(No Model.)

T. F. VANDEGRIFT & A. L. MAPLE.

FENCE MACHINE.

No. 383,785. Patented May 29, 1888.

Fig. 1.

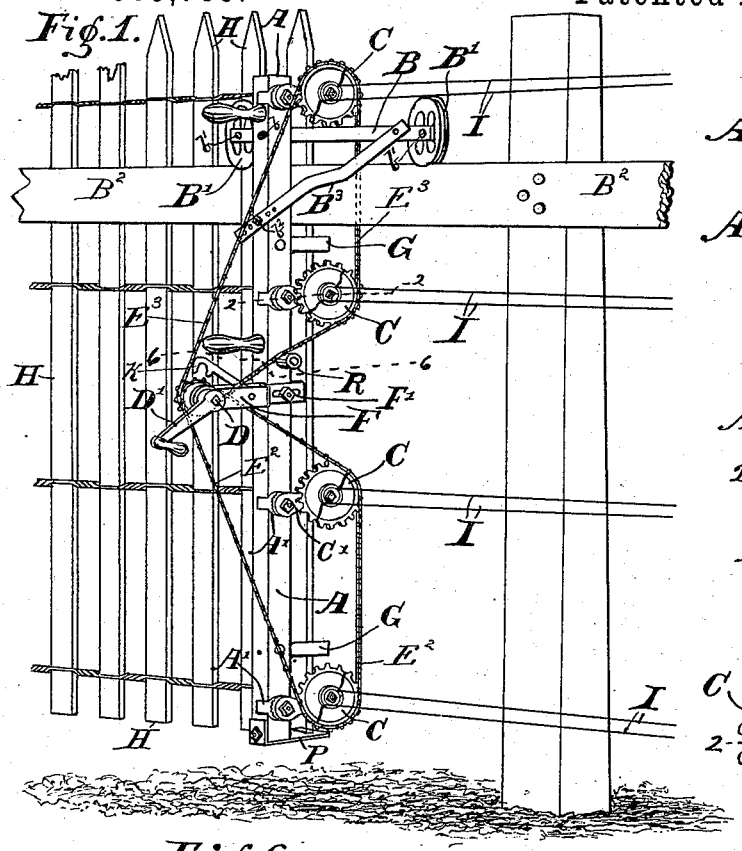


Fig. 2.

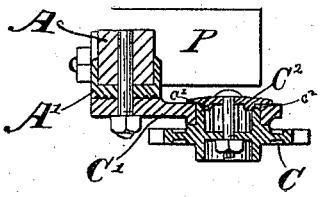


Fig. 3.

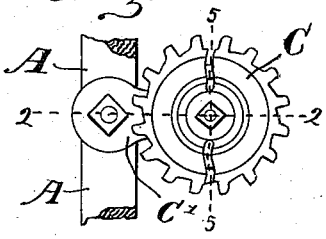


Fig. 4.

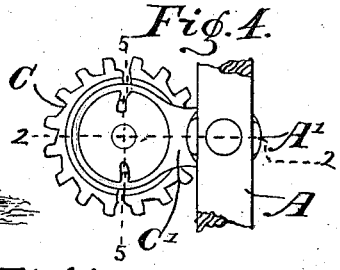


Fig. 6.

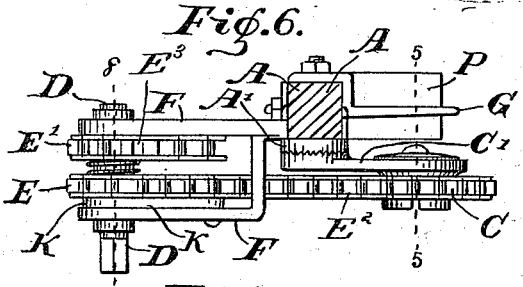


Fig. 5

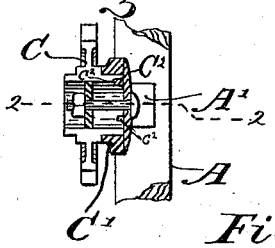


Fig. 7

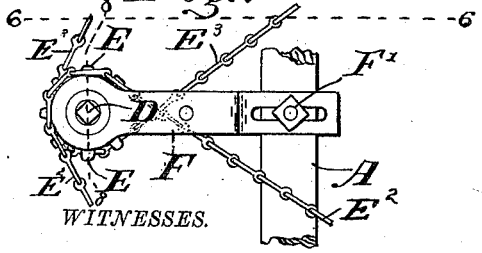
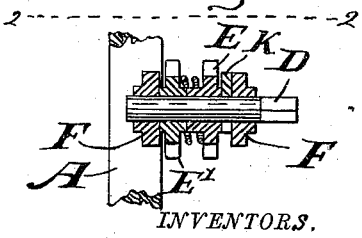


Fig. 8.



WITNESSES.

Chas. L. Leonard.

Frank H. Hood.

INVENTORS.

Theodore F. Vandergrift,
and Alfred L. Maple,
PER
C. Bradford.
ATTORNEY.

