

No. 612,400.

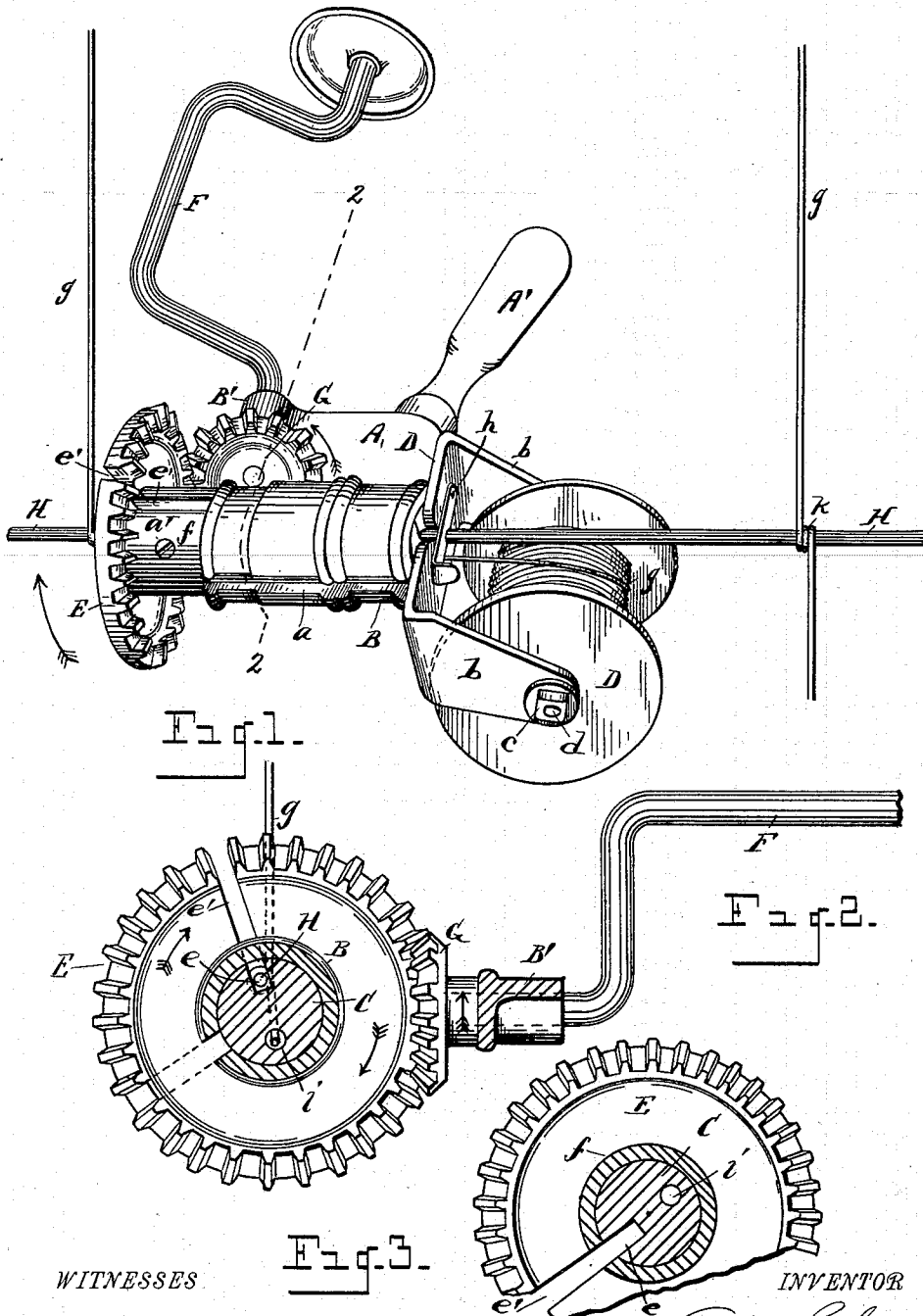
Patented Oct. 18, 1898.

