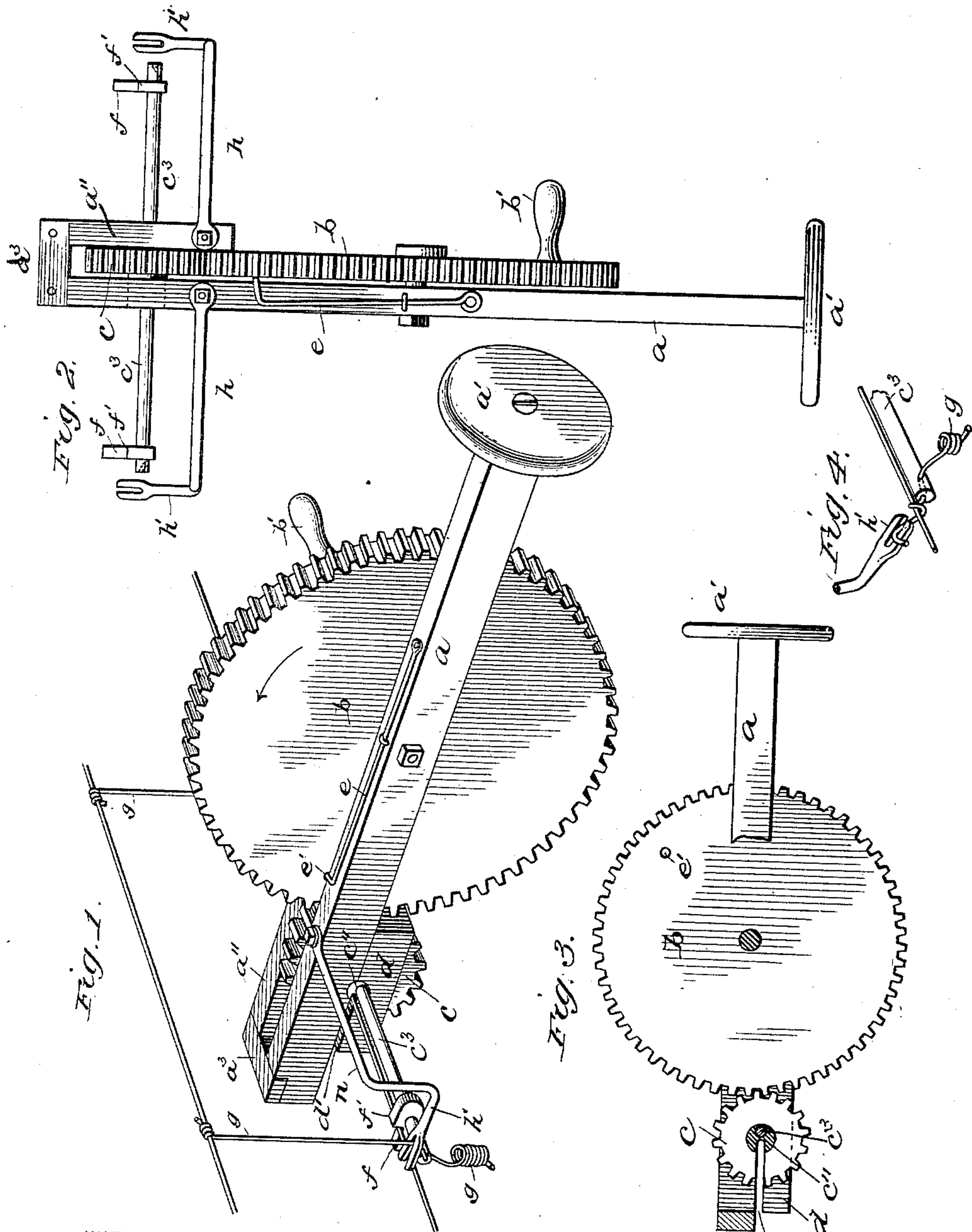


(No Model.)

E. E. & O. COLE.
MACHINE FOR ATTACHING VERTICAL WIRES IN A WIRE FENCE.
No. 450,791. Patented Apr. 21, 1891.



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ELMER E. COLE AND OGDEN COLE, OF HUDSON, MICHIGAN.

MACHINE FOR ATTACHING VERTICAL WIRES IN A WIRE FENCE.

SPECIFICATION forming part of Letters Patent No. 450,791, dated April 21, 1891.

Application filed December 29, 1890. Serial No. 376,180. (No model.)

To all whom it may concern:

Be it known that we, ELMER E. COLE and OGDEN COLE, citizens of the United States, residing at Hudson, in the State of Michigan, have invented certain new and useful Improvements in Fence-Machines, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 represents a perspective view of our machine in position for operation; Fig. 2, a plan view thereof; Fig. 3, a side elevation partly in section, and Fig. 4 a detail perspective view of a portion of the winding mechanism.

The invention is designed to provide a simple and practical machine for attaching to the horizontal wires of a fence the vertical stay-wires thereof, the machine being adapted to apply two of the wires at each operation, as will more fully hereinafter appear.

In the drawings annexed, *a* designates a bar or beam of suitable length, and provided at its outer end with a suitable hand-disk *a'* and at its inner end with a frame composed of the short parallel beam *a''*, connected to the said main beam by a short block *a³* at its forward end, this short beam *a''* being arranged parallel with and a short distance from the main beam. Journaled on a horizontal spindle carried by the main beam is a vertical cog-wheel *b*, which is provided with a suitable operating-handle *b'*, and which constantly engages a smaller gear-wheel *c*, journaled between the main beam and short beam *a''*. The shaft *c''* of the wheel *c* is journaled between the under sides of the main and short beam and blocks *d d'* bolted to the same, horizontal openings *d' d'* being left between the forward portions or ends of the blocks and the beams for the passage of the horizontal wires. The wheel *c* is preferably one-third the size of the main driving-wheel, so that it will revolve three times at every rotation of the driving-wheel, and it is provided with a radial slot *c'*, extending from its periphery to within a short distance of its winding-shaft *c³*, as shown most clearly in Fig. 3.

