I. E. PALMER, DEC'D.
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BOBBIN SUPPORTER.
APPLICATION FILED SEPT. 24, 1908.

1,196,740. Patented Aug. 29, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

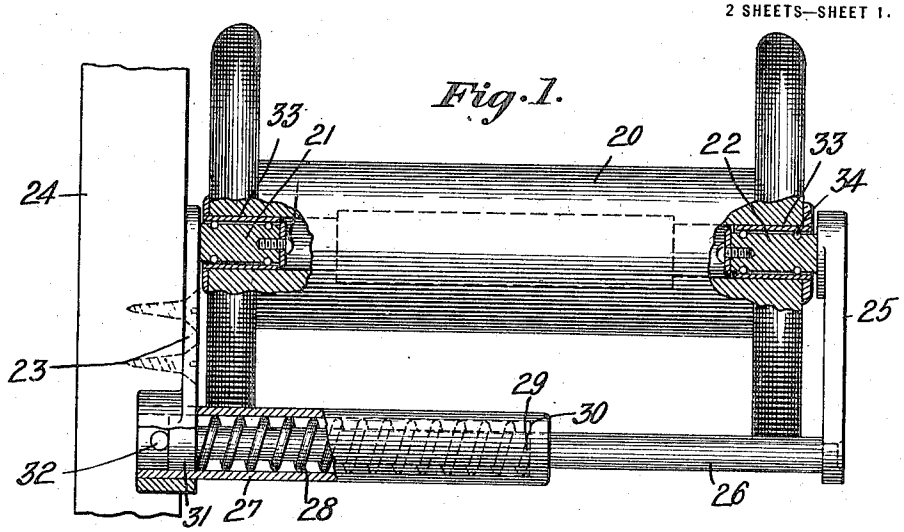
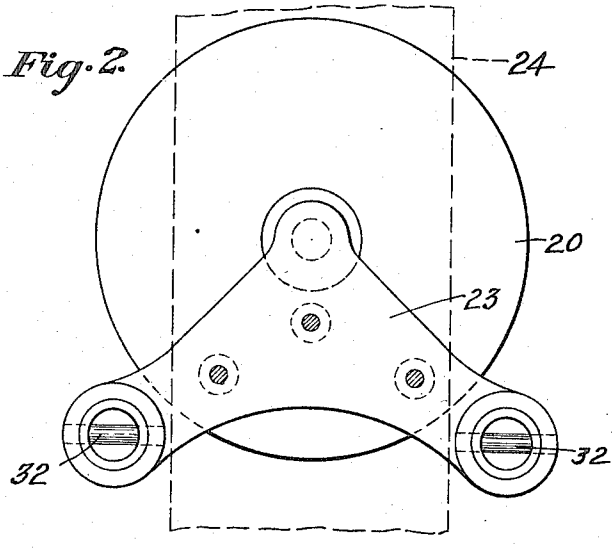


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

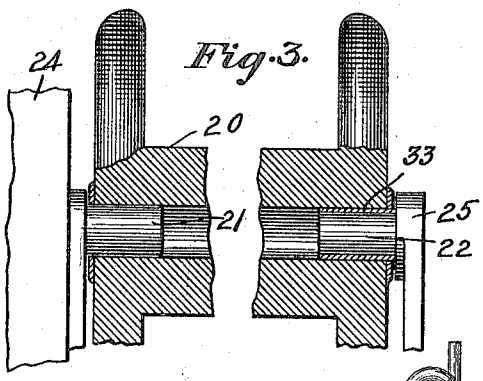


Fig. 4.

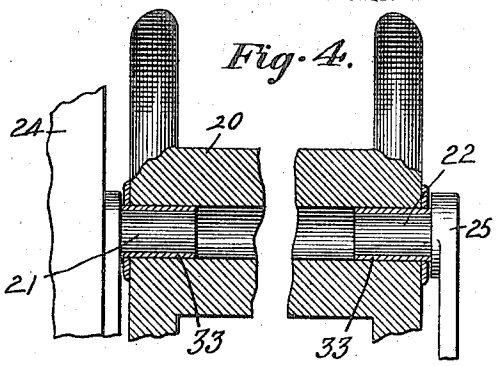


Fig. 5.

