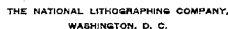


A. W. LANE.  
WIRE AND SLAT FENCE MACHINE.

Patented May 22, 1894.



# UNITED STATES PATENT OFFICE.

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## WIRE-AND-SLAT-FENCE MACHINE.

SPECIFICATION forming part of Letters Patent No. 520,321, dated May 22, 1894.

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### *To all whom it may concern:*

Be it known that I, ANDREW WILSON LANE, of Fredonia, in the county of Wilson and State of Kansas, have invented a new and Improved Fence-Machine, of which the following is a full, clear, and exact description.

The invention relates to machines for manufacturing wired picket fences, and its object is to provide a new and improved fence machine, which is simple and durable in construction, very effective in operation, and arranged to quickly and securely weave the pickets or slats in place in the sets of wires.

The invention consists principally of sliding bars carrying oppositely-arranged racks engaging gear wheels formed with transverse openings for the wires.

The invention also consists of certain parts and details, and combinations of the same, as will be hereinafter described and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of the improvement. Fig. 2 is a rear elevation of the same. Fig. 3 is an enlarged face view of one of the sliding rack bars with a gear wheel in place. Fig. 4 is a sectional side elevation of the same on the line 4—4 of Fig. 3. Fig. 5 is an enlarged front elevation of the bars and one of the gear wheels. Fig. 6 is a rear elevation of the same. Fig. 7 is a transverse section of one of the gear wheels. Fig. 8 is a sectional face view of the same on the line 8—8 of Fig. 7; and Fig. 9 is a face view of the detachable flange for the gear wheel.

The improved fence machine is provided with the standards A and A', connected with each other at the front and rear by bars B and B', so as to hold the said standards parallel one to the other. The two standards are also connected with each other a suitable distance from their lower ends by frames B<sup>2</sup> and B<sup>3</sup>, arranged on the front and rear of the standards, as plainly illustrated in Figs. 1 and 2, the said frames being located directly opposite each other, so as to form a strong support for the pivot C on which the handle D is fulcrumed, one end of the said handle being lengthened to be taken hold of by the operator. If desired, however, the said handle may be taken hold of by two operators

on opposite ends, to impart a swinging motion to the handle when making the fence, as hereinafter more fully described. The handle D is pivotally connected on opposite sides of the pivot C by pitmen E and E', with bars F and F', respectively, fitted to slide on the inner faces of the standards A and A' and between the connecting bars B, B' and the frames B<sup>2</sup>, B<sup>3</sup>. The bars F and F' carry on their opposite faces sets of racks G and G' respectively, each set engaging a gear wheel H on opposite sides, so that when the two bars F and F' are moved up and down by the operator working the handle D, the said gear wheels are rotated to twist the wires I held in each gear wheel. Each rack G or G' is fitted with its back G<sup>2</sup> into a vertically-extending groove F<sup>2</sup> formed in the corresponding bar F or F'. From the back G<sup>2</sup> of each rack extends a number of cross bars G<sup>3</sup> fitting into correspondingly-shaped recesses F<sup>3</sup> formed in the corresponding bar F or F', but deeper than the grooves F<sup>2</sup>, so that when a rack is in place, the cross bars G<sup>3</sup> prevent the rack from sliding up or down. The cross bars G<sup>3</sup> extend a sufficient distance on each side of the rack to permit of inserting a screw or pin J, in each projecting side to fasten the cross bar in place on the corresponding bar F or F'. The cross bars are located at uniform distances apart, and each bar F or F' is formed with correspondingly-distanced recesses F<sup>3</sup> throughout its length, so that the said rack G or G' can be shifted on the corresponding bars F or F' to bring the racks of one bar closer one to the other, or farther apart according to the distance desired between the sets of wires holding the slats in place, it being understood that this distance between the wires depends mainly on the length of the slats or pickets. Each gear wheel H is provided with two flanges H' and H<sup>2</sup>, of which the flange H' is integral with the gear wheel and the other flange H<sup>2</sup> is held in place by a bolt K extending centrally through the gear wheel and flange H<sup>2</sup> as plainly illustrated in Fig. 7. In order to prevent the flange H<sup>2</sup> from turning I provide the same at its inner face with a lug H<sup>3</sup> fitting into a correspondingly shaped recess H<sup>4</sup> formed in the face of the gear wheel H. On each gear wheel H are formed two transversely extending and radially arranged slots H<sup>5</sup> and H<sup>6</sup> located diametrically opposite each other and adapted to register with the inner

