Feb. 17, 1931. H. W. JESPERSEN 1,793,092

STRAND TENSIONING DEVICE

Filed Nov. 24, 1928

Fig. 1.

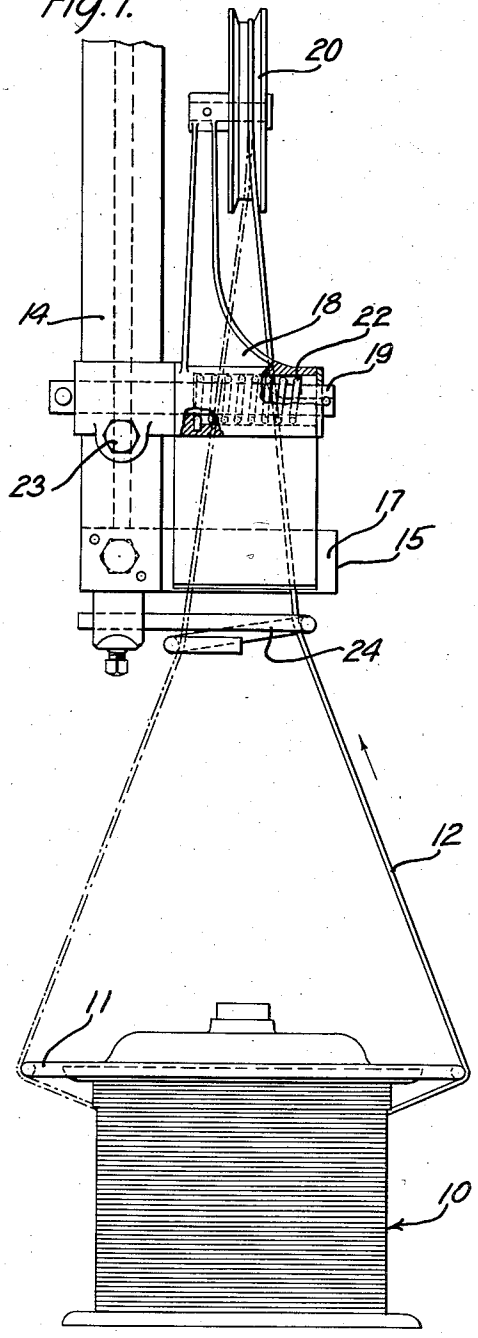
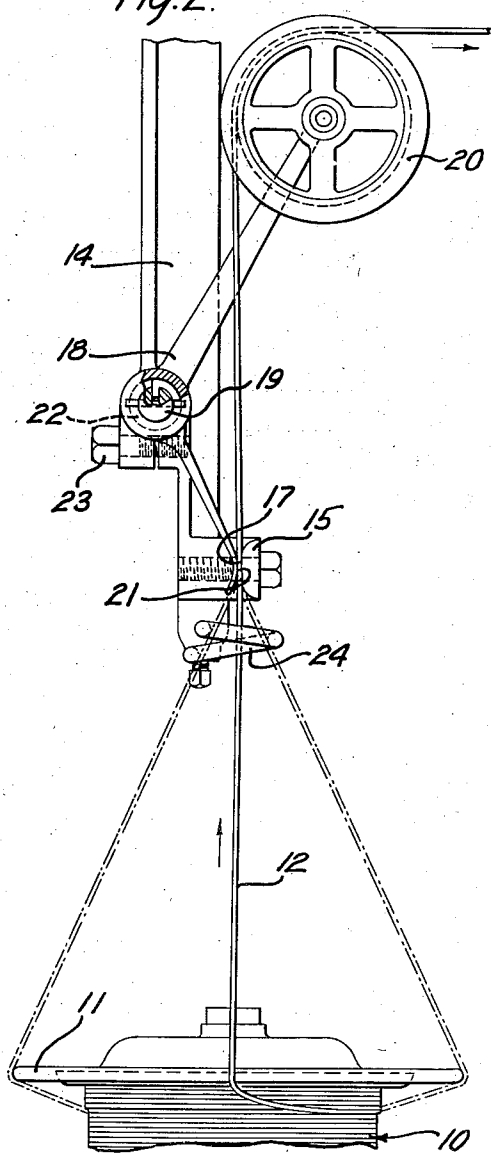


Fig. 2.



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Patented Feb. 17, 1931 1,793,092

UNITED STATES PATENT OFFICE

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STRAND-TENSIONING DEVICE

Application filed November 24, 1928. Serial No. 321,631.

This invention relates to strand tensioning devices, and has for its principal object the provision of a simple and inexpensive device for maintaining a moving strand under a constant predetermined tension.

