W. W. HOFFLAND.

WIRE STRETCHER.

APPLICATION FILED JAN. 17, 1917.

1,287,313.

Patented Dec. 10, 1918.

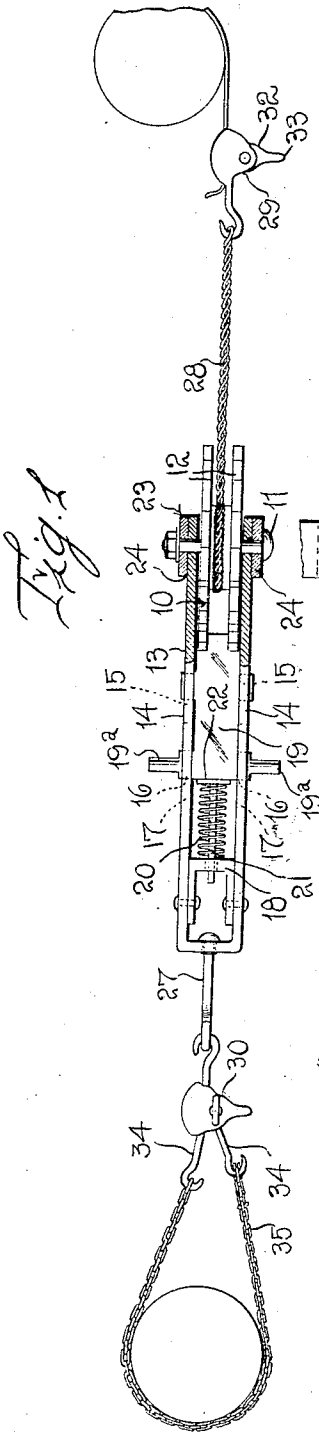


Fig. 1

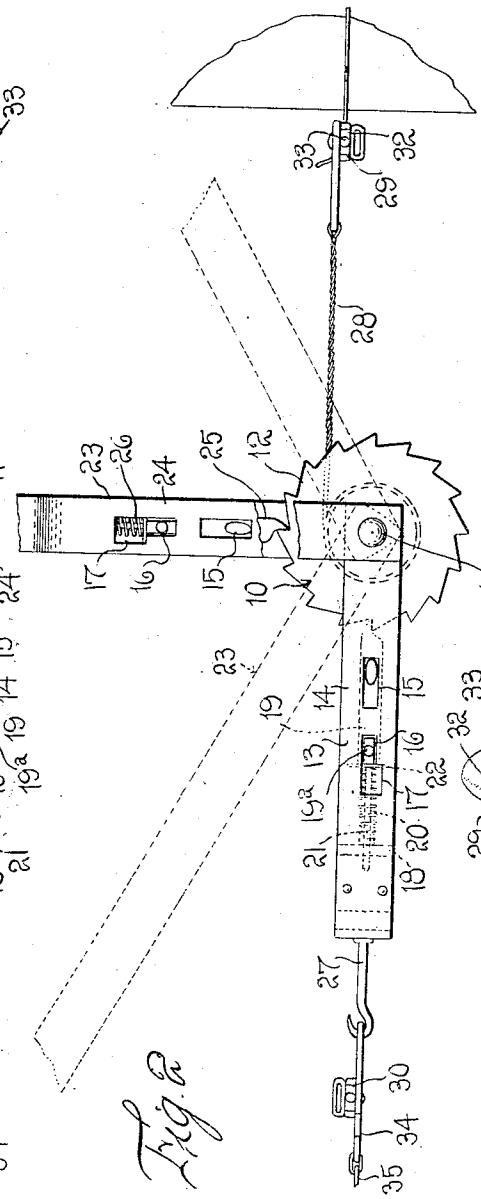


Fig. 2

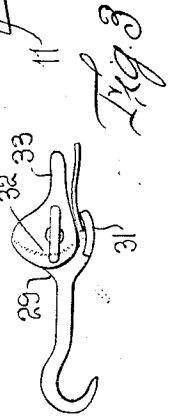


Fig. 3

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UNITED STATES PATENT OFFICE.

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WIRE-STRETCHER.

1,287,313. Specification of Letters Patent. Patented Dec. 10, 1918.

Application filed January 17, 1917. Serial No. 142,894.

To all whom it may concern:

Be it known that I, WALTER W. HOFFLAND, a citizen of the United States, residing at Bend, in the county of Crook and State of Oregon, have invented certain new and useful Improvements in Wire-Stretchers, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to wire stretchers and particularly to that class of wire stretchers including a winding drum or reel and means for giving a step by step rotation to the winding drum. The general object of my invention is to provide a very simple, portable, and cheaply constructed wire stretcher of this character and a further object of the invention is to provide means whereby the pawls which hold the drum from rotation, or which engage the winding drum with the operating lever, may be readily put out of operation so as to leave the drum free for reverse rotation.

Still another object of the invention is the provision of very simple means for engaging the stretcher with a post and the wire to be stretched and further to provide means whereby the wire stretcher may be applied to drawing two wires toward each other to thereby permit the ends of the wire to be spliced.

Other objects relate to details of construction as will appear more fully in the following specification.

My invention is illustrated in the accompanying drawings wherein—

Figure 1 is a top plan view partly in section of a wire stretcher constructed in accordance with my invention;

Fig. 2 is a side elevation of the structure shown in Fig. 1;

Fig. 3 is an elevation of one of the clamps.

