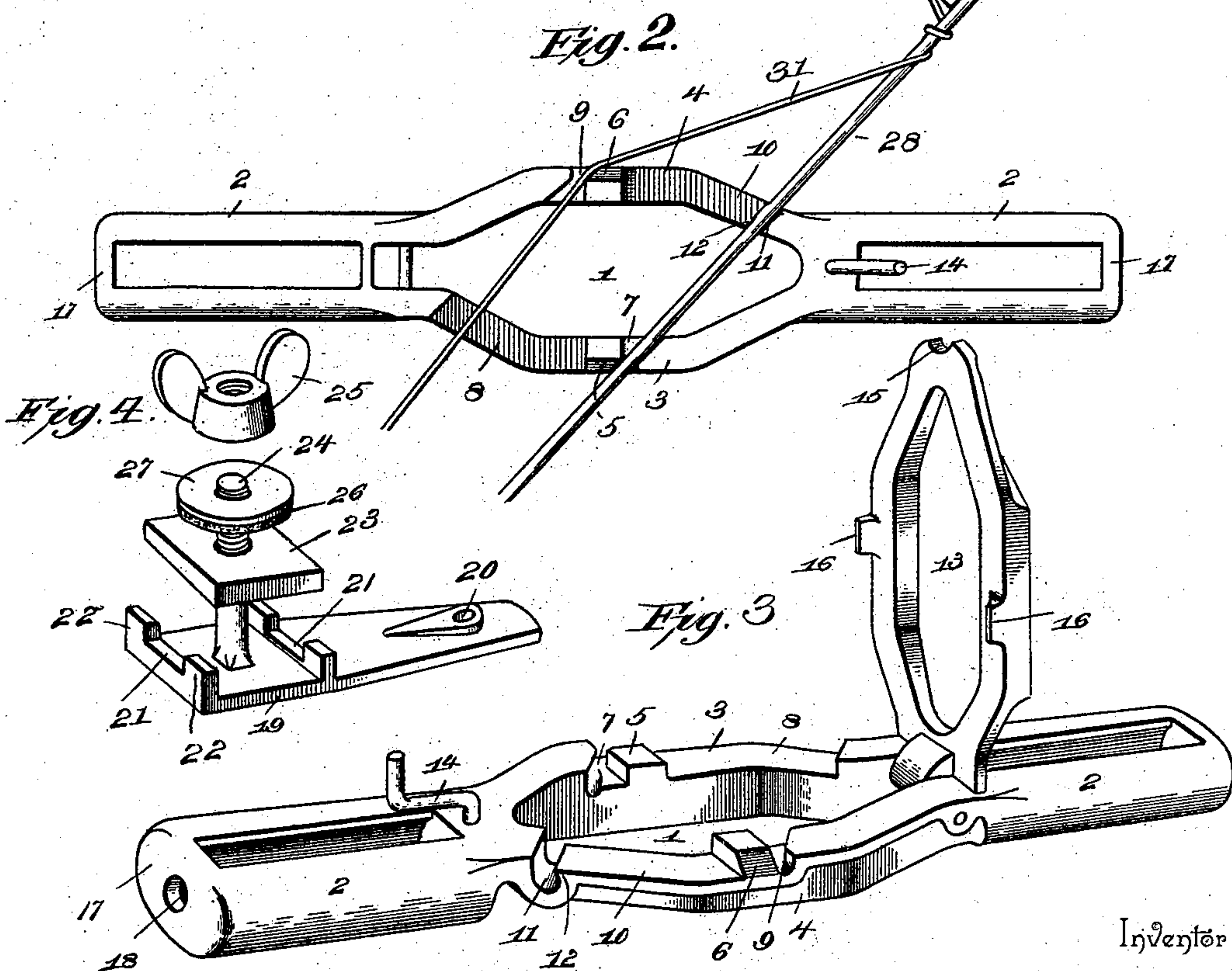
