Jan. 6, 1925. 1,522,377

R. C. LONGVALL

SPINDLE FOR CREELS

Filed April 30, 1923

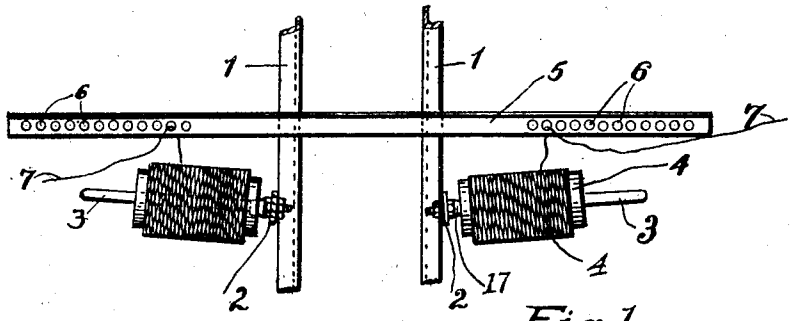


Fig. 1.

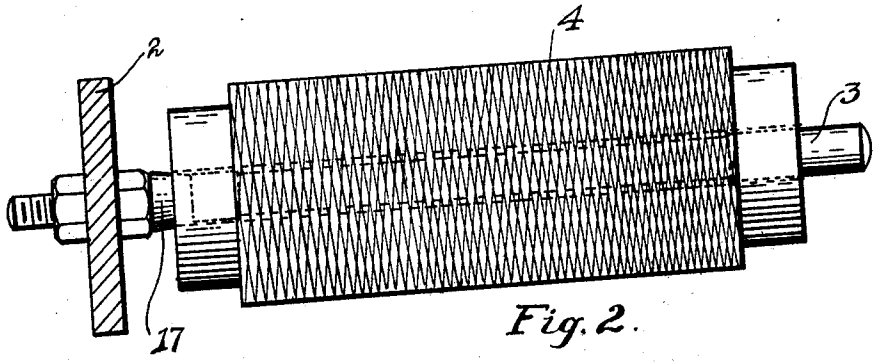


Fig. 2.

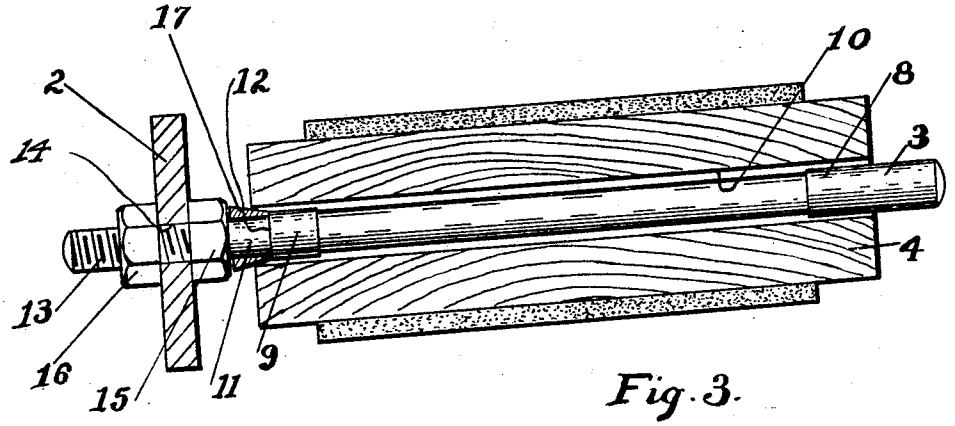


Fig. 3.

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UNITED STATES PATENT OFFICE.

RAYMOND C. LONGVALL, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO WARP COMPRESSING MACHINE COMPANY, OF WORCESTER, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

SPINDLE FOR CREELS.

Application filed April 30, 1923. Serial No. 635,600.

To all whom it may concern:

Be it known that I, RAYMOND C. LONGVALL, a citizen of the United States, residing at Worcester, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in a Spindle for Creels, of which the following, together with the accompanying drawings, is a specification.

My invention relates to creels or spool stands, such as are employed for rotatably supporting a plurality of spools or yarn packages so that the yarn may be conveniently led therefrom.

The object of my invention is to provide an improved spindle for rotatably supporting a spool or yarn package in such a manner that the latter will not vibrate excessively as the yarn is led therefrom. The spindles heretofore employed in creels or spool stands are usually inclined from the horizontal a certain amount, so that when a spool is slipped over a spindle it will tend to seat a position near the base of the spindle as it is rotated by the withdrawal of the yarn therefrom. The opening in the spool which receives the spindle must necessarily be large enough to permit the spool to turn freely, and it has been found that as the opening in a wooden spool becomes larger, by wear, the spool will tend to chatter on the spindle, due to the fact that the pull exerted by the yarn as it unwinds, is applied to first one end of the spool and then to the other. When a large number of spools are turning on a creel at high speed, the chattering of the spools then becomes most objectionable and tends to set up severe vibrations throughout the whole creel.