The invention contemplates the provision of a member pivoted intermediate its ends and provided at one end with a flat strand engaging surface arranged to yieldably press a moving strand against a cooperating flat surface of a stationary member. The strand is drawn over an idler roller carried by the pivoted member, and as the tension on the strand increases, the roller is depressed to relieve the pressure exerted thereon by the flat strand engaging surfaces, thereby decreasing the tension on the strand. As the strand is advanced, it constantly moves laterally between the cooperating strand engaging surfaces, thus eliminating excessive frictional wear at any point.

Other features and advantages of the invention will become apparent from the following detailed description, reference being had to the accompanying drawing, wherein

Fig. 1 is a front elevational view of a tension controlling device embodying the features of the invention, and

Fig. 2 is a side elevation thereof.

Referring now to the drawing in detail it will be observed that the reference numeral 10 designates a vertically disposed strand supply spool having a flier 11 associated therewith for facilitating the withdrawal therefrom of strand material 12 which may consist of bare copper wire upon which an insulating coating of pulpous material is to be applied. Rigidly secured to a supporting frame 14 and extending laterally therefrom is a metallic member 15 having a substantially flat strand engaging surface 17. A member 18 is pivotally supported intermediate its ends upon a stud shaft 19 secured to the frame 14. A grooved pulley 20 is rotatably carried at one end of the member 18 and the opposite end of this member is provided with a flat strand engaging surface 21 which is arranged to yieldably engage the strand engaging surface 17 of the member 15 under the tension of a coil spring 22. The spring 22 is secured at one end to the stud shaft 19 and is fastened at its opposite end to the pivotal member 18. By loosening a clamping screw 23, the stud shaft 19 may be turned to vary the tension of the spring 22 so as to vary the tension applied to the strand.

As the strand is withdrawn from the supply it passes between the cooperating flat surfaces 17 and 21 and over the grooved pulley 20. The strand constantly moves laterally across the surfaces 17 and 21, thus eliminating excessive frictional wear at any one point. A guide member 24 secured to the frame 14 serves to hold the strand between the engaging surfaces 17 and 21. Upon the tension on the strand increasing above a certain predetermined value the pulley 20 is depressed causing the disengagement of the movable strand engaging member 21 from the cooperating rigid strand engaging member 15 thereby relieving the pressure on the strand. When the tension on the strand decreases below a certain predetermined value the pressure exerted thereon by the cooperating strand engaging surfaces 17 and 21 is accordingly increased due to the action of the coil spring 22. Thus it will be obvious that a substantially constant tension is maintained on the strand at all times.

Although only one specific embodiment of the invention has been herein illustrated and described it is to be understood that the invention is capable of other applications within the scope of the appended claims.

What is claimed is:

1. In a device for tensioning a moving strand, a stationary member having a flat strand engaging surface, a pivoted member having a strand engaging portion cooperating with said flat surface, a roller carried by the pivoted member for engaging the moving strand, and resilient means for causing the strand engaging portion of the pivoted member to yieldably press the strand against the flat surface of the stationary member.

2. In a device for tensioning a moving strand, a frame, an arm fixedly secured thereto and having a flat strand engaging surface, a shaft secured to the frame above and extending parallel to the arm, a member hav-

ing an intermediate housing surrounding the shaft and two angularly disposed portions extending therefrom, one of the portions terminating in a flat strand engaging surface, a coiled spring surrounding the shaft within the housing and having one end secured to the shaft and the other end secured to the housing for causing the strand engaging surfaces to exert a predetermined pressure upon the strand passing therebetween and a strand pulley carried by the other portion of the member and responsive to variations in tension in the strand to vary the pressure exerted by the strand engaging surfaces upon the strand.

3. In a device for tensioning a moving strand, a frame, an arm fixedly secured thereto and having a flat strand engaging surface, a shaft secured to the frame above and extending parallel to the arm, a member having an intermediate housing surrounding the shaft and two angularly disposed portions extending therefrom, one of the portions terminating in a flat strand engaging surface, a coiled spring surrounding the shaft within the housing and having one end secured to the shaft and the other end secured to the housing for causing the strand engaging surfaces to exert a predetermined pressure upon the strand passing therebetween, a strand pulley carried by the other portion of the member and responsive to variations in tension in the strand to vary the pressure exerted by the strand engaging surfaces upon the strand and a strand guiding member secured to the frame below the strand engaging surfaces for maintaining therebetween a strand passing from a supply over the pulley.

In witness whereof, I hereunto subscribe my name this 14th day of November, A. D., 1928.

HELGO WIGGO JESPERSEN.