

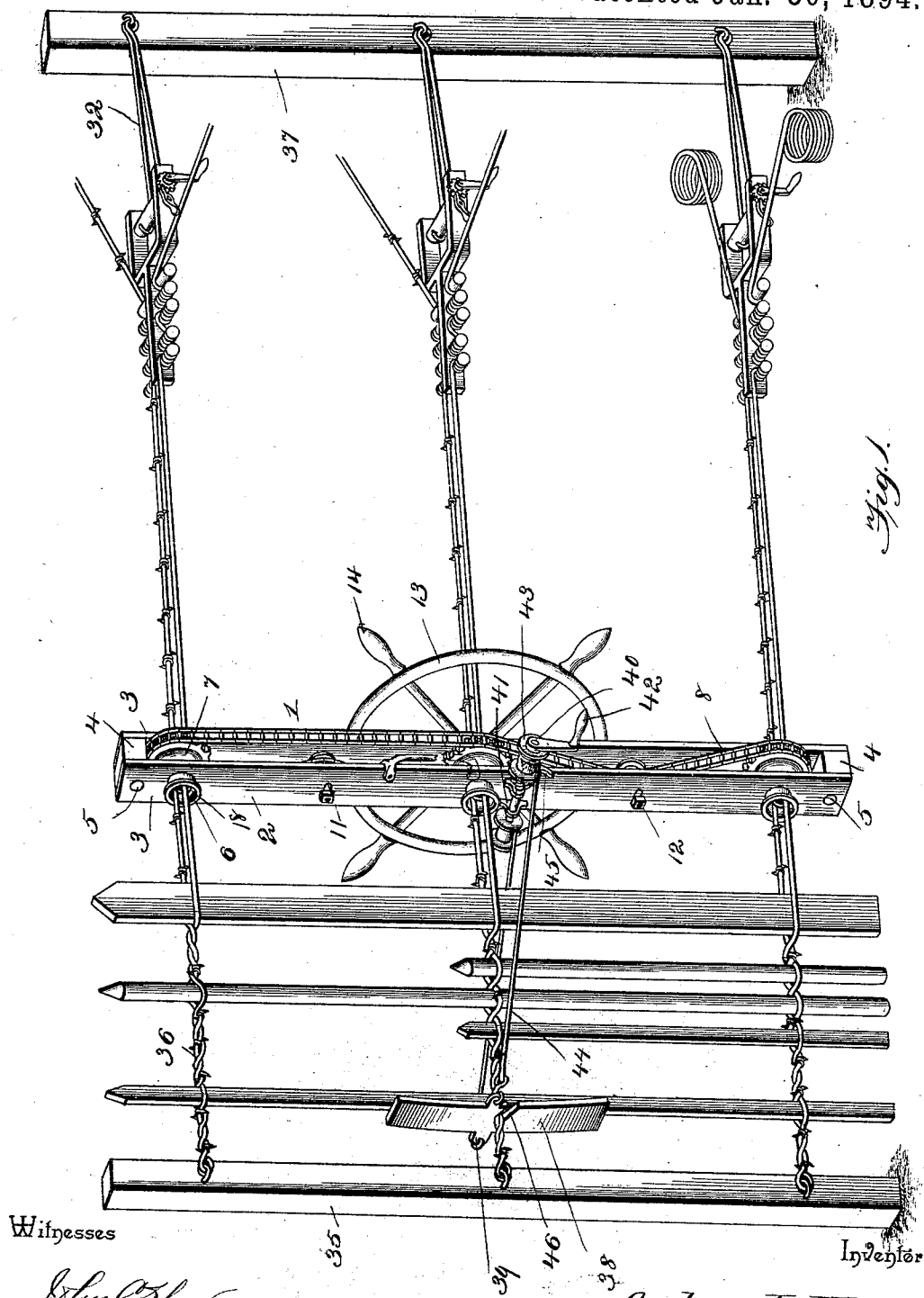
(No Model.)

2 Sheets—Sheet 1.

A. J. HALEY.
SLAT AND WIRE FENCE MACHINE.

No. 513,503.

