

(No Model.)

2 Sheets—Sheet 1.

S. C. & F. M. LOVE.

TENSION DEVICE FOR WIRE FENCE MACHINES.

No. 350,542.

Patented Oct. 12, 1886.

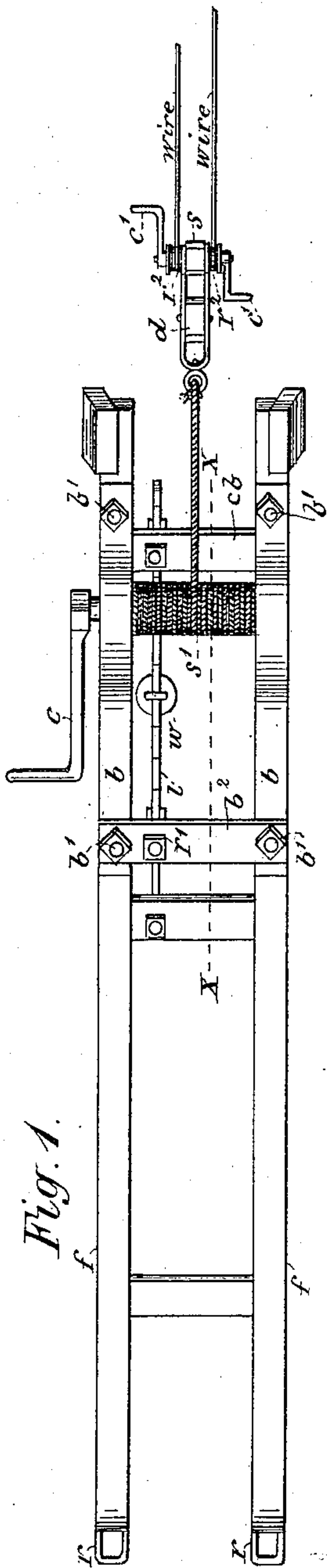


Fig. 1.

WITNESSES.

Gustav Bohn.
W. S. Lockman.