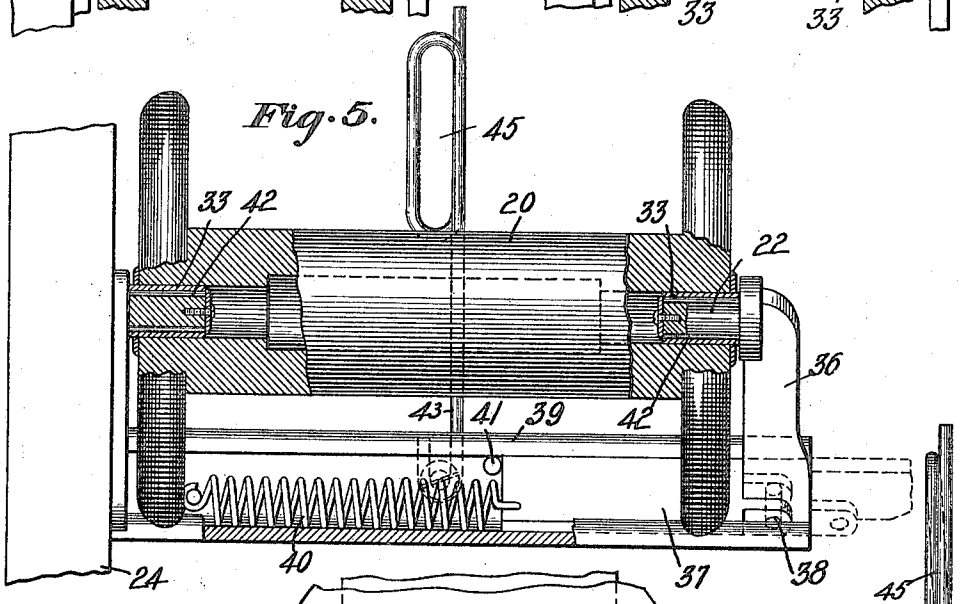
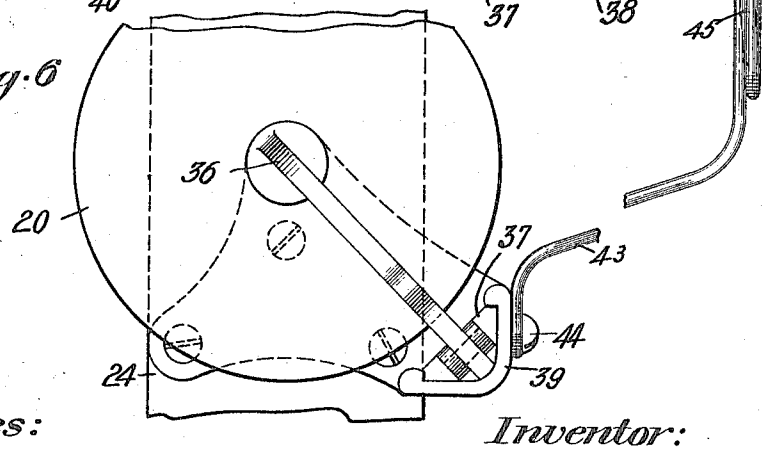


Fig. 6



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UNITED STATES PATENT OFFICE.

ISAAC E. PALMER, OF MIDDLETOWN, CONNECTICUT; TOWNSEND PALMER AND NATHALIE T. PALMER, BOTH OF MIDDLETOWN, CONNECTICUT, ADMINISTRATORS OF SAID ISAAC E. PALMER, DECEASED.

BOBBIN-SUPPORTER.

1,196,740. Specification of Letters Patent. Patented Aug. 29, 1916.

Application filed September 24, 1908. Serial No. 454,570.

To all whom it may concern:

Be it known that I, ISAAC E. PALMER, a citizen of the United States, and a resident of Middletown, in the county of Middlesex and State of Connecticut, have invented an Improvement in Bobbin-Supporters, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention relates to mechanism for unwinding yarn and thread, and has for its purpose among other objects to control the tension of the yarn or thread, so that a predetermined and regulable strain may be imparted thereto.

Further objects of my invention are to support the spool or bobbin upon spaced studs in such manner as to prevent chattering or gyratory motion of the spool or bobbin in the unwinding operation and to reduce the friction of the parts and the amount of power required to operate the mechanism.

In order that the principles of the invention may be readily understood, I have disclosed certain forms thereof in the accompanying drawings, wherein—

Figure 1 is a side elevation, partially in vertical section, of a bobbin holder for a warper creel having my invention applied thereto; Fig. 2 is an end elevation looking toward the right of the construction shown in Fig. 1; Figs. 3 and 4 are details partially in section of further forms of my invention; Fig. 5 is a view in side elevation and vertical section of a modified form of the construction shown in Fig. 1; Fig. 6 is an end elevation of the construction shown in Fig. 5 looking toward the left.

Much difficulty has been experienced heretofore in regulating or controlling the tension of the yarn or thread as wound onto or from spools or bobbins supported in creels or the like. In unwinding devices with which I am familiar, there has been an excessive amount of gyratory or chattering motion of the spools or bobbins, resulting in unevenness in the product and the expenditure of an undue amount of power.

