A. E. RHOADES.

BEARING FOR TWISTER SPOOL SPINDLES.

APPLICATION FILED JUNE 21, 1909.

951,548. Patented Mar. 8, 1910.

Fig. 1.

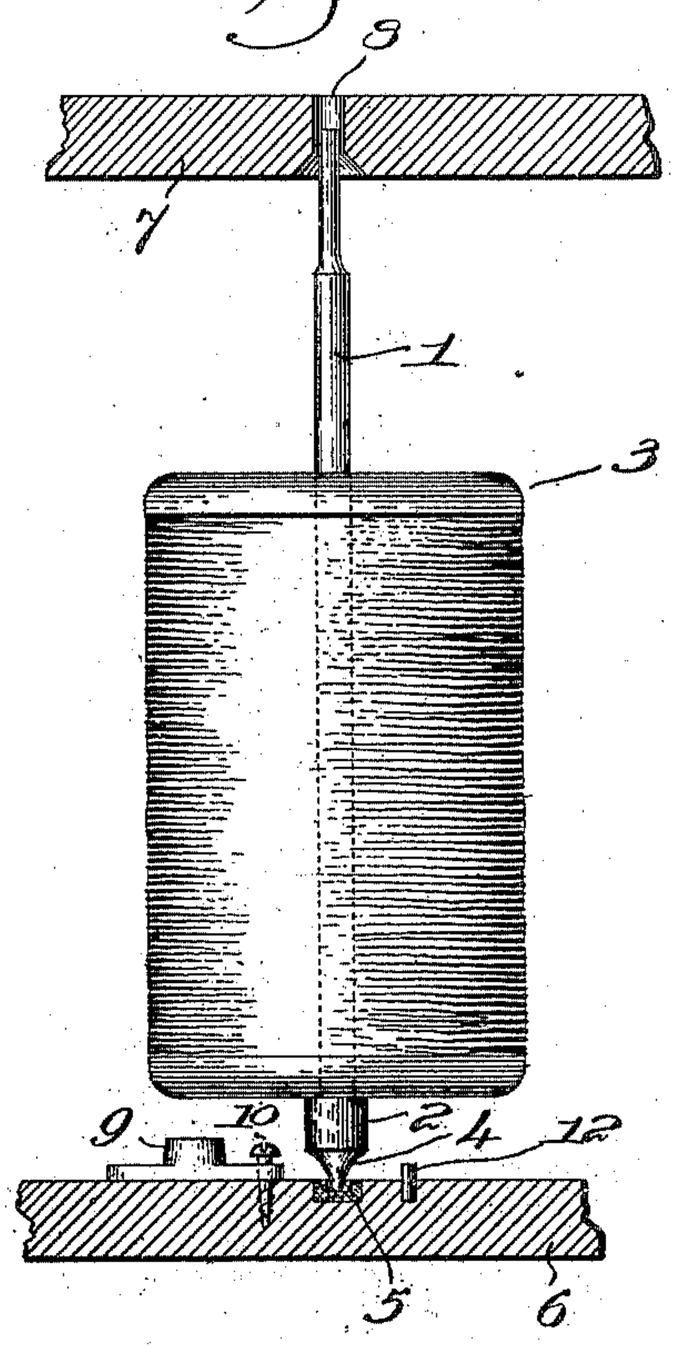


Fig. 2.

