

(No Model.)

2 Sheets—Sheet 1.

E. S. PLACKARD.

FENCE MACHINE.

No. 365,150.

Patented June 21, 1887.

Fig. 1.

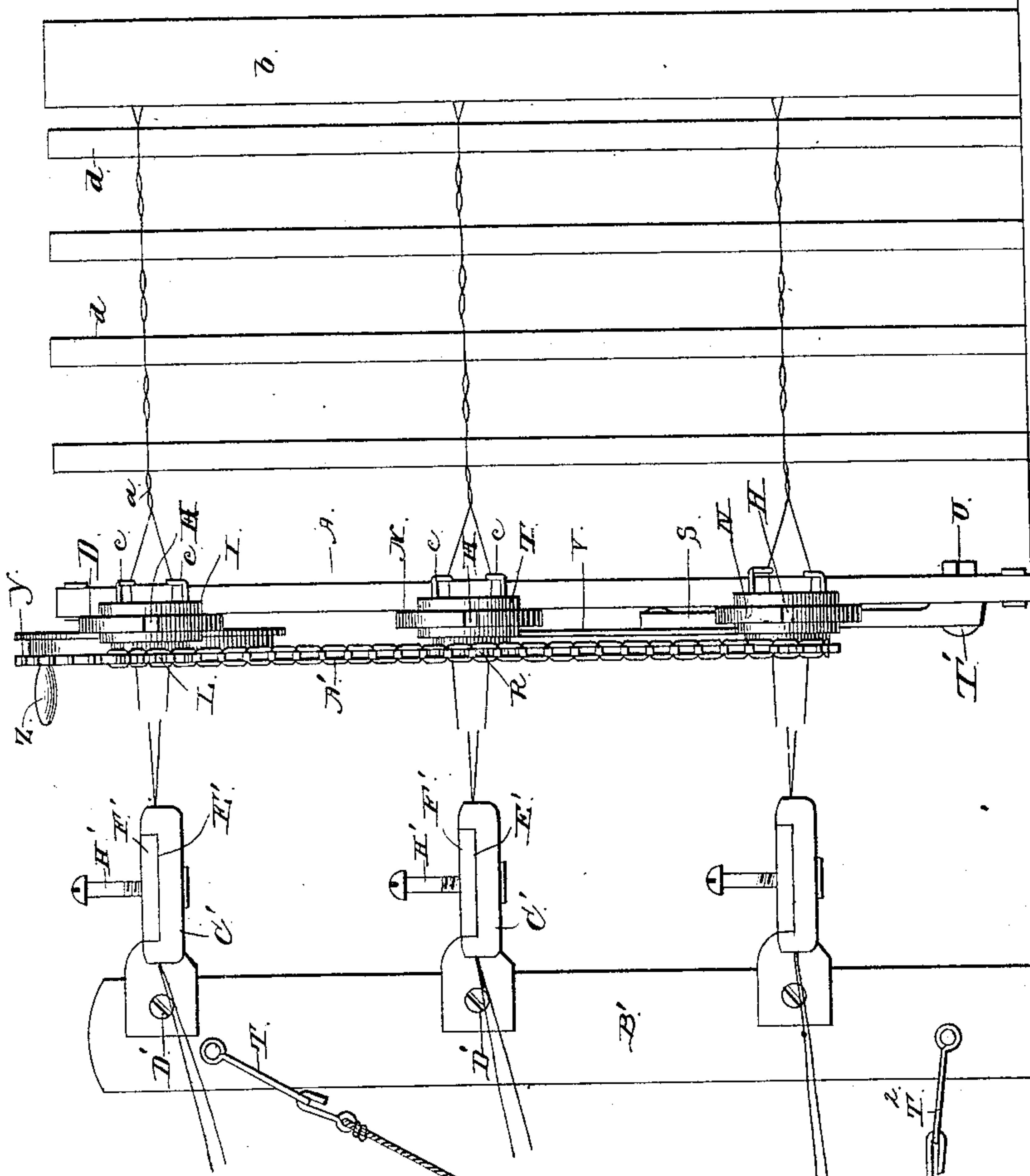


Fig. 5.

