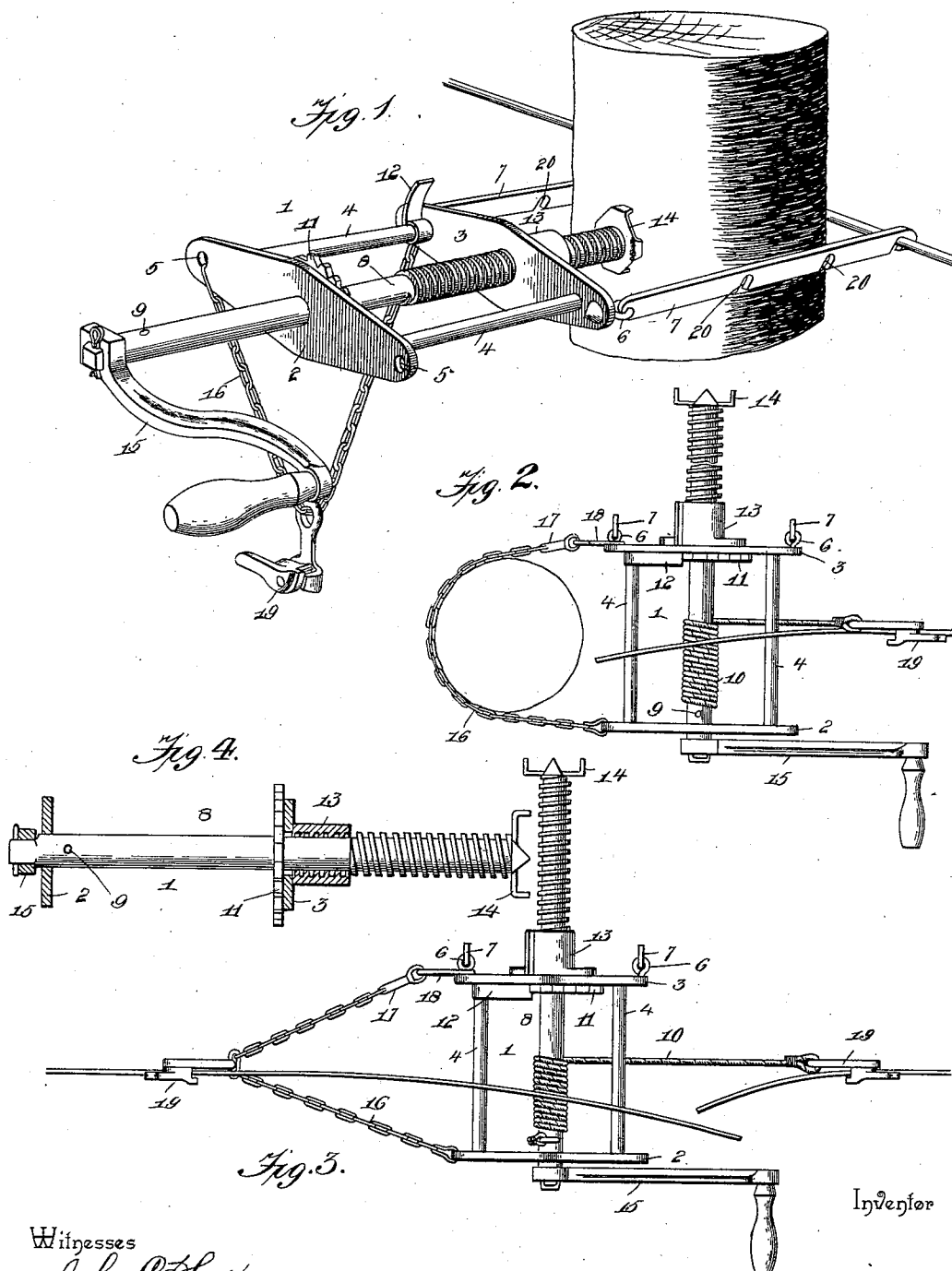


(No Model.)

W. PICKFORD.  
WIRE STRETCHER AND TIGHTENER.

No. 563,409.

Patented July 7, 1896.



Witnesses

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# UNITED STATES PATENT OFFICE.

WILLIAM PICKFORD, OF ELDORADO, KANSAS.

## WIRE STRETCHER AND TIGHTENER.

SPECIFICATION forming part of Letters Patent No. 563,409, dated July 7, 1896.

Application filed September 19, 1895. Serial No. 563,031. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM PICKFORD, a citizen of the United States, residing at Eldorado, in the county of Butler and State of Kansas, have invented a new and useful Wire Stretcher and Tightener, of which the following is a specification.

This invention relates to an improvement in wire tighteners and stretchers; and the main object in view is to provide, in one article, means for tightening the line-wires of wire fences when, from any reason, they become stretched or loosened, for stretching longitudinal strands of a wire fence during the construction thereof, and for splicing the parted ends of the fence-strands should they become broken.

The device, while particularly adapted to the construction and repair of wire fences, may also be utilized for the purpose of lifting heavy and unwieldy objects.

With the above objects in view the invention consists in an improved wire stretching and tightening device, embodying certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and finally pointed out in the claim.

In the accompanying drawings, Figure 1 is a perspective view of the improved device, the same being shown in use as a wire-tightener. Fig. 2 is a plan view showing the device employed as a wire-stretcher. Fig. 3 is a similar view illustrating the use of the device as a wire-splicer. Fig. 4 is a sectional view through the device, taken in line with the screw-shaft.

