

(No Model.)

D. A. GREEN.
WIRE AND PICKET FENCE MACHINE.

No. 533,887.

Patented Feb. 12, 1895.

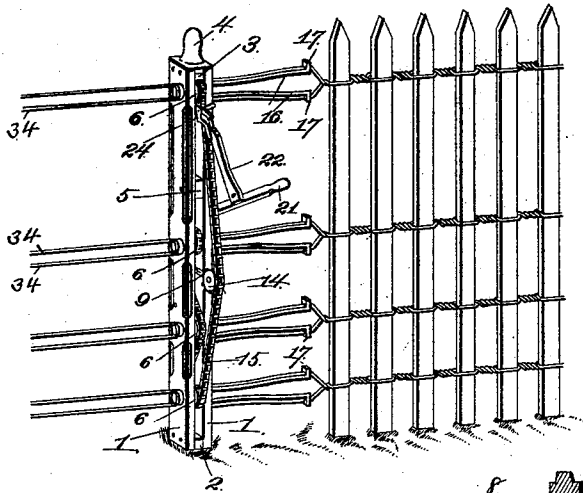


Fig. 1.

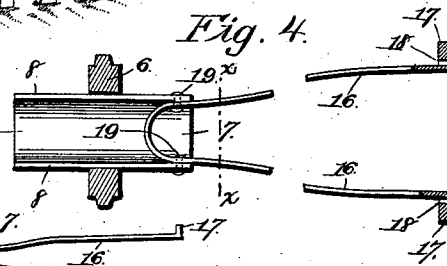


Fig. 4.

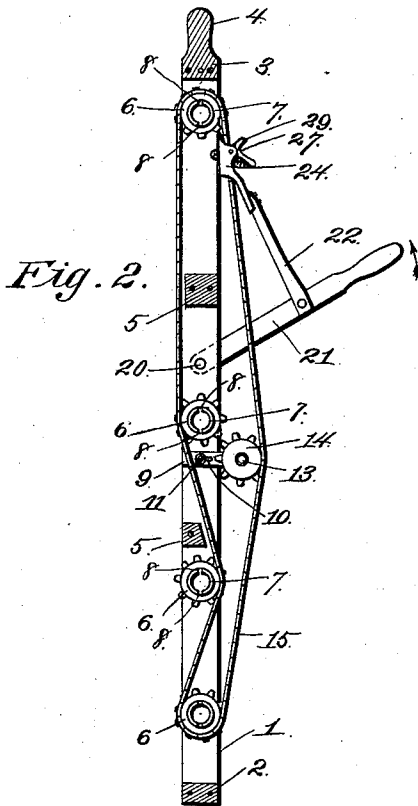


Fig. 2.

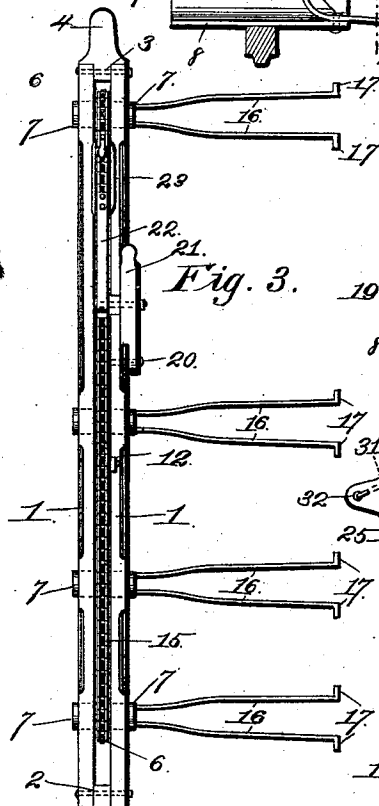


Fig. 3.

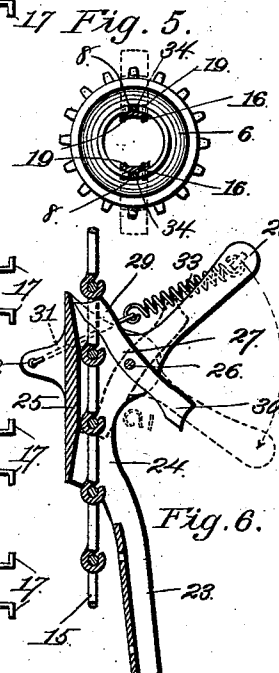


Fig. 5.

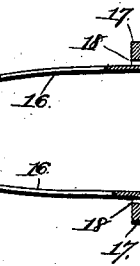


Fig. 6.

Witnesses:

F. G. Fischer
C. P. Thorpe.

Inventor:
David A. Green,

By Higdon & Higdon
Attys.

UNITED STATES PATENT OFFICE.

DAVID A. GREEN, OF EMPORIA, KANSAS.

WIRE-AND-PICKET-FENCE MACHINE.

SPECIFICATION forming part of Letters Patent No. 533,887, dated February 12, 1895.

Application filed April 14, 1894. Serial No. 507,515. (No model.)

