No. 702,648. Patented June 17, 1902.

E. M. HAND.

WIRE STRETCHER.

(Application filed Aug. 15, 1901.)

(No Model.)

Fig. 1.

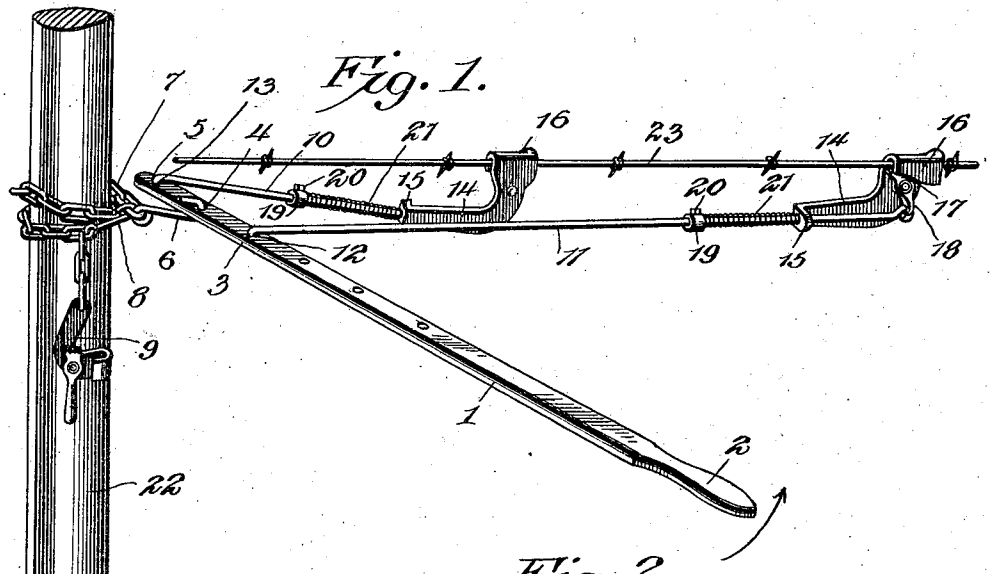


Fig. 2.

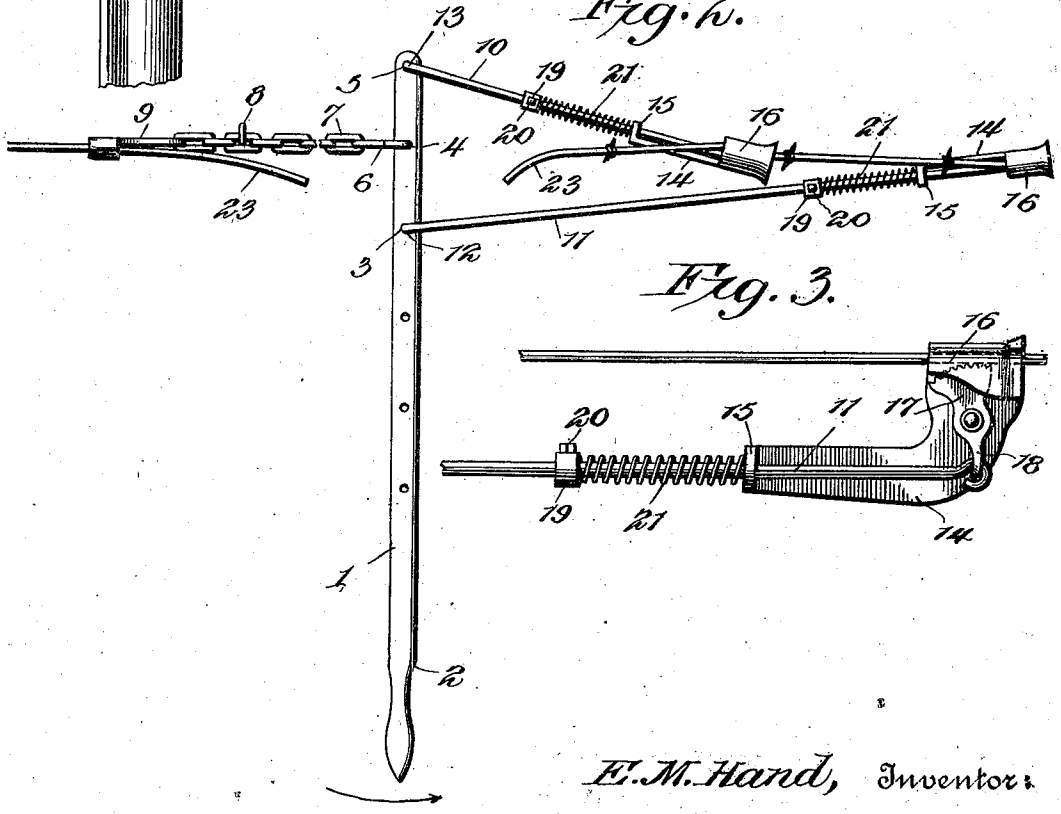


Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

EDWARD M. HAND, OF ORIENT, SOUTH DAKOTA.

