid in illustrating the use of this invention, will not be described.

Referring now to the drawings, A indicates an upright frame composed of two sides bars hinged or pivoted at its lower end to a frame, sled, or drag, B, and held in an upright position by rods or braces C, pivotally attached to the sled or frame, and secured by bolts *a* near the upper end of frame A. By removing the bolts *a* the braces may be disconnected from the frame, and they and the frame may then be folded down upon the sled into compact shape for transportation or storage.

Journaled in the side bars of upright frame A are spools or bobbins D, each having one end of its shaft or axle extended out beyond the side of frame A to receive a crank or winch, E, by which to turn the spool.

Each spool or bobbin D is formed with a disk, *b*, the periphery of which is turned true and smooth to form a bearing-face for the tension springs or plates F, which are bent or fitted to conform more or less closely to the periphery of the disk, and are drawn with greater or less force against the same by bolts G and thumb-nut H. The degree to which the bolt is tightened regulates the degree of tension placed upon the disk, and consequently controls the turning of or the amount of force required to turn the spool or bobbin. The frame F is furnished with as many of these spools or bobbins, each with its independent tension device, as there are double strands to be used in the fence, or in any fence in the making of which the machine is to be used.

Each spool or bobbin has wound upon it a wire, I, or a cord or band of any suitable material, one end of which is made fast to the spool or bobbin, and the other end of which carries a block, J, provided with two clamping levers or eccentrics, K K, each lever or eccentric designed to hold one wire of a double strand or line, such as used in making this class of fencing. In practice about thirty feet of such wire or band is usually wound upon each spool or bobbin.

The machine being thus constructed is used in the following manner: The twisting machinery L is carried to the point where its work is to begin, and the tension device is carried to a distance therefrom differing according to the lay of the land, the judgment or skill of the operator, and like considerations. The wires for the different strands are made fast to the first post of the fence, and one after another carried out in the direction of the intended fence, preferably of the full length of the line of fence to be made, with enough additional length to provide for the twisting between the pickets. Ordinarily from eight to twelve inches are allowed for each rod of fencing.

In order that the wires may not become tangled, and that they may not cause too much

pull or drag upon the machine, they are advisably supported on sticks tacked to the posts at suitable intervals, or on upright boards with notches cut in each side for said wires.

5 After the wires are thus carried along the line of the intended fence, each strand passing through an eye of a twisting-head in the machine L, the double strands are clamped to the block J by the eccentrics K K, one double  
10 strand to each block, the wires or bands I being first unwound from one to three or four feet from the spools D. The clamps may be applied to the wires at any point in the length of the latter, detached from time to time, as  
15 required, and moved to any point desired. After the wires are thus clamped to the blocks J the cranks or winches E are turned to wind said wires or bands upon the spools until the fence-wires are drawn taut, the tension upon  
20 the spools being previously regulated by turning the thumb-nuts H. After the wires are thus tightened the tension is tested and made uniform on all the spools, a convenient mode of testing being to press upon each tension-  
25 wire suddenly, but quickly, with the hand, when, if the spools turn slightly and pay out the tension-wire the tension is about right. If the spools do not turn, the nuts are loosened, or if they turn too freely the nuts are tight-  
30 ened. All being thus made ready, the twisting machinery is operated, the palings inserted one after another, and the wires or bands I are drawn from the spools D, permitting the fence-wires *c* to be drawn toward the twisting-  
35 machine as required to compensate for the length taken up in twisting. It will be seen that each spool is independent of the others, its wire or band I and the double strand which it controls will be given off at the same rate  
40 as that of the other spools, if the palings or pickets are of uniform thickness; but if the palings be thicker or thinner on the line of any particular strand than above or below that point a greater or less quantity of wire  
45 will be drawn off, thus leaving all under like tension. When the twisting machinery works up to the tension-frame, or when the wires or bands I are drawn nearly off the spools, the clamps K are released and the bands wound  
50 upon the spools, and, if necessary, the tension-frame is moved back, the fence-wires again clamped and drawn taut and the work proceeded with as before.

The machine is equally serviceable for level  
55 and for hilly ground.

To steady the machine, and hold it against the strain put upon the wires, I provide the frame with a hook, *d*, near its top, and another hook, *e*, near its bottom, from which  
60 ropes or wires *f* are carried to a post or anchor, M, as shown.

I believe myself to be the first to provide a tension device for the double strands, or one which can be applied to and removed from  
65 the fence-wires at any point at will and without threading the wires through eyes or holes,

and the first, also, to provide a tension device which can be moved back as required without varying the adjustment of the tension devices; hence claim the same, broadly.

70 It is apparent that instead of the brakes or bars herein described any form of friction device and means for adjusting the same may be adopted—as, for instance, an inelastic brake-shoe controlled by a set screw, wedge, or like  
75 means. I therefore wish it understood that I do not limit my claim to any particular form of tension device. So, too, any well-known form of clamping devices may be employed instead of the eccentrics K K.

80 Having thus described my invention, what I claim is—

1. The herein-described tension device for use in fence making, consisting of a frame, a series of spools or bobbins journaled in said frame,  
85 springs or plates bearing upon said spools or bobbins, adjusting screws or bolts for said springs or plates, wires or bands wound upon the spools, and clamps carried by said bands and adapted to clamp or hold the fence-wires.

2. The herein-described tension device, consisting of frame A B, spools D, provided each with a disk, *b*, and adapted to receive a winch,  
90 E, tension-plates F, bearing upon the disks, bolts or screws for regulating the pressure of the plates upon said disks, bands I, wound upon the spools D, blocks J, attached to said bands, and clamps K, carried by said blocks, all substantially as described and shown.

3. A tension apparatus for use in fence-  
100 making, consisting of a frame provided with a series of independent tension devices, each provided with a clamp for attachment to the double fence-wires, said clamps being adapted for attachment to and detachment from the  
105 wires at any point in the length of said wires at will.

4. The combination of frame, sled, or drag B, frame A, provided with spools D, and hinged to sled B, braces C, pivoted to sled B,  
110 and bolts or fastenings detachably connecting the braces with the frame A.

5. In a tension device for use in fence-making, the combination of a supporting-frame, a spool or bobbin journaled in said frame and  
115 provided with a winch, a plate or spring bearing upon the spool, a screw or bolt for controlling the pressure of said plate or spring, a band wound upon the spool, and a clamp carried by the free end of the band.

6. A tension apparatus for use in fence-making, consisting of a frame, a series of spools or bobbins journaled in said frame, a brake apparatus to each bobbin, a band wound upon each bobbin, and a clamp carried by the  
120 free end of each band and adapted to clamp or hold a double strand, substantially as and for the purpose explained.

MICAJAH C. HENLEY.

Witnesses:

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