H. T. VERNER & C. C. RANSON.

PAWL AND RATCHET MECHANISM.

APPLICATION FILED DEC. 13, 1912.

1,106,995. Patented Aug. 11, 1914.

Fig. 5.

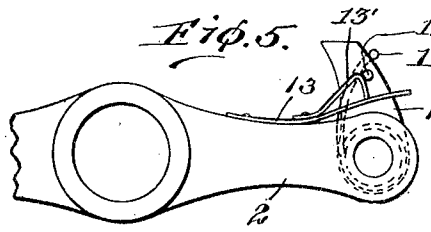


Fig. 4.

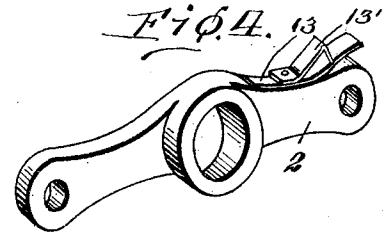


Fig. 1.

Fig. 2.

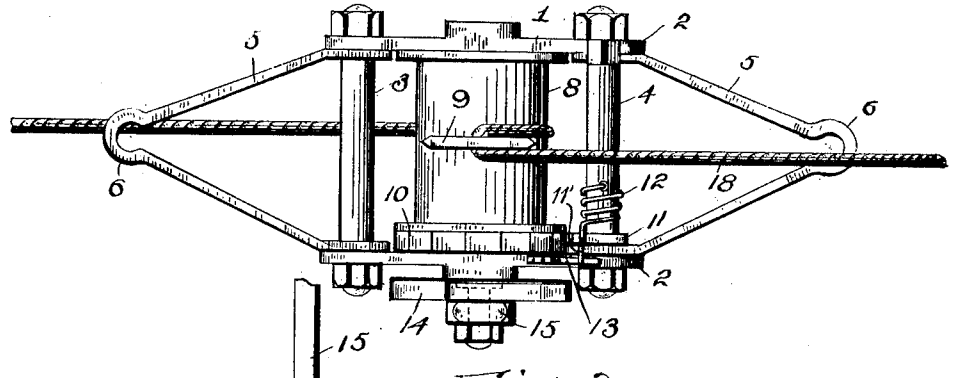
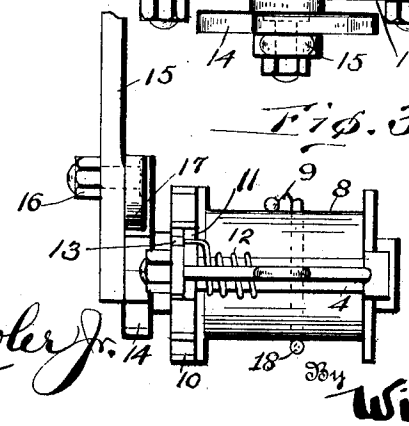


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

HAMILTON T. VERNER, OF CHARLOTTE, NORTH CAROLINA, AND CORBIN C. RANSON, OF RICHMOND, VIRGINIA.

PAWL-AND-RATCHET MECHANISM.

1,106,995. Specification of Letters Patent. Patented Aug. 11, 1914.

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To all whom it may concern:

Be it known that we, HAMILTON T. VERNER and CORBIN C. RANSON, citizens of the United States, residing, respectively, at Charlotte and Richmond, in the counties of Mecklenburg and Henrico and States of North Carolina and Virginia, have invented certain new and useful Improvements in Pawl-and-Ratchet Mechanism, of which the following is a specification.

Our invention relates to wire tighteners, and more particularly to devices used for drawing taut the guy wires of telegraph poles and the like.

The objects of the invention are to provide a device of the character described which will positively hold the wire when once pulled up until it is permanently clamped; to provide a device in which the pulling force is exerted in opposite directions and consequently equalized; and to provide a device which is portable, simple and compact in arrangement, and comparative inexpensive to manufacture.

To the accomplishment of the recited objects and others coördinate therewith, the preferred embodiment of my invention resides in that construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and embraced within the scope of the appended claims.

In said drawings:—Figure 1 is a side elevation of our complete device. Fig. 2 is a top plan view thereof. Fig. 3 is an end elevation of the invention. Fig. 4 is a detail perspective view of one of the side members, showing the construction of the spring, and Fig. 5 is a side elevation of the side member illustrating the application of the spring to maintain the pawl disengaged.

