(No Model.)

F. W. SHELLABURGER.

MACHINE FOR WEAVING CROSS WIRES IN WIRE FENCES.

No. 523,415. Patented July 24, 1894.

Fig 1.

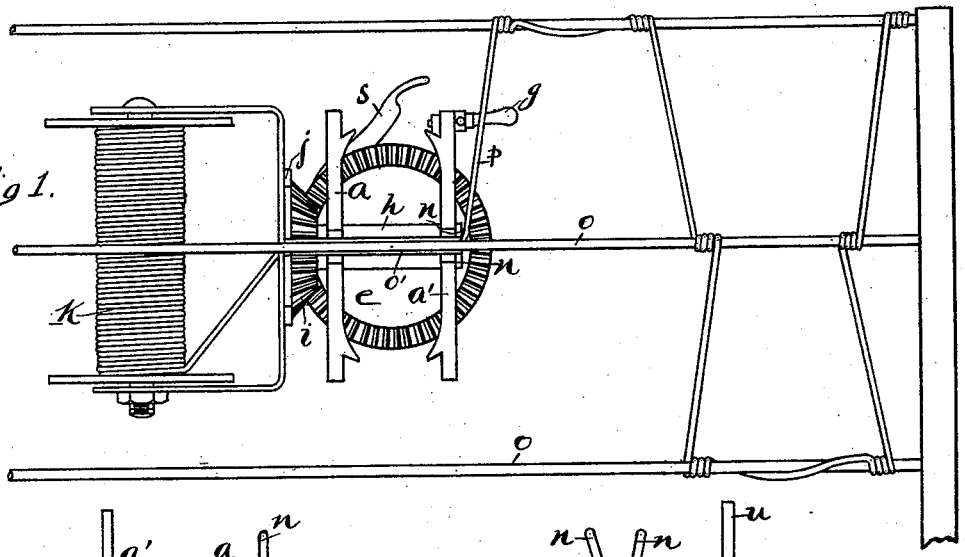


Fig 2.

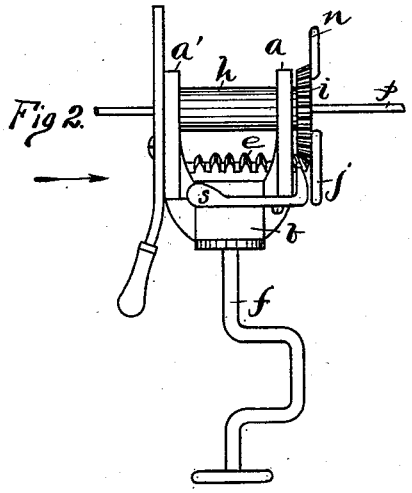


Fig 3.

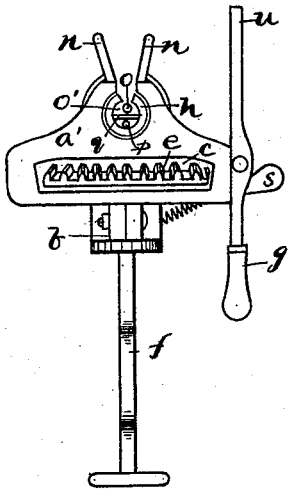
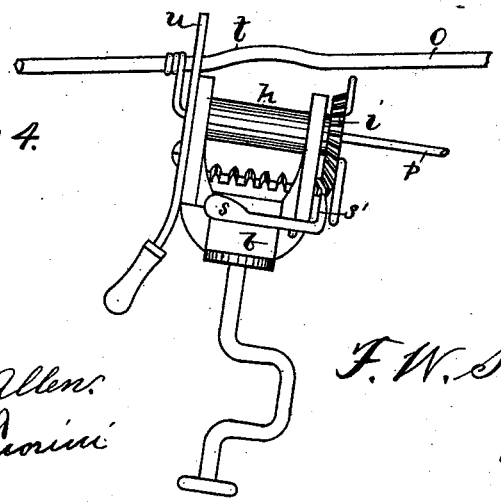


Fig 4.



WITNESSES:

Lester L. Allen.

Alfred J. Fiorini

INVENTOR

F. W. Shellaburger.

BY

R. J. McCarty

ATTORNEY.

UNITED STATES PATENT OFFICE.

FLAVIOUS W. SHELLABURGER, OF DAYTON, OHIO.

MACHINE FOR WEAVING CROSS-WIRES IN WIRE FENCES.

SPECIFICATION forming part of Letters Patent No. 523,415, dated July 24, 1894.

Application filed April 26, 1894. Serial No. 509,145. (No model.)

To all whom it may concern:

Be it known that I, FLAVIOUS W. SHELLABURGER, of Dayton, county of Montgomery, State of Ohio, have invented a new and useful Improvement in Machines for Weaving Wire Fences; 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 letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in machines for weaving wire fences, more particularly to means for applying the woof or vertical wire to the warp or horizontal wires, of that class of fences that are erected upon the ground as distinguished from the factory made article.