A. COCHRANE.
MACHINE FOR WEAVING WIRE FENCES, &c.

(Application filed Nov. 29, 1897.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES

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By his Attorney's

INVENTOR
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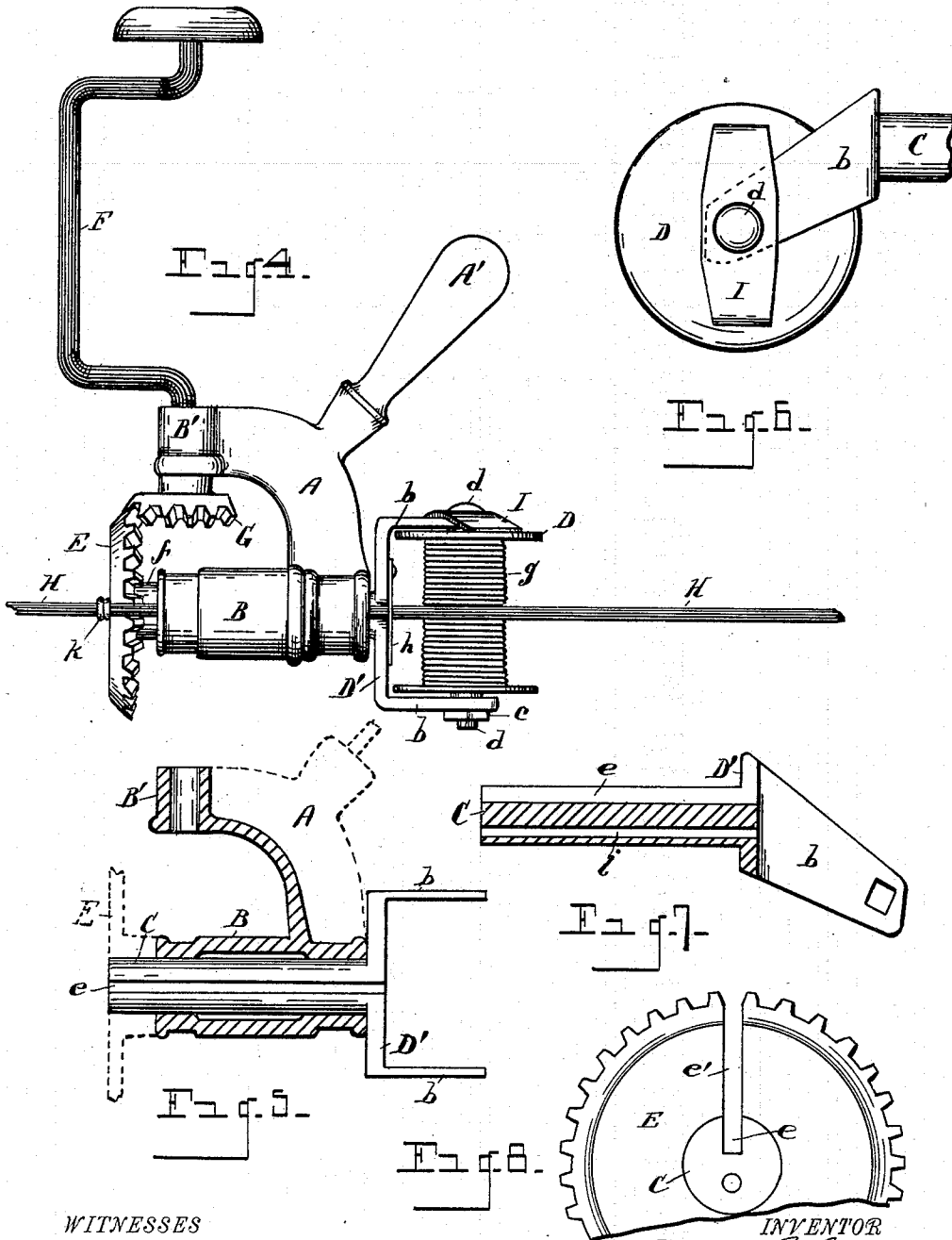
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UNITED STATES PATENT OFFICE.

ADAM COCHRANE, OF DETROIT, MICHIGAN, ASSIGNOR TO THE COCHRANE FENCE MACHINE COMPANY, LIMITED, OF SAME PLACE.

MACHINE FOR WEAVING WIRE FENCES, &c.

SPECIFICATION forming part of Letters Patent No. 612,400, dated October 18, 1898.

Application filed November 29, 1897. Serial No. 660,105. (No model.)