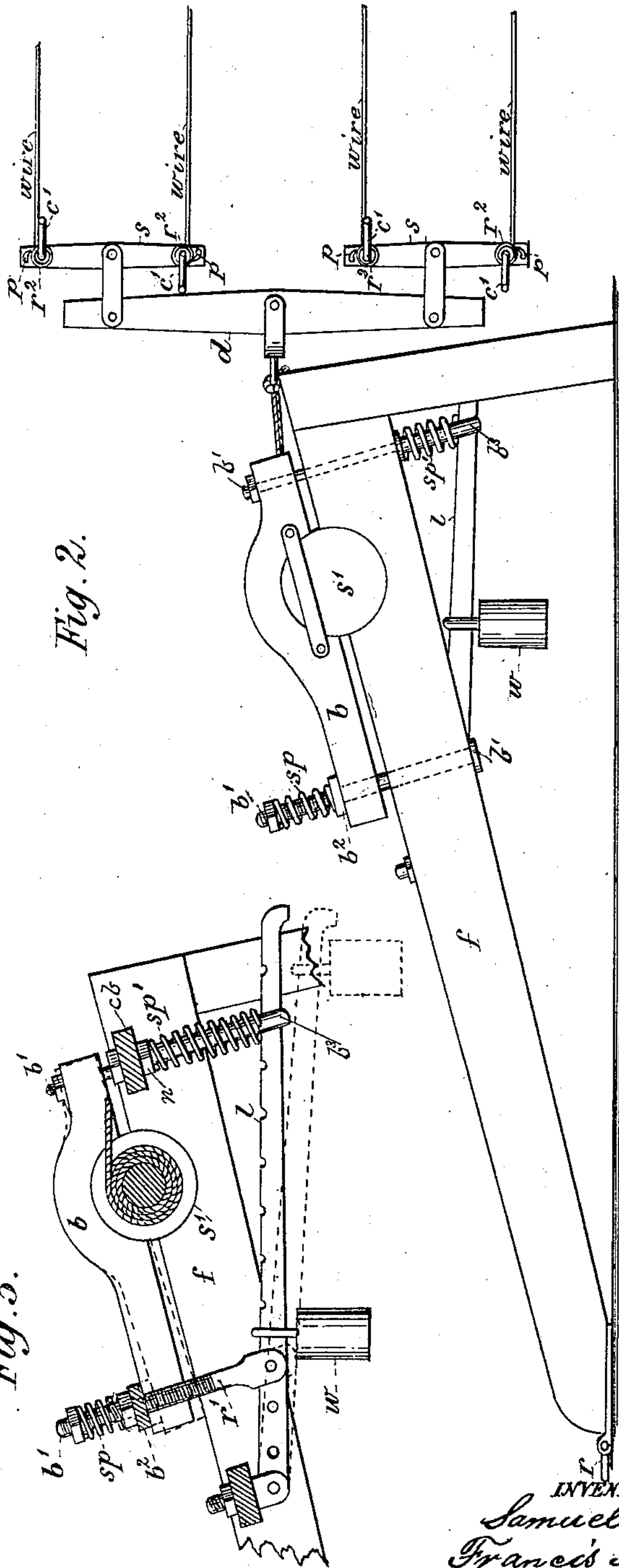


Fig. 2.

Fig. 3.

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Fig. 5.

