(No Model.) 2 Sheets—Sheet 1.

J. H. McMAHON & D. D. MANGUM.

WIRE STRETCHER.

No. 381,569. Patented Apr. 24, 1888.

Fig. 1.

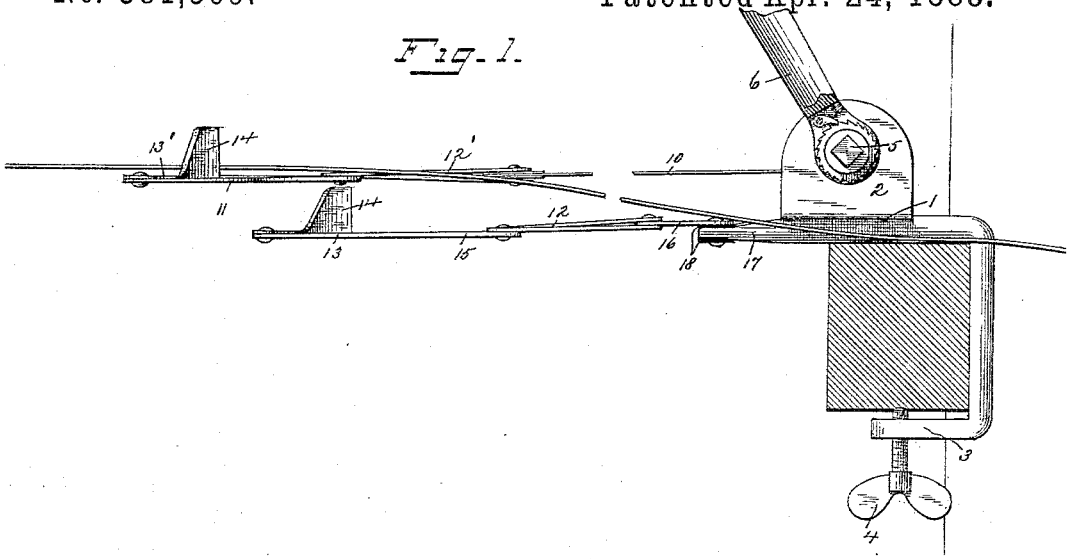
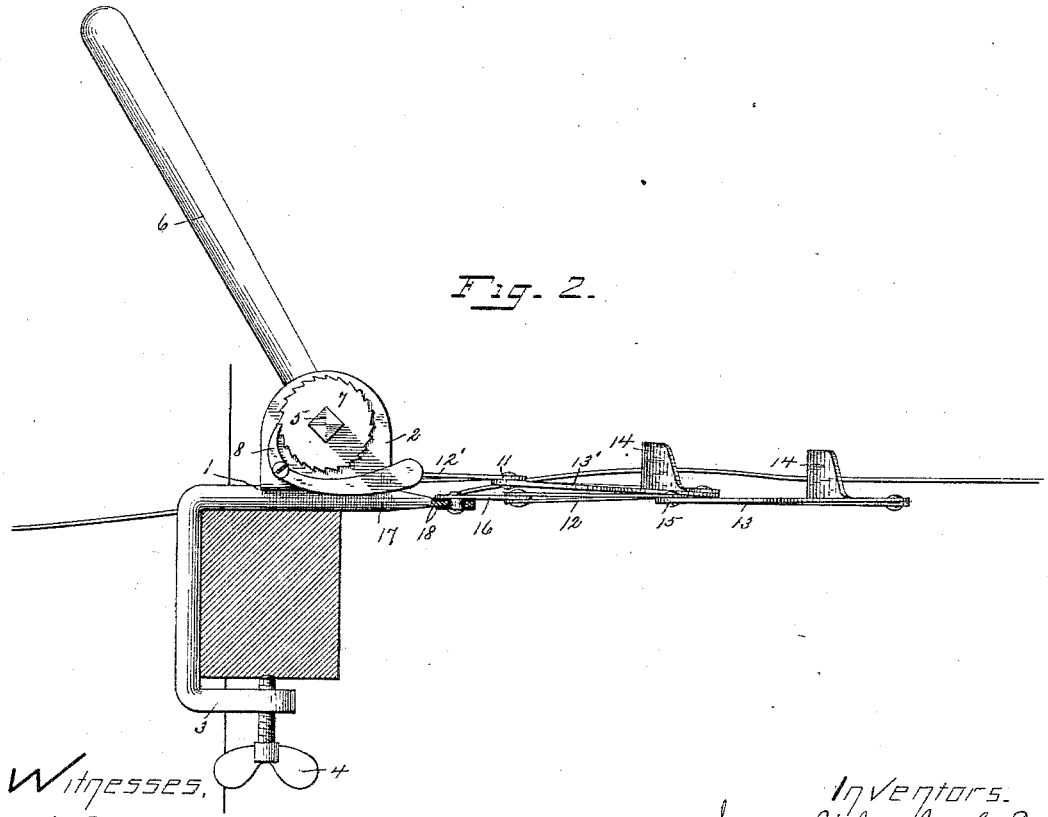