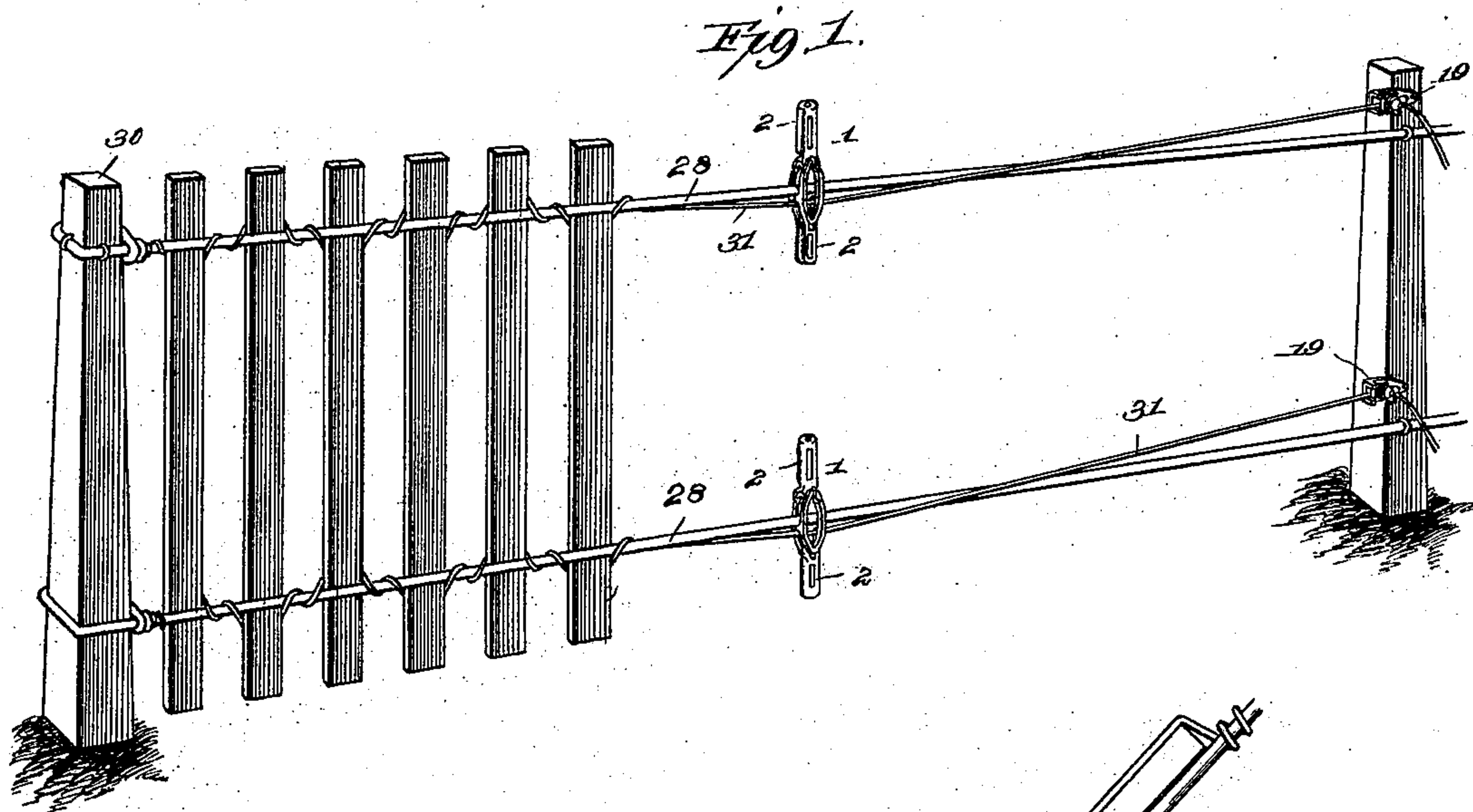