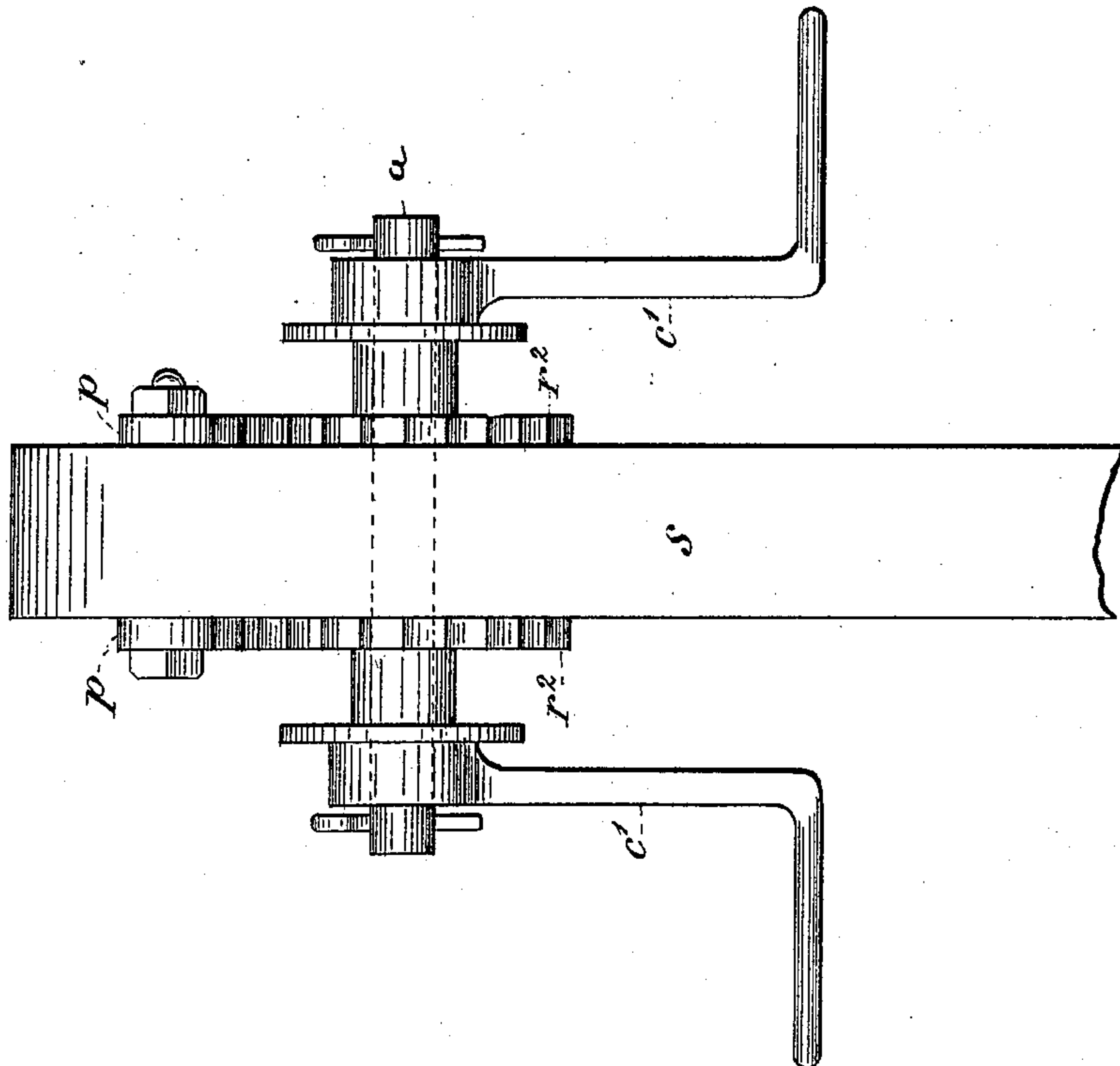
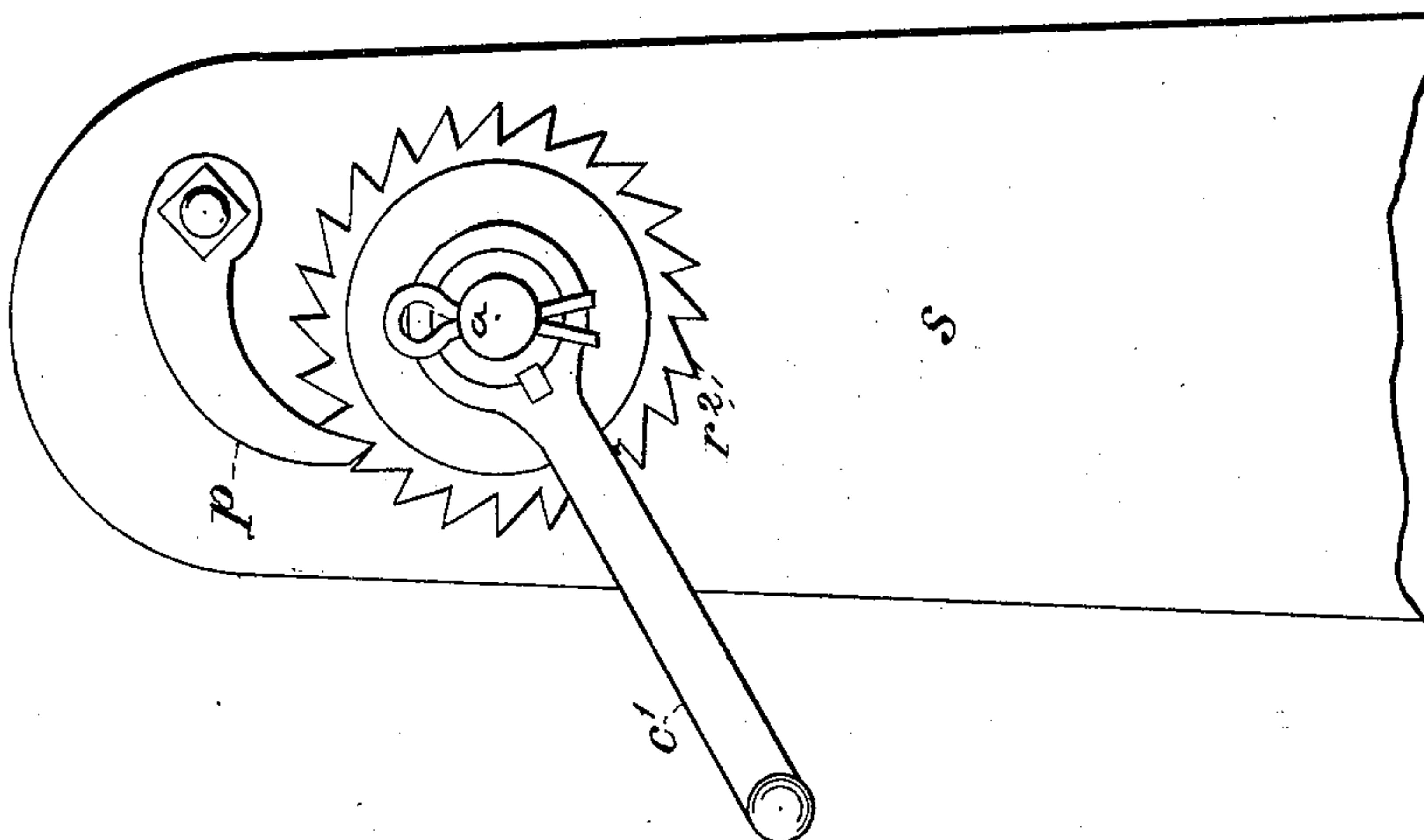


Fig. 4.



