

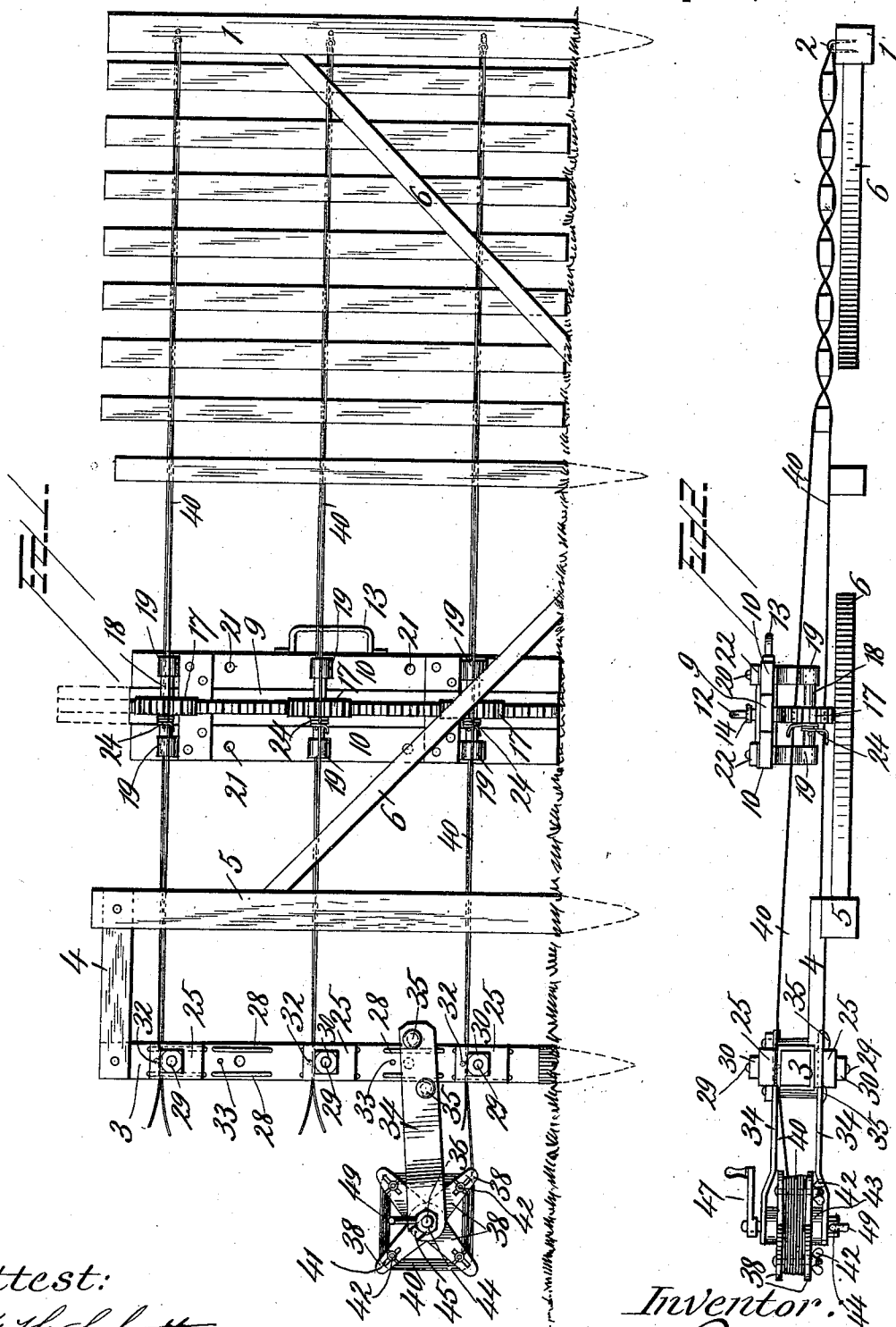
(No Model.)

2 Sheets—Sheet 1.

N. F. STANTON.
SLAT AND WIRE FENCE MACHINE.

No. 504,371.