Patented Jan. 30, 1894.



Witnesses

Inventor

John C. Shaw.
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By *W. S. Payne*, Attorneys,

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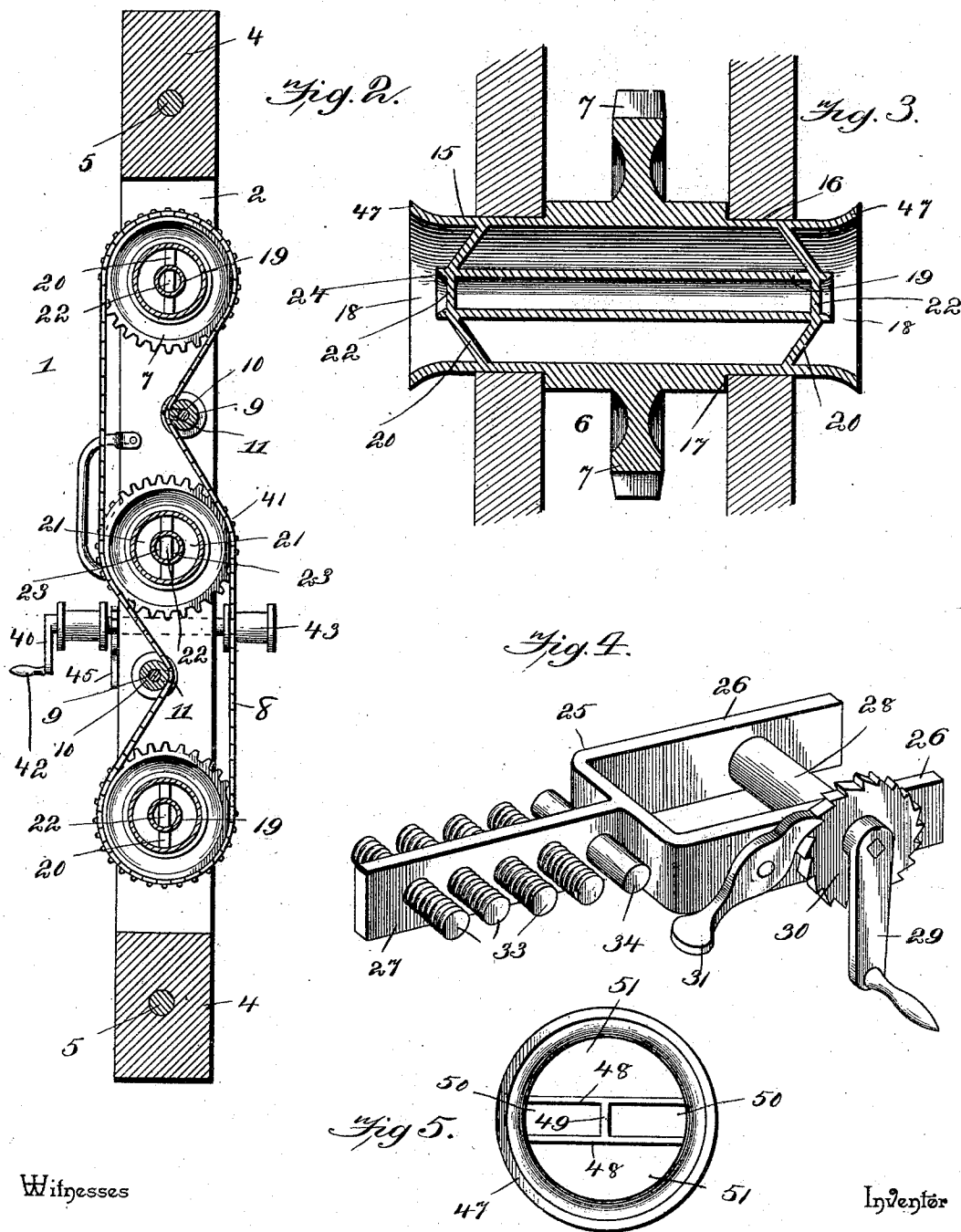
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UNITED STATES PATENT OFFICE.