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

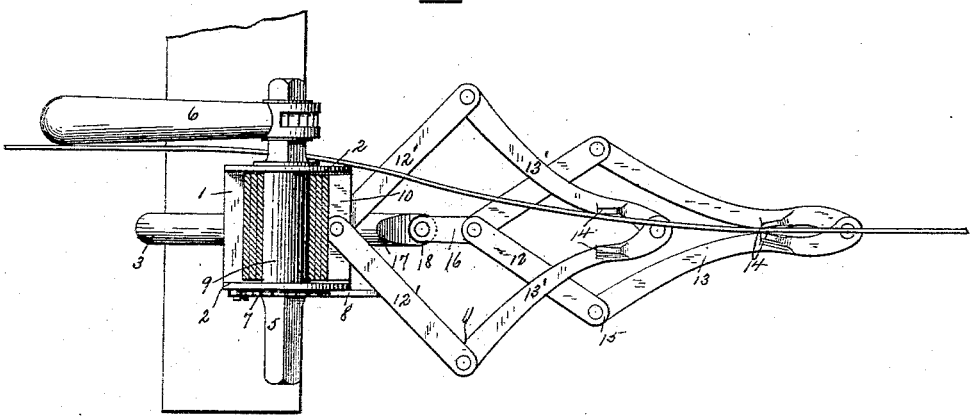
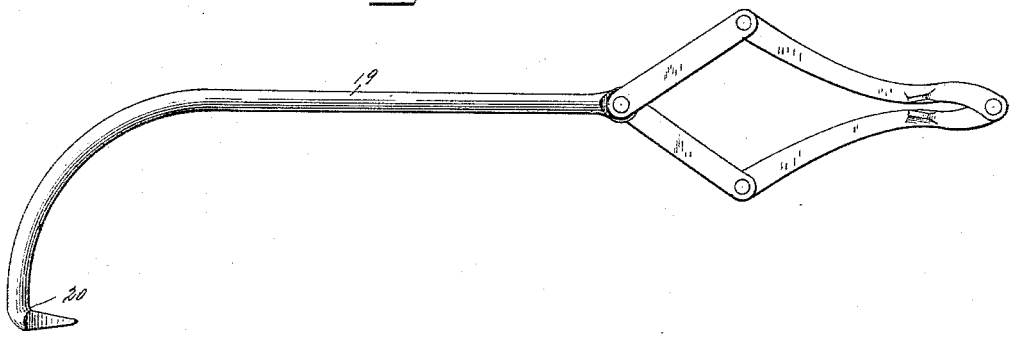


Fig. 4.



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UNITED STATES PATENT OFFICE.

JAMES H. McMAHON, OF NEW MILFORD, AND DANIEL D. MANGUM, OF LANESVILLE, CONNECTICUT; SAID MANGUM ASSIGNOR TO SAID McMAHON.

WIRE-STRETCHER.

SPECIFICATION forming part of Letters Patent No. 381,569, dated April 24, 1888.

Application filed June 20, 1887. Serial No. 241,839. (No model.)

To all whom it may concern:

Be it known that we, JAMES H. McMAHON and DANIEL D. MANGUM, citizens of the United States, residing, respectively, at New Milford and Lanesville, in the county of Litchfield and State of Connecticut, have invented certain new and useful Improvements in Wire-Stretchers; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention is adapted to all the general uses to which wire-stretchers are applied; but will be found especially valuable in putting up telegraph, telephone, and electric-light wires, and also in putting up fence-wire. In order to perfect the device for all classes of work, we have provided a supplemental grip which will hold the wire perfectly in case the slack has not been entirely drawn up by the first operation, and have also insulated the grips, so that the device may be used in repairing lines, even when the wires are in use.