WIRE-STRETCHER.

SPECIFICATION forming part of Letters Patent No. 702,648, dated June 17, 1902.

Application filed August 15, 1901. Serial No. 72,151. (No model.)

To all whom it may concern:

Be it known that I, EDWARD M. HAND, a citizen of the United States, residing at Orient, in the county of Faulk and State of South Dakota, have invented a new and useful Wire-Stretcher, of which the following is a specification.

This invention relates to wire-stretchers, and has for its object to provide an improved device of this character which is arranged to have a step-by-step stretching operation, so as to conveniently and effectually take up the slack in barbed or other wire fences.

A further object resides in providing for automatically releasing one of the clamps and forcing the same forward to obtain a new hold while the other clamp is being moved in the opposite direction to stretch the wire and also to insure a comparatively tight grip of the clamps when there is no tension upon the device, so as to prevent accidental displacement of the wire from the clamps.

A final object resides in providing for conveniently mounting the device upon a post or other support and also to arrange for using the device as a mid-wire take-up where there is no other support than the wire.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a perspective view of a wire-stretching implement constructed in accordance with the present invention. Fig. 2 is a plan view of the stretcher employed to draw together the opposite ends of the broken wire. Fig. 3 is an enlarged detail view of one of the wire-clamps.

Like characters of reference designate corresponding parts in all the figures of the drawings.

Referring to the accompanying drawings, 1 designates a lever formed by a metal bar, which has one end shaped into a suitable handle 2, and its opposite end is provided with three openings, designated, respectively, 3, 4, and 5. In the intermediate opening 4 there is engaged a terminal hook 6, which is carried by a chain 7, which latter is provided with an intermediate hook 8 and a terminal wire-clamp 9. Located wholly at one side of the lever are the rods 10 and 11, of which the rod 10 at the end of the lever is somewhat shorter than the other rod, and these rods are provided with the respective terminal hooks 12 and 13 for detachable connection with the openings in the lever and to provide pivotal connections therewith. These rods are provided with outer terminal clamps which are duplicates in construction, and therefore a description of one clamp is deemed sufficient. Each clamp comprises a relatively fixed body member 14, which has a rear laterally-projected perforate ear 15, through which the adjacent rod is slidably received. The opposite outer end of the clamp-body is provided with a bowed laterally-offset jaw 16, with the inner side of which coöperates a movable clamp member 17 in the form of a dog or cam pivotally mounted upon the side of the body and having a projection 18, located substantially diametrically opposite the active rounded edge of the dog and to which is pivotally connected the outer end of the adjacent rod, whereby the dog is controlled by the rod to open and close the clamp. As plainly illustrated in Fig. 1, it will be seen that the two clamps are reversely arranged, or, to be more correct, are arranged back to back or face to face. Upon each rod and in rear of the clamp there is provided an adjustable stop-shoulder 19, formed by a collar, which is slidable longitudinally upon the rod and is provided with a set-screw 20 for the purpose of fixedly holding the collar at any desired adjustment upon the rod. A helical spring 21 embraces the rod and has its ends bearing in opposite directions against the collar and the rear end or ear 15 of the clamp, thereby to yieldably hold the dog in clamped relation with respect to the jaw 16. By this arrangement of spring the clamp is normally closed, so as to insure a comparatively tight grip upon the stretcher, and thus accidental displacement of the wire is prevented.

In the operation of the device the chain is secured to a support—as, for instance, a post

22—and the two clamps are engaged with a wire 23, after which the lever is worked back and forth upon its fulcrum-support formed by the hook 6, thereby alternately moving the clamps in opposite directions to stretch the wire with a step-by-step movement. When the free end of the lever is moved in the direction of the arrow, the clamp connected to the short rod at the opposite end of the lever is moved to stretch the wire and the other clamp is moved in the opposite direction to slide the same along the wire and to obtain a new grip. It will here be noted that the movement of the lever is sufficient to overcome the resistance of the spring 21, and thereby open the clamp to permit of the latter being readily moved upon the wire, and when the lever is at rest the pressure of the spring causes the dog to firmly bind the wire between itself and the fixed jaw, so as to obviate displacement of the wire from the clamp.