ANSLEM J. HALEY, OF DALLAS, TEXAS.

SLAT-AND-WIRE FENCE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 513,503, dated January 30, 1894.

Application filed April 11, 1893. Serial No. 469,984. (No model.)

To all whom it may concern:

Be it known that I, ANSLEM J. HALEY, a citizen of the United States, residing at Dallas, in the county of Dallas and State of Texas, have
5 invented a new and useful Wire-Fence Machine, of which the following is a specification.

My invention relates to improvements in wire-fence machines, the objects in view being to provide a simple and compact device which can be moved and operated by hand in the construction of a fence composed of horizontal wire strands and vertical pickets of wood, metal, or other suitable material.

15 In carrying out my invention I employ means for stretching and maintaining the wires under tension during the twisting operation, such tension device being so constructed as to feed the wire as it is required
20 without lessening the tension; and in connection with such tension device I employ a twisting mechanism by means of which any desired number of pairs of wires may be
25 twisted together to secure the pickets in place, such pairs of wires being either smooth or barbed, or both; namely, one being smooth and the other barbed.

My invention is more fully described hereinafter in connection with the drawings, and
30 the novel features thereof are particularly pointed out in the appended claims.

In the drawings—Figure 1 is a perspective view of a fence in process of erection, the machine embodying my invention being shown
35 in the operative position. Fig. 2 is a vertical sectional view of the twister to show the means for connecting the twister heads for simultaneous rotation. Fig. 3 is a detail enlarged sectional view taken axially of one of
40 the twister heads. Fig. 4 is a detail view in perspective of a tension device. Fig. 5 is an end view of a modified form of a twister head.

Similar numerals of reference indicate corresponding parts in all the figures of the
45 drawings.

1 designates a twister, having a frame, 2, consisting of parallel side bars, 3, which are held at the desired interval by blocks, 4, inserted between their extremities and are secured together by means of bolts or screws, 5,
50 or other suitable retaining devices. Rotatably mounted in registering bearings in the

parallel side bars 3 and spaced at suitable intervals to correspond with the horizontal members of the proposed fence are the twister
55 heads 6. In the construction illustrated three twister heads are shown, two being located near the extremities of the supporting frame, and the third being arranged midway between such terminal twisters. Fixed exteriorly to the
60 twister heads, and, if desired, formed integral therewith, as shown in Fig. 3, are sprocket-gears 7 which are arranged between the side bars of the frame and are connected for simultaneous rotation by means of a sprocket chain
65 8. It is desirable that all of the twisters should rotate, during operation, in the same direction, and hence the chain is arranged to pass over and under the terminal gears and engage the
70 sides of the intermediate gear, the sides of such chain not being crossed. In order to insure a positive engagement of the chain with the intermediate gear and provide means for taking up slack in the chain I have shown
75 idlers 9, whose spindles 10 extend through horizontally-disposed slots 11 in the side bars of the supporting frame and are held in adjusted positions by means of nuts 12. The arrangement of these parts will be clearly understood by reference to Fig. 2 of the draw-
80 ings in which the disposition of the sprocket chain in passing around the adjusting idlers is fully shown. Secured to the intermediate twister head outside of the supporting frame is an operating wheel 13 provided with handles 14, and by means of this operating wheel
85 the said intermediate twister may be rotated in either direction and the motion thereof imparted by means of the chain to the terminal twisters.

All of the twister heads are similar in construction, and hence the description of one of them will suffice for all.

15 represents a cylinder which is mounted in bearings 16 in the side bars of the supporting
95 frame and is provided with shoulders 17 to bear against the inner surfaces of such side bars. The ends of the cylinder are flared or bell-shaped, as shown at 18, for a purpose to be hereinafter explained. Arranged concentrically in this outer cylinder is an inner cylinder or tube 19 which is held in position
100 within the outer cylinder by means of radially-disposed dividing webs or bars 20 which are

so arranged as to divide the bore of the outer cylinder to form duplicate guides 21, as shown clearly in Fig. 2, a wire being designed to extend, during operation, through each guide.

