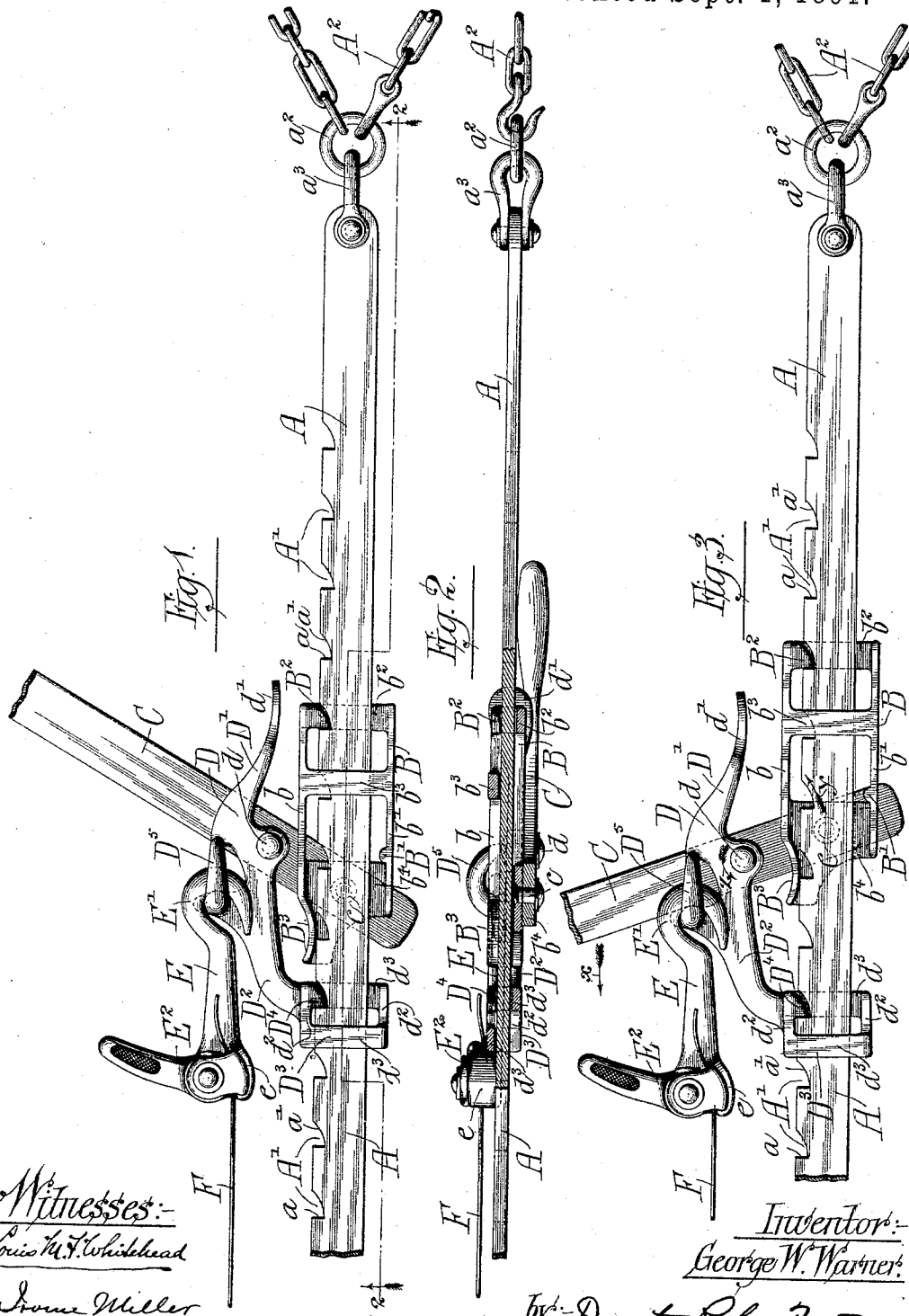
(No Model.)

G. W. WARNER.

WIRE STRETCHER.

No. 458,720. Patented Sept. 1, 1891.



Witnesses:-
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE W. WARNER, OF FREEPORT, ILLINOIS.

WIRE-STRETCHER.

SPECIFICATION forming part of Letters Patent No. 458,720, dated September 1, 1891.

Application filed May 26, 1891. Serial No. 394,135. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. WARNER, of Freeport, in the county of Stephenson and State of Illinois, have invented certain new and useful Improvements in Wire-Stretchers; and I do hereby declare that the following is a full, clear, and exact description thereof, 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 wire-stretchers, and more particularly to that class designed for use in stretching fence-wire from post to post, and has for its object to provide a simple and efficient device for this purpose.

