

(No Model.)

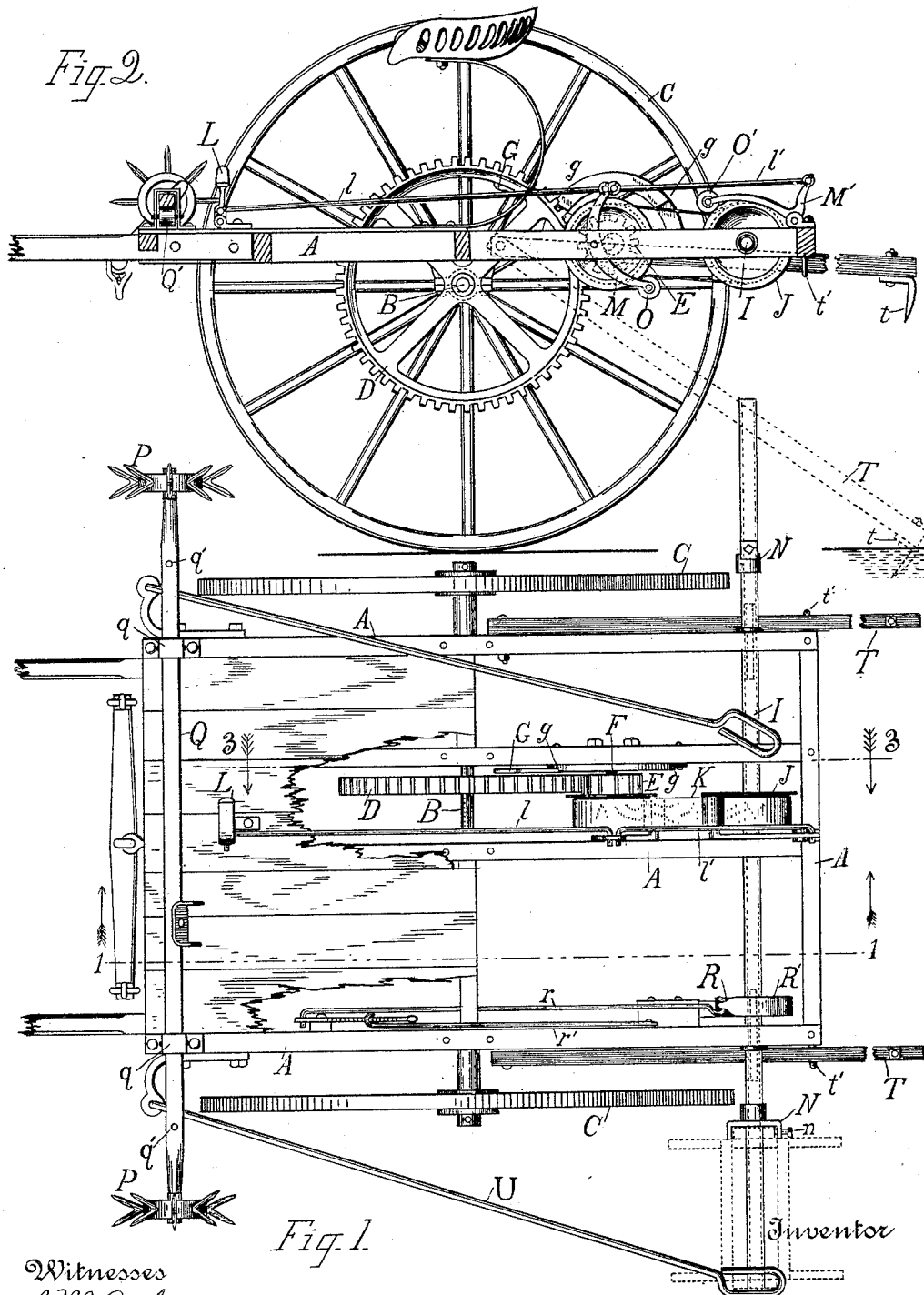
3 Sheets—Sheet 1.

M. M. CULVER.

MACHINE FOR SPOOLING AND UNSPOOLING BARBED FENCE WIRE.

No. 477,185.

Patented June 14, 1892.



Witnesses
J. M. Culver.
John B. Donaldson

By his Attorney *Moses M. Culver.*
R. B. Swift.