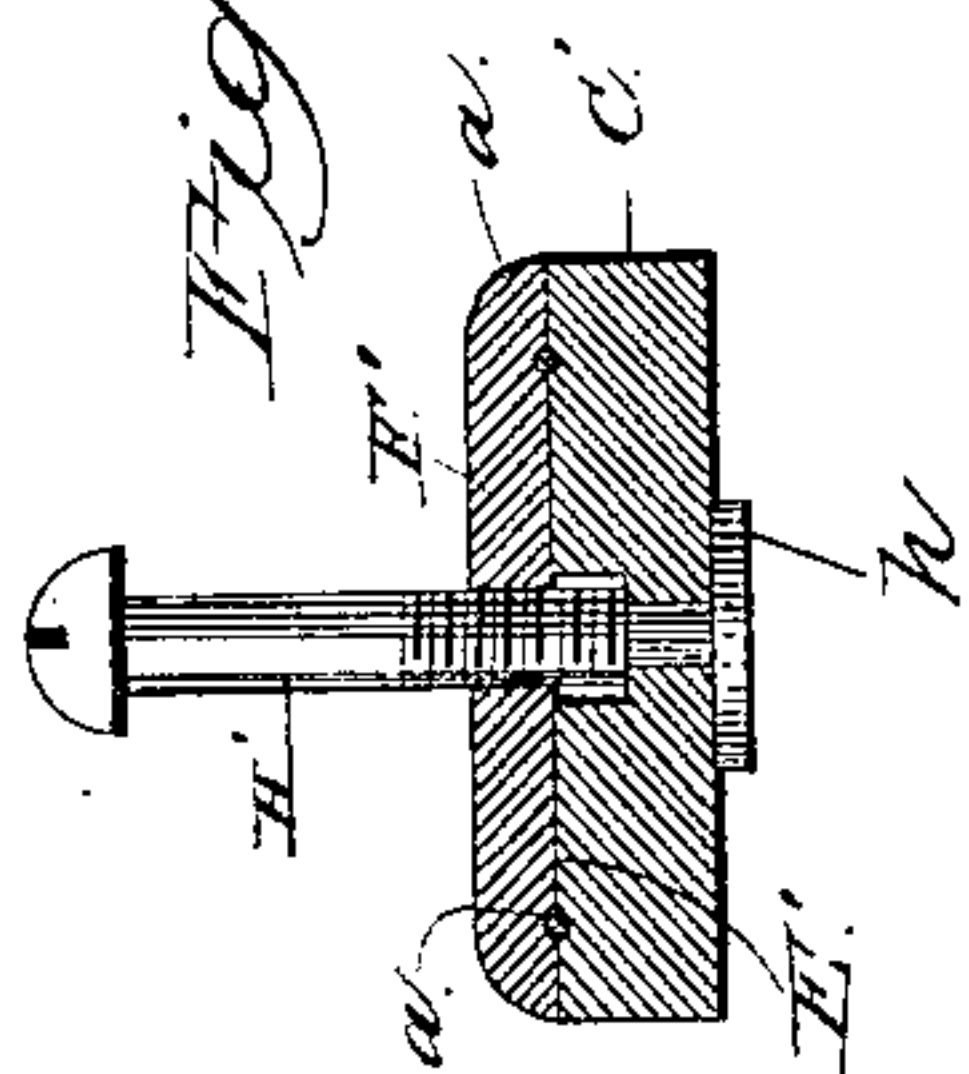
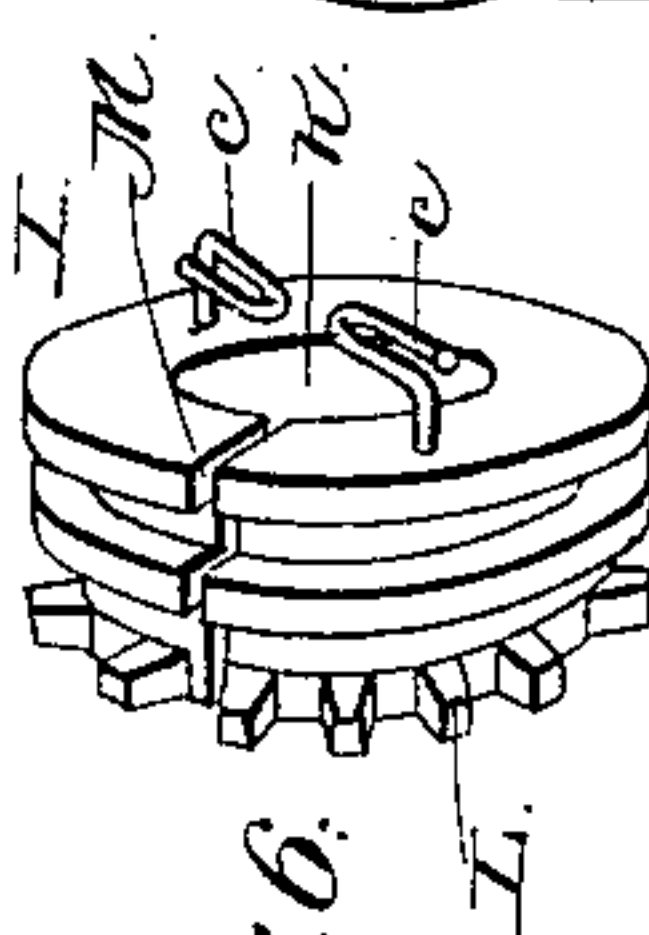