UNITED STATES PATENT OFFICE.

THEODORE F. VANDEGRIFT, OF NOAH, AND ALFRED L. MAPLE, OF SHELBYVILLE, INDIANA.

FENCE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 383,785, dated May 29, 1888.

Application filed December 21, 1886. Serial No. 222,216. (No model.)

To all whom it may concern:

Be it known that we, THEODORE F. VANDEGRIFT, of Noah, and ALFRED L. MAPLE, of the city of Shelbyville, county of Shelby, and State of Indiana, have invented certain new and useful Improvements in Fence-Machines, of which the following is a specification.

Our said invention relates to that class of fence-machines by which fences are constructed by twisting wires about slats or pickets; and it consists in a means of using either short or long pickets, or both, as may be desired, in means for adjusting the several parts, and in certain details of construction, all as will be hereinafter more particularly described and claimed.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a perspective view of a section of fence in process of construction with the aid of our improved machine; Fig. 2, a detail horizontal sectional view, on an enlarged scale, looking downwardly from the dotted line 2 2; Fig. 3, a side elevation of one of the twisting-wheels and immediately-adjacent parts; Fig. 4, a similar view of the other side of said twisting-wheel; Fig. 5, a transverse vertical section of the same; Fig. 6, a horizontal sectional view looking downwardly from the dotted line 6 6; Fig. 7, a side elevation of the parts shown in Fig. 6, and Fig. 8 a transverse vertical section of the same on the dotted line 8 8.

In said drawings, the portions marked A represent the post or standard of the machine; B, a truck-frame secured thereto; C, the twisting-wheels; D, the crank-shaft; E E′, the driving-wheels; F, the yoke or frame in which the crank-shaft is mounted; G, bearings or arms, which are adapted to come in contact with the pickets and force them into proper position while the machine is being operated; I, the fence-wires, and H the fence slats or pickets.

The post or standard A is a plain straight timber, and has the handles by which the machine is moved, the truck-frame B, and the arms G, rigidly secured thereto, as also plates A′, having serrated faces, with which the brackets C′, on which the twisting-wheels C are mounted, engage. A guide-roller, R, for one of the driving-chains, and a plate, P, on which the bottoms of the pickets may rest when placed in position, are also secured thereto.

The truck-frame B is preferably a metal bar secured at a point between its ends to the standard A by a bolt, *b*. At each end it is provided with a truck, B′, mounted on a suitable journal, *b′*, provided for the purpose. Said trucks are mounted and arranged to run on the track B^2, which is secured to the fence-posts at the proper elevation above the ground, as shown. A brace, B^3, is secured at one end to one end of the frame B, and extends down to the standard A, to which its other end is secured by means of a bolt, b^2. This end of said brace is provided with a series of perforations, as shown, and thus when it is desired, for any reason, to change the position of the frame B in relation to the standard A, it can be easily done by disengaging the brace from the bolt b^2, turning said frame to the position desired, and then engaging said brace again with the bolt b^2 by means of another one of the perforations. While this adjustable connection is desirable at times, it will be understood, of course, that the position of said frame B is always substantially at right angles with the standard A, as shown, as any adjustment necessary is usually but very slight. By suspending the machine from near the top in the manner shown, it is always supported at right angles with the track, which, being arranged parallel with the surfaces over which the fence is being built, insures that the pickets shall be put into the fence at right angles with the surface over which it is built, and said machine is also adapted for use over all kinds of rough, marshy, or watery surfaces, as will be readily understood.

The twisting-wheels C are ordinary chain-wheels on their peripheries, but are slotted in on two sides a proper distance to receive the wires of the fence. They are mounted on the brackets C′ by means of a bolt passing through them and through a plate or washer, C^2, on the opposite side of said bracket, as shown most plainly in Figs. 2 and 5. These twisting-wheels have large hollow hubs which extend through the brackets, and these have notches in their edges into which projections c^2 on the

plates or washers extend, and the sides of said plates or washers are slotted similarly to the wheels themselves, so that the fence-wires have a corresponding bearing in both, said notches and projections serving to rigidly secure said washer to said twisting-wheels to revolve therewith and form practically a part thereof, as will be readily seen by noticing Figs. 2, 3, 4, and 5.

The crank-shaft D is mounted in bearings in the yoke or frame F and carries a crank, D′, by which it is operated. The driving-wheels are mounted on this crank-shaft, as will be presently described.