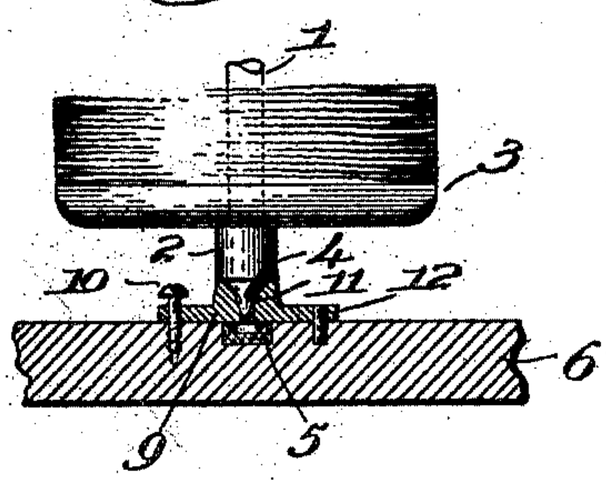
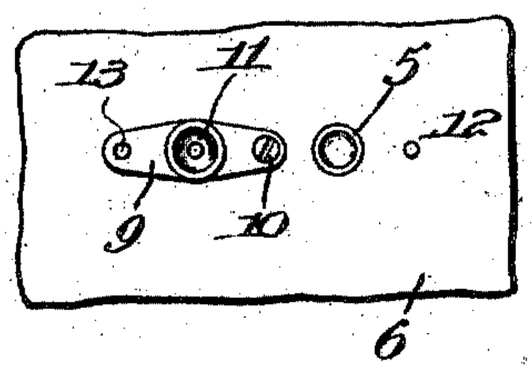


Fig. 3.



Witnesses,
Edward F. Allen.
Joseph M. Ward.

Inventor:
Alonzo E. Rhoades,
by Cooley Gregory.
Atty's.

UNITED STATES PATENT OFFICE.

ALONZO E. RHOADES, OF HOPEDALE, MASSACHUSETTS, ASSIGNOR TO DRAPER COMPANY, OF HOPEDALE, MASSACHUSETTS, A CORPORATION OF MAINE.

BEARING FOR TWISTER SPOOL-SPINDLES.

951,548. Specification of Letters Patent. Patented Mar. 8, 1910.

Application filed June 21, 1909. Serial No. 503,265.

To all whom it may concern:

Be it known that I, ALONZO E. RHOADES, a citizen of the United States, and resident of Hopedale, county of Worcester, State of Massachusetts, have invented an Improvement in Bearings for Twister Spool-Spindles, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention relates more particularly to twisters, wherein the yarn to be twisted is drawn from spools mounted on upright rotatable spindles, the lower ends of the latter being sustained in bearings or creel-steps made of glass or porcelain, while the upper ends of the spindles rotate freely in guide-holes formed in an overhead support. As the lower ends of the spindles are tapered they turn very easily on the cup-like creel-steps, which is very desirable in the case of fine or light yarns, as the spools must turn easily in order to prevent breakage of the yarn as it is drawn therefrom. With coarse or heavier yarns, however, there is so little resistance to the rotation of the spool that the latter will sometimes overrun, slackening up the yarn and permitting the kinks to form.

My present invention has for its object the production of simple and efficient means for readily increasing the friction or drag upon the spindle to prevent too rapid rotation thereof, without interfering with the ordinary form of bearing or creel-step used for light yarns.

The various novel features of my invention will be fully described in the subjoined specification and particularly pointed out in the following claims.

Figure 1 is a view in elevation of a twister spool-spindle with a spool thereon, the creel-step and its support and the overhead guide for the spindle being shown in section, with auxiliary friction-producing means for the spindle embodying one form of my invention and shown in inoperative position; Fig. 2 is a similar view showing the auxiliary friction-producing means in operation, and illustrated in section to more clearly show its coöperation with the spindle; Fig. 3 is a top plan view of the creel-step, its support, and the auxiliary friction-producing means inoperatively positioned.

Referring to the drawing the spindle 1 enlarged near its lower end at 2 to sustain the spool 3, the tapered end 4 of the spindle to rest in the step bearing or creel-step 5, usually made of glass or porcelain with a cup-like depression for the spindle end, the support 6 for the step, and the overhead guide 7 having a hole 8, Fig. 1, to loosely receive the upper end of the spindle, are and may be all of well-known construction. The creel-step offers very little resistance to the rotation of the spindle and spool by the pull of the yarn, and purposely the creel-step is made to reduce the friction, but when coarse or heavy yarn is being twisted the spool and spindle turn so freely as to often overrun and permit the yarn to kink. I prevent this overrunning by auxiliary friction producing means, herein shown as forming when in use the bearing for the spindle.