Fig. 6.



Inventor

E. S. Plackard

By his Attorneys,

C. A. Snowles

Witnesses

M. E. Fowler
J. W. Garner

(No Model.)

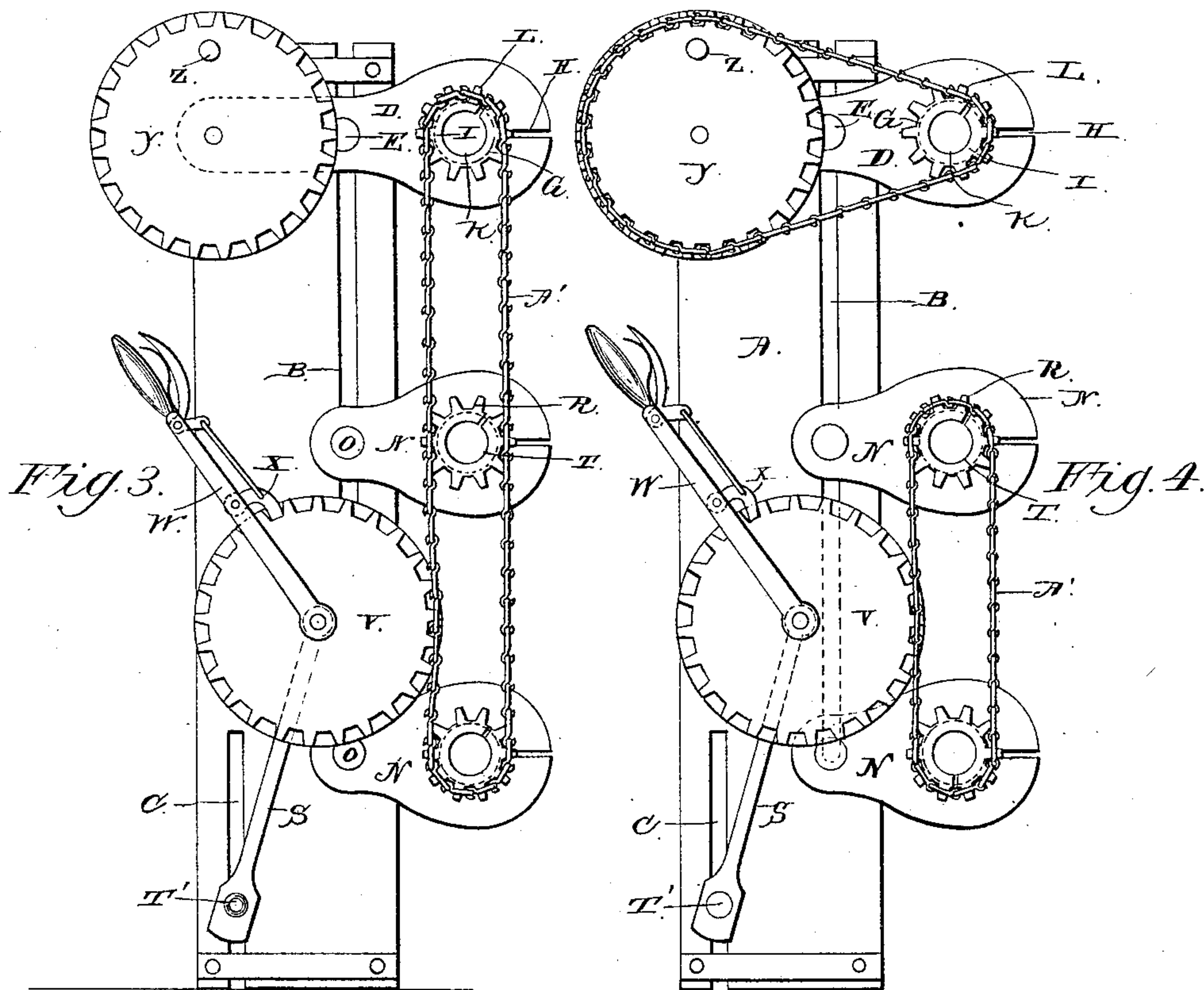
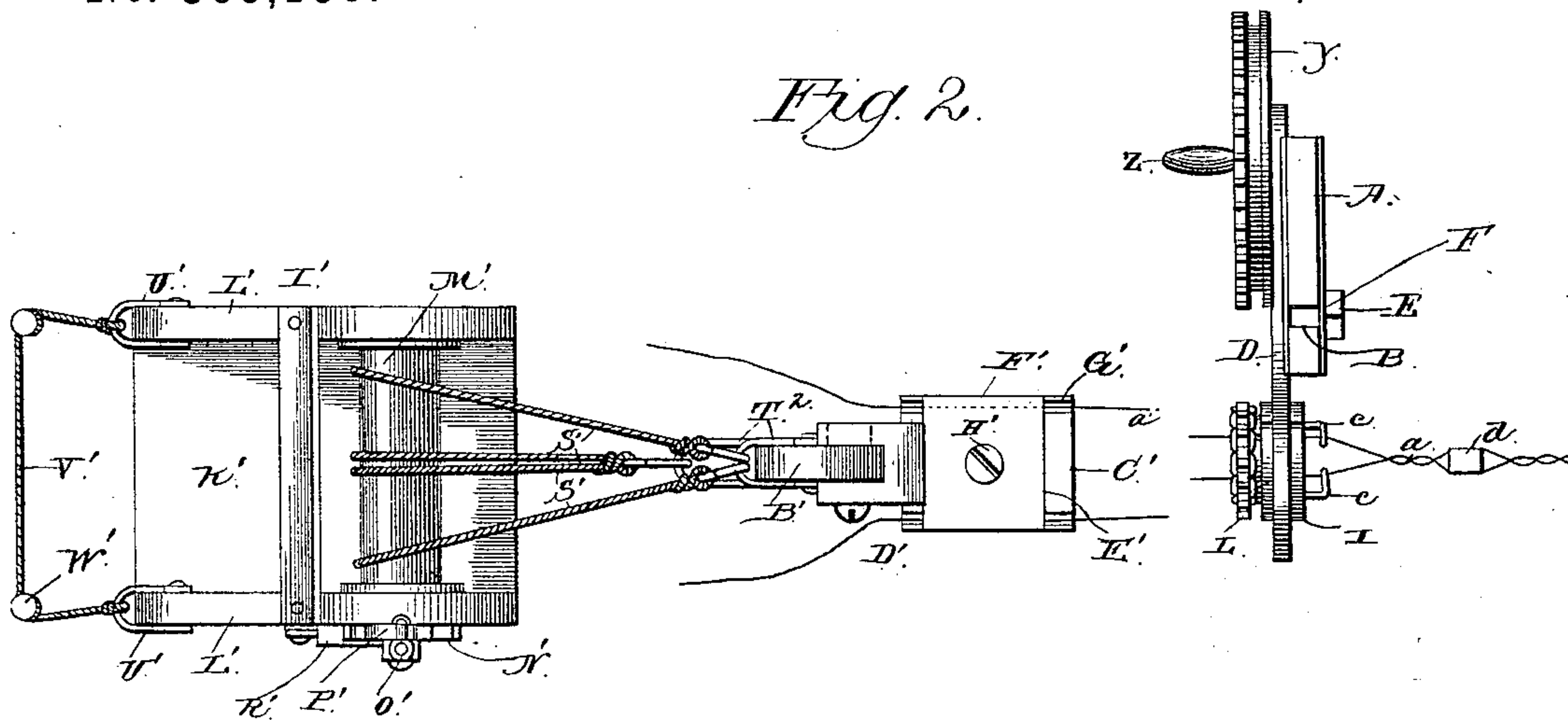
2 Sheets—Sheet 2.

