(No Model.)

W. L. GREEN.

WIRE STRETCHER.

No. 553,236. Patented Jan. 21, 1896.

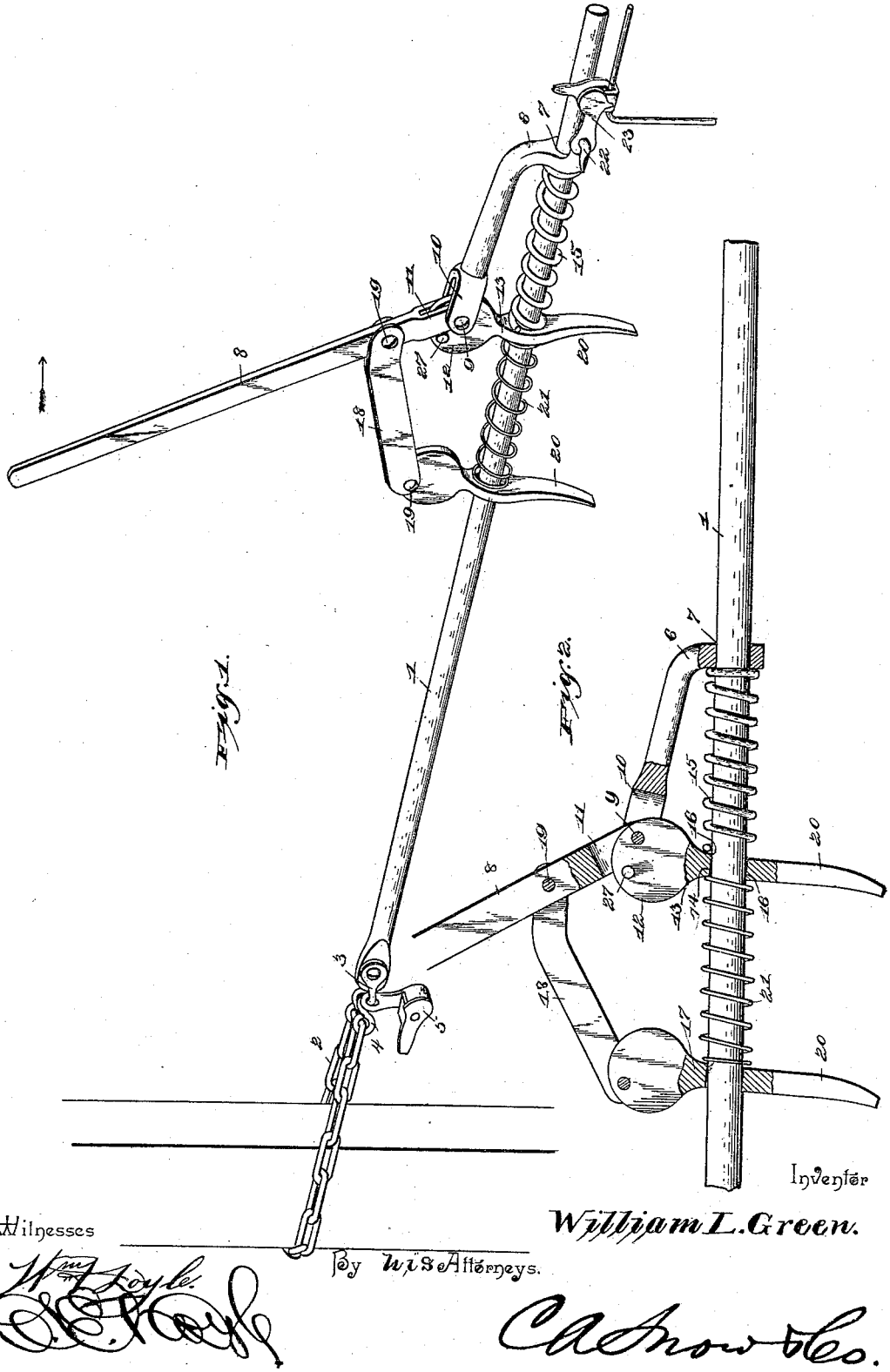

Fig. 1.

Fig. 2.

Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM L. GREEN, OF MONROE CITY, MISSOURI.

WIRE-STRETCHER.

SPECIFICATION forming part of Letters Patent No. 553,236, dated January 21, 1896.

Application filed January 2, 1895. Serial No. 533,626. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM L. GREEN, a citizen of the United States, residing at Monroe City, in the county of Monroe and State of Missouri, have invented a new and useful Wire-Stretcher, of which the following is a specification.

My invention relates to wire-stretchers, and has for its object to provide a simple, efficient and durable device adapted to be used in stretching fence-wire; to provide means whereby the stretcher may be adjusted to avoid twisting the wire during the stretching operation, and to provide means whereby the clutches may be disengaged with facility to release the wire.

