

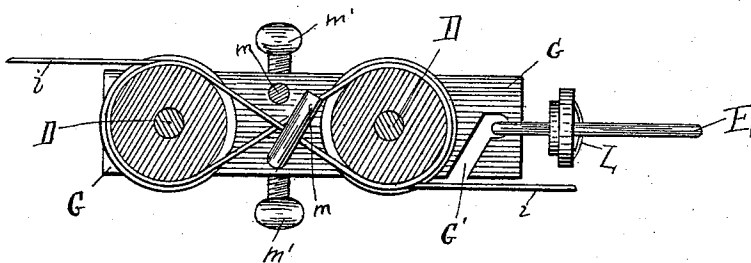
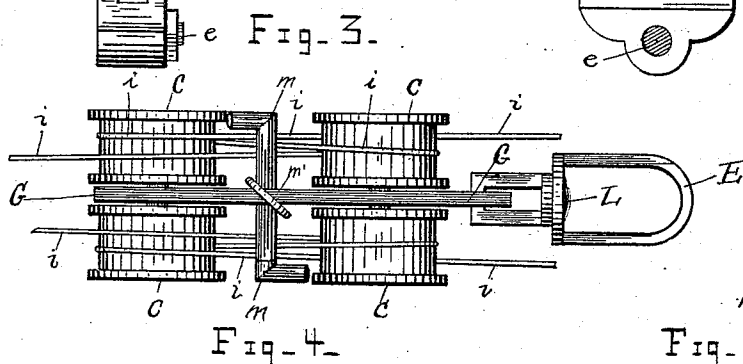
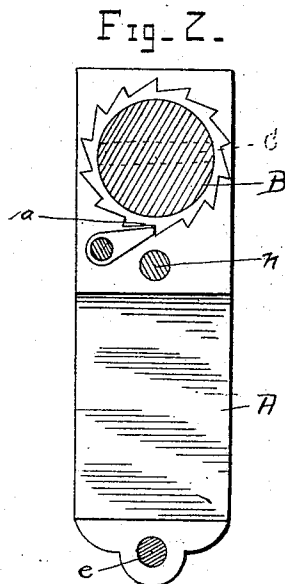
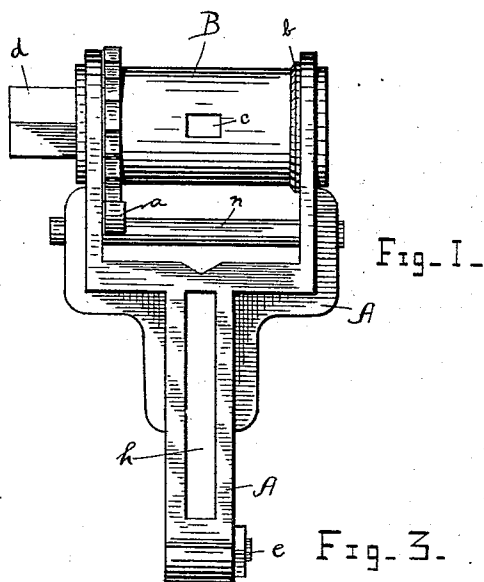
(No Model.)

2 Sheets—Sheet 1.

H. D. ROBINSON.
TENSION DEVICE.

No. 471,571.

Patented Mar. 29, 1892.



