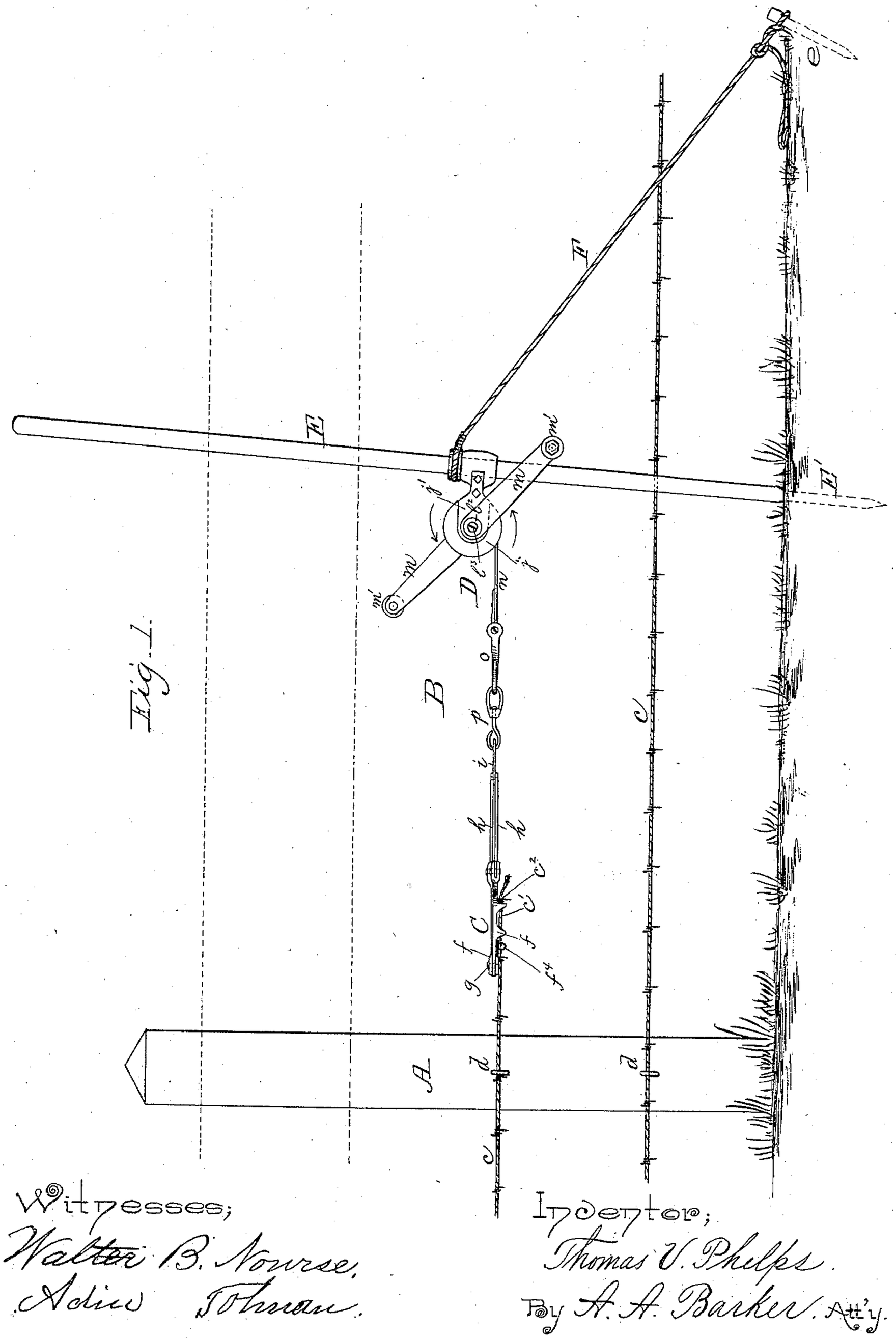
(No Model.)