According to the present invention I propose to provide an improved spindle so constructed that the end of the spool opening near the base of the spindle will always make a close fit with a member carried by the spindle, so that play at one end of the spool is substantially eliminated, regardless of the size of the opening in the spool, and chattering does not occur.

The above and other advantageous features of my invention will hereinafter more fully appear, reference being had to the accompanying drawings in which

Fig. 1 is a view in front elevation of a portion of a creel provided with spindles embodying my invention.

Fig. 2 is an enlarged view of one of my improved spindles removed from the stand of the creel shown in Fig. 1.

Fig. 3 is a longitudinal sectional view of the parts shown in Fig. 2.

Like reference characters refer to like parts in the different figures.

Referring to Fig. 1, a portion of a creel frame is shown, which consists of upright members 1 with spindle bars 2 supported thereby and each carrying a number of spindles 3. The bars 2 are so arranged that the spindles 3 extend therefrom with an upward inclination from the horizontal, so that when spools or yarn packages 4 are placed on the spindles, the spools will each seek a position near the point of support of the spindles 3 on the bars 2. A cross member 5 extends above each row of spindles 3, and is provided with eyes 6 through which are led the individual strands of yarn 7 from the spools 4.

Referring now to Figs. 2 and 3, each spindle 3 is provided near its ends with cylindrical seats 8 and 9 which are slightly less in diameter than the cylindrical opening 10 provided in the spool 4. The spindle 3 is provided beyond the seat 9 with a reduced portion 11, thereby forming a shoulder 12. The reduced portion 11 is provided with a plurality of threads 13 which extend to within a short distance of the shoulder 12. The threaded end of the spindle 3 is received in an opening 14 provided in the bar 2, and nuts 15 and 16 serve to clamp the spindle 3 on the bar 2.

A sleeve 17 surrounds the unthreaded reduced portion 11 and is free to turn between the shoulder 12 and the face of the nut 15. The outer surface of the sleeve 17 is conical in form, with the small end thereof substantially flush with the seat 9. When the spool 4 is slipped over the spindle 3, the small end of the sleeve 17 will be received in the spool opening 10, and the end of the opening 10 will fit snugly upon the conical

portion of the sleeve 17, the exact point of engagement between the spool 4 and the sleeve 17 being determined by the diameter of the spool opening.

When the spool 4 is rotated by withdrawal of the yarn therefrom, it is obvious that the lower end of the spool will always fit closely on the sleeve 17, and cause the latter to rotate therewith on the unthreaded reduced portion 11. Therefore, there is no possibility of any play developing between the lower end of the spool and the spindle, so that the spool will always rotate without chattering. The conical surface of the sleeve 17 is of such length that it will fit into different sizes of spool openings, provided of course, the spool opening has not been enlarged too much by wear. Any spool which has been worn to the extent that its opening is larger than the sleeve, would be unfit for use.

From the foregoing it is apparent that by my invention I have provided an improved spindle for creels or spool stands, which is so constructed as to substantially eliminate the possibility of chattering, caused by play at both ends of the spool. The loose sleeve can be readily and cheaply applied to any spindle, and is adapted to fit snugly into the opening in any spool which is still serviceable, without requiring any adjustment of parts whatsoever; consequently creels or spool stands equipped with spindles embodying my invention will operate without vibration.

While I have shown my invention as being applied to a particular type of creel or spool stand, it is not so limited, but can be as well applied to the spindles of other similar machines without departing from the spirit and scope of my invention. I desire therefore that only such limitations be imposed thereon as may come within the scope of the appended claims.

I claim:

1. In a creel, a spindle provided with a reduced portion a shoulder and a nut, and a frusto conical sleeve turnable on said reduced portion said sleeve held from movement along said spindle in one direction by said shoulder and in the other direction by said nut.

2. In a creel, a spindle having a reduced seat, a portion of which is threaded, and a frusto conical sleeve surrounding the unthreaded portion of said seat and maintained thereon by a nut coacting with the threaded portion.

3. In a creel, a spindle provided with a reduced portion, said reduced portion having a shoulder, a frusto conical member rotatably mounted on said reduced portion, and means to hold said frusto conical member against said shoulder so as to positively position it longitudinally on said spindle.

Dated this 25th day of April, 1923.

RAYMOND C. LONGVALL.