

No. 826,326.

PATENTED JULY 17, 1906.

H. J. GARDNER.
WIRE FENCE MACHINE.
APPLICATION FILED MAY 22, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

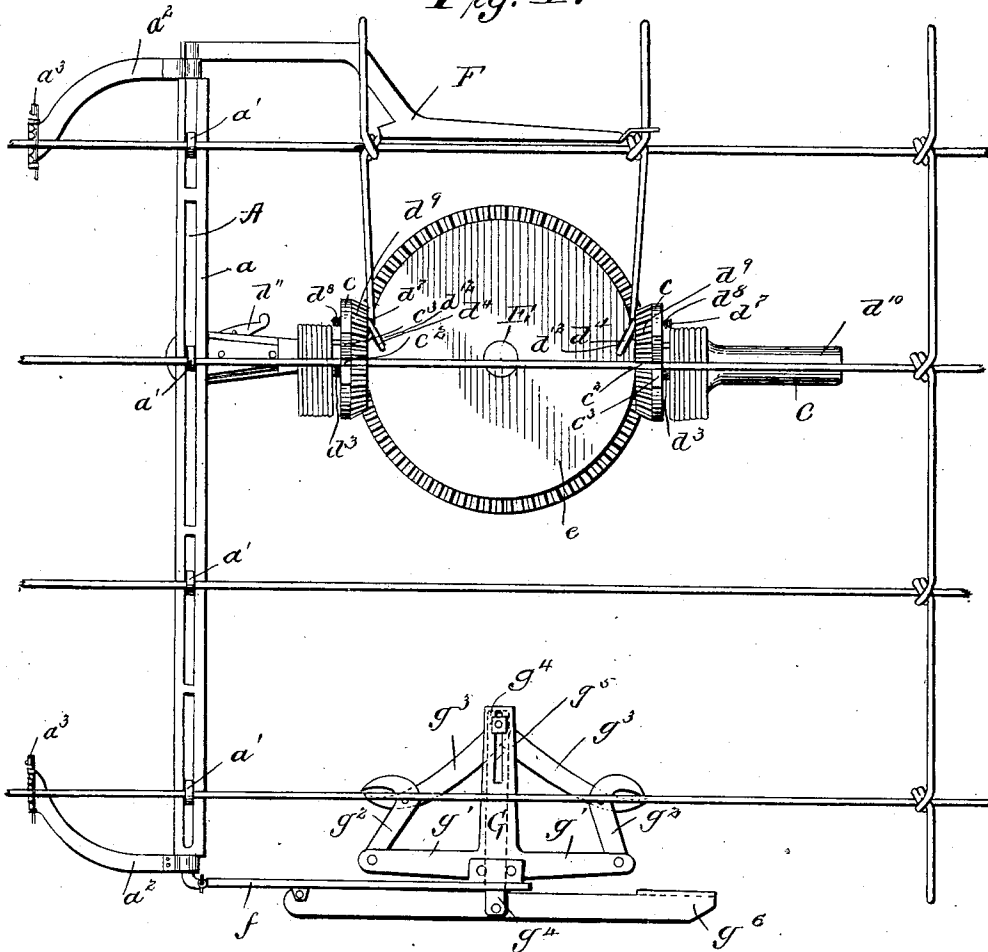
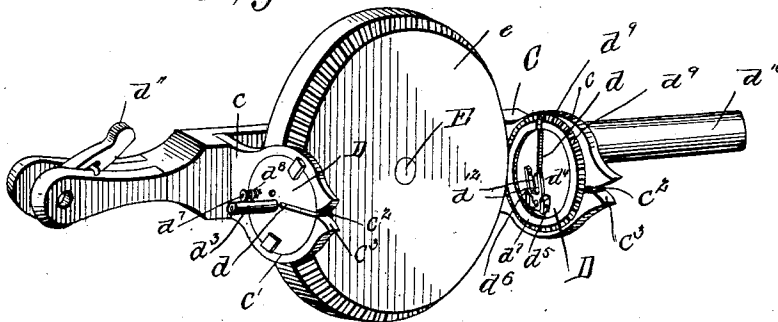


Fig. 2.