To all whom it may concern:

Be it known that I, DAVID A. GREEN, of Emporia, Lyon county, Kansas, have invented certain new and useful Improvements in Wire-and-Picket-Fence Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to wire and picket fence machines, and has for its object to produce, in a machine of this character, a mechanism whereby the twisting operation is performed by the operation of a lever, and the twist is taken out of the unemployed portion of the wire by the reverse operation of said lever; and a spreading mechanism, whereby the wires are held apart with a yielding tension, so as to allow of the easy and expeditious insertion therebetween of the pickets, and to allow for pickets of varying sizes; furthermore, to produce a machine of this character which is simple, durable, and inexpensive of construction, and positive and reliable in operation.

With these objects in view, the invention consists in certain peculiar and novel features of construction and combination of parts, as hereinafter described and claimed.

In order that the invention may be fully understood, reference is to be had to the accompanying drawings, in which—

Figure 1. is a perspective view of a fence building machine embodying my improvements, and showing the same in position relative to an uncompleted fence. Fig. 2. is a vertical central sectional view of the machine on an enlarged scale. Fig. 3. is a front view of the fence machine. Fig. 4. is a vertical sectional view enlarged of one of the twisting and spreading mechanisms. Fig. 5. is a vertical sectional view of the same, taken on the line $x-x$ of Fig. 4. Fig. 6. is a vertical sectional view enlarged of the mechanism and chain engaged thereby, for operating the twisting mechanism.

It has been found in practice, especially where pickets of various sizes were employed, that a great deal of time was wasted in the operation of inserting the pickets between the wires with machines of the ordinary type, and to obviate this loss of time and the inconven-

ience and annoyance arising from the difficulty experienced in the insertion of pickets between the wires, is one of the objects of my invention.

Proceeding now to the detailed description of the invention, wherein similar numerals refer to corresponding parts in all the figures, the framework of the machine comprises the two similar and parallel standards, 1, 1, which are held a suitable distance apart by the spacing-blocks 2 and 3, at the upper and lower ends of the framework, respectively, and projecting vertically upward from the spacing-block 3, is a handle-bar 4. To give additional strength and stability to the framework, other spacing-blocks 5, are arranged at suitable intervals between said standards, and are secured rigidly in position by bolts, which extend, also, through the standards 1; similar bolts, of course, being used to secure the blocks 2 and 3 in position relative to said standards. Arranged to operate in a vertical plane, and at suitable intervals apart between said standards, are the sprocket-wheels 6, and these sprocket-wheels have their cylindrical hub-ports projecting outwardly from each side, and journaled rotatably in the standards, 1, 1. The hubs 7, and the sprocket-wheels 6, are preferably cast integral, but may, as will be readily understood, be secured rigidly together in any suitable manner, and the said hub-ports 7 are slotted longitudinally their entire length and at diametrically opposite points, as shown at 8, 8, and for a purpose hereinafter explained.

A horizontal bar 9 is provided with a longitudinal slot 10, which engages a bolt projecting from the inner side of one of the standards, and a clamping-nut 11, engaging the inner end of said bolt, secures the said bar at any desired point of adjustment, and firmly in the rectangular notch or recess 12, formed in the inner side of the standard from which said bolt projects, so as to prevent the pivotal operation of said bar, and projecting laterally from the forward end of said bar is a stub-shaft 13, upon which is loosely journaled the tension sprocket-wheel 14, and an endless chain 15 operatively engages said tension sprocket-wheel, and also the sprocket-wheels 6, in the ordinary manner. A spring-plate is

bent to form the outwardly diverging arms 16, 16, which terminate in the outwardly projecting portions 17, provided with apertures 18.

By employing outwardly diverging spreader arms, as above described and illustrated in the drawings, a space wide enough to receive the largest picket is provided, thereby obviating the necessity of spreading or forcing the wires apart each time a picket which is diametrically larger than said space when the wires are in their normal position, is inserted. A plate formed with these resilient arms is carried by and projects outwardly from the corresponding hub-portion of each sprocket-wheel 6, so that said arms, at their inner ends, bridge the inner side of the adjacent end of the slots 8 of said hub-portions, and are secured rigidly or permanently in this position by rivets 19, or other suitable means.

Pivotaly mounted at 20 on the outer side of the framework, is a lever 21, which is provided with a handle-portion, and pivotaly carried by said lever, inward of said handle-portion, is a bar 22, which carries a casting 23 at its outer end, comprising the side arms 24, which embrace the opposite sides of the adjacent portion of the chain 15, and a bridge or base-portion 25, which lies at the inner side of said chain, and pivotaly mounted at 26, between the side-arms 24, and outward of the chain, is a pawl 27, comprising a handle-portion 28, which projects outwardly from the pivotal point thereof, and the upwardly and downwardly projecting arms 29 and 30, which project approximately at right angles from said handle-portion, and are also preferably concaved slightly at their outer ends; which ends are adapted to engage the chain 15, as hereinafter explained. Projecting inwardly from the base or bridge portion 25, and opposite the pivotal point 26, is an ear or lug, to which is pivotaly connected at 32 the inner end of a rod 31, and this rod, at its outer end, is engaged by a retraction-spring 33, which is connected to the outer end of the handle-portion 28, and holds, yieldingly, one end or the other of the double pawl comprising the arms 29 and 30 in engagement with the chain 15, so as to move the same in one direction or the other.