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UNITED STATES PATENT OFFICE.

SAMUEL C. LOVE AND FRANCIS M. LOVE, OF SHELBYVILLE, INDIANA.

TENSION DEVICE FOR WIRE-FENCE MACHINES.

SPECIFICATION forming part of Letters Patent No. 350,542, dated October 12, 1886.

Application filed April 19, 1886. Serial No. 199,328. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL C. LOVE and FRANCIS M. LOVE, residents of Shelbyville, Indiana, have made certain new and useful Improvements in Tension Devices for Wire-Fence Machines, a description of which is set forth in the following specification, reference being made to the accompanying drawings, in the several figures of which like letters represent like parts.

Our invention consists in an improvement in devices for regulating the tension of and feeding the wire to the field-machine which twists the ordinary fence-wire about the wooden slats or pickets so commonly used at the present time; and it consists in the several parts and combination of such parts hereinafter set forth, and will be understood from the following description.

In the drawings, Figure 1 represents a top view of our device. Fig. 2 is a side view of the same. Fig. 3 represents a horizontal section on the line $x x$, Fig. 1. Fig. 4 is a detail side view of the ratchet mechanism. Fig. 5 is an edgewise view of the same. The views represented in Figs. 4 and 5 are on a larger scale than the others.

In detail, f represents a frame-work, one end of which is rested upon suitable supports some distance above the ground, while the opposite end rests directly upon the ground and is provided with rings r , through which stakes are passed and driven into the ground to prevent its being moved from its position when it is in operation. In the front of this frame-work is mounted a spool, s' , the central portion of which consists of the windlass around which the holdback rope or chain is wound.

c is a crank for revolving the spool. The ends of this windlass are enlarged in the manner of an ordinary spool, and these enlarged ends or drums, having bearings in the frame-work below, are kept in position by a boxing, b , passing over the top of each drum, and this boxing is held down by means of bolts b' , passing up through the frame-work at each end, these bolts being provided also with coil springs sp , which are secured in place by means of nuts working upon the threaded upper ends of these bolts. It is obvious that by tightening these nuts the pressure upon the coil-springs is

increased, and they serve to hold the boxings b more firmly down upon the peripheries of the spools or drums, and act in some measure as a friction-brake, retarding their movement. A bar, b^2 , connects these bolts at the rear end, and a rod, r' , passes downward from this bar to a lever, l , which extends forward under the frame-work to near its front end. This lever is intended to accomplish a similar result to that produced by means of the pressure brought to bear upon the coil-springs sp —that is to say, to force down the rear end of the boxing, so as to clamp the drums and prevent their moving too easily. This lever may accomplish this result in either of two ways: first, by means of an ordinary weight, w , hung over the lever in the manner of a scale-beam, which weight may be shifted along its length to any desired point, so that the leverage of the weight will produce the particular pressure desired; or, second, the outer end of the lever may be connected to the cross-bar cb upon the front part of the frame by means of a bolt, b^3 , upon which may be mounted a coil-spring, sp' , and this spring may be compressed by screwing down upon it a nut, n , as shown in Fig. 3, so as to give greater or less pressure upon the lever. It is obvious that, if desired, both these means may be adopted, and such an arrangement is shown in Fig. 3. The weight may be used with the lever and the coil-spring also, either together or in combination with the pressure-springs upon the bolts at the rear of the boxing, and any one skilled in the art could easily adjust the pressure at the point desired by a very simple mechanical operation. In many cases it is sufficient to have but one drum on the spool; or the boxings might be adjusted to work directly upon the axle, if the latter be made of sufficient size, and the drum dispensed with.

The tension device is set, perhaps, twenty rods from the twisting-machine, and any twisting-machine may be used in connection with this device, such as the one shown and described in the application of Francis M. Love, filed on the 9th day of the present month. In front, as this tension device is set up, is placed a double-tree, d , provided with two single-trees, s , and on either end of either of these single-trees is secured the double ratchet-spool

r^2 , (shown in Figs. 4 and 5,) and in such a manner that the wires leading to the twisting device of the field-machine are connected one wire to each side of this double ratchet-spool.

