Feb. 8, 1927. 1,616,949

E. E. BRADLEY

SPINNING AND TWISTING MACHINE

Filed June 3, 1925 2 Sheets-Sheet 1

Fig. 1.

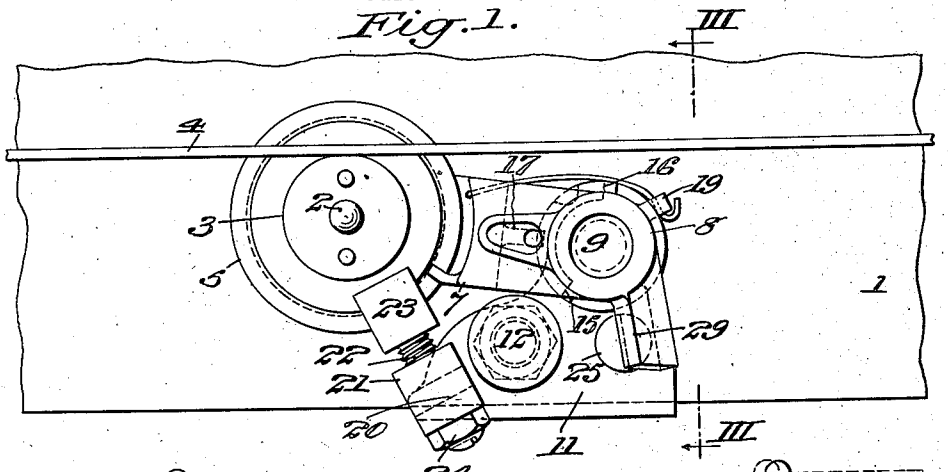


Fig. 3.

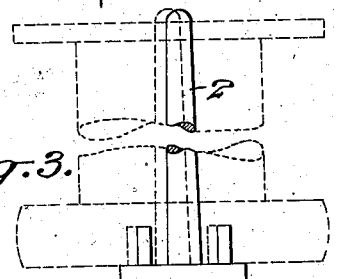
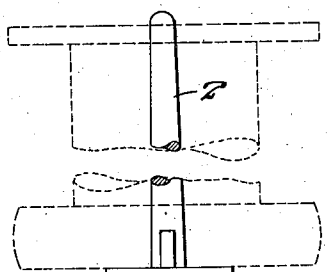
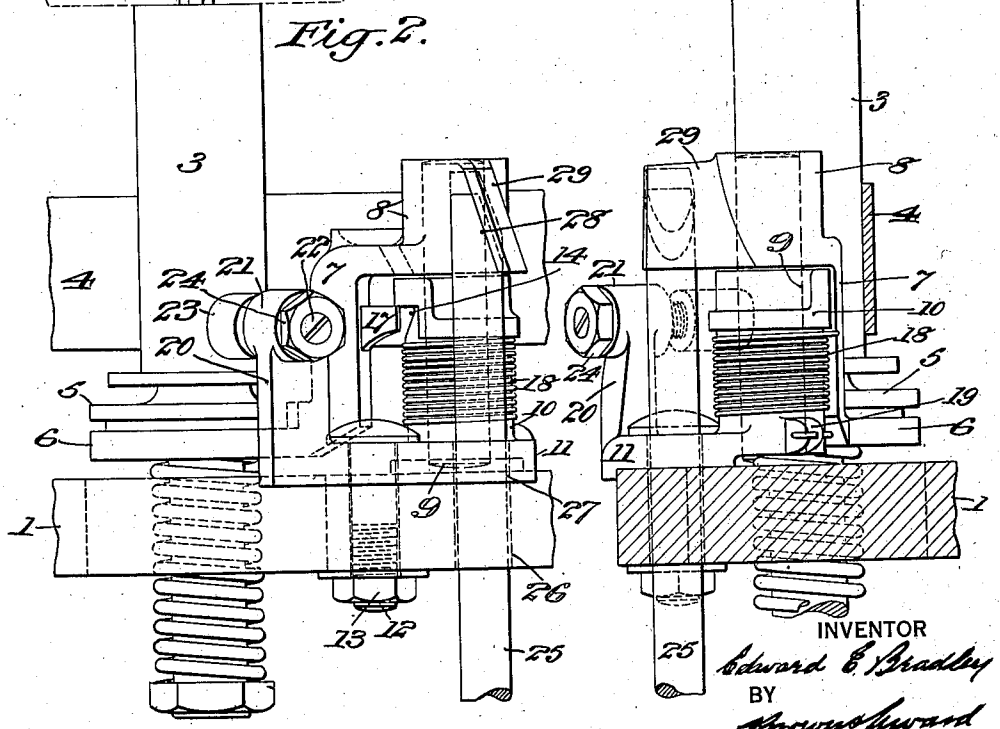


Fig. 2.





