C. W. BOARDMAN.

MOUNT FOR TENSION PULLEYS FOR SPINNING AND TWISTING MACHINES.

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1,298,163. Patented Mar. 25, 1919.

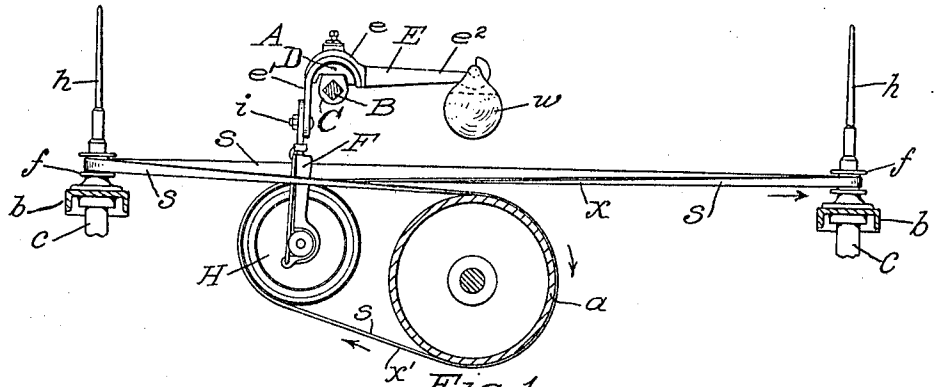

Fig. 1.

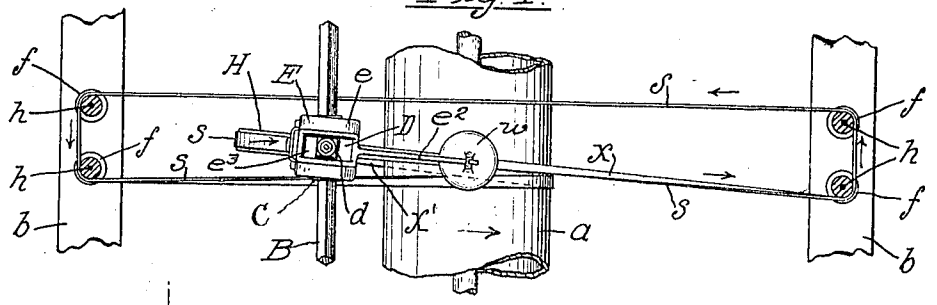

Fig. 2.

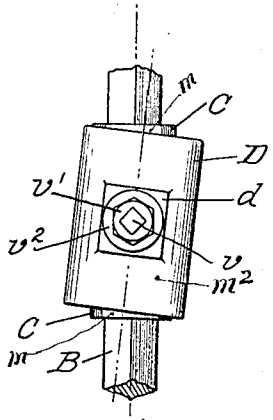

Fig. 3.

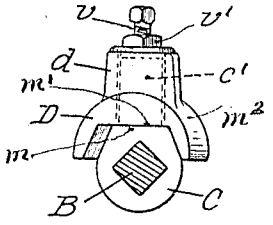

Fig. 4.

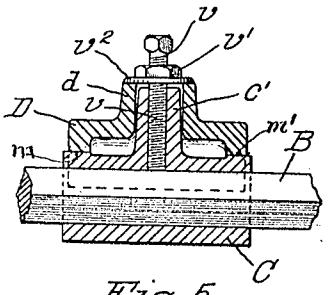

Fig. 5.

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MOUNT FOR TENSION-PULLEYS FOR SPINNING AND TWISTING MACHINES.

1,298,163. Specification of Letters Patent. Patented Mar. 25, 1919.

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To all whom it may concern:

Be it known that I, CHARLES W. BOARDMAN, a citizen of the United States, residing at Pawtucket, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Mounts for Tension-Pulleys for Spinning and Twisting Machines, of which the following is a specification.

My present invention relates to means for adjustably positioning the mounted band-driven take-up or tension-pulleys employed in connection with the spindles of textile spinning and twisting machines, substantially as herein set forth and claimed.

In devices of this general character heretofore constructed independently adjustable eccentric sleeves or cams were employed, the arrangement being such that the axial relation of the oscillatory pulley-carrying hanger was necessarily varied, up or down, with relation to the horizontal longitudinal axis of the main supporting member or rod and the driving drum, the result being to cause a degree of non-parallelism of the said axes, corresponding with the degree of adjustment.

The object I have in view in my present invention is to provide a tension-adjusting device in which the adjustments are capable of being readily effected to the extent desired, maximum or minimum, and at the same time maintain parallelism of the axes, thereby causing a more even and uniform action of the tension-pulley on the belt.

By means of my improvement for regulating the tension of the driving-band running on the tension-pulley, the adjusting device is constructed so that the face of the pulley is caused to aline properly both laterally and tangentially with the respective runs or folds of the belt as they pass to and from the pulley and drum. The said adjusting means employed includes a centrally cored longitudinal sleeve secured to a horizontally supported rod, a swivel-mounted bearing member positioned flatwise on the sleeve, and means for securing the bearing member in adjusted relation to the parts whereby the axis of the oscillating tension-pulley is or may be maintained in planes parallel with the axis of the driving-drum.