(No Model.)

W. F. BEALS.
FENCE WEAVING DEVICE.

No. 551,153.

Patented Dec. 10, 1895.



Inventor

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Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM F. BEALS, OF DECATUR, ILLINOIS.

FENCE-WEAVING DEVICE.

SPECIFICATION forming part of Letters Patent No. 551,153, dated December 10, 1895.

Application filed March 9, 1895. Serial No. 541,172. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. BEALS, a citizen of the United States, residing at Decatur, in the county of Macon and State of Illinois, have invented a new and useful Hand Fence-Machine, of which the following is a specification.

This invention aims to provide a tool or hand-machine to facilitate the construction of that class of fencing in which the pickets are attached to the line or fence wires by hand after the said line-wires are placed in position and attached to the fence-posts.

The invention also aims to combine with such tool means for preserving and maintaining a uniform tension on the binding-wires, whereby the latter will be twisted around the pickets and the line-wires with a practically uniform tension at all points in the construction of the fence, thereby preventing buckling and kinking of the fencing in the event of it becoming necessary to detach the same from the fence-posts in order to transmit it for use in a different location.

The vital feature of the improvement is the construction of a tool which can be conveniently and successfully operated to twist the binding-wires around the line-wires, and, at the same time, will admit of the binding-wire being forced away from the line-wire a sufficient distance to receive the picket, which can be readily inserted in the angular space provided between the line-wire and the binding-wire, the said tool being constructed with especial reference to maintaining this position to the proper adjustment and positioning of the picket.

For a full understanding of the invention reference is to be had to the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a perspective view of a fence, showing the application of the invention. Fig. 2 is a plan view of the tool, showing its operation in providing a space between the line and the binding wires for the reception of the picket, the cap-plate being removed. Fig. 3 is a detail perspective view of the tool on a larger scale, showing the cap-plate opened or turned back out of the way. Fig. 4 is a detail perspective view of the tension device on a larger scale, the thumb-nut being turned

back from the tension-screw and the friction-plate moved away from the base-plate a sufficient distance to clearly indicate and disclose the structural arrangement of the device.

The tool comprises, essentially, the frame 1 and oppositely-disposed handles 2, the frame tapering from a central point toward the handles on symmetrical lines. For lightness of construction the center portion of the frame is removed, thereby providing side bars 3 and 4 of similar construction. A projection 5 extends from one face of the frame-bar 3, and a similar projection 6 is provided on the frame-bar 4, the two projections 5 and 6 being oppositely disposed and occupying a central position between the ends of the frame 1. A notch 7 is provided in the frame-bar 3 to one side of the projection 5, and a long recess 8 is provided on the opposite side of the said projection 5. A notch 9, similar to the notch 7, is provided on the frame-bar 4 on the side of the projection 6 opposite to the position of the notch 7 relative to the projection 5. A recess 10 is provided on the frame-bar 4 on the opposite side of the projection 6 and terminates at the end remote from the said projection 6 in a depression 11, which is provided with an overhanging extension 12 to hold the line-wire within the depression 11 when the tool is adjusted to move the binding-wire so as to provide proper space for the passage of the picket between the said binding-wire and the line-wire.

It will be observed that the notches 7 and 9 are diagonally disposed with respect to the projections 5 and 6, and that the recesses 8 and 10 occupy a similar relation relative to the said projections.

A cap-plate 13, of similar outline to the frame 1, is provided and pivoted at one end to the frame 1, and its opposite end is held in proper relation by means of a catch or turn-button 14, provided at the opposite end of the frame 1. In the present instance this catch 14 is a heavy wire bent in approximately the form of a crank and is journaled at one end in the frame 1, the crank portion being adapted to extend over the free end of the cap-plate 13 and hold the latter in closed relation upon the frame 1. The end of the cap-plate is provided with a notch 15 to receive the journal of the catch 14, so as to prevent lateral displacement

of the said cap-plate when subjected to side-wise stress or strain. The cap-plate 13 is provided at opposite points with extensions 16, which correspond in position with the projections 5 and 6, with which they co-operate to prevent the wires wedging between the cap-plate and the outer faces or ends of the said projections 5 and 6. In the preferred form of construction these extensions 16 are beveled, as shown most clearly in Fig. 3, to provide a snug fit with the corresponding beveled portions of the said projections 5 and 6. The handles 2 are hollow and are connected at their extremities by end pieces 17, in which are formed openings 18, the latter serving to receive the ends of the line-wires after they have been passed around the terminal posts, so as to provide a convenient means for twisting said end portions of the line-wires around the main portions thereof.