WITNESSES:

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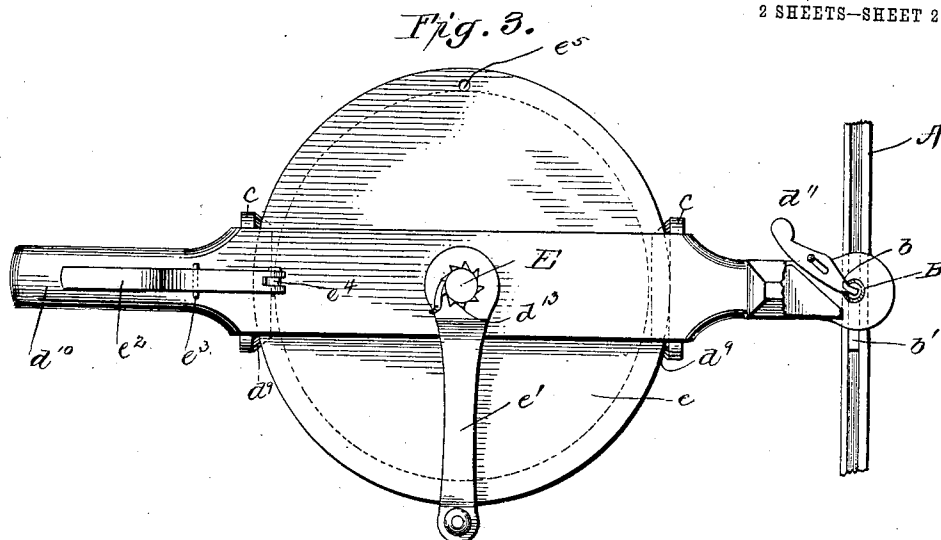
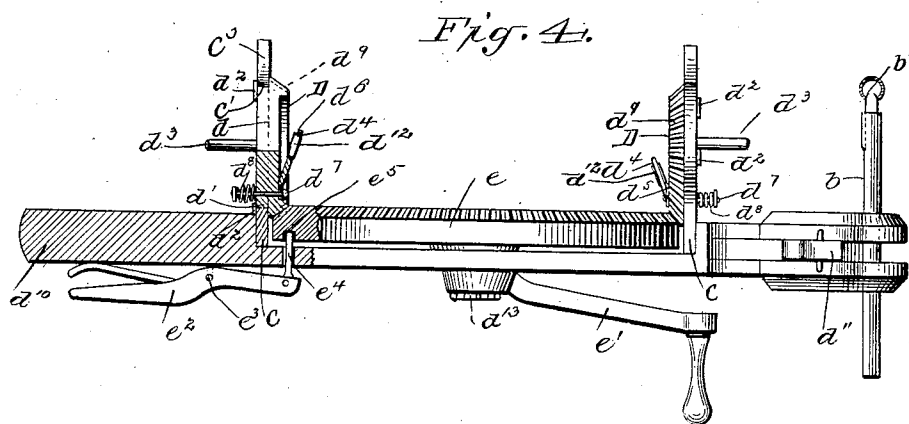
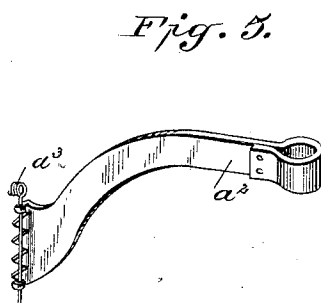
BY Munroe & Co.
ATTORNEYS

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UNITED STATES PATENT OFFICE.

HOWARD JOHN GARDNER, OF MONTPELIER, OHIO.

WIRE-FENCE MACHINE.

No. 826,326.

Specification of Letters Patent.

Patented July 17, 1906.

Application filed May 22, 1905. Serial No. 261,679.

To all whom it may concern:

Be it known that I, HOWARD JOHN GARDNER, a citizen of the United States, residing at Montpelier, in the county of Williams and State of Ohio, have made certain new and useful Improvements in Wire-Fence Machines, of which the following is a specification.

My invention is an improvement in wire-fence machines; and it consists in certain novel constructions and combinations of parts hereinafter described and claimed.

In the drawings, Figure 1 is a front elevation of my improved machine. Fig. 2 is a perspective of the operating-frame. Fig. 3 is a rear plan view of the same. Fig. 4 is a side elevation, partially in section; and Fig. 5 is a detail of one of the wire-engaging brackets.