Patented Sept. 5, 1893.



Attest:

H. H. Schott

M. L. Paul

Inventor.

Nelson F. Stanton,
by H. H. Schott,
his Attorney.

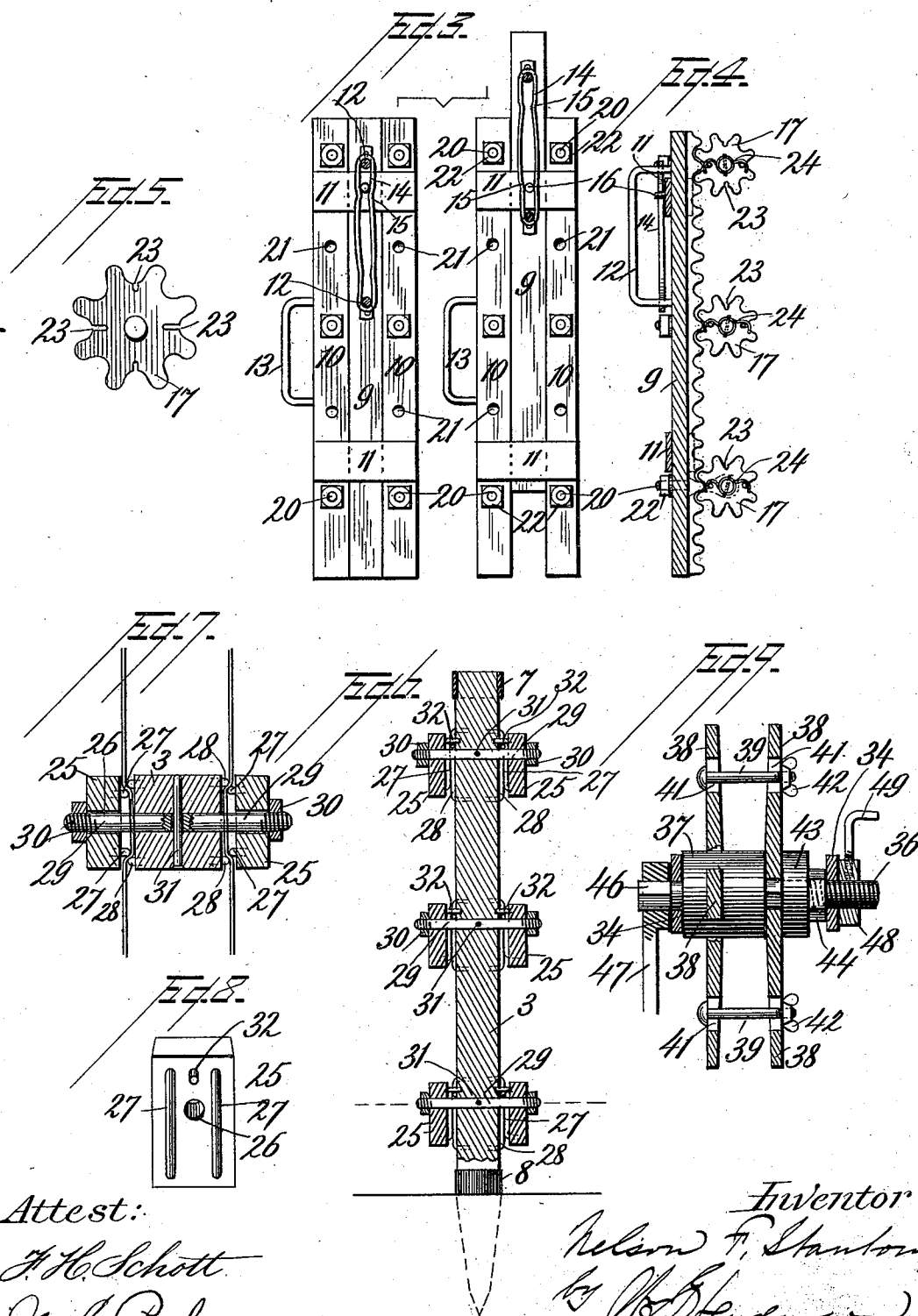
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by R. E. Henderson
his Attorney

UNITED STATES PATENT OFFICE.