In the accompanying sheet of drawings, Figure 1 is a vertical transverse sectional view of a textile spinning-machine showing my improvement normally connected therewith, parts of the machine being omitted; Fig. 2 is a corresponding top plan view showing one group of band-driven spindles; Fig. 3 is an enlarged top plan view of a normally fixed swivel-mounted independently adjustable bearing element on which the pulley-carrying weight-lever is arranged to oscillate in vertical planes; Fig. 4 is a corresponding end elevation of the parts represented in Fig. 3; and Fig. 5 is a longitudinal section showing the parts in the central axial position, parallel with the axis of the driving-drum.

In the drawings, A indicates the device or hanger as a whole; the same comprising a fixed supporting rod B; a concentric sleeve C adjustably slidable on the rod; said sleeve member having a flat surface, a bearing member D swivel-mounted horizontally on the sleeve in engagement with said flat surface, a weight-lever E mounted to oscillate on the bearing member D; a yoke or fork F attached to and depending from an arm of the weight-lever, and a tension or band take-up pulley H revolubly mounted in the forked member.

A revoluble driving-drum *a* extends longitudinally of the machine and between the oppositely disposed bolster-rails *b*, *b*, in which are mounted bolsters *c* carrying revoluble spindle-blades *h* and their whirls *f* driven by an open endless flexible band *s*; the band also passes around the rim of and rotates the take-up or tension-pulley H mounted for swinging movement toward and from the driving-drum. Said tension-pulley is fixed to an axle revolubly mounted in bearings removably positioned in a fork F suspended from an arm *e'* extending downwardly from the lever E. A clamping bolt *i* passing through said fork and arm serves to hold the fork member in laterally adjusted positions. The lever E is also provided with a substantially horizontal arm e^2 having a counter-weight *w* at its free end. The inner ends of said arms merge into an open semi-circular head or body part *e*, having a concave surface forming a seat arranged for rocking engagement with the convex stationary horizontal bearing surface m^2 of the element D, later described. The wall of the upper portion of the said

head part e is provided with a central elongated arc-shaped transverse opening e^3 through which a boss d of member D extends.

The fixed non-revoluble rod B is disposed level and parallel with the longitudinal axis of the driving-drum a and at a distance laterally from it. To the rod is adjustably fixed a number of the sleeves C (one for each group of spindles); each sleeve having on its upper side a central screw-tapped vertical boss c^1 (Fig. 5) arranged at right angles with the longitudinal horizontal axis of the sleeve. The member D, it will be observed, bears flatwise horizontally at m^1 upon and is clamped to the upper flat surface m of the sleeve.

The bearing member D is also provided with a central hollow rectangular lug d, arranged to receive the pivot or boss c^1; the lug itself extending through the said elongated, arc-shaped guide-slot e^3, thereby permitting the member D to be adjusted angularly a limited extent on the pivot in a horizontal plane, the ends of the slot serving to limit the oscillating movements of the weight-lever E.

By means of this construction the bearing member D, interposed between the sleeve C and lever E may be swiveled flatwise on the member C at an angle, or obliquely, in a horizontal plane a limited extent relatively to the axis of the horizontal driving-drum, whereby the hanger and its pulley may be adjusted or swung bodily in a lateral direction on the boss c' until the upper and lower folds x, x^1 of the band are caused to properly aline with the rim of the tension pulley, after which the said members C and D are firmly clamped to the rod B by means of the screw v, check-nut v^1, and washer v^2. See Fig. 5.

In my improved tension-adjusting device, the same, when in normal swinging action, acts to maintain a substantially uniform tension or pull upon the band, in that the counter-weighted pulley-carrying hanger is caused to swing the pulley laterally in a vertical plane inclined to the axis of the driving-drum, thereby, when moved from its normal central position, causing the face of the tension pulley to aline with the upper and lower folds of the band, as before stated.

Thus it will be apparent that in a spinning machine provided with my improved tension-controlling means, the corresponding adjustments are capable of being effected and maintained in parallel horizontal or level planes with relation to the longitudinal axes of the revoluble driving-drum and the fixed rod or member supporting the adjusting device A.

I claim as my invention:—

1. A spindle-driving mechanism having in combination a horizontal driving drum, a stationary supporting rod arranged parallel with said drum, a sleeve mounted on said rod, a bearing member swivel-mounted on said sleeve, and a pulley-hanger mounted on said bearing member.

2. A spindle-driving mechanism having in combination a horizontal driving drum, a stationary supporting rod arranged parallel with said drum, a sleeve mounted on said rod, a bearing member swivel-mounted on said sleeve, a pulley-hanger mounted on said bearing member and a stop for limiting the swiveling movement of said bearing member.

3. A spindle-driving mechanism having in combination a horizontal driving drum, a stationary supporting rod arranged parallel with said drum, a sleeve mounted on said rod and provided with a pivot, a bearing member mounted on said sleeve and arranged to swivel about said pivot, and a pulley-hanger mounted on said bearing member.

4. A spindle-driving mechanism having in combination a horizontal driving drum, a stationary supporting rod arranged parallel with said drum, a sleeve mounted on said rod, a bearing member swivel-mounted on said sleeve, and a pulley-hanger supported and adapted to oscillate upon said bearing member.

In testimony whereof I have affixed my signature in presence of two witnesses.

CHARLES W. BOARDMAN.

Witnesses:
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