5 Dividing webs or bars 22 are also employed in the inner cylinder or tube to divide its bore to form the duplicate inner guides 23, as shown in Fig. 2. The webs or bars 20 which divide the interior of the outer cylinder are

10 preferably inclined inward or from the ends of the cylinder to prevent the catching of the barbs of wire thereupon. These bars or webs 20 may, however, be arranged in an upright position instead of inclined, as shown, but the latter construction is preferable.

15 Thus, it will be seen that I have provided outer and inner concentric cylinders, the bore of each of which is divided to form duplicate guides or holders through which the wires, which form the horizontal strands of the

20 fence, are designed to pass. The guides or holders of the outer cylinder are designed for barbed wire and the guides or holders of the inner cylinder for smooth wire which does

25 not require as much space in order to pass freely. When a barbed wire and a smooth wire are used together, as shown in the drawings in Fig. 1, the barbed wire is arranged in one of the outer guides or holders and the

30 smooth wire in one of the inner guides or holders. The flared or bell-shape of the extremities of the outer cylinder serve to guide the wire into the twister head without the risk of engagement of the barbs with the ends

35 of the cylinder, and the ends of the bore of the inner cylinder are also flared or recessed, as shown at 24. This construction is especially useful when the pickets, which are being secured by means of the wire strands, are

40 of greater width or thickness than the bore of the outer cylinder, thereby necessitating the contracting or drawing together of the strands as they enter the twister head.

The tension device which I prefer to employ in connection with my invention comprises a Y-shaped frame 25 having the parallel arms 26 and the oppositely extended stem 27. Rotatably mounted in suitable bearings in said arms 26 is a tension roller 28

50 bearing at one end an operating crank 29 and a ratchet 30, the latter being engaged by a pawl 31 to prevent the backward rotation of the tension roll. Connected to the tension roller, in position to be coiled thereupon in

55 operating the tension device, are the flexible connections 32 which are adapted to be secured at their rear ends, as shown in Fig. 1, to a suitable object, such as a post or tree, as hereinafter explained. The stem 27 is provided with lateral grooved studs or pins 33

60 over and under which strands of wire are adapted to be woven, the last stud or pin 34 being smooth to enable the wire to be carried laterally from the tension device to the

65 supply roll without danger of kinking.

This being, essentially, the construction of my improved fence machine, the operation

thereof in the erection of a fence is as follows: To a terminal post 35 are attached the ends of the wires or strands 36, in pairs. In this case one of each pair of strands is of smooth wire and the other of barbed wire, this being a convenient arrangement inasmuch as it provides the necessary strength and a sufficient number of barbs at a less expense than would be necessary if both wires were barbed. Previous to the attachment of the ends of the strands to the terminal post 35 such strands are passed through the twister heads, in the way hereinbefore explained, whereby the twister is supported upon the wires. The coils or rolls of wire are now carried backward a sufficient distance, which may be determined by the operator, and are woven in the manner described, and as clearly shown in Fig. 1 of the drawings, around the lateral studs or pins which are carried by the tension devices, the latter having been previously connected by means of the connections 32 to the anchor-post 37.

90 Having attached the strands in this manner to the tension devices the tension rolls are rotated by means of their operating cranks 29 to produce the desired tension in the strands, but inasmuch as the connection of the strands to the tension devices is not permanent or immovable it will be understood that up to a certain tension the strands will be held and beyond that they will slip over the studs or pins, and hence in case the distance between the terminal post and the anchor-post is unusually great, or in case it is desired to secure a greater tension than will be afforded by the attachment of the strands as above described, such strands may be coiled or reeled one, two, or more times around the last stud or pin 34. With the parts arranged as described the twister is operated in one direction to produce a twisting of the strands adjacent to the terminal post, after which the first picket is inserted, the twister being backed sufficient to enable such picket to be arranged in the proper position. Now using the twister as a ram by sliding the same upon the strands, the picket is driven firmly against the last twist, after which the twister is operated in the opposite direction and a twist is formed upon the opposite side of the first picket to hold the latter in place. This operation is repeated for each succeeding picket.