NELSON F. STANTON, OF BRUIN, PENNSYLVANIA.

SLAT-AND-WIRE-FENCE MACHINE.

SPECIFICATION forming part of Letters Patent No. 504,371, dated September 5, 1893.

Application filed July 7, 1892. Serial No. 439,237. (No model.)

To all whom it may concern:

Be it known that I, NELSON F. STANTON, a citizen of the United States, residing at Bruin, in the county of Butler and State of Pennsylvania, have invented certain new and useful Improvements in Fence-Making Machines; and I do 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 the figures of reference marked thereon, which form a part of this specification.

My invention relates to fence-making machines, more particularly to that class of machines used for wiring the wood palings as the fence is in course of construction and erection; and it has for its object to simplify the construction and increase the efficiency of machines of this kind, and also to provide for readily shifting the wheels in the line of one strand to the line of another in applying the strands and putting tension thereon.

It has further for its object to provide for giving the fence strands a greater or less number of turns according as the palings may be heavier or lighter.

It has also for its object to improve the construction of the reel from which the wire is fed to the fencing and by which the tension is put upon the wire.

To the accomplishment of the foregoing and such other objects as may hereinafter appear the invention consists in the construction and in the combination of parts hereinafter particularly described and then sought to be specifically defined by the claims, reference being had to the accompanying drawings forming a part hereof in which—

Figure 1 is a side elevation of the machine with a portion of the fencing partly constructed by the machine. Fig. 2 is a plan view of Fig. 1. Fig. 3 is a front elevation of the wire crossing mechanism from the side opposite to the face where the cogs are arranged, the portion of the figure to the left showing a rack bar at its lowest position and the portion to the right showing at its highest position, the operating handle being in section. Fig. 4 is a side or edge view of parts illustrated in Fig. 3 with portions in section. Fig. 5 is a side view of one of the wire cross-

ing cogs on an enlarged scale. Fig. 6 is a vertical cross section through the post to which the reel and the clamping devices are applied. Fig. 7 is a horizontal cross section through said post showing the wires clamped in position. Fig. 8 is an inside face view of one of the clamping blocks; and Fig. 9 is an end view of the reel with portions in section.

In the drawings the numeral 1 indicates the post placed at one end of the section of fencing to be wired which post is provided with staples 2 through which the wire will be passed and looped so that it may be drawn through the staples.

The numeral 3 designates a post placed at the other end of the section of fencing, which post I will designate as the clamping post inasmuch as it carries the clamping blocks. This post may be connected by a bar 4 with a bracing post 5 which may in turn be braced by the diagonally set bar 6; but any other well known means of bracing the clamping post may be employed. The posts 1 and 3 will be pointed so as to facilitate driving the same into the ground, and the post to be driven into the ground may be provided with a metallic cap or band 7 as is shown applied to the clamping post in Fig. 6, and there may be also applied to such posts near the ground a metallic band 8 as represented applied to the clamping post in Fig. 6 of the drawings. The bracing post 5 may if desired be pointed as shown in Fig. 1 but that is not necessary as said post may rest upon the surface of the ground.

The wire crossing mechanism consists of a vertically moving rack bar 9 preferably arranged between the two side bars 10 which may be connected together by the cross strips 11 lying against opposite faces of the guide bars so that the space between said parts will constitute a way in which the rack bar may play. The rack bar will be provided with a handle 12 by which the operator may move the bar up and down, and the guide bars may be provided with a handle 13 on one side by which the operator may steady the wire crossing mechanism during its operation. The rack bar will be provided with a spring catch designed to hold the bar in its lowest and in its highest position against the tension of the wire in the strand so that when in either of

those two positions the operator may leave it without the tension of the wire strands moving it from the position in which it has been placed by the operator. Any suitable spring catch answering the purpose may be employed. A simple and efficient catch is that illustrated in the drawings and designated by the numeral 14, it consisting of a loop of spring metal passed over and under the handle 12 and having shoulders 15 at its upper and its lower portion so that as said shoulders are forced over or beyond a pin 16 projecting from the rear of the wire crossing mechanism they will bear against or on one side of said pin with spring pressure sufficient to prevent the tension of the wire from forcing the shoulders past said pin and thus will hold the rack-bar to its adjusted position until moved therefrom by the operator. While I have illustrated a suitable spring catch for the purpose I do not mean to confine myself thereto.