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

Referring to the accompanying drawings, 1 designates a metal frame of substantially rectangular shape, the same comprising substantially diamond-shaped end plates 2 and 3, which are connected together adjacent to their extremities by tie-rods 4, which also serve to space said end plates the proper distance apart. The forward plate or bar 2 is provided at each end with a perforation 5, while the inner plate or bar 3 has, at each of its ends, an inwardly-disposed eye 6, forming

the means whereby two wire-engaging arms 7 are pivotally connected with the frame 1. The end plates or bars 2 and 3 are also provided, at or near their centers, with alining perforations, through which passes a screw-shaft 8.

That portion of the shaft 8 which lies normally within the frame 1 is left smooth and provided, at a suitable point, with a transverse hole 9, adapted to receive the pin or fastener of a rope or cable 10, which is wound upon said shaft when the device is used for the purpose of stretching or splicing the longitudinal strands of wire fences. Adjacent to the inner bar or plate 3 the shaft 8 has rigidly secured thereto a ratchet-disk 11, which, in conjunction with a pawl 12, loosely mounted upon one of the tie-rods 4, serves to prevent retrograde movement of the shaft 8 when in the act of stretching or splicing fence-wires.

That portion of the shaft which lies normally outside of the frame 1 is screw-threaded, as shown, and operates within an internally-threaded nut or sleeve 13, which is shown secured to the inner frame bar or plate 3, but which, if preferred, may be formed integrally therewith. The threads upon the shaft, when in its normal position, extend only from the edge of the nut or sleeve 13 to the inner extremity of said shaft, so that within said nut or sleeve the shaft is left smooth, so that it may be rotated therein without being fed or moved longitudinally. When, however, the rope or cable on the smooth portion of the shaft, within the frame 1, has been removed, and the pin or fastener of said cable withdrawn from the transverse hole in the shaft above referred to, it is possible to engage the threaded portion of the shaft within the threaded nut or sleeve 13, whereupon the revolution of said shaft will feed the frame 1 longitudinally thereof. The inner end of the screw-shaft has a pointed or barbed head 14 swiveled thereon, which is adapted to rest against a fence-post while the device is being used for the purpose of stretching the longitudinal fence-wires in a manner that will be hereinafter explained, and the opposite or outer extremity of the screw-shaft is squared and has applied thereto a crank-handle 15, by means of which the shaft may be revolved.

16 designates a draft-chain which is secured at one extremity through one of the perforations in the end of the bar or plate 2, and at its opposite extremity is received in a snap-hook 17, the latter being attached to the frame 1 by means of a link 18, which extends around the shank of one of the eyes 6, secured to the inner bar or plate 3 of the frame.

19 designates a pair of cam-clutches, one of which is attached to the chain above described and the other to the outer extremity of the rope or cable 10, said clutches being adapted to grip the fence-wires at the desired point and retain their hold upon such wires during the operation of tightening or stretching the same.

The operation of the device is as follows: When used for tightening the longitudinal strands of a wire fence, the swiveled head on the inner end of the screw-shaft is brought to bear against the fence-post, and the arms 7 are engaged with the particular line-wire to be tightened by means of a series of inclined notches or slots 20, formed in the lower edges of said arms and within which the said wire will rest and be retained. By now rotating the screw-shaft with the aid of the crank-handle referred to the frame 1 may be caused to travel outward on said shaft, thereby drawing upon the wire-engaging arms and causing the latter to crimp the longitudinal fence-wire or bend the same sufficiently around the fence-post to take up the slack in said wire between said post and the adjacent fence-post on either side thereof. When the wire has been sufficiently tightened, such condition may be maintained by means of a suitable stay-wire extending around the adjacent side of the post and having its terminals twisted around the line-wire in proximity to the points where the arms 7 engage said wire, or by means of staples or other fastening devices.

When in the construction of wire fences it is desired to stretch a line-wire preparatory to securing the same to one of the fence-posts, the chain 16 is passed around the desired post and the rope or cable 10 clutched to the line-wire, as shown in Fig. 2. By now rotating the shaft the cable will be wound thereon and the line-wire tightened or stretched to the required degree, whereupon it may be secured

to the post by means of a staple or in any usual manner.

When employed as a splicer, the clutch on the chain 16 is engaged with one of the parted ends of the line-wire, while the clutch on the rope or cable 10 is engaged with the other parted end of the wire. Upon the rotation of the shaft the parted ends of the wire are now drawn toward and past each other, whereupon the overlapping ends may be knotted or twisted together in any approved manner.

In addition to the several uses above described it is feasible also to employ the device for the purpose of lifting heavy or unwieldy objects, in which event the chain 16 may be engaged with any suitable supporting frame or tripod arranged over the object to be lifted, and the rope or cable 10 passed around or conveniently engaged in any manner with said object, when by rotating the shaft of the device the said cord or cable will be wound upon the same, thereby lifting the object. Various other uses may be found for the device hereinabove described, and it is therefore not limited to those particularly herein set forth.

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

Having thus described the invention, what is claimed as new is—

The herein-described device comprising an open substantially rectangular frame, a screw-shaft bearing in the spaced bars of said frame, a nut rigidly connected to one of said frame-bars, a barbed head having a swiveled connection with the extremity of the screw-shaft and adapted to positively engage a fence-post, a crank-handle for rotating said shaft, and wire-engaging arms connected to said frame and adapted to be reciprocated with said frame when the latter is actuated by the rotation of the screw-shaft, substantially as described.

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

WILLIAM PICKFORD.

Witnesses:

T. D. MCINTYRE,  
S. H. BRANDON.