In the practical application of my invention I provide a bar A, having a longitudinal slot extending the full length thereof, and upon the bar is secured a plate a, having a plurality of longitudinal slots spaced apart and in line with each other, the plate being secured to the bar in such manner that it is parallel to the slot therein. A plurality of wire-engaging brackets a' are arranged within the slots of plate a and are formed from T-shaped pieces of metal or other suitable material, the arms of the T being between the plate and the bar and the foot projecting through one of the slots of the plate a. The foot is bent backward into the slot to form a loop or hook, while the arms are bent around the bar, so that the bracket slides loosely on the same, the foot moving in the slot of the plate. This is to provide for fences having wires at different distances from each other. Wire-retaining brackets a² are provided at each end of the bar A for engaging the top and bottom wires of the fence. These brackets comprise arms extending laterally from each end of the bar and curved upwardly and downwardly, respectively, the free ends of the brackets being provided with claws for engaging the wires, the upper and lower claws being bent to form rings for retaining a pin a³. In placing the brackets upon the wires the pin is removed and the wire is engaged between the claws, after which the pin is replaced, thus retaining the wire in a position between the claws. A second bar B, provided with a longitudinal slot b through-
out the length thereof and with a foot b' for

engaging the slot of the first bar A, projects laterally therefrom and supports a frame C, slidably mounted upon the said bar.

The frame C has secured thereto oppositely-disposed brackets c, provided with circular openings c' and longitudinal slots c², communicating with the circular openings. The outer openings of the slots are beveled, as shown at c³, to facilitate the entrance of the wire.

Disks D, having radial slots d, are provided with reduced portions d' for engaging the circular openings in the brackets, and plates d² on the faces of the reduced portions engaging the sides of the circular openings to retain the disks therein. Upon the outer faces of the disks are journaled wire-carrying reels d³, and adjacent to the reels is a perforation traversing the disks for the passage of the wire. Tension-plates d⁴ are pivoted in bearings d⁵ upon the inner faces of the disks and are provided with slots d⁶ in one end thereof, registering with the radial slots in the disk. The opposite end of the tension-plate is provided with a pin d⁷, traversing the disk and having a headed end for engagement by a spiral spring d⁸, encircling the pin.

A shaft E is journaled in the frame and has secured thereto a bevel gear-wheel e, meshing with bevel-teeth d⁹ on the peripheries of the disks. A crank-arm e' is secured to the opposite end of the shaft for rotating the gear-wheel, and a spring-actuated latch e², pivoted upon the frame at e³, is provided with a pin e⁴, extending through a perforation in the frame and engaging a recess e⁵ in the gear-wheel to prevent rotation of the same. The free end of the frame C is formed into a grip d¹⁰, and a sliding pawl d¹¹ is arranged on the frame adjacent to the second slide-bar B for engaging the said slide-bar to prevent rotation or longitudinal movement of the frame upon the slide-bar. A stay-wire support F is hinged to the upper end of the first-named slide-bar A, and to the lower end thereof is hinged a bar f for supporting a wire-cutter G. The wire-cutter G comprises a bracket provided with laterally-extending arms g', having pivoted thereto cutter-blades g² for coacting with cutter-blades g³, pivoted to the first-named cutter-blades and to a sliding bracket g⁴, the part of the bracket behind the wire-cutter being indicated by dotted lines in Fig. 1. The bracket g⁴ is provided with a pin-engaging a slot g⁵ in the upright part of the

bracket and is pivoted at its lower end to a treadle *g*⁶, pivoted to the cutter-bar *f*.

In operation the machine is placed with the horizontal wires passing through the wire-engaging brackets *a'*. The frame is moved upward on the sliding bar until the slots in the bracket engage the upper wire. The gear-wheels and disks are so arranged with respect to each other that the radial slots register with the slots in the brackets when the pin engages the gear-wheel to restrain the same from motion. The wire is drawn into the radial disks, and the free ends of the stay-wires are secured in the stay-supports. The pin is then released from the gear-wheel, and the crank is turned. One revolution of the gear-wheel makes two complete revolutions of the disks, thus giving two complete wraps to the stay-wires, and since the disks rotate in opposite directions the stay-wires are wrapped in opposite directions. After the stay-wires are secured to the upper wire the frame is moved to the next wire, and the process is repeated as often as there are wires. After the securing of the stay-wires to the lowermost horizontal wire the frame is lowered a trifle, thus bringing the stay-wires in proximity to the cutters, when a depression of the treadle severs both wires, leaving the machine free for further operation.

It will be evident from the description that I provide a machine simple in construction and operation and capable of making a strong and durable fence. With a single revolution of the crank the stay-wire will be given two complete wraps, and if more is desired they can be easily given. The second coil passes over the first coil, thus providing a lock. By the provision of the hinged cutter-bar and stay-wire support I provide a machine capable of being folded into a small compass and easily transported from place to place. The provision of a double cutter saves much time in severing the wire, which is ordinarily done by hand with a pair of nippers. A stronger fence results from wrapping the stay-wires in opposite directions than when wrapped in the same direction, since in the first case they serve as braces for each other and are not so easily displaced.