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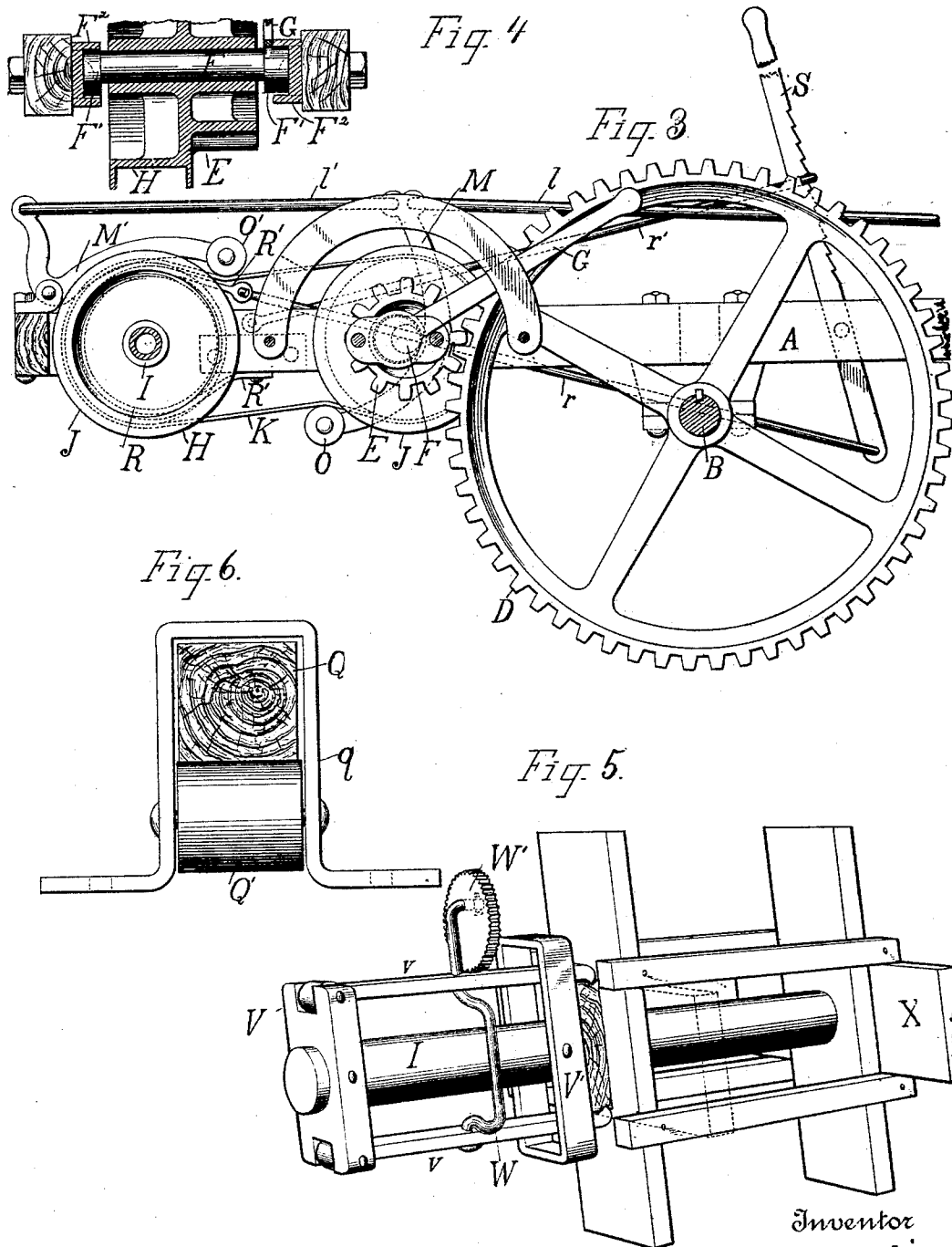
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Inventor
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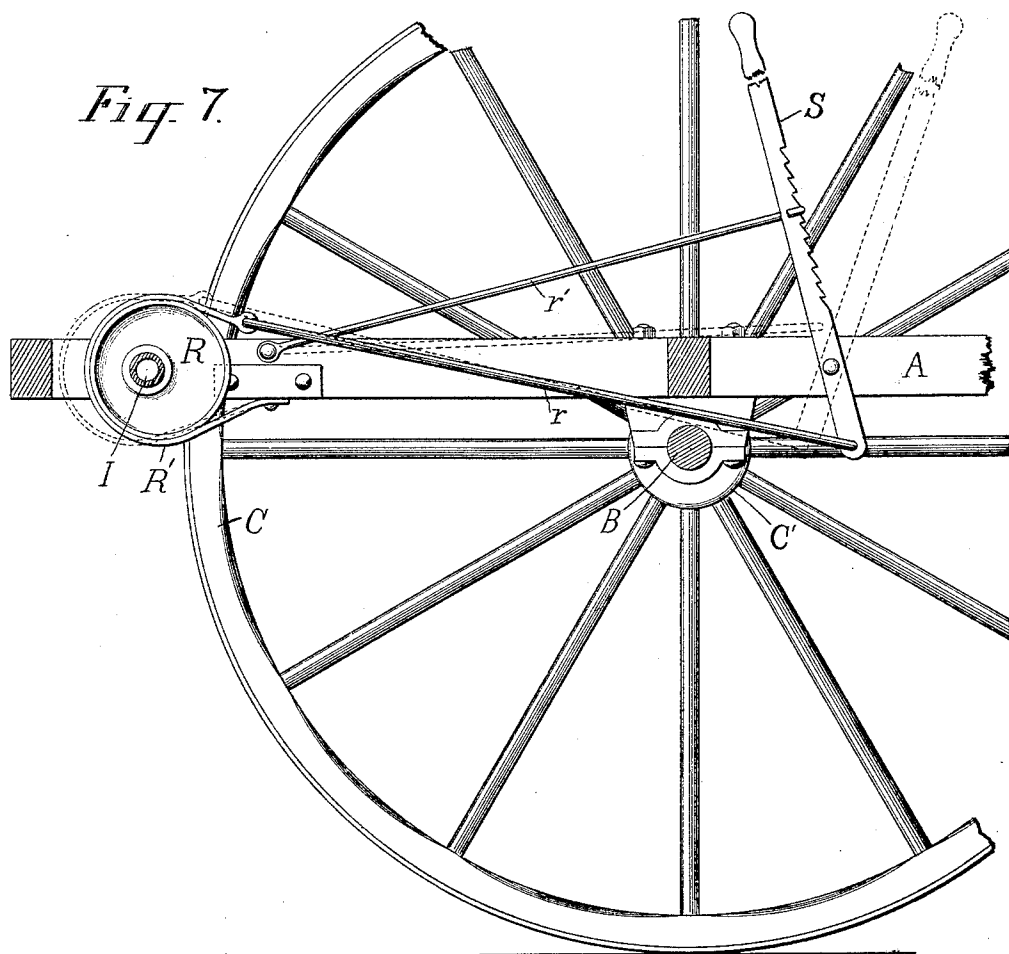
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UNITED STATES PATENT OFFICE.