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Feb. 8, 1927. E. E. BRADLEY 1,616,949

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Filed June 3, 1925 2 Sheets-Sheet 2

Fig. 4.

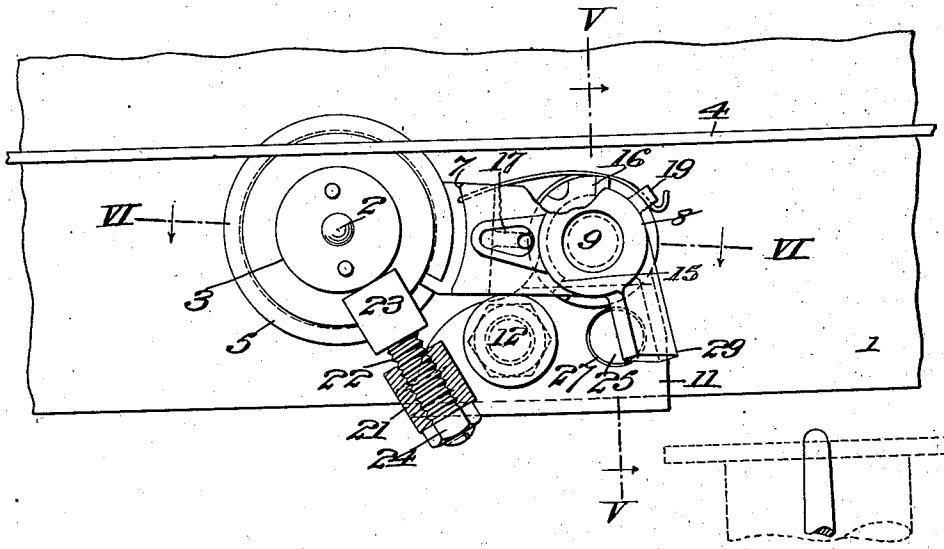


Fig. 5.

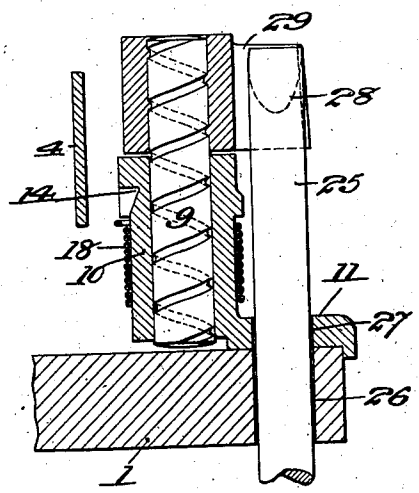
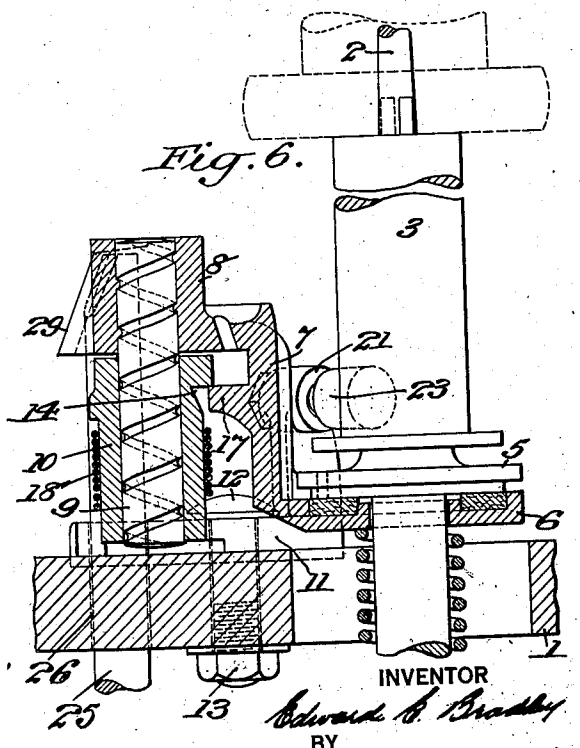


Fig. 6.