E. S. PLACKARD.
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Fig. 2.



Witnesses

M. Fowler
J. W. Garner

Inventor

E. S. Plackard

By his Attorneys,

C. A. Howland

UNITED STATES PATENT OFFICE.

EDGAR SHERMAN PLACKARD, OF ELWOOD, INDIANA.

FENCE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 365,150, dated June 21, 1887.

Application filed March 23, 1887. Serial No. 232,159. (No model.)

To all whom it may concern:

Be it known that I, EDGAR SHERMAN PLACKARD, a citizen of the United States, residing at Elwood, in the county of Madison and State of Indiana, have invented a new and useful Improvement in Fence-Making Machines, of which the following is a specification.

My invention relates to an improvement in fence-making machines; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of a fence-machine embodying my improvements, showing the same in operation to build a fence. Fig. 2 is a top plan view of the same. Fig. 3 is a detailed elevation of the wire-twisting machine. Fig. 4 is a similar view of the same, showing a different arrangement of the twisters and the wheels for rotating them. Fig. 5 is a detail sectional view of one of the tension devices. Fig. 6 is a detail view of one of the twisters.

A represents a vertical board, which forms the body or frame of the twisting device. The said board is provided, near one side, with a vertical slot, B, that extends nearly throughout the length of the board, and on the opposite side of the same, near its lower side, is a vertical slot, C, which extends a suitable distance from the lower end of the board.

D represents a transverse plate or arm, which extends across the front side of the board A, near the upper end thereof, and is secured to the said board by means of a bolt, E, which passes through the slot B, and is provided on its rear threaded end with a clamping-nut, F. By means of the said nut and bolt the plate or arm D may be adjusted vertically on the board A. One end of the said plate or arm projects beyond the outer side of the board A, and the said projecting end of the plate or arm is provided with a circular opening, G, of suitable diameter. An open slot, H, is made in the extreme outer end of the plate or arm, and communicates with the opening G.

I represents an annular rotating twister, which is journaled in the opening G, and is adapted to rotate therein. A central opening,

K, of suitable diameter, extends through the twister, and on the front side of the latter is secured a sprocket-wheel, L. An open slot, M, extends from one side of the opening K to the outer side of the twister, and by turning the latter in the opening G, so that the slot M communicates with the slot H, the wires of the fence may be inserted in the opening in the center of the twisting device, as will be very readily understood.

N represents a pair of plates or arms, which are similar in construction to the plate or arm D, and are secured to the board A by means of clamping nuts and bolts O. The said bolts extend through the slot B. The plates or arms N are also vertically adjustable on the board, and are each provided with a rotating annular twister, T, having on its front side a sprocket-wheel, R, the said twisters on the sprocket-wheels being similar in construction to the twister I and sprocket-wheel L.

