

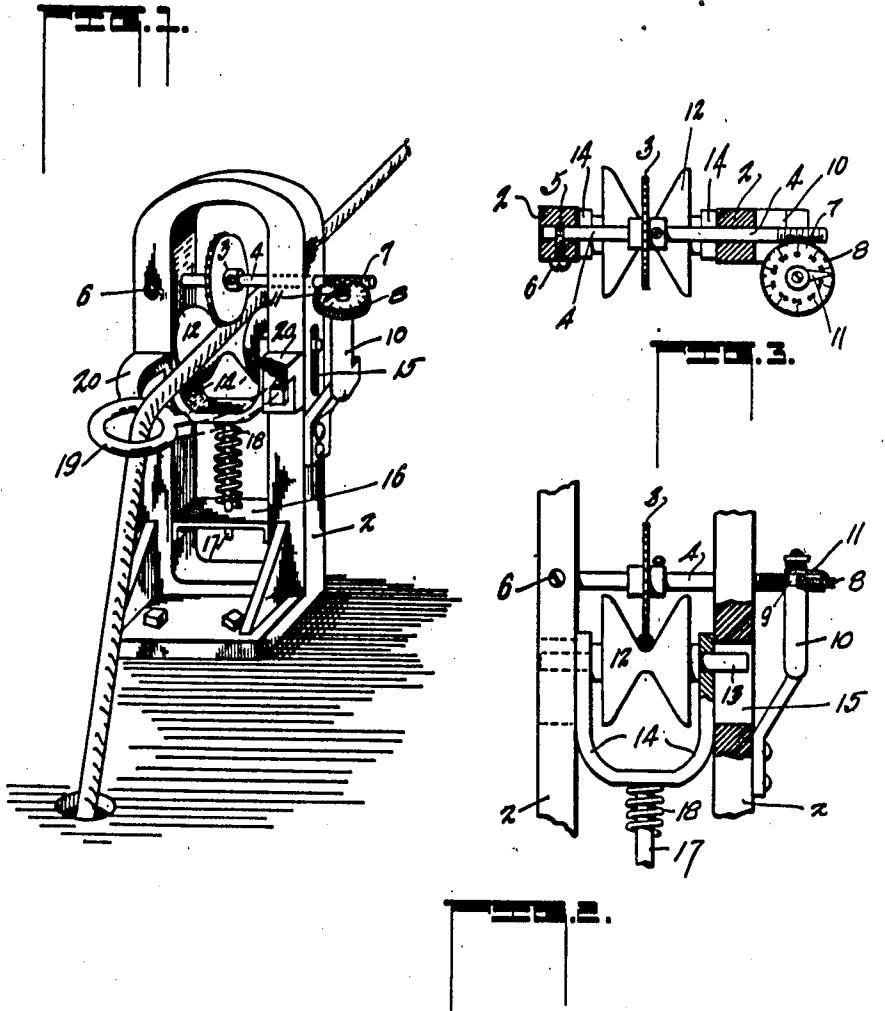
W. O. SOMMERFIELD & D. W. MORRIS.

ROPE MEASURING DEVICE.

APPLICATION FILED NOV. 29, 1911.

1,038,797.

Patented Sept. 17, 1912.



WITNESSES

*Messrs. Allen
& M. Wright.*

INVENTOR

*William O. Sommerfeld
Daniel W. Morris*

By N. V. Deff ATT'Y.

UNITED STATES PATENT OFFICE.

WILLIAM O. SOMMERFIELD, OF EAST PEORIA, AND DANIEL W. MORRIS, OF PEORIA, ILLINOIS.

ROPE-MEASURING DEVICE.

1,038,797.

Specification of Letters Patent. Patented Sept. 17, 1912.

Application filed November 29, 1911. Serial No. 663,051.

To all whom it may concern:

Be it known that we, WILLIAM O. SOMMERFIELD and DANIEL W. MORRIS, citizens of the United States, the former residing at East Peoria, Tazewell county, Illinois, and the latter at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Rope-Measuring Devices, of which the following is a specification.

Our invention relates to a rope measuring device.

The object of our invention is to provide a positive mechanical actuation of a measuring disk or wheel by the movement of a rope being drawn from a coil and to properly register such movement upon an indicating dial.

A further object of our invention is to provide means for holding rope of any size to a positive centering engagement with the rotatable disk and such that will not permit any lateral movement of the rope.

Our invention consists essentially in the form of a rope holding device in combination with a rotatable toothed disk.