To all whom it may concern:

Be it known that I, ADAM COCHRANE, a citizen of the Dominion of Canada, residing at Detroit, in the county of Wayne, State of Michigan, have invented certain new and useful Improvements in Machines for Weaving Fences and other Wire Fabric; 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.

This invention relates to machines for weaving wire fences and other wire fabric; and it consists in the construction and arrangement of parts hereinafter fully set forth, and pointed out particularly in the claims.

The objects of the invention are to produce a simple, efficient, and inexpensive machine which may be operated by hand and by means of which many styles of wire fences may be made, enabling the work to be accomplished quickly and with little labor, the construction of the machine being such as to enable it to be employed upon plain or barbed wire and in the repairing of old as well as in the construction of new fences. These objects are attained by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of my improved machine in the operation of weaving or winding the vertical or stay wire upon the lateral wires of the fence. Fig. 2 is a transverse section as on line 2 2 of Fig. 1. Fig. 3 is a similar section through the slotted hanger and shaft, showing the slots in said parts brought into a position to register one with another. Fig. 4 is a plan view of the machine in the position substantially as shown in Fig. 1. Fig. 5 is an enlarged detail in horizontal section through the hanger and bracket, showing in elevation the shaft journaled in said hanger. Fig. 6 is an elevation of the end of the spool, showing the spring for applying tension thereto. Fig. 7 is a longitudinal section through the rotary shaft, showing the longitudinal channel in the periphery thereof and the aperture passing longitudinally

therethrough. Fig. 8 is an elevation, partly broken away, of the large gear-wheel, showing the slot therein which receives the lateral wire of the fence and the aperture therein through which the stay-wire passes.

Referring to the letters of reference, A designates a curved bracket carrying at one end a hanger B and at the other a journal-bearing B', standing at right angles to said hanger, all of said parts being formed integral. Projecting at an angle from the bracket A is a handle A', by means of which the machine is supported.

The hanger B is in the form of a cylindrical shell, being provided with an opening passing therethrough and having a longitudinal slot *a* opening through the periphery thereof. Journaled in said hanger B is a solid shaft C, carrying at one end the inclined parallel arms *b*, between which the spool D is journaled, said spool rotating upon a bolt *d*, passing through said arms and spool and secured by a nut *c*. Upon the opposite end of the shaft C is a beveled gear-wheel E, having a hub *f*, which abuts against the end of the hanger B and through which a set-screw *a'* is passed to secure said gear-wheel to said shaft.

Formed longitudinally in the periphery of the shaft C is a channel *e*, extending the entire length thereof, which registers with the slot *e'*, passing diametrically through the gear-wheel E and through the hub of said wheel, uniting with the channel in said shaft and terminating at a point near said wheel's axis of rotation, as clearly shown in Figs. 1, 2, and 8. The shaft C passes through the face of the wheel E, exposing the outer end of the aperture *i*, passing longitudinally through the shaft C and through which the stay-wire is fed as it is woven in the fence.

Journaled in the bearing B', carried by the bracket A, is a crank F, preferably in the form of a hand-brace, the journal end of which, extending beyond said bearing, is provided with a beveled pinion G, which pinion meshes with the beveled gear E, whereby said gear, its shaft C, and the spool D, carried by said shaft, may be rotated through a manipulation of said crank or brace, as will be well understood.

While this device is applicable to the weaving of many forms of wire fabric, its operation will be described with reference to the application of vertical stay-wires to the lateral wires of a fence. The spool D, which is journaled between the supporting-arms *b*, carries a winding of wire *g*, from which the stay-wires are formed. This wire upon leaving said spool passes into the aperture *i*, which extends longitudinally of the shaft C, the end of said wire *g* projecting beyond the face of said wheel, in which position of parts the machine is ready for the operation of attaching or weaving the stay-wires to the lateral wires of the fence, in which operation the shaft C is rotated, so as to cause the channel *e* therein to register with the slotted opening *a* in the hanger B, which operation also causes the slot *e'* in the wheel E and its hub to stand in alinement with said slot *a* in said hanger, as clearly shown in Fig. 3. The machine is then slipped onto the lateral wire H of the fence, which wire passes through the slot *a* in the hanger and the slot *e'* in the gear-wheel and lies in the channel *e* in the shaft C, as clearly shown in Fig. 2. To retain the lateral wire H within said channel, the catch *h*, which is pivoted to the cross-piece D', carrying the spool-arms *b*, is turned downward over said wire, as clearly shown in Fig. 1, so as to engage and retain it in place within said channel *e*. The end of the stay-wire *g* is then secured to the lateral wire H, adjacent to the face of the gear-wheel E, when by a rotation of the crank F said shaft is caused to rotate and wind the stay-wire *g* around the lateral wire H, as shown at *k*. When a sufficient number of wraps of the wire *g* around said lateral wire shall have been made, the catch *h*, retaining said lateral wire, is raised and the shaft turned, so as to bring its channel *e* to register with the slot *a* in the hanger, as shown in Fig. 3, when said machine is withdrawn from said wire and placed upon the next succeeding wire of the fence and the operation of winding the stay-wire repeated. In this manner the stay-wire may be readily and securely twisted around each of the lateral wires of the fence from the top to the bottom, the stay-wire paying off of the spool D as it is consumed.