2 Sheets—Sheet 1.

T. V. PHELPS.

FENCE WIRE STRETCHER.

No. 335,842. Patented Feb. 9, 1886.



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(No Model.)

2 Sheets—Sheet 2.

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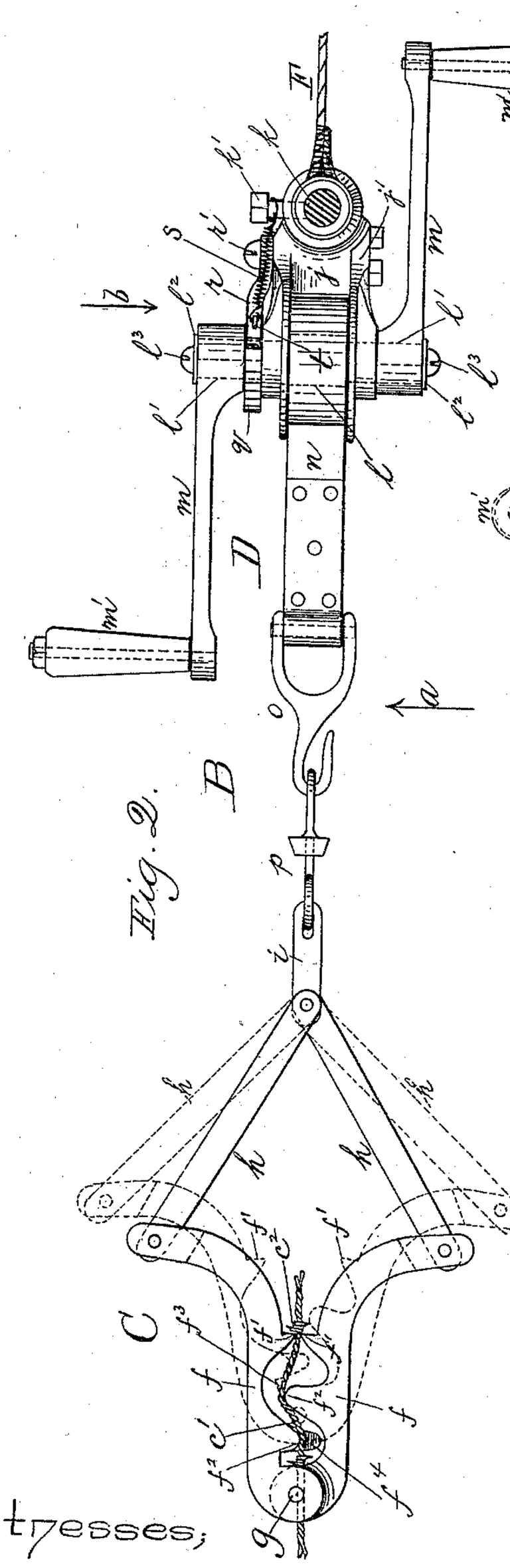

Fig. 2.