S represents an arm, which is connected to the board A by means of a bolt, T', which extends through the lower end of the arm and the slot C. This bolt has its threaded end provided with the clamping-nut U, by means of which the arm may be secured at any desired vertical adjustment in the slot.

V represents a large sprocket-wheel, which is journaled in the free upper end of the arm S. A lever, W, has its inner end pivoted on the same shaft or pin that serves for the bearing of the sprocket-wheel V, and the said lever W is provided with a spring-actuated locking-bolt, X, adapted to engage the teeth of the wheel V.

Y represents a similar sprocket-wheel, which is journaled in one end of the arm D on the same side of the said arm with the sprocket-wheel L. The wheel Y is provided with a crank-handle, Z, by means of which it may be readily rotated.

A' represents a sprocket-chain, which is made of detachable links, whereby the said chain may be taken apart and divided into sections of any desired length. When it is desired to operate all of the twisters simultaneously, when the pickets to be employed in making the fence are of a uniform length, the sprocket-chain A' connects the sprocket-wheels R with the sprocket-wheels L.

B' represents a tension-bar, which is pro-

vided with a series of horizontal arms, C', that project from one side thereof, the said arms having their inner ends bifurcated to fit one edge of the tension-bar, and being secured thereto by means of clamping bolts and nuts D'. The outer ends of the arms C' are broadened and flattened, and the upper sides thereof are recessed, as at E', and thereby adapted to receive plates F'. The upper sides of the flattened portions of the arms C' are provided, near their opposite sides, with longitudinal grooves G', which are adapted to receive the wires. H' represents clamping screws, which extend through the centers of the plates F', and have reduced lower ends, which extend through and are free to turn in openings in the arms C'. To the lower ends of the screws are secured disks h, and thereby the said screws are swiveled to the arms and are adapted to clamp the said plates to the said arms, so as to secure the wires between the opposing sides of the said plates and arms.

I' represents a wire-tightening device, which comprises a base, K', having vertical sides L', a winch, M', journaled transversely between the sides L', a ratchet-wheel, N', rigidly secured to one end of the winch, a pivoted lever, O', having a spring-actuated pawl, P', to engage the ratchet-wheel, and a spring-actuated detent, R', pivoted to one of the sides L', and adapted to engage the ratchet-wheel to prevent retrograde rotation of the winch. Ropes or chains S' are attached to the latter, and are adapted to be coiled or wound upon the same, and the ends of the said ropes or chains are provided with hooks adapted to engage yokes T', with which the tension-bar is provided, near its upper and lower ends. The front ends of the sides L' of the tightening device are provided with yokes U', and ropes or chains V' are attached to the said yokes and to stakes W', which are adapted to be driven into the ground and thereby anchor the tightening device.

The operation of my invention is as follows: The wires *a* are stretched from a post, *b*, at one end of the proposed line of fence by means of the tension-bar and its tension arms and plates, and the tightening device I' is anchored to the ground at a suitable distance from the tension-bar and in line with the fence-post. The twisters are then turned so that their slots coincide with the slots H in the plates or arms, and the wires *a* are inserted through the said coincident slots into the central openings in the twisters, and are engaged by means of hooks *c*, with which the rear sides of the twisters are provided, the said hooks being arranged on opposite sides of the central openings in the twisters. The winch is turned by means of the lever O' and the spring-actuated pawl, so as to wind the ropes S', and thereby draw the tension-bar B' forward, so as to stretch and tighten the wire. I will assume that the pickets to be used in the fence are of uniform height, and in this event the sprocket-wheels of all of the twisters will be connected to-