In order to reduce friction and to prevent injury to the stay-wire, rollers *d*¹² are provided on either side of the slot in the tension-plate. A pawl-ratchet mechanism *d*¹³ connects the axle *E* with the gear-wheel *e* to permit weaving of stay-wires close to the posts of the fence.

In wrapping the stay-wire with my improved machine after the first wrap is in position that part of the stay-wire next to the wrapped portion is, relatively speaking, at a distance from the tension-plate, which latter is in its outermost position. The action of the spring on the rear end of the tension-

plate tends to force the wire-engaging end inwardly toward the face of the disk, thus bringing the second wrap of the stay-wire over the preceding wrap.

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

1. In a wire-fence machine, the combination with a slide-bar provided with a longitudinal slot, a slotted plate secured to the slide-bar and opposite to the slot, wire-engaging brackets in the slotted plate, wire-engaging brackets at the ends of the sliding bar, a second slotted slide-bar having a foot for engaging the slot in the first slide-bar, a frame journaled on the second slide-bar, a pawl slidably mounted in the frame and engaging the slot for restraining the movement of the frame on the slide-bar, slotted brackets secured to the frame and provided with circular openings, radially-slotted disks provided with reduced portions for engaging the openings, and with perforations for the passage of the wire, plates secured to the faces of the reduced portions for engaging the sides of the openings, wire-carrying reels journaled on the outer faces of the disks, bearings on the inner faces of the disks, a tension-plate journaled in the bearing and having one of its ends longitudinally slotted, a pin engaging the other end of the plate and projecting through a perforation in the disk, a coil-spring encircling the pin for maintaining the same in its outward position, bevel gear-teeth on the periphery of the disk, a shaft journaled in the frame, a bevel gear-wheel secured to the shaft and meshing with the gear-teeth of the disks, a crank-arm secured to the free end of the shaft, a spring-actuated latch pivoted on the frame and provided with a pin for engaging a perforation in the face of the gear-wheel, a stay-wire-supporting arm at the upper end of the slide-bar, a cutter-bar hinged to the lower end of the first slide-bar, and a wire-cutter secured thereto, comprising a bracket secured to the bar and having laterally-extending arms, cutter-blades pivoted on the arms, a bar slidably mounted on the bracket, cutter-blades pivoted to the sliding bar and to the first-named cutter-blades, and a treadle pivoted to the cutter-bar and to the sliding bar.

2. In a wire-fence machine, the combination of a slide-bar, provided with a longitudinal slot, a slotted plate secured to the slide-bar, wire-engaging brackets in the slots of the slotted plate, wire-engaging brackets at the ends of the bar, a second slotted slide-bar having a foot for engaging the slot in the first slide-bar, a frame journaled on the second slide-bar, a pawl slidably mounted in the frame and engaging the slot to restrain the movement of the frame on the slide-bar, slotted brackets secured to the frame and provided with circular openings, radially-slotted

disks provided with reduced portions for engaging the opening and with perforations for the passage of the wire, plates secured to the faces of the reduced portions for engaging the sides of the openings, wire-carrying reels journaled on the outer faces of the disks, bearings on the inner faces of the disks, a tension-plate journaled in the bearings and having one of its ends longitudinally slotted, a pin engaging the other end of the plate and projecting through a perforation in the disk, a coil-spring encircling the pin for maintaining the same in its outward position, bevel gear-teeth on the periphery of the disks, a shaft journaled in the frame, a bevel gear-wheel secured to the shaft and meshing with the gear-teeth of the disks, means for rotating the shaft, a spring-actuated latch engaging the gear-wheel to restrain the same from movement, a stay-wire-supporting arm at the upper end of the slide-bar, a cutter-bar hinged to the lower end of the first slide-bar, cutters for each of the stay-wires mounted on the cutter-bar, and means for actuating the cutters simultaneously.

3. In a wire-fence machine, the combination of the slide-bar provided with a longitudinal slot, means for engaging a series of horizontal wires on the slide-bar, a second slotted slide-bar having a foot for engaging the slot in the first slide-bar, a frame journaled on the second slide-bar, means for fixing the frame with respect to the slide-bar, slotted brackets secured to the frame and provided with circular openings, radially-slotted disks provided with reduced portions for engaging the openings and with perforations for the passage of the wire, means for retaining the disks within the openings, wire-carrying reels journaled on the outer faces of the disks, spring-actuated tension-plates mounted on the inner faces of the disks for engaging the stay-wires, bevel gear-teeth on the peripheries of the disks, a shaft journaled in the frame, means for driving the shaft, a bevel gear-wheel secured to the shaft and meshing with the gear-teeth of the disks, a spring-actuated latch for restraining the motion of the gear-wheel, a stay-wire-supporting arm at the upper end of the slide-bar, a cutter-bar hinged at the lower end of the first slide-bar, wire-cutters for the stay-wires secured to the slide-bar, and means for actuating the same simultaneously.