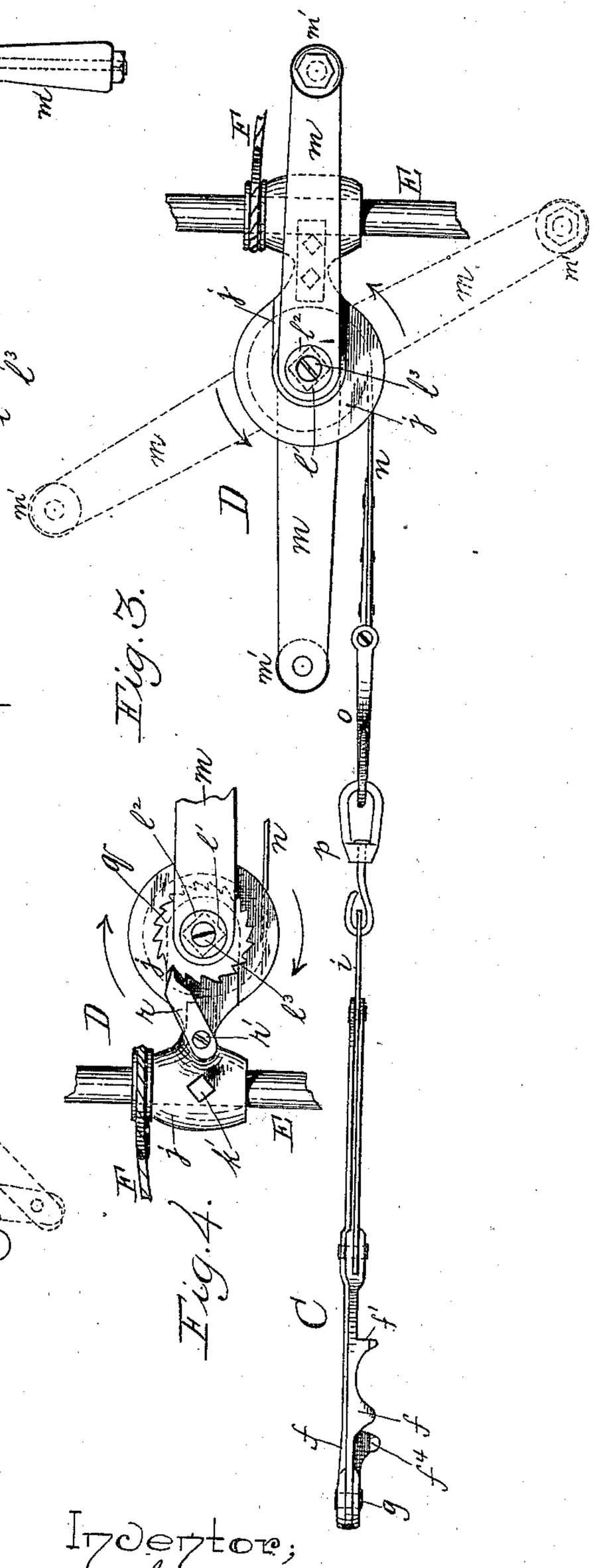

Fig. 3.

Fig. 4.

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UNITED STATES PATENT OFFICE.

THOMAS V. PHELPS, OF WORCESTER, MASSACHUSETTS.

FENCE-WIRE STRETCHER.

SPECIFICATION forming part of Letters Patent No. 335,842, dated February 9, 1886.

Application filed August 3, 1885. Serial No. 173,350. (No model.)

To all whom it may concern:

Be it known that I, THOMAS V. PHELPS, of Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Fence-Wire Stretchers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 represents a side view of my aforesaid improved stretcher applied to practical use, as hereinafter more fully explained. Fig. 2 represents, upon an enlarged scale, a top or plan view of said wire-stretcher. All the following figures are also upon the same enlarged scale. Fig. 3 represents a side view of the stretcher shown in the above figures, looking in the direction indicated by arrow *a*, Fig. 2, and Fig. 4 represents an opposite side view from that shown in Figs. 1 and 3 of a part of the stretcher hereinafter described, looking in the direction of arrow *b*, Fig. 2, a spring device shown in said Fig. 2 being left off in this figure.

The object of my invention is to provide a more convenient and expeditious means for stretching fence-wire in applying the same to a line of fence-posts than has heretofore been practicable by the use of similar devices for the above purpose.

My said invention is more especially designed for stretching what is commonly known as "barbed fence-wire;" but I do not limit its use to the same.

It consists of a gripping device adapted to grip the forward end of the fence-wire, means for drawing the same forward to stretch or make said wire taut preparatory to its being fastened to the fence-posts, and means for supporting and holding said parts aforesaid at any desired elevation, independent of the line of fence-posts, so as to stretch the several strands composing the completed fence, as hereinafter more fully set forth.

To enable those skilled in the art to which my invention appertains to make and use the same, I will proceed to describe it more in detail.