The driving-wheels E E′ are mounted on the crank-shaft D, one rigidly and the other loosely. The adjacent faces of these wheels have a clutch formation, and so, when they are brought together, the rigidly-mounted one, when the crank-shaft is turned, will drive the other. A spring is interposed between them, (see Fig. 6,) by which they are kept apart when not forcibly held together. A drive-chain, E^2, is mounted on the wheel E and passes down around the lower pair of twisting-wheels, and a similar drive-chain, E^3, is mounted on the drive-wheel E′ and passes up around the upper pair of twisting-wheels, thus giving each pair of twisting-wheels an independent connection with the driving mechanism, as shown. By this means, as will be readily understood, either one pair only of the twisting-wheels may be driven by turning the crank, or both pairs together, and the machine thus adapted for use with either short or long pickets, at pleasure. This arrangement is especially valuable when, as is often the case, it is desired to construct a fence with alternately long and short pickets. When the long pickets are to be woven into the fence, the two drive-wheels are coupled together by means of the clutch, and all of the twisting-wheels are thus driven. When it is desired to insert a short picket, then the two driving-wheels are separated, and one pair of twisting-wheels are driven, the others remaining idle.

A good device for holding the driving-wheels together is a hook-shaped plate, K, pivoted inside the frame or yoke F, which, when raised up, (see Fig. 1,) permits the wheels to be separated by the force of the interposed spring, said frame or yoke being wide enough to permit them to separate sufficiently so that the clutch will be disengaged; but when said hooked plate is pushed down the loosely-mounted wheel is forced toward its fellow and engages therewith, so that both are driven.

The yoke or frame F is securely bolted to the standard A and extends out a convenient distance to one side thereof to permit the crank to be conveniently operated. It is preferably provided with a slot or series of holes for the bolt or bolts F′, by which it is secured to the standard so that it may be adjusted thereon. The brackets which carry the twisting-wheels are also adjustable up and down by means of the serrated faces thereon, which engage with the serrated faces on the plates A′, and are thus adapted to carry the twisting-wheels to positions at a greater or less distance apart. The adjustment of this frame or yoke F permits this to be done without lengthening or shortening the driving-chains, it being manifest that when the driving-wheels are brought nearer to the standard the twisting-wheels can be moved farther apart with the same length of chain, and when the driving-wheels are carried farther from the standard the twisting-wheels are necessarily brought closer together, which, as before indicated, can easily be done by loosening the bolts which hold the brackets C′ and swinging said brackets to a new position, and then tightening said bolts, which holds the brackets as securely as before, by means of the serrated faces before described.

By the use of the arms G and the plate P the picket can be placed in position and forced between the wires, as desired, without the employment of a separate device. The pickets H and wires I are of course the ordinary wires and pickets of which this character of fence is constructed.

The operation is as follows: The posts being set and the wires strung, (passing through the twisting-wheels,) the machine is mounted by means of the truck-frame and trucks on a board secured to the posts and serving as a track therefor. In building fence in which all the pickets are of the longer sort the hook-plate K is kept down into the position shown in Fig. 6. The pickets are placed one by one into position, resting on the plate P, and are forced up between the wires by pushing the machine toward them, which brings the arms or bearings G in forcible contact therewith. The wires are twisted between each picket by revolving the twisting-wheels by means of the crank which operates the driving-wheels and driving-chains. When it is desired to use alternately long and short pickets, the operation is the same, except that with every other picket the hook-plate K is raised up, permitting the loosely-mounted driving-wheel to escape from its clutch engagement with the other, and thus only the two twisting-wheels are operated to twist the wires instead of all four.

Having thus fully described our said invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a fence-machine, of several twisting-wheels, two driving-wheels, and independent driving-chains running from said driving-wheels to said twisting-wheels or groups of twisting-wheels, one of said driving-wheels being provided with means of engagement with the other, whereby either a part or all of the twisting-wheels may be driven.

2. The combination, in a fence-machine, of a series of twisting-wheels adjustable toward or from each other, a driving wheel or wheels located to one side of the twisting-wheels and adjustable toward or from said twisting-wheels, and drive-chains connecting said twisting-wheels and said drive-wheels, whereby said

twisting-wheels can be adjusted to different positions without varying the length of said driving-chains, substantially as set forth.

3. A fence-machine having a series of twisting-wheels, mechanism for operating said series of twisting-wheels, and means for throwing a portion of said twisting-wheels out of connection with the operating mechanism, substantially as set forth.

4. In a fence-machine, the combination of the twisting-wheels and drive-chains, two independent driving-wheels mounted upon the same shaft and provided with clutch-faces, one being mounted loosely on said shaft, and means for holding said wheels together and for forcing them apart, and means for operating said shaft, whereby the twisting-wheels or groups of twisting-wheels driven therefrom may be operated independently, substantially as set forth.

5. The combination, in a fence-machine, of the standard or post, serrated plates secured thereto, and brackets for the twisting-wheels having similar serrated faces, said twisting-wheels, driving-chains, driving-wheels, and an adjustable bracket supporting said driving-wheels, whereby the positions of said brackets on said plates, and consequently the positions of the twisting-wheels, may be varied as desired, substantially as set forth.

In witness whereof we have hereunto set our hands and seals, at Shelbyville, Indiana, this 6th day of December, A. D. 1886.

THEODORE F. VANDEGRIFT. [L. S.]
ALFRED L. MAPLE. [L. S.]

In presence of—
ED E. ELLIOTT,
CHAS. MAJOR.