It will be apparent from the foregoing, that when the arm 29 of the pawl is in engagement with the chain, as shown in Fig. 6, the movement of the lever in the direction indicated by the arrow, Fig. 2, will cause the chain to move in a corresponding direction, and rotate the twisting-mechanism of the machine, and that when the lever is moved in the reverse direction, the spring 33 will yield sufficiently to allow the arm 29 to slip from one link of the chain to the other without operating the same. It will further be observed, that when the arm 30 of the pawl is in engagement with the chain, the depression of the lever 21 will operate the chain correspondingly, and rotate the twisters in the reverse direction to that described, and that when said lever is moved

upwardly, the spring 33 will yield sufficiently to allow the arm 30 to inoperatively move from one link of the chain to another, so as not to reverse the operation of the twisting-mechanism, as will be readily understood.

In the practical operation of the machine, the wires 34 are secured at one end upon a tension device of any suitable or preferred construction, and extend through the slots 8 of the hub-portions of the sprocket-wheels 6, and outwardly upon the resilient spreader-arms 16 and through the apertures 18 thereof, and thence extend to and embrace the pickets in the ordinary manner, and it will be apparent, from the construction and arrangement of the spreader-arms, that pickets of large or small diameter may be inserted with equal facility, and that said arms, in operation, will, with a yielding tension, and with the same degree of efficiency, secure both large and small pickets firmly in position, as the endless chain is moved by the operation of the lever 21, which, requiring simply an up and down movement, and with great leverage upon said chain, requires practically but a small exertion of strength to manipulate the same. It will be further seen, that after each twisting operation and the subsequent insertion of a picket, the reverse operation of the chain, by striking or grasping the handle-portion 28 and throwing the opposite arm of the pawl into engagement therewith as the lever is pivotaly operated, will take the twist out of the unemployed or that portion of the wire in advance of the machine, as will be readily understood.

It will be apparent, without departing from the spirit and scope of my invention, that single arms 16 may be substituted in lieu of the arms which are connected, as shown, at their inner ends or formed in one continuous piece, and that gravity alone might be depended upon to hold the arm 30 of the pawl in engagement with the chain upon the descent of the lever, but to make positive this engagement, and also because it is absolutely necessary to operate the chain when the lever is moved upwardly, I employ the spring 33, which, swinging from one side to the other of the pivotal point 26 of said pawl, also holds the opposite end of the pawl in engagement with the chain.

From the above description, it will be apparent that I have produced a machine of this character which is simple, durable, and inexpensive of construction, and which is positive and reliable in operation.

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

1. A wire and picket fence machine, comprising a suitable framework, a plurality of rotatable twisters carried thereby, resilient spreader-arms projecting from each twister, sprocket wheels mounted upon said twisters, and an endless chain connecting said sprocket-wheels, in combination with a lever pivoted

to said framework to operate in a vertical plane, a bar pivotally carried by said lever and carrying a casting embracing said chain, and a spring-actuated pawl carried by said casting, substantially as set forth.

2. A wire and picket fence machine, comprising a suitable framework, rotary twisters mounted therein, sprocket-wheels mounted upon said twisters, an endless chain engaging said sprocket-wheels, and a tension sprocket-wheel engaging said sprocket-chain, in combination with a lever pivoted to said framework, a bar pivoted to said lever, a casting carried by said bar and provided with side-arms embracing the sides of said chain, and with a base or bridge portion at the inner side of said chain, a pawl pivotally mounted between said sides and outward of the chain, and a spring secured to the casting and to said pawl and holding the same yieldingly in engagement with said chain, substantially as set forth.

3. A wire and picket fence machine, comprising a suitable framework, rotary twisters journaled therein, sprocket-wheels mounted upon said twisters, an endless chain engaging said sprocket-wheels, and a suitable tension sprocket-wheel also engaging said chain, in combination with a lever pivotally mounted upon the framework, a bar pivotally carried by said lever, a casting carried by said bar and comprising sides embracing the opposite sides of said chain, and a base or bridge por-

tion at the inner side of said chain, a pawl pivotally mounted upon the sides of said casing and outward of the chain and provided with a handle-portion and with oppositely projecting arms which alternately engage and move the chain in opposite directions, and a spring to hold said arms yieldingly in engagement with said chain, substantially as and for the purpose set forth.

4. In a wire and picket fence machine, the combination, substantially as hereinbefore set forth, of a suitable framework, a series of twisters rotatably mounted therein, and consisting of sprocket-wheels, having tubular hub-portions 8 formed in halves and arranged with their longitudinal margins apart so as to provide slots which extend longitudinally the entire length of the hub-portions, and means to operate the twisters, of spreaders carried by said twisters and consisting of the resilient and outwardly diverging arms 16, which are secured at their inner ends to the inner end of one of the tubular hub-portions so as to bridge the corresponding ends of the slots thereof, and terminate at their outer ends in the outwardly projecting and apertured portions 17.

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

DAVID A. GREEN.

Witnesses:

W. E. BRAY,
E. BECK.