In the drawings, A represents one of a line of fence-posts to which are fastened the barbed wires *c* by means of staples *d*.

B represents my improved stretcher, which comprises, in combination, the gripping device C, the device D, for drawing forward said gripping device, the supporting rod or bar E, having the pointed end E′, to facilitate its insertion into the ground, and the holding rope or chain F, attached at one end to the rod E above the tightener D, and fastened at the other end to a stake, *e*, or other fixed point in the ground, as shown in Fig. 1.

The gripping device C (see Figs. 2 and 3) consists of the two angular-shaped parts *f f*, hinged together at their outer ends, as shown at *g*, and at their inner ends to the outer ends of link-sections *h h*, whose inner ends are hinged to the end of another link-section, *i*. Therefore, when said link *i* is drawn forward, as hereinafter described, (assuming that the parts *f f* are held against a tensional draft,) said parts *f f* will be drawn together or closed, so as to grip the end *c′* of the fence-wire, as shown in Fig. 2, and the greater the tensional strain the more firmly will said end *c′* be held. To facilitate said operation, said parts *f f* are provided with jaws *f′ f′*, which close upon the wire when the parts are closed, and with lateral projections f^2 f^2, which cause bends f^3 to be formed in said wire, thus producing additional friction thereon, to prevent its being drawn out.

In placing the end *c′* in the gripping device the first barb, c^2, is placed in front of the jaws *f′ f′* next to the same, as shown in Fig. 2, thus forming an additional security against its drawing out of said device, even under the most extreme strain brought to bear upon the wire without breaking.

The device D, for producing the tension upon the wire, consists of a frame part, *j*, which is adapted to slide up and down on the holding-rod E, or locked at any desired point thereon, being provided with the vertical opening *k* and set-screw *k′* for that purpose. Said frame *j* is also provided with a horizontal opening to receive a journal, *l*, (see dotted lines, Fig. 2,) having square ends *l′ l′*, over which are fitted the cranks *m m*, for turning said journal *l* to wind up the strap *n*, whose inner end is

fastened thereto. To the outer end of said strap *n* is fastened a hook, *o*, which engages with a swivel-hook, *p*, the latter in turn engaging with the inner end of the link-section *i*, hereinbefore alluded to.

The part *j'* of the frame *j* is made detachable for the purpose of enabling the journal *l*, which is the largest at the center, to be fitted in position.

The strap *n* is prevented from being unwound by the back-draft produced by the fence-wire by means of a ratchet-wheel, *q*, (see Figs. 2 and 4,) fitted over one of the square ends *l'* of journal *l* between the frame *j* and the hub of one of the cranks *m*, and pawl *r*, hinged to said frame at *r'*, and adapted to catch and hold in the notches of said ratchet-wheel, as illustrated in Fig. 4.

The cranks *m m* are prevented from slipping off of their respective square bearings *l' l'* by means of washers l^2 l^2 and screws l^3 l^3.

If preferred, a rope or chain may be used in lieu of the strap *n*, and other parts of the stretcher may also be varied to produce like results without departing from the principle of my invention.

