

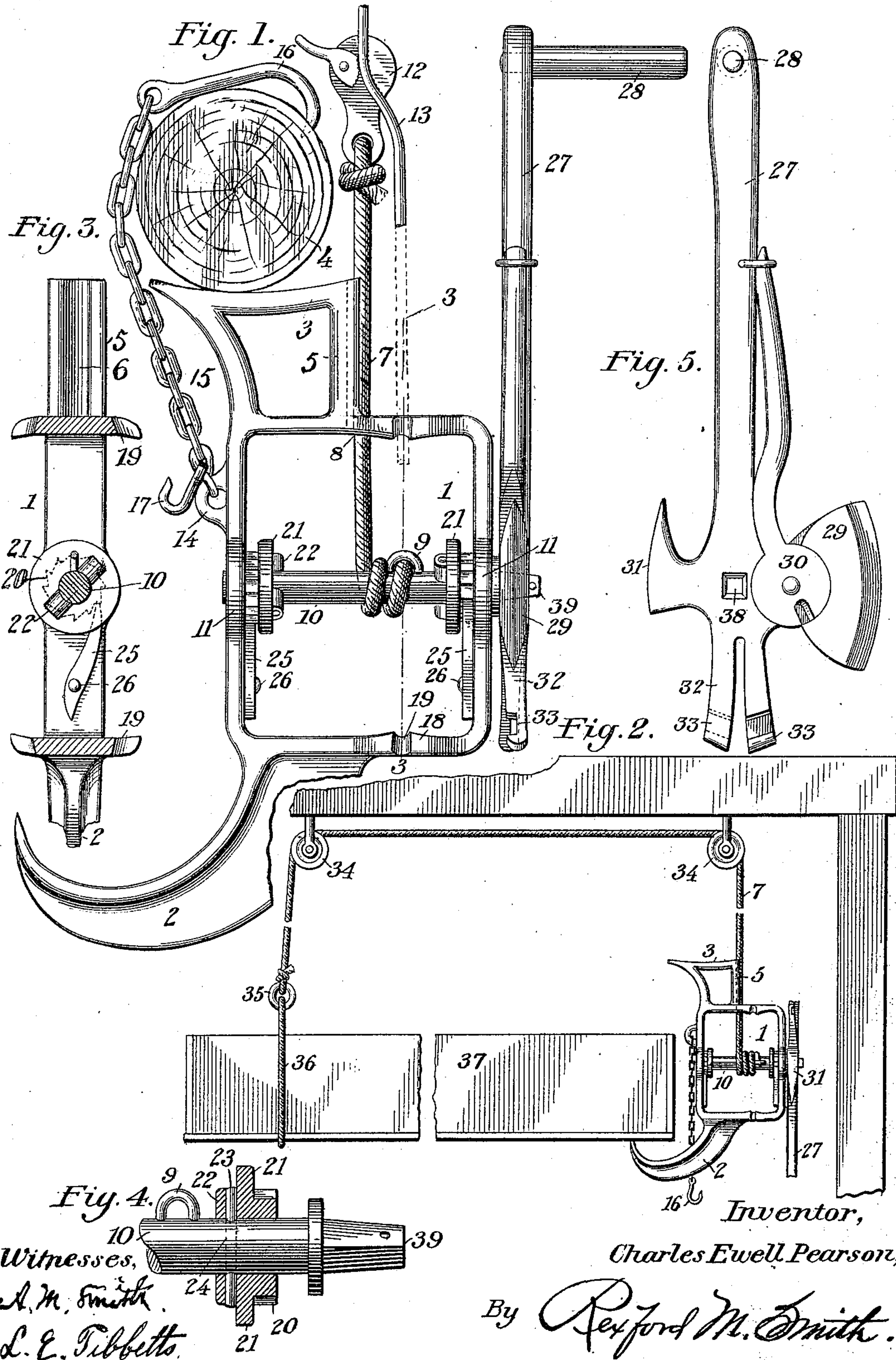
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C. E. PEARSON.
WIRE STRETCHER.

(Application filed Jan. 15, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

CHARLES EWELL PEARSON, OF MEXIA, TEXAS.

WIRE-STRETCHER.

SPECIFICATION forming part of Letters Patent No. 684,857, dated October 22, 1901.

Application filed January 15, 1901. Serial No. 43,400. (No model.)