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UNITED STATES PATENT OFFICE.

EDWARD E. BRADLEY, OF STONINGTON, CONNECTICUT, ASSIGNOR TO THE ATWOOD MACHINE COMPANY, OF STONINGTON, CONNECTICUT, A CORPORATION OF NEW JERSEY.

SPINNING AND TWISTING MACHINE.

Application filed June 3, 1925. Serial No. 34,556.

This invention relates to an improvement in spinning and twisting machines and has for its object to provide a novel means of mounting the spindles on the rail of the machine and its coaction with the stop motion mechanism.

Another object is to provide a device having a lateral movable wind-up spool carrying spindle arranged to normally hold the spindle whirl in contact with its driving belt and adjustable brake in proximity to the spindle.

Another object is to provide a device arranged to coact with the stop motion controlling mechanism for moving the spindle out of contact with its driving belt and into engagement with a stationary brake to stop the wind-up spool when the thread breaks.

Another object is to provide a device which is simple, effective, economical to manufacture and readily attached to machines now in common use.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Fig. 1 represents a plan view of my improved mounting showing a portion of the rail of a spinning machine to which it is adapted, the upper end of the stop motion rod, and a part of the driving belt.

Fig. 2 represents an elevation of the same.

Fig. 3 represents a vertical section taken in the plane of the line III—III of Fig. 1, looking in the direction of the arrows.

Fig. 4 represents a plan view partly in section, similar to that shown in Fig. 1, with the parts in another position.

Fig. 5 represents a vertical section taken in the plane of the line V—V of Fig. 4, looking in the direction of the arrows, and

Fig. 6 represents a vertical section taken in the plane of the line VI—VI of Fig. 4, looking in the direction of the arrows.

The spindle rail of the spinning machine is denoted by 1, the spindle by 2 which removably carries the wind-up spool shown in dotted outline, the spindle whirl by 3, and the driving belt by 4. The spindle step and bolster is denoted by 5 and it is suitably supported in the usual manner in a spindle base 6. This spindle base 6 is provided with an upright 7 having a lateral directed arm and hub 8 carrying a depending pivot pin 9, which pivot pin is inserted axially in a bearing 10 uprising from a bracket 11 fixed to the spindle rail 1 of the machine by means of a bolt 12 and nut 13. The upper end of this bearing 10 is provided with an arcuate groove 14 terminating in shoulders 15, 16, which shoulders are located in position to engage a lug 17 projecting from the upright 7 of the spindle base 6 for limiting the movement of the spindle base. A coil spring 18 surrounds the bearing 10, one end of which spring engages a lug 19 on the bracket 11, while the other end of the spring connects the upright 7. This spring 18 acts to normally hold the whirl 3 of the wind-up spool carrying spindle 2 in driving contact with the belt 4.

A brake is provided in position to engage the spindle whirl 3 to automatically stop the wind-up spool when the whirl is moved away from its contact with the driving belt by the automatic action of the stop motion (not shown), which brake comprises an arm 20 extending upwardly from the bracket 11 having a hub 21 arranged to receive a screw threaded shank 22 of a brake shoe 23 of hard rubber or other similar material, which brake shoe is normally spaced a short distance from the spindle whirl 3. The brake shoe 23 may be adjusted longitudinally in the hub 21 and securely fixed in position by a lock nut 24 which has a threaded engagement with the threaded end of the shank 22. By releasing the lock nut 24, the shank and brake shoe may be rotated in the hub 21 so that the position of the brake shoe with respect to the spindle whirl may be accurately adjusted.

The stop motion controlling means, as shown in my United States Letters Patent, No. 1,482,779, dated February 5, 1924, is employed to move the spindle whirl 3 out of engagement with the belt 4 and into contact with the brake shoe 23, and in connection therewith I have only deemed it necessary to illustrate the vertically reciprocating rod 25, of the said mechanism, which rod is arranged to pass through a hole 26 in the spindle rail and having a bearing 27 in the bracket 11. The upper end of the rod 25 is bevelled as shown at 28, which bevel portion coacts with an inclined surface of a lateral arm 29. As the rod is moved upwardly the bevel face 28 will ride on the inclined surface and arcuately move the arm

and hub 8, pivot pin 9, upright 7 and spindle base 6, which movement swings the whirl 3 out of engagement with the belt and into contact with the brake shoe 23. The movement of the whirl 3 away from the brake shoe 23 is controlled by the bevel face 28 of the rod 25 moving downwardly on the inclined surface of the lateral arm 29, and the coaction of the spring 18 on the bearing 10 with the lug 19 and upright 7.