In stretching a fence-strand, *c*, one end is first fastened to the desired post. The coil is then unwound and deposited along the ground at the side of the line of fence-posts. After it is all unwound, or the length desired to be stretched is unwound, the stretcher is then arranged in about the position represented in Fig. 1, with the parts for producing the tension upon a line with the level at which the strand is to be secured to the fence-posts. The pointed end E' is driven well into the ground, and the holding rope or chain F securely fastened to a solid bearing. If convenient to do so, it may be fastened to one of the posts close to the ground without in the least affecting its stability. The stretcher now being in a firm condition against a tensional strain in the direction of the strand to be operated upon, the operator, taking hold of the fence-wire, inserts it in the gripping device C, hereinbefore described, with the body of the wire resting on the projection f^4 of one of the angular parts *f*, (see Figs. 2 and 3,) and with one of the barbs, or the end barb, just in front of the jaws *f' f'* of said device, as also hereinbefore described. He now closes the device from about the position shown by dotted lines to that shown by full lines, Fig. 2, thereby bending the wire, as there shown, when he then grasps the body of the device in one hand, to hold it in a closed condition, and with the other takes hold of one of the crank-handles *m'*, and, turning the journal *l*, winds up the strap *n* until the slack in the fence-wire is taken up and sufficient tension is produced to hold the device C in its closed condition. He now drops said device, and, taking hold of both crank-handles *m' m'*, continues to turn until the fence-wire is drawn up taut. He, or an attendant, then fastens the wire to the fence-posts A by means of staples *d*, as hereinbefore stated, the stretcher in the meantime remaining turned up tight. After the fence-wire has been fastened as aforesaid, or fastened to a sufficient number of posts next to the stretcher to hold it taut, the operator hooks the outer end of a spiral spring, *s*, (which has previously hung loose from the holding-screw *k'*,) over a pin, *t*, in the upper side of the pawl *r*, near its forward end. He then takes hold of both crank-handles *m' m'* and turns the journal *l* and parts connected therewith a sufficient distance to allow the aforesaid spring *s* to spring back the pawl *r* out of action with its ratchet-wheel, after which he finally removes the fence-wire from the gripping device of the stretcher, and the operation is completed.

The use of the spring *s* as above described renders the operation of removing the fence-wire from the stretcher much easier to perform than without it; but I do not limit myself to its use, and it may be dispensed with, if preferred, as shown in Fig. 4.

Heretofore the construction and arrangement of the stretchers used has necessitated their being attached to one of the fence-posts upon a level with the line of draft, therefore necessitating the post to which it is applied being braced against a counter strain, which operation not only occupies considerable time, but also tends to loosen the fence-post in its bearing.

By the use of my improved stretcher the line of fence-posts are in no manner affected by the stretching operation. The stretcher may be quickly adjusted in position and securely fastened and operated by one person with the greatest ease. It being strong and durable, and the draft applied at its center, also being operated by the use of two instead of one crank, as is the usual case, considerably longer lengths may be stretched at one operation than by the present stretchers in use, which I have ascertained by practical application in stretching considerable barbed wire in building fences during the past and present seasons.

Having described my improved fence-wire stretcher, what I claim therein as new and of my invention, and desire to secure by Letters Patent, is—

1. The combination of the gripping device C, consisting of the hinged angular parts *f f*, having the gripping-jaws *f' f'*, wire-bearing parts f^2 f^2, and supporting part f^4, the link-sections *h h*, hinged at their outer ends to the inner ends or arms of the parts *f f*, and link-section *i*, hinged at one end to the inner ends of the link-sections *h h* aforesaid, with means for connecting said link-section *i* with the tightening device D, and said tightening device D, consisting of the journal *l*, frame *j*, cranks *m m*, provided with handles *m' m'*, ratchet-wheel *q*, its pawl *r*, supporting and holding rod E, its set-screw *k'*, and the holding rope or chain F, adapted to be fastened at

its outer end to a stationary part near the ground, whereby a line of fence-wire may be stretched independent of the line of fence-posts, substantially as shown and described.

2. The combination of the gripping device C, consisting of the hinged angular parts *f f*, having the gripping-jaws *f' f'*, wire-bearing parts f^2 f^2, and supporting part f^4, the link-sections *h h*, hinged at their outer ends to the inner ends or arms of the parts *f f*, and link-section *i*, hinged at one end to the inner ends of the link-sections *h h* aforesaid, with means for connecting said link-section *i* with the tightening device D, said tightening device D consisting of the journal *l*, frame *j*, cranks *m m*, having handles *m' m'*, ratchet-wheel *q*, its pawl *r*, having the holding-hook *t*, spring *s*, set-screw *k'*, and rod E, substantially as shown and described.

THOMAS V. PHELPS.

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