The tension device comprises a base-plate 19, which is made tapering at one end and provided with an opening 20, the opposite end having transverse ribs 21 disposed in parallel relation and having end extensions 22, a tension or friction plate 23, and a tension-screw 24, provided with a thumb-nut 25 and passing through corresponding openings in the base-plate 19, tension-plate 23, and washers 26 and 27, mounted upon the threaded portion of the said tension-screw 24. The washer 26 is rubber or any other elastic material which is susceptible of being slightly compressed, so as to maintain a tension upon the binding-wire which passes between the plates 19 and 23. The washer 27 is of metal and is adapted to receive the wear and thrust of the thumb-nut 25, so as to prevent injurious contact of the said thumb-nut with the washer 26. The square portion of the tension-screw 24 enters a corresponding square hole in the base-plate 19, so as to prevent relative turning of the parts 19 and 24 when turning the thumb-nut 25 to obtain the required tension on the binding-wire. The transverse ribs 21 project a short distance from the face of the plate 19, and serve, in connection with the tension-plate 23, to deflect that portion of the binding-wire comprised between the said ribs 21, so as to secure a tension on the said binding-wire independent of the tension provided by the compression of the elastic washer 26.

The tension-plate 23 is of such a size as to come and operate between the ribs 21. Hence it will be seen that when the said plate 23 is caused to press upon the wire 31 the latter will be deflected between the said ribs 21 opposite the tension-plate 23, thereby creating a friction, as will be readily understood. Obviously the closer the plate 23 is brought to the plate 19, within certain limits, the greater will be the tension on the binding-wire 31.

In the application of the invention the line-wires 28 are attached at their ends and intermediate points to fence-posts 30 in any desired manner, and the binding-wires 31 are

fixedly attached at their extremities to the terminal post from which it is desired to construct the fencing. The tension devices are attached to a remote fence-post by means of nails driven through the openings 20 into the said fence-post. The binding-wires 31 are passed between the base-plates 19 and the tension or friction plates 23, and the thumb-nuts 25 are turned upon the tension-screw 24 until the required friction between the plates 19 and 23 is obtained upon the said binding-wires.

The hand-machine or tool, one being provided for each line-wire and its companion binding-wire, is placed upon the wires in such a manner that the line-wire occurs in the notch 7 and recess 10 to one side of the projections 5 and 6, and the binding-wire in the notch 9 and the recess 8, the projections 5 and 6 separating and occurring between the two sets of wires. To enable the placing of the tool upon the wires, the cap-plate 13 is opened, and after the tool is placed in position in the manner just described the cap-plate is closed and fastened by means of the latch 14. Care should be taken to have the tools so disposed that the depression 11 will be opposite the terminal post from which the fencing is constructed. When twisting the binding-wire around the line-wire, the tool is arranged at right angles to the said line-wire, as shown in Fig. 1, and when it is required to move the binding-wire away from the line-wire, so as to provide a space for the insertion of the picket, the tool is turned at an angle of about forty-five degrees to the said line-wire, as indicated most clearly in Fig. 2. In this position of the tool the latter is given a twist, so as to seat the line-wire in the depression 11, said line-wire being retained in the depression by the overhanging portion 12. By this construction the tool is maintained in the position shown in Fig. 2 until the picket is placed in position in the angular space provided between the line and binding wires.

The advantage of the overhanging projection 12 is manifest when it is remembered that the tools upon the upper and lower wires must maintain the relative position shown in Fig. 2 without any care upon the part of the builder until the picket is properly positioned.