gether by the sprocket-chain A', as before described, and as shown in Fig. 3. The twisting device is then moved rearward on the wires to within a suitable distance of the starting-post *b*. The operator then inserts a picket, *d*, between the wires and near the post *b*, and swings the arm S upward to cause the sprocket-wheel V to engage the sprocket-chain A'. He then grasps the lever W, and thereby partly rotates the wheel V, thus imparting motion to the sprocket-chain and through the latter to the rotary twisters, thus causing the said twisters to turn and twist the wires in front of the picket. Another picket is then inserted in the bights of the wires and the twisting device is moved forward on the wires a suitable distance, and the operator causes the wheel V to rotate in the opposite direction from its previous movement, and thereby the wires are twisted in the opposite direction before the second picket, and the operation before described is then repeated until one of the fence-posts is reached, when the wires are secured to the said post by means of staples, in the usual manner, and so on until the fence is completed.

When pickets of unequal lengths are used, it becomes necessary to enable the upper twister to be rotated independently of the others, and this I accomplish by disconnecting the chain A' and converting it into two independent chains, one of which connects the sprocket-wheels R together and the other connects the sprocket-wheel L to the wheel Y, as shown in Fig. 4. The lower twisters are rotated, as before, by means of the sprocket-wheel V, and the upper twister is rotated, when necessary, by means of the sprocket-wheel Y.

The arms D and N are vertically adjustable on the board A, in order to raise the wires to any suitable height according to the length of the pickets employed in building the fence, and the arm S, which carries the sprocket-wheel V, is vertically adjustable, in order that the said sprocket-wheel may be caused at all times to engage the endless sprocket-chain.

Having thus described my invention, I claim—

1. In a fence-machine, the combination of the board A, the vertically-adjustable arms thereon, the rotary twisters journaled in the said arms, and having the sprocket-wheels, the endless chain connecting the sprocket-wheels, the arm S, pivoted to the board and vertically adjustable thereon, the sprocket-wheel V, journaled to the free end of the arm S, and the lever W, pivotally connected to the free end of arm S, and having the bolt or detent to engage the wheel V, for the purpose set forth, substantially as described.

2. In a fence-machine, the combination of the board A, the plates or arms, the rotary twisters having the sprocket-wheels, the endless sprocket-chain to connect the said wheels, the arm S, and the operating sprocket-wheel V, journaled to the free end of the said arm

and adapted to engage the sprocket-chain to rotate the twisters, substantially as described.

3. The combination, in a fence-machine, of the board A, having the vertical slots B and C, the arms or plates, the clamping-bolt to secure the same to the board at any desired vertical adjustment, the said clamping-bolts working in the slot B, the rotary twisters carried by the arms or plates, and having the sprocket-wheels, the endless sprocket-chain connecting the said sprocket-wheels, the arm S, the clamping-bolt to secure one end of the arm to the board, the said clamping-bolt working in the slot C, and the operating sprocket-wheel V, journaled to the free end of the arm S and adapted to engage the sprocket-chain, for the purpose set forth, substantially as described.

4. In a fence-machine, the combination of the board A, the arms or plates secured to the said board and carrying the rotary twisters, each of which is provided with a sprocket-wheel, the sprocket-wheel Y, journaled to the arm which carries the upper twister, the endless chains to connect the said sprocket-wheel with the sprocket-wheel of the upper twister, the endless chain to connect the sprocket-wheels of the lower twisters together, and the operating sprocket-wheel V, adapted to engage

the latter endless chain, for the purpose set forth, substantially as described.

5. The combination of the tension-bar, the arms C', having their inner ends bifurcated, and thereby adapted to receive one edge of the tension-bar, the bolts extending through the bifurcated ends of the arms and through the tension-bar to secure the arms to the latter, the tension-plates F', and the clamping-screws H', to clamp the said plates against the arms C', for the purpose set forth, substantially as described.

6. The combination of the tension-bar, the arms C', secured thereto, and having the upper flattened surfaces provided with the longitudinal grooves G' and the recesses E', the plates F', adapted to fit the recesses E', and the clamping-screws passing centrally through the plates and the arms and located between the grooves G', for the purpose set forth, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

EDGAR SHERMAN PLACKARD.

Witnesses:

SAMUEL BEALE,
J. N. NUGUM.