Referring more particularly to the drawings for a detail description of our invention, the numeral 1 designates the frame comprising longitudinal side members 2 terminally connected by the cross rods 3 and 4, the latter being provided with a square shoulder 4′ at one end for a purpose which will be hereinafter described. A V-shaped yoke 5 is suitably secured to opposite extremities of each cross rod and has its outer end fashioned into an eye, as 6. It will be understood that the side members 2, cross rods 3 and 4, and yokes 5 constitute the frame. Journaled medially of the side members 2 is a squared axle 7 carrying a drum or spindle 8 provided centrally thereof with a fin 9 and formed with an integral ratchet 10 adapted to be engaged by the pawl 11 having a lateral extension 11′ and pivoted upon the adjacent extremity of the cross rod 4. Coöperating with the pawl 11 is a coil spring 12 for maintaining same engaged. A flat spring 13 having an upstanding medial projection or trip 13′ is secured upon the top of the adjacent side member 2 for the purpose of holding the pawl inactive. On the outer proximal end of the axle is a smaller ratchet 14, and on the extreme or distal end of the axle is secured a lever 15, having pivotally fastened thereto by means of the set screw 16 a gravity pawl 17 designed for engagement with the ratchet 14. Extending through the fin 9 of the drum is a wire rope or cable 18, the said fin serving to guide the rope so that each half thereof will be wound in opposite directions around the drum. The outer extremities of the rope pass through the single blocks 19, equipped with hooks 20, and are suitably secured to the eyes 6, as at 21. In this connection it will be noted that the blocks 19 are disposed oppositely relative to their respective yokes.

In operation, one of the hooks 20 is fastened in the clamp usually attached to the guy wire after it has been passed through the ground anchor, while the other hook is secured to the wire coming from the pole on the opposite side of the anchor. Upon forcing lever 15 to the left the drum 8 will be rotated through the medium of ratchet 14 and pawl 17, whereupon both extremities of the rope 18 are wound upon the drum and the blocks 19 drawn toward each other. When the guy wire is as tight as desired it will be understood that the ratchet 10 is locked by the pawl 11 and the spring 12 so that no retrograde movement of the drum can occur. A clamp is now secured on the guy wire and the work is completed. To uncouple the device pawl 11 is elevated from engagement with ratchet 10 and swung rearwardly, the lateral extension 11′ riding over the medial projection 13′ until the outer wall thereof is constrained upwardly by the spring 13, when the rope is pulled from around the drum. By providing a square

shoulder on the cross rod 4 the latter is prevented from turning with respect to the longitudinal side pieces of the frame.

It will thus be seen that we have devised a guy puller which is exceedingly simple and which can be operated expeditiously to do the work for which it is adapted.

It should be understood that in its broader aspect the invention comprehends the employment not only of the various means described, but of equivalent means for performing the recited functions.

While the arrangement shown is thought at the present time to be preferable, it is desired to reserve the right to effect such modifications and variations thereof as may come fairly within the scope of the appended claims.

What is claimed, is:—

1. In a device of the kind described, a frame, a rotary element revolubly mounted therein, a ratchet fast on the axle of the rotary element, a pawl pivotally mounted upon the frame in coöperation with said ratchet, a second ratchet on said axle, a lever on said axle, a pawl pivotally mounted on the lever for engagement with the last-named ratchet, a spring supported upon said frame and having an upturned medial projection, a lateral extension on the first-named pawl for coöperation with said projection and a spring coöperating with the first-named pawl to lock the first-named ratchet to prevent retrograde movement of the rotary element.

2. In a device of the kind described, a frame, yokes secured to opposite extremities of said frame with their outer ends forming eyes, a squared axle journaled in said side frame, a rotary element on said axle, a spring secured to said frame, a ratchet fast on said rotary element, a pawl pivotally mounted on the frame and coöperating with said spring, a second ratchet fast on said axle, a lever on the outer end of said axle, a pivotally mounted gravity pawl on said lever for coöperation with the last-named ratchet and coöperating means on said frame and the first-named pawl for holding the latter in its inoperative position.

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

HAMILTON T. VERNER.
CORBIN C. RANSON.

Witnesses:
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W. E. BAYLISS.

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