5 These ratchet-spools are loosely mounted on an axle, a , common to both, passing through the end of the single-tree, and pawls p are pivoted so as to engage the teeth of the ratchet on each side. The ratchets r^2 operate by small
10 cranks c' , and, being each independent of one another, either ratchet may be revolved separately, or both may be revolved at the same time, as may be desired, so that in case the wire on one side is a little slack it may be
15 tightened up without interfering with the other, and vice versa. The wires at either end of the single-tree may not always be equal, and in such case one or both wires on either
20 end of the single-tree may be tightened without interfering with the tension of the other. In working split pickets or those of irregular widths, one strand of wire will become tighter or looser than another, and by means of this device the tension may be so regulated that
25 these as well as any other kind of slats may be woven into the fence.

In practice it is found that about six inches of wire is taken up in twists between the pickets for every rod, and it becomes necessary
30 that there shall be a constant feed from the tension device to the machine. The brake mechanism in this tension device is therefore adjusted by means of the springs or the weighted lever, or both, hereinbefore described, so
35 that when the pull on the wire passes a certain point it will give, the spool will revolve, and enough wire and no more will be fed to the machine to keep the tension equal and uniform.

40 We are aware that tension devices consisting of spools adapted to be revolved by cranks are not new, and do not broadly claim the same as our invention.

45 What we do claim, however, as our invention, and desire to secure by Letters Patent, is the following:

1. In a tension device for a wire-fence machine, a supporting-frame adapted to be secured to the ground, carrying a spool having
50 the holdback-chain coiled around it provided with a crank for revolving the same, and clamped by means of the boxings b , and secured over one or both ends of the axle, such boxings connected with bolts upon which wire
55 springs are coiled, and which carry nuts for increasing the pressure upon the springs, so as to clamp the boxings upon the periphery of the axle, substantially as shown and described.

60 2. In a tension device for wire-fence machines, a supporting-frame carrying a spool to receive the holdback-rope, with one or more brakes adapted to press upon the windlass, so

as to retard its revolution, a lever carried beneath the frame and connected by suitable mechanism to such brakes, with means—such
65 as a weight or compressible spring—to force down the lever so as to bring a pressure upon the brakes, substantially as described.

3. In a tension device for wire-fence machines, the supporting-frame f , the spool s' , for
70 carrying the holdback-chain, the boxings b , adapted to bear upon the periphery of the spool and connected in the rear to the frame-work by bolts carrying coiled springs whose compression forces the boxings upon the spool
75 so as to retard its revolution, the lever l , carrying a weight and connected by suitable rods to the boxings b , all combined substantially as described.

4. In a tension device for wire-fence machines, the double-tree d , connected by a clevis
80 to a holdback-rope wound upon a windlass, the single-trees s , connected to the double-tree and carrying ratchet-spools r^2 on either end, substantially as described.
85

5. A pair of ratchet-spools mounted upon a common axle, and having a movement independent of each other, adapted to carry the wires which lead to a field-fence machine, the
90 ratchets connected to the single-trees of a double-tree, which is held in place by a holdback-rope, connected with a tension device of a fence-machine, substantially as shown and described.

6. The double ratchet-spool herein described, consisting of a pair of spools mounted
95 upon a common axle, the inner flange of each spool forming a ratchet whose teeth engage with pawls pivoted above such ratchet, the whole carried upon a single or double tree,
100 substantially as described.

7. In a tension device for wire-fence machines, the supporting-frame f , carrying the
105 spool s' , whose enlarged ends have bearings in the frame-work below, the boxings b , connected with the frame-work and adapted to act as a friction-brake for the peripheries of these drums, with means—such as a spring or weight—upon a suitable lever carried beneath
110 the frame for clamping the boxings b down upon such drum, in combination with an equalizing double-tree carrying single-trees provided with spools having ratchets at each end moving independent of each other, and
115 carrying the end of the wire which leads to the fence-machine, all combined substantially as described.

In witness whereof we have hereunto set our hands this 14th day of April, 1886.

SAMUEL C. LOVE.
F. M. LOVE.

Witnesses:

C. P. JACOBS,
HATTIE MURRY.