ends of L-shaped slots  $H^7$  and  $H^8$  formed in the removable flange  $H^2$ . From the face of the gear wheel  $H$  next to the detachable flange  $H^2$  and close to the inner ends of the slots  $H^5$  and  $H^6$ , project lugs  $H^9$  and  $H^{11}$  adapted to fit into the outer ends of the L-shaped slots  $H^7$  and  $H^8$ , as plainly shown in Fig. 5, so that the outer ends of the said slots  $H^7$  and  $H^8$  are closed whenever the flange  $H^2$  is fastened in place on the gear wheel by its bolt  $K$ . When the said flange  $H^2$  is detached from the gear wheel, the wires can be readily inserted at the slots  $H^5$  and  $H^6$  and through the open ends of the slots  $H^7$  and  $H^8$  in the detached flange  $H^2$ , after which the latter is placed in position on the gear wheel and fastened in place thereon, by the bolt  $K$ , as previously described, so that the two wires are locked in place in the gear wheels. Now, when the rack bars  $F$  and  $F'$  are moved up and down, as above described, a rotary motion is given to each gear wheel  $H$ , so that the wires are twisted to hold the picket in place. I prefer to give each gear wheel  $H$  one and a half turn for each full stroke of the handle  $D$ . On the upper end of the standards  $A$  and  $A'$  is secured a handle  $L$  located on the rear side of the standards, as plainly shown in Fig. 2, so as to be within convenient reach of the operator's left hand. A gage  $N$  is secured to the rear of the standards  $A$  and  $A'$  near their lower ends, as plainly shown in Fig. 2. On the lower end of the standard  $A$  and at the rear side thereof is secured a foot  $O$  adapted to be engaged by the operator's left foot to hold the machine in proper position on the ground. See Fig. 1. It will be seen that by the arrangement described, the operator can conveniently manipulate the handle  $D$  so as to impart an alternate up and down sliding motion to the rack bars  $F$  and  $F'$  to rotate the gear wheels  $H$  to twist the wires  $I$ , as above described.

It is understood that as the rack bar  $F$  moves upward the other rack bar  $F'$  moves downward, so that the gear wheels are turned without moving in either an up or down direction, and a similar movement takes place at the time the bar  $F$  moves downward and the other bar  $F'$  moves upward, with the only difference that the gear wheel then turns in an opposite direction.

It is further understood that a picket is inserted in the sets of wires at the end of each up or down stroke, so that the twists on opposite sides of a picket are in opposite directions. The flanges  $H^7$  and  $H^8$  fit on opposite sides of the corresponding racks  $G$  and  $G'$ , so that transverse displacements of the said gear wheels are prevented, and at the same time undue friction between the racks and gear wheels is prevented.

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

1. A fence machine, comprising connected standards held parallel to each other, bars

fitted to slide in the said connected standards, and adapted to travel simultaneously in opposite directions, racks secured on opposite faces of the said bars and adjustable thereon, for the purpose specified, and gear wheels carrying the wires and arranged between the opposite racks, substantially as shown and described.

2. A fence machine, comprising vertical standards held parallel to each other, bars mounted to slide in opposite directions in the said standards, racks secured on opposite faces of the said bars, and adjustable thereon, gear wheels engaged on opposite sides by the oppositely arranged racks, each gear wheel being formed with transverse recesses for the reception of the wires to be twisted, pitmen connected with the said bars, and a handle mounted to swing and pivotally connected with the said pitmen on opposite sides of its fulcrum, substantially as shown and described.

3. A fence machine comprising connected standards, frames attached to the said standards on opposite sides and carrying a pivot, a handle mounted to swing on the said pivot, pitmen pivotally-connected with the said handle at opposite sides of the said pivot, bars fitted to slide in the said connected standards and pivotally connected with the said pitmen, sets of racks held adjustably on opposite faces of the said bars, and gear wheels arranged between the sets of racks and formed with transverse recesses for the wires to be twisted, substantially as shown and described.

4. A fence machine provided with a revolvable gear wheel having diametrically arranged slots and provided with a recess formed in its face, and a detachable flange formed with slots adapted to register at their inner ends with the slots in the gear wheel and provided with a lug shaped to fit the recess in the face of the gear wheel, substantially as shown and described.

5. A fence machine provided with a revolvable gear wheel having diametrically arranged slots, a detachable flange formed with slots adapted to register at their inner ends with the slots in the gear wheel, and lugs projecting from the face of the gear wheel, to close the outer ends of the slots in the said detachable flange, substantially as shown and described.

6. A fence machine provided with sliding bars, each having a longitudinally-extending groove and transverse recesses, and racks each adapted to engage with its back the said longitudinal groove, each rack being also formed with cross bars adapted to fit into the transverse recesses of the bar, substantially as shown and described.

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Witnesses:

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C. S. REID.