4. In a wire-fence machine, the combination with a slide-bar provided with a longitudinal slot, means on the slide-bar for engaging a series of horizontal wires, a second slide-bar having a foot for engaging the slot in the first slide-bar, a frame journaled on the second slide-bar, means for fixing the frame with respect to the slide-bar, slotted brackets secured to the frame and provided with circular openings, radially-slotted disks rotatably

secured in the openings and provided with perforations for the passage of the wire, wire-carrying reels journaled on the outer faces of the disks, spring-actuated tension-plates for the stay-wires on the inner faces of the disks, means for rotating the disks in opposite directions, means for supporting the upper ends of the stay-wires, a cutter-bar supported on the lower end of the first slide-bar, cutters for the stay-wires on the cutter-bar, and means for simultaneously actuating the same.

5. In a wire-fence machine, the combination of a slide-bar, means on the slide-bar for engaging a series of horizontal wires, a second slide-bar longitudinally movable on the first slide-bar, a frame rotatable and slidable upon the second slide-bar, means for fixing the frame with respect to the slide-bar, slotted brackets upon the frame, radially-slotted disks journaled in the brackets, wire-carrying reels journaled on the outer faces of the disks, spring-actuated tension-plates for the stay-wires on the inner faces of the disks, means for rotating the disks in opposite directions, means for supporting the free ends of the stay-wire, a cutter-bar on the lower end of the first slide-bar, and means thereon for cutting the stay-wires simultaneously.

6. In a wire-fence machine, the combination of a slide-bar, means for engaging a series of horizontal wires on the slide-bar, a frame movably mounted thereon, oppositely-disposed slotted brackets upon the frame, and provided with circular openings, radially-slotted disks journaled in the openings, stay-wire-carrying reels journaled on the outer faces of the disks, stay-wire tension-plates secured to the inner faces of the disks, means for rotating the disks in opposite directions, stay-wire supports secured to the sliding bar, a cutter-bar on the lower end of the sliding bar, and means on the cutter-bar for simultaneously severing the stay-wires.

7. In a wire-fence machine, the combination of a slide-bar, a frame movably mounted upon the slide-bar, oppositely-disposed brackets mounted on the frame, stay-wire-carrying reels on the brackets, means on the brackets for engaging a horizontal wire and for simultaneously twisting two stay-wires in opposite directions thereon, means for actuating said means, means for supporting the free ends of the stay-wires, and means on the slide-bar for simultaneously cutting the stay-wires.

8. In an apparatus of the character described, a slide-bar, means on the slide-bar for engaging a series of horizontal wires, a frame movably mounted on the slide-bar, means on the frame for engaging a horizontal wire, and means for simultaneously twisting two stay-wires in opposite directions upon the horizontal wire, means for tension-

ing the stay-wires, a cutter-bar on the slide-bar, and means on the cutter-bar for simultaneously severing the stay-wires.

9. In an apparatus of the character described, the combination of a slide-bar, means on the slide-bar for engaging a series of horizontal wires, means movably mounted on the slide-bar for engaging a horizontal wire and for simultaneously twisting two stay-wires in opposite directions upon the horizontal wire, and means for simultaneously severing the stay-wires.

10. In an apparatus of the class described, and in combination, means for engaging a horizontal wire, means for simultaneously twisting two stay-wires in opposite directions thereon, means for tensioning the stay-wires, means for simultaneously severing the stay-wires, and means for supporting each of said means.

11. In an apparatus of the class described,

and in combination, means for engaging a horizontal wire, means for simultaneously twisting two stay-wires in opposite directions on the horizontal wire, means for supporting each of said means, means for actuating the twisting means, and means for simultaneously severing the stay-wires.

12. In an apparatus of the class described, and in combination, means for engaging a horizontal wire, means for simultaneously twisting two stay-wires in opposite directions thereon, means for lapping the last wrap of the stay-wires over the preceding wrap, means for actuating the twisting means, and means for simultaneously severing the stay-wires.

HOWARD JOHN GARDNER.

Witnesses:

REUBEN K. GARDNER,
LEON CLIFTON.