WITNESSES
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By W. J. Dennis, Attorney
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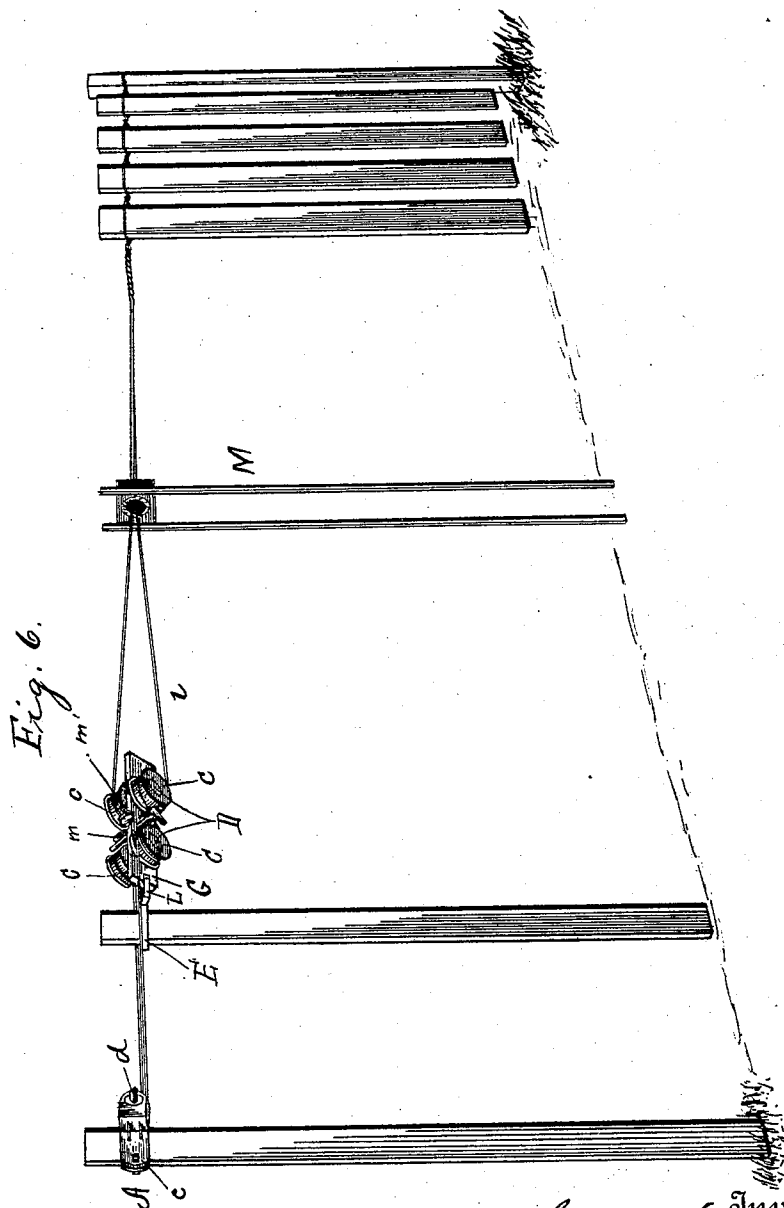
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2 Sheets—Sheet 2.

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TENSION DEVICE.

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Witnesses
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UNITED STATES PATENT OFFICE.

HENRY D. ROBINSON, OF CHESTER, INDIANA.

TENSION DEVICE.

SPECIFICATION forming part of Letters Patent No. 471,571, dated March 29, 1892.

Application filed March 10, 1890. Serial No. 343,428. (No model.)

to all whom it may concern:

Be it known that I, HENRY D. ROBINSON, a citizen of the United States of America, residing at Chester, in the county of Wayne and State of Indiana, have invented certain new and useful Improvements in Tension Devices, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to that class of devices used to produce the desired tension of the wires used in constructing combination wire-and-picket fences.

My invention consists in the employment of a series of cylinders around which the wires are wrapped, the bending and unbending of the wire about which cylinders constitutes a resisting force, to overcome which gives the requisite amount of tensile strain upon the wires to insure a firm grip upon the pickets as the wires are twisted or platted around them.

It further consists in the employment, in connection with said cylinders, of a tightener-frame, substantially as hereinafter described, and particularly pointed out in the subjoined claims.

In the drawings, Figure 1 is a top plan view of the tightener-frame. Fig. 2 is a side elevation of the inside of one-half of the framing of the same. Fig. 3 is a top plan view of the tension-frame, showing the cylinders with the wires around their circumference, the swivel-loop for holding the frame in position, and the guides for directing the wires on the face of the cylinders. Fig. 4 is a side elevation of the same, partly seen in vertical section. Fig. 5 is a view of the guide which controls the position of the wire on the face of the cylinder, and Fig. 6 is a side elevation of the device seen in the operation of making a fence.