Further objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of a stretcher embodying my invention, arranged in the operative position in engagement with a fence-post. Fig. 2 is a side view, partly broken away, of the clutch mechanism.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

1 represents a rod which is round in section and is provided at one end with means for attachment to a fence-post or a fence-wire. For attachment to a fence-post I employ a chain 2 connected permanently at one end to the rod by means of a swinging eye 3 and provided at the other end with a hook 4 to engage said eye after passing around a post. Also connected to this swinging eye is a wire-clamp 5 adapted to be used when it is desired to stretch a wire at an intermediate point in opposite directions. Mounted upon this rod is a guide 6 having an eye 7 which is fitted to slide on the rod, and fulcrumed in the bifurcated end of this guide is a hand-lever 8. A bolt 9 forms a connection between the bifurcation 10 of the guide and the slotted end 11 of the hand-lever, and arranged in this slot of the hand-lever and connected to the lever by means of the said bolt is a flat ear 12, forming a part of the rear clutch 13. This clutch is provided with an opening 14 which fits loosely upon the rod, and a strong spring 15 is coiled upon the rod between the clutch and the eye of the guide, whereby the edges or detents 16 formed by said opening in the clutch are normally held in engagement with the surface of the rod to prevent movement of the clutch toward the guide. A similar front clutch 17 is arranged in advance of the rear clutch, and is connected to the hand-lever at a point above its fulcrum by means of a double link 18 consisting of parallel sides or cheeks which are connected to the lever and the clutch by means of pivot-bolts 19. Both of the clutches are provided with hand-holds 20 and a light spring 21 is coiled upon the rod between the two clutches to hold the forward clutch in its operative position. Integral with the eye of the guide is a hook 22, to which is detachably connected a wire-clamp 23 for engagement with a wire to be stretched.

This being the construction of the improved wire-stretcher, the operation thereof is as follows: The front end of the rod being attached to a post, as shown in Fig. 1, and the wire-clamp which is carried by the guide being engaged with the wire to be stretched, the hand-lever is oscillated to cause a step-by-step movement of the clutches. When the hand-lever is swung in the direction indicated by the arrow in Fig. 1, the link by which the lever is connected with the forward clutch, and which is pivoted to the latter near its front side, is subjected to tensile strain, thereby, in conjunction with the spring 21, causing the front clutch to bite the rod. This movement of the hand-lever loosens the rear clutch and causes it with the guide and wire-clamp to advance upon the rod. When the hand-lever is swung in the direction opposite to that indicated by the arrow in Fig. 1, the motion imparted to the front cluch through the intermediate link trips said clutch and causes it to slide freely upon the rod to assume a new position, while the strain upon the rear clutch caused by the tension of the wire and the expansion of the spring which is interposed between the guide and said rear clutch causes the latter to engage the rod and prevent a retrograde movement. When it is desired to release the wire, the clutches may be disengaged simultaneously by grasping the hand-holds with which they are provided, but in order to still further simplify the operation of disengaging the clutches I provide the

rear clutch with stop-pins 27, which are arranged in the path of the hand-lever, whereby when the hand-lever is swung to engage the pins the rear clutch is swung in opposition to its actuating-spring, and the same operation trips the front clutch, which, as above described, is free to move upon the rod when the hand-lever is swung in the direction opposite to that indicated by the arrow.

The above stretcher is simple in construction and direct in operation, and may be used with facility and rapidity to apply the desired tension to a fence-wire, and after the wire has been sufficiently stretched the device, without adjusting any locking means, holds it at that tension until it can be secured.

The use of a round rod provides for the swinging of the hand-lever and clutches around the same to avoid twisting the wire during the stretching operation, and the construction of the device is such as to enable it to be used with facility in any position.

The handle or operating lever is arranged in the plane of the guide-rod, and, therefore, entirely upon one side of the latter, and the clutches, which are similar in construction, extend in the same direction from the guide-rod, and are connected with the lever upon the same side thereof, whereby the transverse measurement or width of the apparatus is reduced to a minimum.

Furthermore, the construction of the apparatus is simplified by the fact that the springs for the clutches bear at their contiguous ends against opposite sides of the rear clutch, the rear spring being of greater tension or greater strength than the front spring in order that it may actuate the rear clutch without being affected by the spring of the front clutch. Ordinarily, it is necessary to provide fixed or unyielding means for the pressure of one end of each spring; but by the construction above described these additional means are avoided.

When the lever is thrown forward into engagement with the stop-pin to disengage the rear clutch from the rod the stretcher may be moved freely upon the rod for the reason that the operator with the other hand may repress, and thereby disengage, the front clutch. It is inconvenient to disengage both front and rear clutches by grasping them in the manner described for the front clutch, but by adapting the rear clutch to be disengaged by the operation of the lever the disengagement of the apparatus is facilitated.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, I claim—

1. In a wire-stretcher, the combination of a rod provided with means for attachment to a fence-post or wire, a guide mounted to slide upon the rod and adapted to carry a wire clamp, a lever fulcrumed to said guide, a rear clutch mounted to slide upon the rod and pivotally connected to the lever, a front clutch mounted to slide upon the rod and connected to the hand-lever by a link, and springs interposed between the clutches and between the rear clutch and the guide and bearing at their contiguous ends against opposite sides of the rear clutch, substantially as specified.

2. In a wire-stretcher, the combination of a rod provided with means for attachment to a fence-post or wire, a guide mounted to slide upon the rod and adapted to carry a wire clamp, a lever fulcrumed to said guide, a rear clutch mounted to slide upon the rod and pivotally connected to the lever, a front clutch mounted to slide upon the rod and connected to the hand-lever by a link, and springs interposed between the clutches and between the rear clutch and the guide, the latter spring being stronger than the former, substantially as specified.

3. In a wire-stretcher, the combination with a rod and means for attaching the same to a post or wire, of a guide mounted to slide upon said rod, a hand-lever fulcrumed upon the front end of the guide, a rear clutch fulcrumed concentric with the lever and fitted loosely upon the rod, a stop-pin on the said clutch in the path of the lever, a front clutch loosely fitted upon the rod, a link connecting the front clutch with the hand-lever, springs for holding the clutches in operative positions, and means for attaching a wire clamp to the guide, substantially as specified.

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

WILLIAM L. GREEN.

Witnesses:

WILLIAM T. RAGLAND,

EDMUND P. MELSON.