To all whom it may concern:

Be it known that I, CHARLES EWELL PEARSON, a citizen of the United States, residing at Mexia, in the county of Limestone and State of Texas, have invented a certain new and useful Wire-Stretcher, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to wire-stretchers; and the object in view is to provide a simple and convenient manually-operated machine especially designed for constructing and repairing wire fences, the machine being also adapted for the purpose of hoisting wagon-bodies and various articles and holding the same in an elevated position. The machine is also useful for the purpose of taking down wire fences whenever necessary and is capable of being easily managed by a single operator.

The present invention is in the nature of an improvement upon the construction disclosed in Letters Patent No. 638,051, granted November 28, 1899, to Benjamin C. Hancock.

One aim of the present invention is to provide a novel construction of ratchet-wheel by means of which the stretching-rope and other parts of the machine are prevented from interfering with the pawls and ratchets which serve to prevent the windlass-shaft from turning after the machine has been operated for stretching the wires.

Another object is to render the machine more practicable for the purpose of operating in different directions and adapting the same to right and left hand persons, the machine being reversible, so that it may be operated with either side upward.

Another feature of novelty resides in the particular manner of lengthening and shortening the cable by means of which the machine is secured to one of the fence-posts and held during the operation of stretching the wires.

These and other objects of the invention will appear more fully in the course of the ensuing description.

The invention consists in a wire-stretcher embodying certain novel features and details of construction and arrangement of parts, as

hereinafter fully described, illustrated in the drawings, and incorporated in the claim.

In the accompanying drawings, Figure 1 is a plan view of a wire-stretcher constructed in accordance with the present invention and shown in operative relation to a fence-post and one of the wires, illustrating the manner of stretching or drawing the wire. Fig. 2 is a similar view of the machine, showing the manner of elevating or hoisting wagon-bodies, &c. Fig. 3 is a longitudinal section through the windlass-frame on the line 3 3 of Fig. 1. Fig. 4 is an enlarged detail section showing the construction of the ratchet-wheels, &c., and the manner of securing the same to the windlass-shaft. Fig. 5 is a plan view of the operating-crank.

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

Referring to the drawings, it will be seen that the windlass-frame 1 is of open rectangular form, being preferably cast or otherwise formed in a single piece. Extending longitudinally and laterally from one end or corner of the frame is a horn or hook 2, having a pointed extremity adapted to engage with a post or with a wagon-body or other article to be hoisted, as shown in Fig. 2, said hook also forming a handle adapted to be grasped by the operator for holding and steadying the machine while it is being operated for stretching the wires. At the opposite end of the windlass-frame is arranged a bolster 3. Said bolster projects longitudinally and is also offset laterally, so as to engage a fence-post 4 and permit the longitudinal member 5 of the bolster to lie to one side of the post, as illustrated in Fig. 1. The outer surface of the portion 5 of the bolster is longitudinally concaved or recessed, as shown at 6, to receive the stretching-cable 7, which passes through an opening 8 in the adjacent end of the windlass-frame and has its end secured to an eye 9 on the windlass-shaft 10, which is journaled in bearings 11, formed integrally with the side bars of the windlass-frame. The stretching-cable 7 has connected to its opposite end a rope-grip 12 of ordinary construction, adapted to receive and engage one of the fence-wires 13,

in the manner illustrated in Fig. 1, for the purpose of drawing said wire across the adjacent side of the post preparatory to securing the wire by means of staples in the ordinary manner.

In order to anchor or secure the machine to a post, the frame is provided with a laterally-extending eye 14, to which is connected one end of an anchoring-cable 15, the opposite end of which is provided with a grappling-hook 16, having a pointed bill or extremity adapted to enter and positively engage the surface of the post, as illustrated in Fig. 1. In order to lengthen or shorten the anchoring-cable 15, so as to accommodate the machine to posts of different diameters, I provide a take-up hook 17, which is connected to the eye 14 directly or by means of the first link of the anchoring cable or chain or, in other words, the link which is directly associated with the eye 14. The hook 17 may be engaged with any one of the links of the anchoring chain or cable, and in this way the length of the chain may be regulated to suit the size of the post with which the grappling-hook is to be engaged.

The end bars of the windlass-frame are each provided with integral lateral extensions 18, which are notched, as shown at 19, to receive the fence-wires and enable the barbs thereof to be engaged behind or within the end bars of the windlass-frame. By reference to Fig. 3 it will be seen that the claws or wire-engaging extensions 18 project from opposite sides of both end bars, so that the machine may be used either side up, and any particular fence-wire may be engaged with the claws at one side or the other of the machine, thus adapting the machine to be used by either right or left hand operators.