The invention consists in the matters hereinafter described, and specifically set forth in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a stretcher embodying my invention. Fig. 2 is a bottom plan view of the same, partly in section, along the line 2 2 of Fig. 1, looking in the direction of the arrows. Fig. 3 is a view similar to Fig. 1, showing the parts in a different position.

In the said drawings, A represents a flat bar provided at intervals in one of its edges with a plurality of notches A′, each having a vertical rear wall *a* and an inclined front wall *a′*. At its forward end the bar A is provided with a chain A^2 or other suitable means for connecting it to the fence-post or other object toward which the wire is to be drawn, and said chain may be connected to the said bar by a ring a^2 and clevis a^3, or in any other suitable manner.

B indicates a slide mounted on the bar A, and comprising an upper member *b*, a lower member *b′* parallel thereto, and vertical lateral members b^2, b^3, and b^4, connecting the members *b* and *b′*, the member b^3 being arranged on one side of the bar A, while the members b^2 and b^4 are arranged on the other side of said bar. By this means the slide B is supported and guided laterally. The lower member *b′* of the slide B is provided on its upper side near its rear end with a transverse rib B′, which forms the fulcrum on which said slide rocks, as hereinafter set forth. The upper member *b* of the slide B has at its front end a downwardly-projecting tooth B^2, adapted to fit and engage the notches A′ of the bar A. At its rear end the member *b* has a depressed portion B^3, preferably curved, as shown, which serves to guide and support the slide B, as hereinafter set forth.

C indicates a hand-lever pivoted to the slide B and conveniently to the member b^4 thereof by means of a pivot-pin *c*. On the same side of the lever C and directly over the slide B there is pivoted to said lever a dog D, by means of a pivot-pin *d*. The dog D has a forward-extending arm or portion D′, terminating in a thumb-piece *d′*, by means of which this end of the dog may be depressed to turn the dog upon its pivot *d* and raise the rear end thereof.

D^2 indicates the rearwardly-extending portion or arm of the dog D, which terminates in a slide D^3, composed of upper and lower parallel portions d^2 and lateral vertical portions d^3, the whole embracing the bar A on all sides. D^4 is a downwardly-projecting tooth on said slide adapted to fit and engage the notches A′ of the bar A.

The dog D is provided on its upper portion with a hook D^5, which serves to connect to the dog a wire-gripping link E, which is provided at its forward end with a hook E′ to engage the said hook D^5. At its other end the link E is provided with wire-gripping devices consisting, preferably, of a cam-lever E^2, which co-operates with a lateral flange *e* on the side of the link.

The stretcher is operated in the following manner: The bar A is connected to the post or other object toward which the wire is to be stretched by the chain A^2 or other means provided for the purpose. The wire F is then gripped between the cam-lever E^2 and flange *e* on the link E, either before or after the said link has been connected with the dog D. The parts being in the position shown in Fig. 1, the lever C is moved over into the position shown in Fig. 3 by a force acting upon it in the direction of the arrow *x* in said figure. During this movement the slide D^3 and dog D remain stationary, owing to the engagement of the tooth D^4 with one of the notches A′ of the bar A. The lever C therefore turns on the pivot *d* as a fixed pivot, and consequently its lower end with a pivot *c* moves forward and upward. This forward motion