To provide for applying tension to the spool to regulate the stress placed upon the stay-wire, a flat bowed spring I is employed, the ends of which bear against the face of the disk of the spool and which is retained in place by the bolt *d*, which passes through said springs, as well as through said spool. By tightening the nut *c* upon said bolt *d* the spring I may be drawn against the face of the spool, so as to place any desired tension upon the stay-wire *g* as it winds therefrom.

In the operation of winding the stay-wire to the lateral wires of the fence the gear E rotates in the direction indicated by the arrows, while the spool D, which is carried by

the shaft upon which said gear is mounted, swings around the horizontal wire II, feeding out the stay-wire as fast as it is used.

It will now be understood that by means of this improved machine various formations of wire fabric may be woven, as the wire *g* may be woven around fixed lateral wires in any desired manner and from either side, enabling wooden slats to be woven into the fence or fabric and secured by the wire *g*, if desired.

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

1. In a fence-machine, the combination of the hanger having a longitudinal slot therethrough, a shaft journaled in said hanger having a longitudinal channel in its periphery, a gear-wheel on said shaft having a diametric channel which registers with the channel in the shaft, a spool carrying a reel of stay-wire mounted on the opposite end of said shaft and adapted to revolve therewith, an interior way passing longitudinally of said shaft eccentric to its axis of rotation adapted to receive said stay-wire, a pinion engaging said gear-wheel, and a crank for rotating said pinion.

2. In a fence-machine, the combination with the hanger having a longitudinal slot therethrough, a shaft journaled in said hanger having a longitudinal channel therein extending to a point near its axis of rotation, the gear-wheel on said shaft having a diametric channel which registers with the channel in said shaft, inclined arms mounted on the opposite end of said shaft, said arms projecting obliquely outward their free ends standing out of axial alinement with said shaft the spool carrying the stay-wire journaled between said arms, an internal way passing longitudinally of said shaft eccentric to its axis of rotation adapted to carry said stay-wire, a pinion engaging said gear-wheel, and a crank for rotating said pinion.

3. In a fence-machine, the combination of a curved bracket carrying a hanger at one end having a longitudinal slot therethrough, a shaft journaled in said hanger having a longitudinal channel therein extending diametrically to a point near its axis of rotation, a gear-wheel on one end of said shaft having a diametric channel which registers with the channel in said shaft, inclined parallel arms mounted on the opposite end of said shaft, a spool adapted to carry the stay-wire journaled between the ends of said arms, said spool standing out of axial alinement with said shaft, said shaft being provided with a longitudinal aperture eccentric to its axis of rotation adapted to carry said stay-wire, a crank journaled in the bearing on the outer end of said bracket and standing at right angles to said channeled shaft, and a pinion carried on the journaled end of said crank meshing with said gear-wheel.

4. In a fence-machine, the combination of

the slotted hanger, the channeled shaft jour-
naled in said hanger, said channel being
adapted to receive the fixed lateral wire which
projects beyond the ends thereof, the pivoted
5 catch for retaining the wire within the chan-
nel of the shaft, the spool carrying a winding
of stay-wire mounted on said shaft and adapt-
ed to revolve therewith, means for applying
tension to said spool, said shaft having a lon-

gitudinal way therethrough eccentric to its ro
axis of rotation adapted to carry said stay-
wire, and means for rotating said shaft.

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

ADAM COCHRANE.

Witnesses:

RODERICK COCHRANE,
EDGAR S. WHEELER.