From the foregoing description it will be seen that I have provided a mounting which obviates the necessity of adjusting the spindle and its support with respect to the driving belt and that it is only necessary to adjust the brake shoe to meet the outward movement of the whirl away from the belt. This feature also eliminates the usual necessary adjustment required of the vertically reciprocating rod 25 of the stop motion mechanism, with respect to the lateral arm 29, since the rod may be given a common movement to swing the spindle base, and the brake shoe brought into operative position with the whirl and permanently secured in the hub 21 on the arm 20 uprising from the bracket 11.

It will also be seen that I have provided a mounting which may be readily applied to the spindle rail of a spinning and twisting machine, now in common use, without interfering in any way with the other mechanism of the machine. It will also be understood that this mounting is very simple and compact and applicable to various forms of spinners.

It is obvious that various changes may be resorted to in the form, construction and arrangement of the several parts without departing from the spirit and scope of my invention; and hence, I do not intend to be limited to the details herein shown and described except as they may be included in the claims.

What I claim is:—

1. In a spinning machine, the spindle rail, the spindle driving belt, the spindle whirl, a bracket fixed to said rail having a bearing uprising therefrom, a spindle base for supporting the spindle whirl mounted to oscillate in said bearing and yieldingly held in contact with the belt, a brake shoe carried by the bracket in position to be engaged by the whirl in its movement away from the belt, and a vertically movable stop motion rod journaled in the bracket and having a cam engagement with the spindle base for automatically swinging the whirl away from the belt into engagement with the brake.

2. In a spinning machine, the spindle rail, the spindle driving belt, the spindle whirl, a bracket fixed to said rail having a bearing uprising therefrom, a spindle base for supporting the spindle whirl mounted to oscillate in said bearing and yieldingly held in contact with the belt, a brake shoe carried by the bracket in position to be engaged by the whirl in its movement away from the belt, said brake shoe being longitudinally adjustable on the bracket toward and away from the whirl, and a vertically movable stop motion rod journaled on the bracket and having a cam engagement with the spindle base for automatically swinging the whirl away from the belt into engagement with the brake.

3. In a spinning machine, the spindle rail, the spindle driving belt, the spindle whirl, a bracket fixed to said rail having an arm and a bearing uprising therefrom, a spindle base for supporting the spindle whirl mounted to oscillate in said bearing and yieldingly held in contact with the belt, and a brake shoe carried by the arm in position to be engaged by the whirl in its movement away from the belt.

4. In a spinning machine, the spindle rail, the spindle driving belt, the spindle whirl, a bracket fixed to said rail having an arm and a bearing uprising therefrom, a spindle base for supporting the spindle whirl mounted to oscillate in said bearing and yieldingly held in contact with the belt, and a brake shoe longitudinally adjustable in the arm and movable toward and away from the whirl.

5. In a spinning machine, the spindle rail, the spindle driving belt, the spindle whirl, a bracket fixed to said rail having an arm and a bearing uprising therefrom, a spindle base for supporting the spindle whirl mounted to oscillate in said bearing and yieldingly held in contact with the belt, a brake shoe carried by the arm in position to be engaged by the whirl in its outward movement, and a vertically movable stop motion rod journaled in said bracket and having a cam engagement with the spindle base for automatically swinging the whirl away from the belt into engagement with the brake.

6. In a spinning machine, the spindle rail, the spindle driving belt, the spindle whirl, a bracket fixed to said rail having an arm and a bearing uprising therefrom, a spindle base for supporting the spindle whirl mounted to oscillate in said bearing and yieldingly held in contact with the belt, a brake shoe longitudinally adjustable in the arm and movable toward and away from the whirl, and a vertically movable stop motion rod journaled in said bracket and having a cam engagement with the spindle base for automatically swinging the whirl away from the belt into engagement with the brake.

In testimony, that I claim the foregoing as my invention, I have signed my name this first day of June 1925.

EDWARD E. BRADLEY.