An auxiliary bearing 9 is loosely pivoted at 10 on the support 6 and is provided with a socket 11, Figs. 2 and 3, adapted to receive and embrace the tapered end 4 of the spindle when in use, the headed pivot 10 being so placed that the bearing when operatively positioned covers the creel-step 5, as in Fig. 2, with the socket 11 just above it. The auxiliary bearing is locked in operative position by an upright pin 12 rising from the support 6 and adapted to enter a hole 13 in the flat base of the bearing, the pivot 10 permitting the bearing to be lifted far enough to receive the pin 12 or to be disengaged therefrom. When it is desired to increase the friction or drag on the spindle the latter is lifted and the auxiliary bearing 9 is swung around into operative position and locked, and then the spindle is lowered until its tapered end 4 enters the socket 11, and as will be manifest the friction between the walls of the socket and the tapered part 4 of the spindle will act to retard or resist the rotation of the spindle sufficiently to prevent overrunning when coarse yarn is being twisted. The auxiliary bearing thus serves not only to vertically sustain the spindle but also to exert upon it the necessary frictional resistance or drag. When the spindle is to run free the auxiliary bearing is unlocked and swung to one side, exposing the creel-step for the reception of the tip end of the spindle.

The auxiliary bearing is preferably made as a casting, it is simple in construction, and can be readily applied to apparatus now in

use, the movement of the bearing into and out of operative position being effected easily and quickly.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In an apparatus of the class described, an upright rotatable spindle, a fixedly positioned creel step adapted to receive the lower end of said spindle and sustain and permit free rotation thereof, and an auxiliary bearing pivotally mounted adjacent the creel step and socketed to receive a greater portion of said lower end of said spindle than is received by the creel step and increase the resistance of rotation of the spindle, said auxiliary bearing when in use being interposed between the creel step and said lower end of said spindle.

2. In an apparatus of the class described, an upright rotatable spindle, a stationary anti-friction bearing to receive the lower end of said spindle and sustain it vertically, and a laterally movable, auxiliary friction producing bearing adapted to receive a greater portion of the lower end of said spindle than is received by the stationary bearing, said auxiliary bearing mounted adjacent the stationary bearing and adapted when operatively positioned to cover and render inoperative the stationary bearing and vertically sustain the spindle and increase the resistance to rotation thereof.

3. In an apparatus of the class described, an upright rotatable spindle, an anti-friction bearing adapted to receive the lower end of said spindle and sustain it vertically, a support on which said bearing is fixedly mounted, and an auxiliary bearing pivotally mounted on said support at one side of the fixed bearing and adapted to receive a greater portion of the lower end of said spindle than is received by the fixed bearing and adapted when operatively positioned above and in alinement with said fixed bearing to engage and vertically sustain the spindle and increase the resistance to rotation thereof.

4. In an apparatus of the class described, an upright rotatable spindle, an anti-friction bearing adapted to receive the lower end of said spindle and sustain it vertically, a support on which said bearing is fixedly mounted, and an auxiliary bearing movably mounted on said support adjacent the fixed bearing and adapted to receive a greater portion of the lower end of said spindle than is received by the fixed bearing and when operatively positioned above and in alinement with said fixed bearing to vertically sustain the spindle and increase the resistance to rotation thereof, and a device to lock the auxiliary bearing in its operative position.

5. In an apparatus of the class described, an upright, rotatable spindle, tapered at its lower end, a creel step adapted to receive the lower end of said spindle, a support on which said creel step is fixed, an auxiliary bearing pivotally mounted on said support adjacent the creel step and having a tapered socket adapted to receive a greater portion of the tapered end of the spindle than is received by the creel step, and means to lock the auxiliary bearing in operative position with its socketed portion interposed between the creel step and the tapered end of the spindle.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

ALONZO E. RHOADES.

Witnesses:
ROBERT JAMIESON,
E. D. OSGOOD.