Referring to the drawings, Figure 1 is a perspective view of the device in position for operation; Fig. 2 is a detail view showing a portion of the structure with parts broken away to illustrate details of construction, and Fig. 3 is a transverse sectional view from the top of the device with the top frame part removed.

In the figures, 2 is a frame adapted to be fixed in any desired and convenient place adjacent a supply of rope.

3 is a comparatively thin toothed disk substantially like a clock wheel.

4 is a shaft journaled in openings in frame 2, grooved as at 5 and adapted to be engaged at said groove by brake screw 6. Manipulation of the screw will serve to tension the shaft from turning except by the application of a desired degree of force exerted upon said shaft through disk 3. One end of the shaft extends beyond the outer wall of frame 2 and is provided with the worm 7.

8 is a worm wheel supported upon stud 9 at the upper end of bracket 10, said bracket being secured to the side of frame 2, as shown in Figs. 1 and 3.

The dial is designed to be spaced by

proper indicating marks or figures in the usual way.

11 is an indicator finger.

12 is a frictionally actuated pulley wheel formed with a perfect V-groove adapted to properly impinge and center a rope of any size with relation to toothed disk 3 so as to prevent lateral movement of the rope.

13 are trunnions upon pulley wheel 12 journaled in U frame 14 and extending outwardly, bearing within guide slots 15 in frame 2, and permitting said pulley wheel 12 to reciprocate vertically within certain limitations and to accommodate the carrying of different sizes of rope between the said pulley wheel and toothed disk 3. Pulley wheel 12 is yieldingly supported from the web 16 secured within the open space in frame 2 by means of rod 17 secured to U frame 14, and depending through a perforation in said web and a coil spring 18 carried upon said rod. Normally, the apex of the V-groove in pulley 12 will, under the tension of spring 18, lie in substantial contact relation with the teeth of disk 3.

19 is a guide loop or eye connected by arms 20 with frame 2, said loop or eye being designed to be positioned substantially in the same horizontal plane with the intersection or contact between pulley 12 and toothed disk 3 when in normal, inoperative position and in a vertical plane centering with a line drawn through the center of toothed disk 3 and pulley wheel 12. However, this position of the guiding eye or loop may be varied to meet the circumstances of use.

The operation of the device is as follows: Rope of any size passed between toothed disk 3 and pulley wheel 12 will be centered so exactly that the toothed disk will bear upon its longitudinal center and through impingement of the V-groove of pulley wheel 12 cannot move laterally. The passage of the rope between disk 3 and pulley 12 will cause the latter to be disposed proportionately with the size of the rope and to be held under tension of spring 18 against the rope, causing the firm engagement of the latter with the teeth of the disk 3. The movement of the rope between the disk and pulley will cause both pulley 12 and disk 3 to be turned, the former to facilitate the easy pull of the rope there-through and the latter to accurately measure

the length of travel of the rope upon disk 8 in feet or inches, as may be desired. The supporting disk 3 is provided with a brake, consisting in the screw 6 engaging groove 5 in shaft 4 to hold the shaft normally against turning, except under the pull of the operator measuring the rope.

We are aware that measuring wheels have heretofore been employed operating in conjunction with counter friction blocks and wheels but have never known of any structure being developed, providing for the proper centering of the rope with relation to a measuring disk to prevent any lateral movement of the rope. Heretofore in the structures we know about, measuring wheels have been concave and their relation to counter friction devices has been such that the rope might readily be carried high or low upon the concave face of wheels employed, from the speed of which the correct measuring was sought to be obtained, thus causing a variation of the speed of the wheel in a given length of travel thereover, thus producing inaccuracy.

The essence of our invention lies in the provision of a perfect centering device for the rope with relation to a disk, the speed of which is designed to be measured by dial meter.

What we claim is:—

In a rope measuring device, in combination, an open framework adapted to be fixed in any desired position, a pulley wheel provided with a V-groove, means for supporting the pulley wheel in a reciprocal relation to said frame comprising a yoke, a stem bearing through a fixed portion of said frame, a coil spring interposed between the yoke and said fixed portion, and slots within the frame, a thin toothed disk, a shaft to which said disk is fixed, journaled in the main frame and provided with a friction groove near one end and with a worm screw thereon, a friction brake, comprising a screw in said frame engaging the groove in said shaft, a worm wheel engaging the worm on said shaft and provided with a dial face, means for supporting the worm wheel, a fixed indicating finger supported relative to the worm wheel dial and a rope guiding frame connected with said main frame, substantially as described.

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

WILLIAM O. SOMMERFIELD.

DANIEL W. MORRIS.

Witnesses:

MARY C. COMEGYS,

W. V. TEFFT.

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