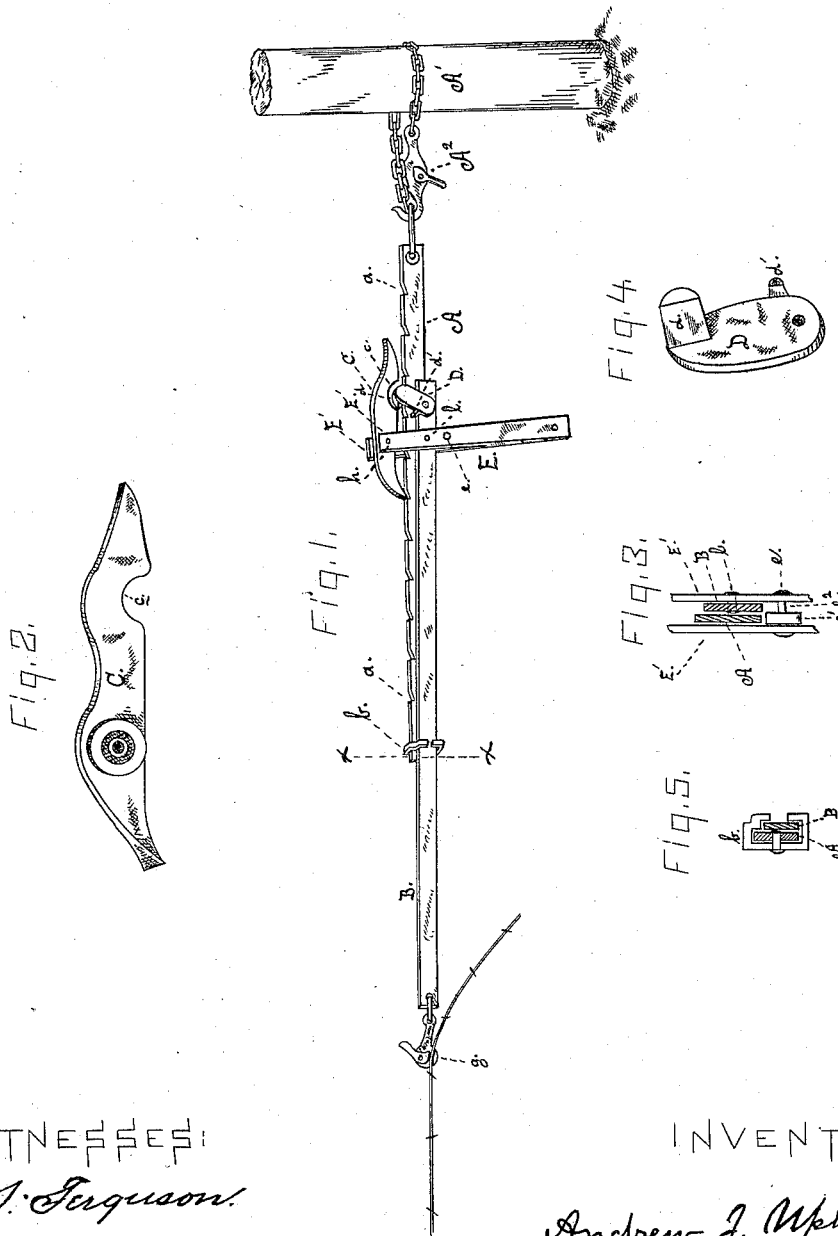


(No Model.)

A. J. UPHAM.
FENCE WIRE TIGHTENER.

No. 344,607.

Patented June 29, 1886.



WITNESSES:

V. S. Ferguson.

Walter W. Haskell

INVENTOR:

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UNITED STATES PATENT OFFICE.

ANDREW J. UPHAM, OF SYCAMORE, ASSIGNOR TO MADISON D. SHIPMAN,
OF DE KALB, ILLINOIS.

FENCE-WIRE TIGHTENER.

SPECIFICATION forming part of Letters Patent No. 344,607, dated June 29, 1886.

Application filed October 30, 1885. Serial No 181,356. (No model.)

To all whom it may concern:

Be it known that I, ANDREW J. UPHAM, a citizen of the United States, residing at Sycamore, in the county of De Kalb and State of Illinois, have invented certain new and useful Improvements in Fence-Wire Tighteners; and I do hereby 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 letters or figures of reference marked thereon, which form a part of this specification.

My invention pertains to fence-wire tighteners; and it consists more especially in certain novel mechanism for forcibly drawing the wire.