It will here be noted that there is a slidable connection between the body of each clamp and the connecting-rod, whereby the dog or clamp member 17 is initially operated by the rod, so as to grip and release the wire prior to a bodily movement of the clamp. In other words, by reason of the independent initial movement of one of the clamp members the wire is gripped before there is any movement of the entire clamp to stretch the wire, and the clamp is released from the wire before the entire clamp is pushed forwardly to take a new grip.

While it is preferable to employ the spring 21, it will of course be understood that it may be omitted, as it is supplemental to the rod 11 for maintaining the clamp member in coöperative relation with the other clamp member.

Should it be desired to draw opposite wire sections toward each other, the terminal clamp 9 of the chain, which is substantially the same as the other clamps, is connected to one of the wire sections so as to form an anchorage for the stretcher, and then the other clamps are applied to the opposite wire section, and the stretching operation is accomplished in the manner hereinbefore described, whereby the two wires may be conveniently drawn toward each other for convenience in splicing or to secure both wires to the same post.

In order that barb-wire may not hang in the clamp portion 16, the outer or forward end thereof is flared or bell-shaped, as indicated in the drawings, so as to form an entrance-opening for the barbs and to obviate catching of the latter in the forward edge of the clamp, as will be clearly understood by reference to Fig. 2 of the drawings. It will here be noted that the overhanging portion 16 also forms a guard or guide to embrace the wire and prevent displacement of the clamp when it is being slid forward to obtain a new grip upon the wire.

From the foregoing description it is apparent that the present invention provides an exceedingly simple, inexpensive, and durable barbed or other wire stretcher which can be conveniently applied and operated to effectually stretch a wire without exposing the hand of the operator to injury by the barbed wire being stretched, and when not in use the several parts of the device may be conveniently detached for convenience in storage and transportation.

What I claim is—

1. A wire-stretcher, comprising a lever having an intermediate fulcrum, long and short connecting-arms pivotally connected to the lever at opposite sides of the fulcrum and projected laterally at one side thereof, terminal clamps slidably carried by the outer ends of the respective connecting-rods, each clamp having a movable member which is connected to the outer end of the adjacent rod, and springs to normally hold the movable members in coöperative relation with the other members of the respective clamps.

2. A wire-stretcher having a connecting-rod, a wire-clamp comprising a body having a rear laterally-projected perforate ear slidably receiving the rod, and a forward laterally-projected jaw, a dog pivoted intermediate of its ends upon the body and in operative relation to the jaw, the rod being pivotally connected to the opposite end of the dog, a shoulder upon the rod and in rear of the clamp-body, and a helical spring embracing the rod and bearing in opposite directions against the shoulder and the rear end of the clamp-body.

3. A wire-stretcher, comprising a lever having an intermediate fulcrum, long and short connecting-rods pivotally connected to the lever at opposite sides of the fulcrum thereof and projected laterally at one side of the lever, terminal clamps slidably carried by the outer ends of the respective connecting-rods, each clamp having a movable member which is connected to the outer end of the adjacent rod, and springs carried by the rods and bearing in opposite directions against the latter and the rear ends of the respective clamps.

4. A wire-stretcher, comprising a wire-clamp having a laterally-projected jaw, which is provided at its outer end with an overhanging portion to form a wire-embracing guide or guard, the forward end of the guide or guard being outwardly flared to form an enlarged entrance-opening, a dog pivoted intermediate of its ends upon the jaw with its inner end working between the jaw and the overhanging portion thereof, and in coöperative relation with the back of said overhanging portion, and a connecting-rod slidably carrying the clamp and connected to the outer end of the dog.

5. A wire-stretcher comprising a lever, a chain or the like pivotally connected to an intermediate portion of the lever and forming a fulcrum-support therefor, a terminal

wire-clamp carried by the free end of the chain, a comparatively short rod pivotally connected to the lever at one side of the fulcrum, a longer rod pivotally connected to the lever at the opposite side of the fulcrum thereof, said rods being projected at the same side of the lever, wire-clamps carried by the outer free ends of the rods, each clamp comprising a relatively fixed body slidably receiving the adjacent rod and provided with a laterally-projected jaw, and an intermediately-pivoted dog in coöperative relation to the jaw, the outer end of the rod being pivotally connected to the opposite end of the dog, stop-shoulders carried by the rods, and helical springs embracing the rods and bearing in opposite directions against the shoulders thereof and the rear ends of the respective clamps.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

EDWARD M. HAND.

Witnesses:
W. H. BRYANT,
AUG. ZELLMER.