To these ends my invention consists of means that may be conveniently and rapidly manipulated, as will be fully described in the following specification and drawings, and specifically set forth in the claims.

In the drawings herewith, upon which similar letters of reference indicate corrresponding parts, Figure 1 is a front elevation of the weaver in the act of weaving the woof or vertical wire to the horizontal wires of the fence. Fig. 2 is a top plan view of the weaver with the reel detached. Fig. 3 is an end elevation looking in the direction of the arrow in Fig. 2. Fig. 4 is a plan view showing the weaver being removed from a horizontal wire, also a kink or curve formed in said wire by the weaver, which prevents the vertical wire from slipping from its position.

a and *a'* designate the sides of the supporting frame having a hub *b* with a central opening therein, and longitudinal slots *c*.

e designates a bevel gear wheel mounted between the sides *a* and *a'* and movable in the slots *c*.

f is a shaft or bit that may be socketed in a brace, or may be an integral part of the brace as shown in the drawings, for rotating the wheel *e*; said shaft penetrates the opening in the hub *b* of the frame, to journal in an opening in the axis of the wheel *e*.

g designates a handle attached to one side of the frame by which the weaver is carried while being operated, in the left hand.

h is a needle shaft, loosely journaled in the sides *a* and *a'* of the frame.

i is a bevel pinion cast preferably, a solid part of the needle shaft, and at one end thereof, and adapted to mesh with the gear wheel *e* on the outside of the frame.

j is an integral plate or flange projecting downwardly in a vertical plane from the outer face of the pinion *i*, to which and with which, the wire reel *k* is rigidly attached, and movable.

n—n are spurs cast on the pinion *i* and projecting vertically from the outer face thereof, in a direction diametrically opposite to the flange *j*; these spurs radiate from the periphery of said pinion, and provide means for guiding the horizontal wires *o* into the slot *o'* extending through the longitudinal axis of the needle shaft, and from the center to the periphery of the pinion *i*; the axes of the needle shaft and the pinion being on a common plane. The wire *p* from the reel, also runs in this slot, below the horizontal wires *o*, and is essentially maintained therein by being threaded under a transverse pin *q* extending across said slot at one end of the shaft and forming an eye therein.

s is a spring latch pivoted to the rear of the frame, with its outer end *s'* turned at a right angle to enter a notch in the wheel *e* to lock the rotating parts while the weaver is being carried from one horizontal wire to another. The needle shaft is locked by this latch in a position to enable the slot therein, and in the pinion, to be brought in alignment with a horizontal wire. At each point on said horizontal wires, where the vertical wire is twisted, a kink or curve *t*, is left, see Fig. 4. This kink in the horizontal wire is an effectual means of preventing said vertical wire from slipping from its position, and is made by the machine when brought in rigid contact with said wire under the strain due to the operation of twisting the wire.

The operation of weaving the vertical wires is as follows: Said wire is first given an initial wind around the top horizontal wire, at the end of the fence, or at any point from whence the weaving is to commence; the

weaver is then carried downwardly by the handle until the forwardly projecting part or end *u* thereof comes against the next lower horizontal wire, which gages the length of wire to be unwound, to reach from one horizontal wire to the other. When the weaver is thus being carried from one wire to another, it is preferable to hold it in the position shown in Fig. 3, to admit of the free unwinding of the wire, and a convenient gaging of said wire by the end *u* of the handle. When the weaver is brought to the horizontal wire with which the woof or vertical wire is to be woven, it is brought to the position shown in Figs. 1 and 2, and the horizontal wire is guided into the slot in the needle shaft and pinion, through the spurs *n—n;* the brace *f* is then turned by the right hand to rotate the wheel *e*, the needle shaft and pinion, and the reel, which as herein before stated, is carried by said pinion; the twisting of the vertical wire is thereby accomplished, a couple of turns of the needle shaft being sufficient to effect a substantial connection between the two wires, but a greater number of turns may he made if required. The ratio of the wheel and the pinion to each other is two to one, so that one rotation of the former will effect two of the needle shaft and the pinion. In practice I prefer to construct the wheel and pinion in the form of miter wheels.

Having fully described my invention, I claim—

1. The combination of a needle shaft, a gear wheel rigidly mounted on one end of said shaft provided with a slot coincident with the slot in the needle shaft, a wire reel carried by said gear wheel, a transverse pin extending across the slot in the needle shaft to form an eye through which the wire from the reel is threaded, and means for rotating said needle shaft and gear wheel, substantially as described.

2. In a machine for attaching vertical wires to the horizontal wires of a fence, the combination with the supporting frame and a gear wheel mounted therein, and means for rotating said gear wheel; of a needle shaft journaled in said frame, a gear pinion rigidly mounted on the needle shaft, through which and said needle shaft there is a common slot; a wire reel carried by said gear pinion, and a pin lying across the slot in the needle shaft forming an eye to secure the wire in said needle shaft, substantially as described.

In testimony whereof I have hereunto set my hand this 19th day of April, 1894.

FLAVIOUS W. SHELLABURGER.

Witnesses:
R. J. McCARTY,
B. L. BOND.