The other portion of the wire crossing mechanism consists of one or more cog wheels 17 having a pintle or axle 18 journaled in suitable boxes 19 from which pins or bolts 20 extend and pass through apertures 21 formed in the upright guide bars 10 and having nuts 22 applied to their threaded ends so as to hold them to said guide bars. There may be as many apertures 21 formed in the guide bars as there are cog wheels, or more if desired so that the cog wheels may be adjusted to the position desired to suit the location and number of wiring strands employed. The cog wheels will be formed with notches or recesses 23 formed in the body of the cog wheels between the teeth thereof in which the wire strands will lie in order that they may be crossed without liability of slipping side-wise, there being as many of these notches or recesses as desired. I prefer to make some of these recesses or notches deeper than others so that when desired the wire strands may be held more or less apart to suit different thicknesses of palings as the wires should be held farther apart for heavy or thick palings than for thinner palings.

In order to further guard against the wires slipping in the cog wheels during rotation, I provide catches 24 which are designed to hook over the wires and thus hold them in place between the teeth of the wheel. I prefer to make these catches of wire crossed around the axle of the cog wheel so as to give elasticity to the catches thereby making them spring catches, the outer ends of these wires being turned into the shape of a hook to pass over the wire strands and hold them in place.

The clamping post 3 is provided with a series of clamping blocks 25 each being formed with an aperture 26 for the passage of a bolt which will secure it to the post and is also formed with two opposite ribs 27 which may be formed of wire having its ends entering the block, which ribs are designed to fit to one side of ribs 28 projecting from the face of the post 3 so that the ribs 27 will press the wire

strands down between the ribs 28 and cause the same to be clamped at two different points between the ribs 27 and 28 as clearly shown in Fig. 7, and thereby most effectually bind the wire strands for the time being to the clamping post and prevent the wire from slipping lengthwise after it has been drawn taut. These clamping blocks are applied to both sides of the clamping post so that the wire strands on each side of the post may be clamped thereto as clearly illustrated in Figs. 6 and 7 of the drawings. The bolts 29 pass through the posts and blocks, and nuts 30 are applied to said bolts serving to hold the parts together. A removable pin 31 passed through the clamping post and into the bolt 29 serves to prevent the latter from turning when applying the nuts thereto and from slipping out of place when the nuts are taken off. This pin also serves to prevent the bolt from moving lengthwise and consequently the clamping blocks on one face of the clamping post may be loosened without affecting the blocks on the opposite face of the post as is obvious, and in that way the strand on either side of the post can be released when necessary without loosening the strand on the opposite side. Each clamping block 25 is provided on its inside face with a pin 32 designed to lie over the wire strand which passes between the clamping block and post so as to prevent said wire strand from rising above the binding ribs when the clamping block is loosened, or at other times. An aperture 33 is preferably made in the clamping post to receive the point of the pin 32.

The reel for holding the roll of wire is supported by two arms 34 which will be secured at their inner ends to the clamping post 3 by means of nutted bolts 35 lying on opposite sides of the clamping posts and in different horizontal planes as illustrated in Fig. 1 so that said reel may be raised or lowered to bring the feed of the wire on the reel in line with the pull on the strand while putting the tension thereon, the position of the bolts 35 permitting the arm to be swung into either a raised or lowered position and be held in either of said positions by reason of the bolts bearing against the sides of the post and by reason of the friction between said arms and post caused by the tightening of the nuts upon the bolts 35. I am thus enabled to adjust the reel to feed the wire for two of the strands and to afterward apply the tension to said strands without the necessity of removing the reel and afterward attaching it again. This is the case for the two strands nearest to the reel; when it is desired to feed the wire from the reel for say the third strand, it will of course be necessary to shift the arms from the position indicated in Fig. 1 to a position between the middle and the upper strand.