MOSES M. CULVER, OF GLIDDEN, IOWA.

MACHINE FOR SPOOLING AND UNSPOOLING BARBED FENCE-WIRE.

SPECIFICATION forming part of Letters Patent No. 477,185, dated June 14, 1892.

Application filed May 5, 1890. Serial No. 350,636. (No model.)

To all whom it may concern:

Be it known that I, MOSES M. CULVER, a citizen of the United States, residing at Glidden, in the county of Carroll and State of Iowa, have invented certain new and useful Improvements in Machines for Spooling, Unspooling, and Stretching Smooth or Barbed Wire, of which the following is a specification.

This invention pertains to improvements in wire gathering, disbursing, and fence-making machines, and, while applicable to any, is more particularly applied to the machine patented to Myron W. Beach and myself October 14, 1884, No. 306,677, and has for its object the gathering of loose or unwound wire as it is taken from fence-posts and winding of the same upon spools, the distributing of the wire from the spools in the construction of a fence, and the stretching and holding of the same so that it can be nailed tautly upon the posts; and it consists in the detailed combination and arrangement of the parts, substantially as hereinafter more fully set forth, and pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a top view of the machine constructed in accordance with my invention. Fig. 2 is a sectional side view on the line 1 1 of Fig. 1. Fig. 3 is a sectional side view on the line 3 3 of Fig. 1 of the gear, friction-wheels, belt, and belt-tightening devices, together with the frictional holding mechanism in the rear. Fig. 4 is a sectional detail view through the friction-wheel and spur-pinion, showing the eccentric mounting of their shaft. Fig. 5 is a perspective view of a modified form of a spool-holding device. Fig. 6 is a view of the friction-roller upon which the wire-controlling bar is moved; and Fig. 7 is a view on the line 1 1 of Fig. 1 (looking in the opposite direction from Fig. 2) of the eccentrically-mounted brake-wheel and its encompassing brake-strap, together with the controlling-lever and connections.