It is obvious that the twisting of the strands produces an excessive tension upon the same and the extra material which is used to form such twists is supplied by the strands slipping through the tension device, the friction between the studs or pins and the wire being sufficient to prevent the tension from being relaxed.

When my improved device is employed in connection with barbed wire it is difficult to slide the twister by hand in driving the picket in place, and hence I employ a tightening device consisting of a holder plate 38, which

is adapted to bear against the side of the picket which is already firmly secured in place, and is provided with lateral ears 39, a shaft 40 which is rotatably mounted in suitable bearings 41 upon the frame of the twister, an operating handle 42 connected to such shaft, duplicate drums 43 carried by the shaft, and connections 44 which are attached at one end to the ears 39 and are reeled at the other end upon the drums 43. A pawl and ratchet device 45 is employed to prevent backward rotation of the drums, and by turning the operating handle forwardly the twister frame can be drawn up firmly against the last picket to force the latter to place. The holder plate 38 is provided with a slot or notch 46 to fit over the twisted strands or wires, as shown clearly in Fig. 1.

In Fig. 5 I have shown a twister head of a slightly modified construction in which a single cylinder 47 is employed, the bore of such cylinder being divided to form the necessary guides or holders by means of parallel substantially diametrical webs 48 which are connected at their centers by a cross-web 49. The guides or holders 50 which are inclosed between the webs 48 and are separated from each other by the cross-web 49 are the inner guides or holders for the reception of the smooth wire, and the guides or holders 51 which are outside of said webs 48 are the outer guides or holders and are designed for the barb wire when such is used.

It will be understood that various other changes in the construction of the twister head and of other parts of the mechanism may be resorted to without departing from the spirit of my invention or sacrificing any of the advantages thereof.

It will be seen that the operating wheel is fixed to the central twister head and motion is communicated from said central twister head to the terminal twister head, the object in this construction being to prevent "springing" of either end of the twister frame during the operation of twisting, as would be the result in case the power was communicated to a terminal twister head. Furthermore, I have provided the frame of the twister with a handhold whereby the twister may be held in operative relation to the last applied picket by one hand of the operator while the operating wheel is rotated by the other.

It will be noted, furthermore, that the stem 27, from which project the lateral studs or pins for the engagement of the strands or wires, acts as a dividing web to prevent con-

tacting between the twin strands or wires, and hence enables the tension of each wire to be preserved independently of the other and also prevents interference between the strands.

Having thus described my invention, what I claim is—

1. In a device of the class described, a twister having twister heads provided with duplicate outer and duplicate inner guides or holders for the reception of strands or wires, and means for operating such twister heads, substantially as specified.

2. In a device of the class described, a twister having rotatable twister heads comprising outer and inner concentric cylinders, the bores of such cylinders being divided by transverse webs or bars to form duplicate outer and inner guides or holders, and means for operating such twister heads, substantially as specified.

3. In a device of the class described, a twister having rotatable twister heads comprising an outer cylinder provided with flared or bell-shaped terminals, an inner concentric cylinder, and radially-disposed bars or webs to divide the interior of such cylinders to form guides or holders, and means for operating the twister heads, substantially as specified.

4. In a device of the class described, the combination with a supporting-frame having parallel side-bars, of cylindrical twister-heads revolubly mounted in registering bearings said side-bars and projecting at their terminals beyond the outer surfaces of the same, chain-wheels fixed to the twister-heads and terminating in shoulders which engage the inner surfaces of the side-bars, a chain connecting said chain-wheels, and means for communicating motion to one of the twister-heads, substantially as specified.

5. In a device of the class described, the combination with a twister having a frame, rotatable twister heads, and means for operating said twister heads simultaneously, of a tightening device having a holder plate, rotatable drums, means for rotating said drums, and flexible connections between the holder plate and the drums, substantially as specified.

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

ANSLEM J. HALEY.

Witnesses:

J. H. SIGGERS,
E. G. SIGGERS.