The reel proper is composed of the shaft 36 carrying the drum 37 from which projects the radial arms 38 from one to the other of which extends the cross rods or bolts 39 designed to

receive the reel or coil of wire 40 and sustain the same between the radial arms. These cross rods or bolts 39 pass through elongated slots 41 in the radial arms so that the rods may be adjusted outwardly and inwardly from the axis of the reel so as to fit to the inside diameter of the roll of wire as the same frequently varies in different rolls. The cross rods or bolts will be held in their adjusted position by means of thumb nuts 42 which when screwed up will clamp the rods or bolts to the radial arm and thus hold them securely to their adjusted position. The radial arms on one side of the reel are removable so as to permit the roll of wire to be placed in position, after which the cross rods or bolts are adjusted and the nuts then tightened up to hold the parts in position. The removable radial arms may be held in place by a washer 43 which may be of the same diameter as the drum 37 and by a nut 44 screwed onto the shaft 36 so as to hold the washer and the removable radial arms in place. The reel thus constructed will have its shaft 36 passed through the openings 45 in the outer end of the arm 34 so as to rest in said arms and be free to turn therein to unwind the wire from the reel and also to apply the tension to the wire strand when in position to receive the palings. One end of the shaft 36 is made angular as shown at 46 so as to receive the hand crank 47 by means of which the reel is turned in unwinding the wire and in applying tension to the wire strand, and the opposite end of the shaft 36 is screw-threaded so as to receive a nut 48 by turning which the reel will be tightly clamped between the arms 34 and thus held against turning after the tension has been put upon the wire strand and during the operation of applying the clamping blocks 25 for the purpose of holding the wires in their taut position. The nut 48 is preferably provided with a handle 49 by means of which it may be readily turned so as to lock and unlock the reel as may be desired in the operation of the machine.

In operation the several posts and the crossing mechanism are placed in position and the wire is run from the reel along the length of the fencing and through the staple 2 in the post 1 and thence backward to the clamping post 3 at which point the end of the wire strand is clamped to the post by one of the clamping blocks 25; then the portion of the wire strand between the reel and the clamping post is brought down upon the periphery of the drum between the crank lever 47 and the radial arms of the reel after which the crank is turned so as to revolve the reel which operation draws the wire tightly around the drum between the crank lever and the radial arms and pulls upon the wire strand extending along the fencing so as to take up all slack in said strand and draw the strand perfectly taut, the surplus wire taken up being wound around the drum next to the crank lever; after the strand has been made as taut

as desired the nut 48 is turned so as to clamp the reel between the two arms in which it is supported, the nut being turned sufficiently to bind the reel so that it cannot turn; after this is done the operator can leave the reel so as to tighten the clamping block 25 against the strand which has been drawn taut, and after that has been done so that the wire will be held taut, the wire between the fencing strand and the reel is severed and the reel adjusted into position to feed for the next strand and to put tension upon the strand and so on until all the strands have been drawn to the tension desired and clamped in that condition; the operator next places one of the palings between the strands and then by means of the handle 12 moves the rack bar 9 so as to revolve the cog wheels 17 sufficiently to cross the strands of wire next to the paling and thus secure the paling in place; this movement of the rack bar, whether it be up or down, brings the spring catch 14 into such position that it is caused to act to hold the rack bar in the position to which it has been moved against the tension of the crossed strand so that the operator has the opportunity to insert the next paling in position between the strands, after which he moves the rack bar in the opposite direction and thereby crosses the strand along the edge of the paling so as to bind it in place, the spring catch before referred to now holding the rack bar in its changed position against the tension of the crossed strand so that the operator can insert another paling and proceed as before, and so on in quick succession until the entire section of fencing is set up. After one section of the fencing is completed the machine is easily and expeditiously shifted in position to set up another section, and so on in succession until the entire fencing has been set up.