The horizontal transverse shaft *c³* passes through the shaft or hub *c''* of the smaller gear-wheel, preferably slightly eccentric to its center, and is secured thereto so as to re-

volve therewith. This shaft *c³* extends out in opposite directions a suitable distance—say five or six inches—and is provided at each end with a forwardly-projecting rigid arm *f*, which arms are provided on their upper edges with shoulders *f'*, against which the horizontal wires abut while the machine is in operation. A spring *e* is secured on the beam *a* alongside the wheel *b* and provided with an inwardly-turned end adapted to normally enter a recess *e'* in the adjacent side of the said wheel and hold it against revolving. When this spring engages the recess in the wheel, the radial slot in the winding-wheel is in line with the slots or openings *d'* and the upper edges of the arms *f*. The ends of the winding-shaft *c³* are each provided with an oblique hole for the passage of the vertical wires *g*, these holes or passages extending from the respective ends of the shaft obliquely inwardly, so as to open out on the body of the shaft a short distance from its ends.

Bolted to the beams *a a''* and projecting out parallel with the winding-shaft are arms *h h*, the end of each of which is bent downwardly and then forwardly, so as to rest upon or over the horizontal wires and prevent the machine tilting while in operation, the horizontal ends *h'* of the arms being bifurcated, in order that the ends of the vertical wires may be readily attached thereto in starting each pair of wires.

As will be observed in Fig. 2, the ends of the stationary arms terminate beyond the ends of the winding-shaft, in order that the vertical wires may be properly wound around the horizontal wires.

In preparing the machine for operation the ends of the vertical wires (these wires having first been cut into suitable lengths, according to the height of the fence, and coiled) are respectively passed through the oblique holes in the ends of the winding-shaft and secured in the bifurcated ends of the arms *h'*, the main coiled part of the vertical wires being permitted to hang loosely below the winding-shaft. The machine is then placed upon the uppermost horizontal wire of the fence—that is, the machine is so adjusted that the top wire passes in the opening *d'* and into the radial slot *c'* in the smaller gear-wheel,

the rotating arms *f* resting under the wire and the rigid arms *h'* resting on top of or over the same. The spring-catch *e* is then disengaged from the driving-wheel and the wheel given a single rotation in the direction of the arrow, the automatic catch stopping the wheel at the end of a single turn. The act of rotating the driving-wheel once causes the spur-wheel *c* to make three revolutions; but it is evident that the relative proportions of these wheels may be changed, so as to cause the vertical wires to be wrapped around the horizontal wires a greater or less number of times, if desired. As the wheel *c* rotates, the winding-shaft rotates with it and carries the coils of wires around the horizontal wires and wraps or winds them tight around the same, the upper ends of the coiled wires being held stationary by the arms *h'* and the coiled wires being straightened out as fast as required by being drawn through the oblique holes in the ends of the winding-shaft. At the end of the winding operation the radial slot in the wheel *c* will register with the openings *d' d'*, so that the machine may be removed from the top wire and carried down to the second wire, when the winding operation is repeated, and so on until the vertical wires are attached to all the horizontal wires of the fence, the lowest wire being the last to be secured.

In carrying the machine from one wire to another it is evident that the required quantity of wire will be uncoiled and drawn through the eyes in the ends of the twister-shaft.

The vertical wires are coiled simply in order that they may be carried around the horizontal wires without becoming entangled with the parts of the machine.

It is evident that one set of twisting devices only may be employed without departing from the invention in the least, in which case only one wire could be put on at a time. we prefer, however, to employ the double set of winding devices, inasmuch as by that means the vertical wires may be attached much more rapidly.

Having thus fully described our invention, what we claim is—

1. In a device for attaching the vertical wires to a wire fence, the combination of a frame, a radially-slotted wheel journaled therein and carrying a winding-shaft, this shaft projecting out from opposite sides of

the said wheel and provided with twisting devices at its ends, whereby two vertical wires may be applied to the fence at one operation, substantially as described.

2. In a device for attaching the vertical wires to a wire fence, the combination of a frame, a radially-slotted wheel journaled therein and carrying a winding-shaft provided with winding-mechanism, a stationary arm supported by the frame and adapted to hold the end of the vertical wire while the same is being attached to the horizontal wires, substantially as described.

3. In a device for attaching the vertical wires to a fence, the combination of a frame, a wheel journaled therein and provided with a radial slot for the horizontal wires, stationary arms carried by the frame and adapted to hold the ends of the vertical wires, a horizontal shaft carried by the said wheel and projecting out in opposite directions therefrom and provided with holes or eyes at each end for the passage of the vertical wires, and means for operating the said wheel, substantially as described.

4. The combination of a frame, a radially-slotted cog-wheel journaled therein and supporting an oppositely-projecting winding-shaft provided with eyes at its ends, shouldered arms on the ends of this shaft, stationary arms supported by the frame and projecting therefrom to near the ends of the winding-shaft, a driving cog-wheel journaled in the frame and meshing with the radially-slotted wheel, and an automatic spring-catch adapted to engage the driving-wheel and hold it against rotation, substantially as described.

5. The combination of a frame, a radially-slotted wheel journaled therein and carrying a horizontal shaft provided with winding-eyes, arms secured to this shaft and resting under the wires, and stationary arms carried by the frame and terminating over the horizontal wires of the fence beyond the ends of the horizontal shaft, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

ELMER E. COLE.
OGDEN COLE.

Witnesses:

O. B. BOWEN,
JOHN W. JACKSON.