In the drawings like letters refer to similar parts.

A is the frame-work of the machine, having about at the center thereof an axle B, which is turned in suitable bearings by the wheels C, secured thereto by fixed ratchet-plates and pawl connections C' of the ordi-

nary kind. The spur-wheel D is secured to the axle B and revolves the spur-pinion E when intermeshing therewith. The pinion E revolves upon the shaft F, which is eccentrically mounted at both ends in blocks F². In order that this pinion may be thrown into and out of engagement with wheel D, shaft F has secured to it the lever G, which, being thrown forward or backward, causes the eccentric gudgeons F' to revolve in blocks F², thus carrying the shaft F forward or backward. That the lever, and through it the shaft, may be locked in position the lever is preferably made as a thin elastic bar of metal.

Secured to the frame of the machine parallel with and nearly in the path of the lever is a quadrant having the outsetting ledges g, which stand directly in the path of the lever and lock it in its position at each extreme, and to pass which the lever must be forcibly sprung aside. Integral with or fastened to the pinion E is a pulley H.

To the rear end of the frame A of the machine is secured a long rotary shaft I, extending beyond the wheels on both sides a sufficient distance to hold a spool of wire and journaled upon or passing through bearings in the frame-work A. Fixedly secured to the shaft I is the pulley J, in line with the pulley H and frictionally connected thereto by the belt K. The tightness of this belt is regulated by the driver with his foot upon the lever L, which by means of the rods l and l', acting upon the levers M and M', pivoted to the frame of the machine, presses the traveling wheels O and O', which are mounted, respectively, on the levers M and M', upon the belt K with the force desired.

Secured to the shaft I near both its extremities are clamps N, fitted with set-screws n to hold the spool upon the ends of shaft I.

In front of the wheels is the bar Q, extending across the frame-work A of the machine and held in position by guides q, fastened to the frame-work A. Loosely mounted upon the ends of the bar Q are feathering sprocket-pulleys P, over which the wire passes as it is being taken upon the spools, the bar Q being moved by the driver back and forth upon the frame to make an evenly-filled spool. In order to facilitate the easy movement of the bar Q, it rests upon friction-rolls Q', which are

mounted in the guides *q*. (See Fig. 6.) Pins *q'* limit the movement of the bar *Q* to the width of the spool.

The parts of the machine thus far described are used in spooling. The wire as it is taken from the fence-posts drops upon the ground along the line of the fence. A spool is secured on the outer end of the shaft *I* and the wire attached thereto and placed over the sprocket-wheel *P*. The machine is then drawn toward the line of wire, the shaft *I* being revolved with sufficient rapidity to tightly wind the wire upon the spool. As the spool increases in diameter the driver regulates the tightness of the frictional belt *K* so that the strain on the wire and machine is only sufficient to keep the wire tightly spooled. In unspooling one end of the wire is attached to a post or held in any way, the spur-pinion thrown out of engagement with the spur-wheel, and the machine drawn along the line of the fence. To prevent the shaft *I* from spinning around too rapidly, and thus allowing the wire to drop upon the ground and the barbs to become tangled in the grass, from which it is very hard to draw them, I fixedly secure to the shaft *I* a small wheel *R* near one of the sills of the machine. This wheel *R* is slightly eccentrically mounted on the shaft *I* and is encompassed by a strip of steel *R'*, which is fastened at one end to the frame *A* and at the other is connected by a pitman *r* to the lever *S*, also mounted on the frame *A* convenient to the driver's hand. In unspooling the driver, with his hand upon this lever or his foot upon a suitable foot connection with the same, keeps the wire stretched along the fence at a proper degree of tautness. In practice I have found it very difficult to tighten the wire if it runs off from the spool too easily and rapidly during any part of the unspooling. When sufficient wire has been drawn off for the desired length of fence, the hook *r'* is employed to lock the lever *S* so tightly that the shaft *I* is prevented from rotation. Any other form of a locking device for the lever *S*—such as a pawl and ratchet—would answer the purpose of the locking-rod *r'* and the serrations in the edge of the lever. The brace-rod *U*, attached to the forward end of the frame *A*, is placed over one of the arms of the spool to prevent the springing of the shaft *I* and a too-great strain on the clamp *N*, and the machine is moved forward, drawing the wire up taut. The eccentricity of the wheel *R* is necessary to assist in locking the shaft *I* from rotation when the wire is to be stretched. At that time the full draft of the team is upon the wire and tending to revolve shaft *I*. The band *R'* is tautly drawn when the part of the wheel adjacent to the shorter radius is in contact with the band. The longer radius cannot, therefore, again pass around. To prevent the running back of the machine and consequent loosening of the wire, I provide anchors *T*, pivoted to both sides of the frame-work *A*