The windlass-shaft 10 is equipped with a pair of ratchet-wheels 20, one of such wheels being arranged at each end of the windlass-shaft and just inside of the side bars of the windlass-frame, as shown in Fig. 1. Each of the ratchet-wheels has formed integrally therewith a guard-flange 21, the diameter of which is materially greater than the ratchet-wheel, and said flange is provided upon the side opposite the ratchet-wheel with a diametrical rib 22, having a longitudinal opening in which is received a removable pin or key 23, which is adapted to pass through an opening 24, extending transversely through the windlass-shaft 10. By the construction described the teeth of the ratchet-wheel 20 are housed between the guard-flange 21 and the disk-shaped bearing 11 of the frame, thus preventing the stretching-rope 7 or the anchoring-cable 15 when not in use from becoming caught by and engaged with the ratchet-teeth, which would render said ratchet-wheels ineffective. Associated with each of the ratchet-wheels 20 is a pawl or detent 25, pivotally mounted, as at 26, upon the inside of one of the side bars of the windlass-frame.

The teeth of one ratchet-wheel are disposed reversely to those of the other ratchet-wheel and the pawls are correspondingly arranged so that the windlass-shaft may be held from rotating, irrespective of the direction in which the stretching-cable is wound thereon.

The operating-handle 27 may be of any suitable construction; but as it is necessary to equip the machine with wire-twisters, wire-cutters, staple-pullers, and post-trimmers I have illustrated the operating-crank in the form of a combination-tool, in which the crank constitutes the handle of the implement and is provided at one end with a detachable crank-handle 28. The tool also comprises a hatchet-blade 29 for trimming the bark from the posts, a wire-cutter 30, a staple-puller 31, a tying or twisting fork 32, and claws 33 for engaging the overlapping ends of a broken wire for the purpose of twisting said overlapping ends together and forming a strong tie or joint. The combination-tool constituting the operating-crank and illustrated separately in Fig. 5 will, however, form the subject-matter of another application and will not be described in detail herein.

In utilizing the machine for hoisting purposes the stretching-cable 7 is led over one or more overhead pulleys 34, hung from a ceiling or other suitable support, and said cable is provided with a terminal ring 35, receiving a loop 36, which may consist of a rope, cable, or chain. The loop 36 is passed around one end of the object to be elevated, as shown in Fig. 2, while the horn or hook 2 of the frame is engaged under the opposite end of the object. By means of the operating-crank 27 the cable 7 is wound upon the windlass-shaft or unwound therefrom, and in this manner the wagon or other object (indicated at 37) may be raised and lowered at will.

As the operation of machines of this class is well understood, it will not be necessary to enter into a description thereof. It will be noted that by means of the construction described the stretching-cable as it is wound upon or unwound from the windlass-shaft is prevented from coming in contact with the teeth of the ratchet-wheels 20 or the engaging extremities of the pawls or detents 25, thus avoiding the liability of the machine to slip by the accidental release of the windlass-shaft. The guard-flanges 21, together with the enlarged bearings 11 of the machine-frame, prevent the stretching-cable 7, as well as the anchoring-cable 15, from interfering with the teeth of the ratchet-wheels, thus curing a defect which has hitherto been present in all machines of the class referred to. It will further be seen that by the arrangement of reversely-extending claws 18 the machine may be used either side up and by right and left hand persons with equal facility; also, that the anchoring-cable may be lengthened and shortened, as occasion may require. The operating-crank 27 is provided

with a central square hole 38, which receives the correspondingly squared and tapered extremity 39 of the windlass-shaft, thus adapting the crank to be detached from the shaft
5 when required for separate use. By extracting the keys or pins 23 the ratchet-wheels, &c., are free to slide on the windlass-shaft and admit of the removal of the windlass-shaft when it is necessary to straighten or
10 otherwise repair the same.

It will be apparent that the form and construction of the machine may be varied in many particulars without departing from the principle of the present invention.

15 Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

A wire-stretcher comprising a windlass-frame, a windlass-shaft journaled therein, a

stretching-cable connected to said shaft, enlarged disk-shaped bearings for said shaft
20 formed integrally with the frame, ratchet-wheels mounted on the shaft and lying contiguous to the inner faces of said bearings, said ratchet-wheels being provided with
25 guard-flanges of larger diameter than the ratchet-wheels themselves, diametrical ribs on said flanges, detachable pins or keys passing longitudinally through said ribs and through openings provided therefor in the
30 shaft and pawls or detents engaging said ratchet-wheels, substantially as described.

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

CHARLES EWELL PEARSON.

Witnesses:

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R. K. CAPELL.