In Figure 1, A represents the frame, and B the cylinder, of my tightening-frame. The two side frames are secured together by a bolt and nut *n*, immediately in front of the cylinder, and by a shorter bolt *e* with a nut at the end of the frame. The cylinder B revolves on a shaft *d*, having its bearings in the side frames and provided at one end with a series of ratchet-teeth and a pawl *a* to fit them. The cylinder B is further provided

with raised flanges *b* and an opening *c*, into which the ends of the wires are passed, while the outer end of the shaft is made square and projects out sufficiently to receive a crank with which it is operated. A rectangular opening *h* is provided at the end of the frame by which the frame can be secured to a standard to hold it in place.

In Fig. 3, C C C C represent cylinders, which are permitted to revolve on axes D, Fig. 4, which are rigidly fastened horizontally in the vertical bed-plate G. These cylinders C C C C are provided with raised flanges on their ends and are adapted to receive wires *i i i i*, which wires consist of two lines parallel with each other and into and between which the pickets are placed and secured by twisting or plating the wires together. These wires are wrapped once or more around each cylinder, crossing each other in the space between the cylinders and extending outward in front and rear. The bed-plate G is provided with a notch or recess G' at one end, which receives and holds a swivel-frame L, carrying a link E, which is used to hold the same rigidly to any post or standard, as desired, the swivel allowing the tension-frame with its cylinders and wires to turn readily in twisting or plating the wires around the pickets. The wires *i i* are confined to any position on the faces of the cylinders C by means of the shorter arms *m*² of guide-bars *m*, one of which guide-bars is shown detached in Fig. 5. These guide-bars have their bearings in the bed-plate G and are permitted a lateral motion therein and also allowed to revolve. They are held in place by means of thumb-screws *m'*.

In operation the tightener is secured to a post and the tension device located between it and the fence-machine, which is partially shown at M, Fig. 6, and the wire properly twisted around the cylinders of said tension device, as shown. When the two wires which form one line of the meshes holding the pickets have their ends placed in the opening *c* of the cylinder B, they are stretched along the line of the intended fence and when a proper distance is reached the tension-frame is secured to a post by the swivel-loop E, the wires *i i* having been first properly coiled around the cylinders C C C C, as described and shown,

while the outer or unoccupied ends of the wires are left loose. The shaft B of the tightener-frame is then revolved by the crank until the required tension of the wires is attained and sustained by the action of the pawl in the ratchet of said cylinder when the process of weaving in the pickets is commenced. The wire taken up by each succeeding twist between the pickets has to pass over the circumference of the cylinders C C C and the resistance of the wires from a straight line to the curve of the cylinder and from the curve of the cylinder to a straight line again is the measure of the force of the tension, and this, it will be seen, can be regulated by the degree of curvature in different-sized cylinders, and also by the number of times the wire is coiled around them.

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a wire-tighener, of the herein-described tension device for the wires, consisting of a bed-plate, a series of cylinders journaled in said bed-plate and around which the wires are wrapped in their passage to the weaving-machine, and guide-bars between said cylinders, having arms bearing against the face thereof, for the purposes specified.

2. The combination, with a wire-tightener, of the herein-described tension device for the wire connected to said tightener and consisting of a bed-plate, a swivel-frame secured to

one end of said bed-plate and having a loop, a series of cylinders journaled in said bed-plate, and guide-bars between said cylinders, having arms bearing against the faces thereof, all substantially as described, and for the purposes set forth.

3. The combination, with a wire-tightener, of the herein-described tension device for the wire connected to said tightener and consisting of a bed-plate, a series of cylinders journaled in said bed-plate, laterally-movable rotatable guide-bars journaled in said bed-plate and having arms bearing against the faces of said cylinders, and means for holding said guide-bars in position.

4. The herein-described tension device adapted for use in connection with a machine for twisting or platting wires around pickets in the construction of fences, comprising a bed-plate having a notch or recess, a swivel-frame engaging said notch or recess and provided with a loop, cylinders journaled in said bed-plate on opposite sides thereof, guide-bars passing through said bed-plate between the pairs of cylinders and having arms bearing against the faces thereof, and thumb-screws engaging said guide-bars for holding the same in place.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY D. ROBINSON.

Witnesses:

I. C. DOAN,

W. T. DENNIS.