Referring to these figures, 10 designates the winding drum which may be of any suitable diameter and which has a transverse passage through it for a bolt 11. This drum preferably is formed at its ends with integral flanges 12 formed with ratchet teeth. The drum rotates upon the bolt 11. The bolt 11 passes through the ends of a U-shaped clevis 13, the arms 14 of which are formed with the longitudinally alined slots 15 and 16. Each of the slots 16 is rectangular in form and is provided with an offset portion 17. A cross bar 18 is disposed across the outer end of the clevis, the cross bar having inwardly turned ends which are riveted to the arms of the clevis and brace these arms. Operating between the arms 14 is the pawl 19, which pawl is approximately rectangular in form, and at each end provided with the outwardly projecting lugs 19^a which extend out through the slots 15 and 16. The lug 19^a which extends out through the slot 16 is of sufficient size that it may be depressed into the lateral notch or offset 17 when the pawl has been shifted outward out of engagement with the ratchet teeth on the flanges 12. Urging the pawl inward is a spring 20 which surrounds a spindle or stem 21 formed upon the pawl and having sliding engagement through the cross bar 18. The spring 20 bears at its ends against washers 22 surrounding the stem 21.

Also mounted upon the bolt 11 is the operating handle or lever 23 which at its lower end is formed to provide the oppositely disposed parallel legs 24 which are perforated for the passage of the bolt 11. These legs 24 are likewise slotted in the same manner as the legs 14 of the clevis, there being two slots 15 and 16 in each leg, the slot 16 being formed at its outer extremity with the offset portion 17. The pawl 25 has the same form as the pawl 19 and is provided with laterally projecting lugs extending through the slots 15 and 16. The offset portion 17 permits the pawl to be withdrawn and held withdrawn from engagement with the ratchets. A spring 26 forces the pawl inward, the spring bearing operatively against the cross bar extending across the legs of the handle. It will be seen that either of the pawls 19 or 25 may be retracted by grasping the lugs 19^a at the ends of the pawls which pass through the slots 16 and drawing the pawls upward and then shifting the outer ends of the pawls laterally into engagement with the offset 17.

Swiveled upon the clevis 13 at its outer end is a hook 27 and attached to the drum and adapted to be wound thereon is a chain 28. The chain carries at its end a wire clamp or grip designated generally 29 and connected to the hook 27 is a wire clamp 30. The clamps 29 and 30 are both approximately alike. The clamp 29 comprises a hook-shaped shank having at one end a head and a lug 31. Pivoted upon the head is a rotatable jaw 32 having a cam face coacting with the lug 31 and having a

handle 33. The clamp 30 is of the same character as the clamp 29, that is provided with the hook-shaped shank having at one end the head and the rotatable gripping jaw but it is also provided with the two divergent outwardly projecting hooks 34 to which a chain 35 is adapted to be connected.

In the practical operation of this invention the chain 35 is placed around a post or other fixed object and the clamp 29 is engaged with the wire to be stretched. The operating handle 23 is then oscillated to cause a step by step rotation of the drum and a winding up of the chain thereon. This of course places the wire gripped by the clamp 29 under tension. If after the full length of the chain has been wound up, the wire is still not sufficiently tight, then the wire may be engaged with the clamp 30 and the clamp 29 released from the wire. The pawls are then shifted outward from engagement with the drum and the chain 28 unwound and reëngaged with the wire, whereupon the operation is repeated to secure final tightening of the wire. Where two wires are to be drawn together so that they may be spliced, then the clamp 30 may be engaged with one wire and the chain 29 engaged with the other wire and the two wires drawn in opposite directions so as to tighten both of the wires and cause their ends to overlap, whereupon the wires may be spliced.

While I have illustrated a construction which is particularly effective, which is very cheaply made, and simple in construction and operation, I wish it understood that various minor changes might be made in the device within the scope of the appended claims.

Having described my invention, what I claim is:

1. In a wire stretcher, a clevis having spaced parallel legs, a drum rotatably mounted between the legs of the clevis at one of their ends, a handle loosely mounted upon the axis of said drum for swinging movement, said drum having a ratchet, means carried by the handle to coact with the teeth of the ratchet and rotate the drum in the swinging movement of said handle in one direction, the legs of said clevis having longitudinal slots therein, each slot having a shoulder formed in one edge thereof intermediate of its ends, and a longitudinally extending swing pressed pawl movable between the legs of the clevis and normally urged into locking engagement with the teeth of the ratchet to hold the drum against reverse rotation, said pawl being provided at one of its ends with oppositely projecting lugs movable in said slots, said lugs adapted to be engaged with said shoulders to retain the pawl in a retracted, inoperative position.

2. In a wire stretcher, a clevis having spaced parallel legs, a drum rotatably mounted between the legs of the clevis at one of their ends, a handle loosely mounted upon the axis of said drum for swinging movement, said drum having a ratchet, means carried by the handle to coact with the teeth of the ratchet and rotate the drum in the swinging movement of said handle in one direction, the legs of said clevis having longitudinal slots therein, each slot having a shoulder formed in one edge thereof intermediate of its ends, a longitudinally extending spring pressed pawl movable between the legs of the clevis and normally urged into locking engagement with the teeth of the ratchet to hold the drum against reverse rotation, said pawl being provided at one of its ends with oppositely projecting lugs movable in said slots, said lugs adapted to be engaged with said shoulders to retain the pawl in a retracted, inoperative position, each leg of the clevis having additional slots therein, and said pawl being provided with guide lugs spaced from the first named lugs and movable in the latter slots.

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

WALTER W. HOFFLAND.

Witnesses:
J. H. STANLEY,
M. J. MCGRATH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."