With these ends in view we have devised the simple and novel construction which we will now describe, referring by numbers to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation illustrating our improved stretcher in use, one side of the ratchet-lever being broken away; Fig. 2, a similar side elevation looking from the opposite direction; Fig. 3, a plan view illustrating the operation of the supplemental grip, and Fig. 4 is a view showing the supplemental grip carried by an independent shank.

As this device is intended to be carried up telegraph-poles, we have reduced the parts to the smallest number possible, and have made the device light but strong.

1 denotes a plate provided with ears 2, and 3 a clamp rigidly secured to the plate and ordinarily bent to form three sides of a square, so that it will grasp the cross-bars of a telegraph-pole. The clamp, and with it the plate, is secured in position in any suitable manner, ordinarily by a set-screw, 4.

5 denotes a shaft journaled in ears 2. The ends of this shaft project outward beyond the ears, and are squared to receive an ordinary crank or a ratchet-lever, 6, as shown in the drawings. This ratchet-lever is of ordinary construction, and is in most cases easier to use upon telegraph-poles than a crank.

7 denotes a ratchet-wheel upon shaft 5, and 8 a gravity-pawl engaging therewith.

9 denotes a drum carried by the shaft between the ears, and 10 is a strap of any convenient length, which is secured to the drum and adapted to be wound around it. A chain or rope may of course be substituted for the strap, if preferred. At the outer end of the strap we provide a grip, 11, consisting of levers 12′, which extend outward from each other, and levers 13′, pivoted to the outer ends thereof. Levers 13′ are usually curved inward slightly, as shown, are pivoted together at their outer ends, and are provided with jaws 14.

15 denotes a supplemental grip, consisting of parts 12 13, constructed in the same manner as grip 11, which we pivot to a link, 16, which is in turn pivoted to some fixed portion of the device. In the present instance we have shown it as pivoted to a stump, 17, formed from the same piece of metal as clamp 3, as clearly shown in Figs. 1 and 2. In order that the grips may be used in repairing lines and without the necessity for throwing the lines out of use, we provide insulating collars or washers 18, of any suitable material, at the point where the grips are pivoted. In case the grip is used with a strap, as shown in Fig. 3, the strap itself, unless of metal, will insulate the grip.

In Figs. 1, 2, and 3 we have shown the supplemental grip as made part of the stretcher itself—that is, pivoted to it loosely, so that it will swing out of the way.

In Fig. 4 we have shown the supplemental grip as carried by an independent shank, 19, which is provided with a prong, 20, for attachment to a telegraph-pole or a tree.

The operation is as follows: Pawl 8 is lifted from the ratchet, which allows the strap carrying grip 11 to unwind from the drum. The

wire to be tightened is then placed between jaws 14, and the crank or ratchet-lever placed upon one of the squared ends of shaft 5. It will be seen that the instant the winding of the strap upon the drum commences the jaws will grip the wire firmly, the principle being that the greater the resistance, whether from the weight of the wire or from any other cause, the stronger will be the hold of the jaws upon the wire. When there is so much slack in the wire that it cannot be taken up at a single operation, the supplemental jaws are swung into place and caused to engage the wire. The instant pawl 8 is lifted from the ratchet the entire strain of the wire will come upon the supplemental jaws, which will grasp it and hold it firmly in the same manner as the jaws of the main grip. The main grip may then be drawn out and placed upon the wire as far beyond the grip of the supplemental jaws as the operator can reach. As soon the operator begins again to wind the strap upon the drum the jaws of the main grip will grasp the wire, instantly loosening the jaws of the supplemental grip, which may then be swung out of the way. The principle of operation is the same, whether the supplemental grip be permanently attached to the device or made separate therefrom.

It will of course be understood that the details of construction may be varied within reasonable limits without changing the principle of our invention.

We claim—

In a wire stretcher, the combination of a plate provided with ears on one side to receive the drum-shaft, and with a securing device on the other, a square-ended shaft carrying a drum, a ratchet-wheel on the drum-shaft and pawl to engage therewith, a ratchet-lever, a strap or its equivalent attached to the drum, and two gripping devices, one fixed and one attached to the drum-strap, each composed of two pairs of connected toggle-levers, of which the outer pair has upwardly-extending grasping-jaws, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

JAMES H. McMAHON.
DANIEL D. MANGUM.

Witnesses:
H. SLUYGATT,
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