near the axle *B* and extending rearward and fitted at their outer ends with the hooks *t*, which are pressed firmly into the ground. During the spooling and unspooling operations these anchors are carried on hooks *t'* upon the frame-work *A*. As the boards forming the ends of spools of wire are not always of the same width, it becomes necessary to make the clamp *N* and set-screw *n* of considerable length.

In the modification shown in Fig. 5 I have made a handy clamping device by securing block *V* on the shaft *I* and pivoting outwardly-extending arms *v* in the extremities thereof, that are provided with hooks upon their outer ends for engaging one of the arms of the spool *X*. Near the spool to guide and sustain the arms *v* I secure to the shaft *I* the rectangular piece *V'*. To hold the arms *v* upon the spool *X*, I connect them with a rod *W*, curved about the shaft *I*, and upon one end of the rod, which is bent at right angles to its general direction, I eccentrically mount a small wheel *W'*, the periphery of which is serrated and the revolution of which tightens the clamp *V* upon the spool.

The details of the construction could be somewhat varied throughout the machine without departing from my invention.

What I claim, and desire to secure by Letters Patent, is—

1. In a wire gathering and disbursing machine, the combination of an eccentric shaft mounted in bearings on the frame of the machine, a lever attached thereto, a combined spur-wheel and pulley mounted on the eccentric shaft, means for rotating the spur-wheel and pulley when the eccentric shaft is thrown to one extreme of its movement by the lever, and a belt connecting the pulley on the eccentric shaft with a pulley on the spool-shaft, which is mounted on the frame of the machine in the rear of the eccentric shaft, substantially as and for the purpose specified.

2. In a wire gathering and disbursing machine, the combination of the driving-wheel *C*, axle *B*, spur-wheel *D*, spur-wheel *E*, pulley *H*, attached thereto, shaft *I*, pulley *J*, carried by it, and belt *K* with rollers *O* and *O'*, mounted on levers *M* and *M'*, and means whereby the rollers can be pressed upon the belt with a varying force, substantially as shown.

3. In a wire disbursing and stretching machine, the combination of a revolving shaft extending transversely across the machine, upon which the spool is mounted, an eccentrically-mounted friction and locking wheel thereon, and an encompassing band attached to a lever pivoted to the machine and adapted to be pressed upon the wheel with varying force, substantially as shown.

4. In a machine to be drawn over the ground to disburse and stretch wire in fence-making, the combination of a shaft extending transversely across the machine, upon which the spool is fixedly mounted, an eccentrically-

mounted brake-wheel thereon, means whereby friction is thrown upon this wheel to keep the wire stretched while unreeling and to lock the spool and shaft against rotation when the
5 desired amount of wire has been disbursed, and anchors pivoted to the frame of the machine and adapted to be pressed into the ground when the wire has been stretched taut, substantially as and for the purpose
10 specified.

5. In a wire disbursing and stretching machine, the combination, with the shaft extending transversely across and beyond the machine and mechanisms thereon to prevent rotation of the shaft and to lock the spool there-

on, of a brace-rod pivoted to the front of the machine to be attached to one of the arms of the spool, substantially as and for the purpose specified.

6. In a wire gathering, disbursing, and stretching machine, the combination to form a spool-clamp of a block secured to the shaft and arms pivoted thereon, connected by a rod, upon one end of which is an eccentrically-mounted wheel, substantially as and for the
20 purpose specified. 25

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Witnesses:

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