After the picket is in place the tool is disengaged from the line-wire at the point 11, and is turned so as to twist the binding-wire around the line-wire. The operation is repeated for the attachment of each picket to the line-wires. The binding-wire is twisted in reverse directions on each side of the picket, thereby preserving the relative position of the binding-wire and preventing entanglement thereof with the line-wires. As the binding-wire is consumed in the construction of the fence, it will pass through the tension devices in the manner hereinbefore specified, and the fence will be of uniform tension throughout its length.

The relative construction and disposition

of the parts herein set forth are preferred, as the best results are attained thereby. However, changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new is—

10 1. A tool, or hand machine, for the construction of wire fences, comprising a frame having oppositely disposed projections 5 and 6, and provided with diagonally disposed notches 7 and 9 and extended recesses 8 and 10, whereby the tool is adapted for twisting the binding wire around the line wire, and providing a space between the said wires for the insertion and proper positioning of a picket on turning the tool at an angle of about 15 forty-five degrees to the line wire, substantially as set forth.

2. A tool, or hand machine, for the construction of wire fences, comprising a frame provided with oppositely disposed projections 25 5 and 6, and having diagonally disposed notches 7 and 9 and extended recesses 8 and 10, the end of one recess 10 being provided with a depression 11, substantially as and for the purpose set forth.

30 3. A tool, or hand machine, for the construction of wire fences, comprising a frame having oppositely disposed handles, and provided with projections, and having diagonally disposed notches and extended recesses, one recess terminating in a depression having an overhanging extension, substantially as described for the purpose set forth.

4. The herein-described tool, comprising a frame provided on one side with oppositely disposed projections, and having diagonally disposed notches and extended recesses, a cap plate pivoted at one end to one extremity of the frame, and a latch for engaging with the 40 latter in closed relation upon the frame, substantially as set forth.

5. A tool comprising a frame provided with oppositely disposed projections, and having diagonally disposed notches and extended recesses, a cap plate pivoted at one end and provided with extensions to co-operate with the projections of the frame in the manner set forth, and a latch to engage with the free end of the cap plate and hold the latter in 45 closed relation, substantially as specified.

6. The herein shown and described tool, comprising an open frame provided with hollow handle bars which have openings in their

closed ends, oppositely disposed projections having their outer end portions beveled, diagonally disposed notches and extended recesses, one recess terminating in a depression having an overhanging projection, a pivoted cap plate having a notch in its free end and provided with beveled extensions to co-operate with the beveled portions of the said projections and an approximately crank-shaped latch adapted to engage with the notched end of the cap plate and extend thereover, to hold the said cap plate in closed relation, substantially as specified. 60 65 70

7. A tension device adapted to be used in the construction of wire fencing, comprising a base plate formed on one side with parallel ribs, and having projections extending outwardly from the ends of the said ribs, a tension plate adapted to come opposite and to operate between the said projections and ribs, a tension screw passing through the base and the tension plates and provided with a thumb nut on its projecting end, an elastic and a metallic washer mounted upon the threaded end of the tension screw and located between the thumb nut and the tension plate, the elastic washer bearing against the tension plate, 75 80 85 the parts being so disposed that the wire will pass over the ribs and through the spaces provided between the end projections thereof, substantially as set forth.

8. A hand machine for the construction of wire fences, comprising a frame having oppositely - disposed projections 5 and 6 and notches 7 and 9, whereby the fence and binding wires will lie upon opposite sides of the said projections in the operation of the machine and a cap plate removably fitted to the side of the frame and adapted to extend over the said projections and notches, substantially as set forth. 90 95

9. A hand machine for the construction of wire fences, comprising a frame provided on one side with oppositely-disposed projections and having diagonally-disposed notches and extended recesses, and a cap plate removably fitted to the side of the frame and adapted to extend over the said projections, notches and extended recesses, substantially as and for the purpose set forth. 100 105

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses. 110

WILLIAM F. BEALS.

Witnesses:

L. T. RUEHL,
GEO. W. BRIGHT.