Inasmuch as I have set forth the purposes and operation of the several parts in giving a description of the construction of the said parts and have also given a general description of the manner of operating the parts in conjunction with each other, the operation of the machine as a whole will be so obvious to any one familiar with the subject that any enlargement upon the description given is unnecessary.

The machine as a whole is simple in construction and operation, and can be readily set up and removed from point to point as may become necessary, and does not require skilled labor to operate the same.

I have described with particularity the details of construction of the several parts and have illustrated what I consider to be the best form for carrying my invention into effect; but I do not mean to confine myself to such details, as it is obvious that many changes can be made and the main features of my invention be still employed.

Having described my invention and set forth its merits, what I claim is—

1. In a machine for wiring wood fences, the combination with one or more cog wheels for crossing the wire strands between the fence palings, of a rack-bar for actuating said wheels, a spring catch for holding the rack bar in its raised or lowered position against the tension of the wire strand, said catch comprising a loop having shoulders at different points in its length, and a pin or stud to engage with said shoulders to secure said rack bar in either of its two positions, substantially as and for the purposes described.

2. In a machine for wiring wood fences, the combination with mechanism for crossing the wire strands, of a clamping post for securing said strands while being crossed, said post having upon its opposite faces parallel ribs, clamping blocks having parallel ribs to bind the wire strands at different points and next to the parallel ribs on the post and provided with a pin to lie over the wire strands, and means for securing said blocks to the post, substantially as and for the purposes described.

3. In a machine for wiring wood fences, the combination with mechanism for crossing the wire strands, of a clamping post for securing said strands while being crossed, a bolt or rod passed transversely through said clamping post, a removable pin passed through the post and the cross rod or bolt therein for securing said rod or bolt against rotation and longitudinal movement, clamping blocks provided with ribs on their inside faces and supported on opposite sides of the clamping post by said transverse rod or bolt, and means for binding said blocks to said post, substantially as and for the purposes described.

4. In a machine for wiring wood fences, the combination with mechanism for crossing the wire strands and a clamping post for securing said strands while being crossed, of a reel for feeding the wire to form the fence strand and for drawing taut said wire, said reel being supported from the clamping post by means of arms permitting the reel to be raised and lowered on said post, and bolts passed through said arms on opposite sides of the clamping post in different horizontal planes, substantially as and for the purposes described.

5. In a machine for wiring wood fences, the combination with mechanism for crossing the

wire strands and a clamping post for securing said strands while being crossed, of arms extending from said clamping post, a reel rotatably supported upon said arms, and means for compressing the ends of the arms at the point where the reel is journaled therein for binding said reel between its supporting arms to hold it against rotation while the tension is on the wire strand, substantially as and for the purposes described.

6. In a machine for wiring wood fences, the combination with mechanism for crossing wire strands and a clamping post for securing said strands while being crossed, of arms extending from said clamping post, a reel supported by said arms, said reel having elongated slots in its sides, rods or bolts extending from one side to the other of the reel and adjustable in said slots, and means for holding said rods or bolts to their adjustment, substantially as and for the purposes described.

7. In a machine for wiring wood fences, the combination with mechanism for crossing the wire strands and a clamping post for securing said strands while being crossed, of arms extending from the clamping post, a reel supported in said arms, the reel comprising a shaft, radial arms one set of which is removable, a washer for holding the removable arms in place, and a nut applied to the shaft of the reel and bearing against one of the side arms for clamping the reel against rotation, substantially as and for the purposes described.

8. In a machine for wiring wood fences, the combination with mechanism for crossing wire strands and a clamping post for securing said strands while being crossed, of arms extending from said clamping post, a reel supported by said arms, and a drum forming a part of said reel and serving for winding the wire of the fencing strand while the same is being drawn taut, substantially as and for the purposes described.

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

NELSON F. STANTON.

Witnesses:

LEONIE WILLMINA KELLY,
B. F. BROWN.