is imparted to the slide B, which moves forward sufficiently to cause its tooth B^2 to engage with the notch A′ next forward of the one it has just left. During the first part of this forward movement of the slide B it moves upward with the pivot *c*, as indicated by the arrow *y* in Fig. 3, until the rib B′ comes into contact with the under side of the bar A, when the force applied to the lever will, owing to the relative position of the pivot *c* and rib B′, tend to turn the slide upon the said rib as a fulcrum, the rear end tending to move upward or away from the bar, while the front end carrying the tooth B^2 moves downward or toward the bar, the said tooth being held in contact with the edge of the bar by the force applied to the lever C. The slide then moves forward with the tooth B^2 forced against the notched edge of the bar until said tooth comes opposite the next notch A′, when the force referred to will positively cause it to enter and become fully engaged with said notch. The depression B^3 serves to insure the engagement of the tooth B^2 with the notches A′ when the stretcher is used in a vertical position, and there is little or no strain from the wire F to overcome, in which case the weight of the lever C and its connected parts will hold the slide B down on the bar A and the rib B′ will be inoperative. In this position of the parts the slide B travels on the bar A while resting on the same at its ends through the tooth B^2 and depressed portion B^3. When the said tooth comes opposite one of the notches A′, the slide turns on the depressed portion B^3 as a pivot as the tooth B^2 engages the notch, such engagement being assumed by this construction, which renders it impossible for any slight irregularity of the bar A to prevent the full engagement of the tooth with the notch, as such irregularity might do if the whole or a large portion of the under side of the upper member *b* of the slide B came into contact with the edge of the bar, as would be the case were the depressed portion B^3 omitted. The slide B having been thus advanced a notch, the lever C is then moved forward into the position shown in Fig. 1, turning upon the pivot *c* as a fixed pivot, the pivot *d* moving forward and carrying forward with it the dog D and slide D^3, this forward movement continuing until the tooth D^4 engages with the next notch A′ forward of the one it has just left. It will be noted that the hook D^5 is above the pivot *d* of the dog D, or, in other words, farther from the bar A than said pivot, so that the strain from the resistance of the wire, being applied to the dog D through said hook D^5, tends to rotate the dog around the pivot *d* in the direction of the arrow *z* of Fig. 3, and thereby forces the tooth D^4 toward and holds it against the edge of the bar A, so that when said tooth comes opposite the notch A′ it positively engages the same. The tooth D^4 may be disengaged at any time independently of the movement of the lever by pressure on the thumb-piece *d*′. This forward movement of the dog carries forward with it the link E and wire F, which latter is thus stretched to an extent equal to the space between two of the notches A′ of the bar A. The series of operations just described is repeated until the wire is stretched to the desired point.

In the foregoing description I have used the terms "up" and "down" and similar terms to indicate the relative position of the parts; but I wish it to be understood that these terms are used merely for facility of description, as the device may be used in any position and not merely in the vertical position shown. Indeed, it is for the very purpose of rendering the device capable of such use in any position that I have devised the construction hereinbefore set forth for causing the teeth to positively engage the notches, instead of relying on gravity to effect such engagement.

I would also state that so far as that feature of my invention is concerned which relates to the slide B and the rib B′ thereof and its arrangement relatively to the pivot *c*, the same may be employed with other forms of the associated parts, as it is obvious, for instance, that some other form of dog than that shown and described may be employed in conjunction therewith without departing from the principle of my invention.

What I claim is—

1. The combination, with a bar having a notched and a smooth edge, of a slide mounted thereon and provided with a tooth to engage the notched edge of the bar and a rib or fulcrum to bear on the smooth edge thereof, a lever pivoted to said slide, a dog pivoted to the lever, and a wire-holding device connected with the dog, the relative positions of the pivot between the lever and slide and the rib or fulcrum and of the pivot between the lever and dog and the point where the wire-holding device is connected with the dog being such that the teeth of the slide and dog are forced positively into engagement with the notches of the bar when the parts are strained, substantially as described.

2. The combination, with a notched bar provided with means for connecting it with a fixed object, of a slide mounted on and embracing the bar and provided with a tooth to engage the notches of the bar, a hand-lever pivoted to one side of the slide, a dog pivoted to the same side of the hand-lever and provided with a slide mounted on and embracing the bar and having a tooth to engage the notches thereof, and wire-gripping devices connected with said dog, substantially as described.

3. The combination, with a bar having a notched and a smooth edge, of a slide mounted thereon and embracing it on all sides, said slide being provided with a transverse rib forming a fulcrum to bear on the smooth edge of the bar, and a tooth to engage with and bear on the notched edge of the bar, a hand-lever pivoted to said slide, and a dog pivoted

to the hand-lever and adapted to engage the notches of the bar, substantially as described.

4. The combination, with a bar having a notched and a smooth edge, of a slide mounted thereon and embracing it on all sides, said slide being provided with a transverse rib forming a fulcrum to bear on the smooth edge of the bar and a tooth and a depressed portion to engage with and bear on the notched edge of the bar, a hand-lever pivoted to said slide, and a dog pivoted to the hand-lever and adapted to engage the notches of the bar, substantially as described.

5. The combination, with a notched bar, of a toothed slide mounted thereon, a hand-lever pivoted to the slide, and a dog pivoted to the hand-lever and having a forwardly-extending portion terminating in a thumb-piece, a rearwardly-extending portion provided with a slide to embrace the bar and a tooth to engage the notches thereof, and a hook to receive a wire-gripping link, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

GEORGE W. WARNER.

Witnesses:
B. F. BLACK,
THEO. D. HEWITT.