In the drawings, Figure 1 is a side elevation of a machine embodying my invention. Fig. 2 is a detached view of the pawl C. Fig. 3 is a partial cross-section through the pivotal point of the lever E. Fig. 4 is a detached view of the dog D. Fig. 5 is a cross-section in the line *x x* of Fig. 1.

A is a bar, fastened in any suitable manner to the fixed object A', and provided also with the usual clamp, A², for use in case it is desired to draw two wires together. The bar A is further furnished with notches *a* on its upper surface, and with the fixed sleeve or clip *b*, at or near its inner end, partially to encircle and loosely to hold the parallel bar B.

B is a bar, furnished with the usual grip, *g*, at its outer end, to clutch the wire to be drawn, and held substantially parallel with and against the side of the bar A, by being passed through the sleeve *b* on the latter, and pivoted at *l* on the inner face of one of the vertical plates constituting the lever E.

E is a hand-lever constructed of the two plates E', placed, respectively, on opposite sides of the two bars A and B, and held together by a bolt, *e*, passing through the plates E', below both of said bars, and by the bolt *h*, near the top of such plates, which forms the pivotal seat of the pawl C. It will be noticed (Fig. 3) that the portion of the bolt *e* between the plates E' has two different diameters, the larger diameter, *e'*, serving as a support for the bar A and the lesser diameter, *e''*, as a seat or support for

the bar B. The lower seat or recess, *e''*, is necessary to permit the movements of the bar B relative to the position of the lever E in the oscillations of the latter. It will also be noticed that the pivot *l* does not extend beyond the inner face of the bar B, Fig. 3, and therefore the space is left for the bar A to lie loosely along the inner face of the bar B and rest down upon the seat *e'*.

D is a dog pivoted near the inner end of the bar B, and to the outer face of the latter, and adapted, by means of a lateral lug, *d*, to engage the notches *a* reversely and alternately with the pawl C. A stop, *d'*, is formed on the inner edge of the dog D, at such location as to strike the upper edge of the bar B and prevent the dog D from falling or being dragged by the pawl C too far outward. The pawl C is pivoted, as shown, in the upper end of the lever E, having its engaging end outward, to engage the notches *a*, and its opposite or inner end projected over the lug *d* of the dog D. A recess, *c*, is formed in the lower surface of the pawl C, in which the lug *d* passes during the process of tightening.

The operation of my invention is as follows: The respective ends of the bars A and B having been attached, as shown, the oscillation inward or toward the fixed point A' of the lever E will cause the outer end of the pawl C to engage one of the notches *a*. This attachment then serves as a fulcrum for the lever E. This engagement of the pawl C is assured by the inward movement of the lever E slightly lifting the inner end of the bar B, and thus forcing the dog D upward against the inner end of the pawl C, causing the outward or engaging end of the latter to enter the notch *a*. When this engagement is effected, the further movement of the lever E toward the post *a'* carries the bar B and the wire to be tightened in that direction. When the lever E has been forced to the inner limit of its oscillation, the dog D engages reversely an adjacent notch, *a*, and holds the bar B, while the outward oscillation of the lever E draws the pawl C inward to the next notch *a*, when the operation just described is repeated. Thus the bar B is caused to draw the wire attached thereto toward the point of attaching the latter. If one complete draw is not sufficient, the wire can

be temporarily held in any suitable manner and a new grip thereon taken.

What I claim as my invention, and desire to secure by Letters Patent of the United States,

5 is—

1. The combination of the bar A, provided with the notches *a*, clip *b*, and means for end attachment, the bar B, held in such clip and pivoted to the lever E, and provided with the dog D, and with means for gripping the wire, the lever E, inclosing the bars A and B, and the pawl C, whereby the inner end of the bar B is adapted to rise independently of the bar A, so as to cause the engagement of the pawl C, substantially as shown, and for the purpose specified.

2. The combination of the bar A, provided

with notches *a*, the bar B, unilaterally pivoted to the lever E, and provided with the dog D, the lever E, inclosing both of said bars, and the pawl C, pivoted to such lever and adapted to be actuated by the bar B, substantially as shown, and for the purpose described.

3. The combination of the lever E, bars A and B, and the bolt *c*, the latter having variant diameters, whereby a different seat is provided for each of said bars, substantially as shown, and for the purpose described.

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

ANDREW J. UPHAM.

Witnesses:

WALTER N. HASKELL,
C. N. RUSSELL.