In Figs. 1 to 6, inclusive, I have shown certain forms of my invention applied to warper creels. Referring first to the construction shown in Figs. 1 and 2, the spool 20 is supported by spaced studs 21, 22 entering the axial passage through the spool. The stud 21 is herein represented as extending from and fixedly supported by a casting 23 secured to the frame 24. The opposite stud 22 is so mounted as to permit the further separation of the studs and the insertion of the spool. To accomplish this result, I have herein shown the stud 22 as carried by an arm 25, to which is secured one end of a transverse connecting plunger rod 26, the opposite end of said rod being received in the sleeve 27 extending from the casting 23. Within the sleeve 27 and surrounding the rod 26 is a coiled expansion spring 28, the end 29 of which engages a shoulder 30 upon the inner face of the sleeve and the opposite end whereof engages the head 31 of the rod 26. Said spring tends normally to project the stud 22 toward the stud 21 and into spool receiving relation therewith. In order to limit such movement of the stud 22 and to prevent binding of the spool, a removable pin 32 is passed radially through the sleeve 27 after the insertion of the rod 26 therein. As shown in Fig. 2, the arm 25 is bifurcated, each bifurcation receiving a rod 26. If desired, each rod may be provided with a spring 28, or one of the rods may serve merely as a guide. To control the tension upon the yarn, as heretofore described, one or both of the studs 21, 22 should be provided with a sleeve 33, 33 between which and the stud or studs may be inserted rotary bearing members, such as the balls 34. As shown in Fig. 3, a single sleeve upon one stud only may be provided or sleeves may be provided upon both studs without the interposition of rotary bearing members. In the event of the employment of the construction shown in Fig. 4, rotary bearing members may be interposed between one of the studs and its sleeve if it be desired still further to reduce the amount of tension upon the yarn.

In Figs. 5 and 6, I have shown a further form of my invention wherein the movable stud 22 is carried by an arm 36 pivoted upon the plunger rod 37, as represented at 38. Said rod 37 is mounted in a guide way 39 extending from the frame 24, a coiled spring 40 being employed acting normally to move the stud 22 to the left viewing said figure, or in spool supporting position. A remov-

able pin 41 is employed to limit the inward movement of the rod 37. The construction of parts is such that the stud supporting lever 36 cannot be swung into dotted line position (see Fig. 5) to release the spool until the rod 37 has been partially withdrawn from the guide way 39. In this form of my invention, one or both of the studs 21, 22 may be provided with sleeves 33. I have herein represented two sleeves 33, 33 between which and the studs 21, 22 are interposed roller bearings 42, it being understood that any suitable rotary bearing support may be provided for one or both of said sleeves. In order to fix the approximate position of the thread and to prevent its interference with other threads upon its progress to the beamer or elsewhere, I have provided a member 43 herein formed as a wire having one end secured by a screw 44 to the guide way 39, and its opposite outwardly bent end provided with an enlarged eye 45 to permit the passage of the thread with the desired freedom, yet localizing the same and preventing its interference with other threads.

Having thus described one type or embodiment of my invention, I desire it to be understood that although specific terms are employed, they are used in a generic and descriptive sense and not for purposes of limitation, the scope of the invention being set forth in the following claims.

Claims:

1. Yarn-winding and unwinding mechanism comprising a support, a spool-supporting stud fixed thereto, a second spool-supporting stud alined with the former, a spring actuated plunger normally projected toward said support, an arm pivoted to said plunger and carrying said second stud, a guideway for said plunger, said guideway normally sustaining said pivoted arm in spool-supporting position, and radially, fixed, cylindrical spool-supporting sleeves mounted on said stud and of a substantially uniform external diameter substantially equaling that of the normal bore of a spool.

2. Yarn winding and unwinding mechanism comprising a support, a spool supporting stud fixed thereto, a second spool supporting stud alined with the former, a spring actuated plunger normally projected toward said support, an arm pivoted to said plunger and carrying said second stud, and a guide way for said plunger, said guide way normally sustaining said pivoted arm in spool supporting position.

3. Unwinding mechanism comprising a support having a spool supporting device for one end of the spool, a second supporting device for the opposite end of the spool, a plunger having means normally to move it inwardly on said support, an arm movably connected to said plunger and carrying said second device, and a guideway for the plunger, said guideway normally sustaining said arm in spool supporting position.

4. Unwinding mechanism comprising a support having a spool supporting device for one end of the spool, a second supporting device for the opposite end of the spool, a spring actuated plunger, an arm carried thereby and movable into active and inactive positions, said second device being supported by said arm, a guideway supporting said plunger and serving to support said arm, and means to limit the inward movement of said plunger.

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

ISAAC E. PALMER.

Witnesses:
F. E. FOWLER,
F. N. COOKE.

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