

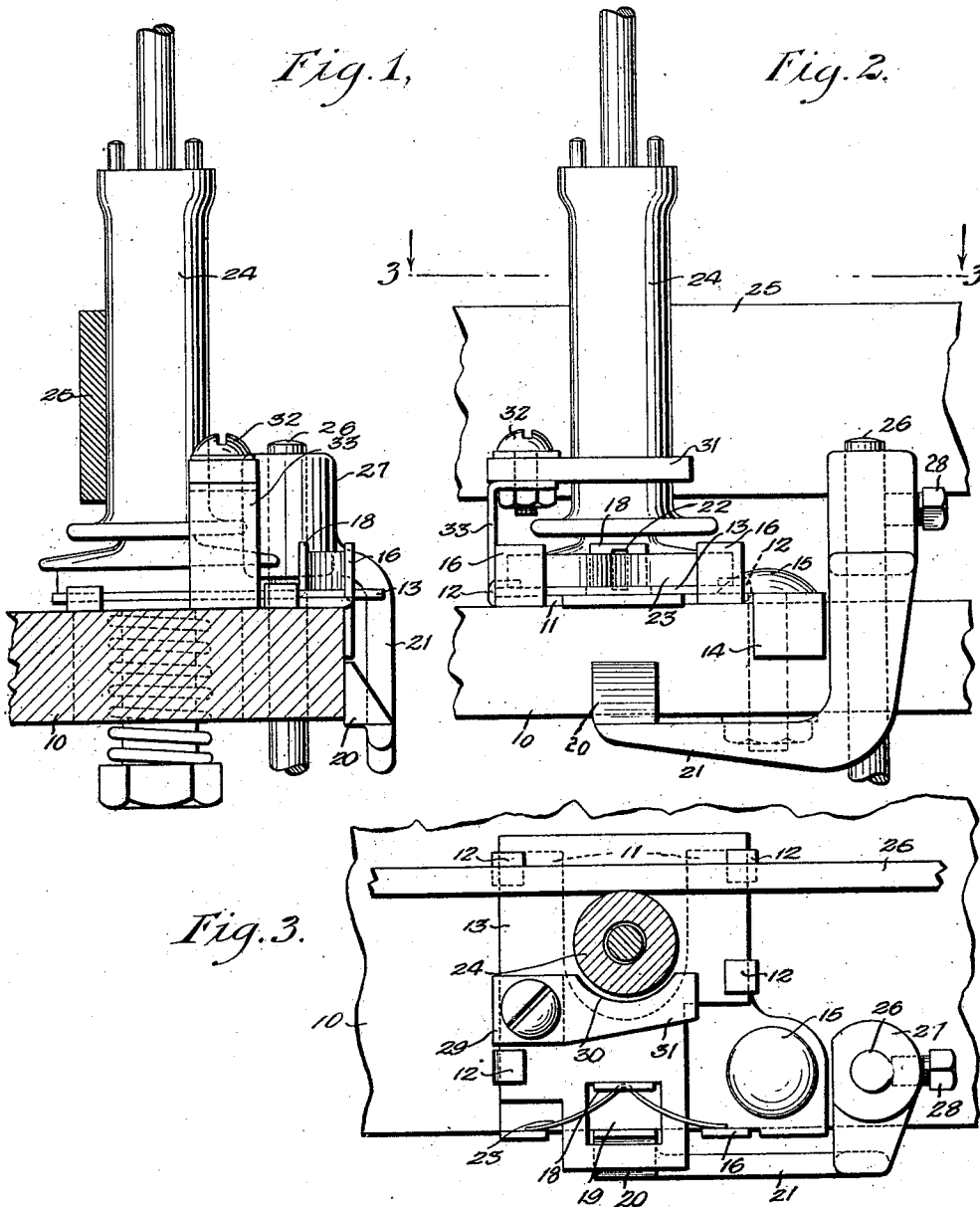
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SPINDLE STOP MOTION ATTACHMENT FOR SPINNING MACHINES

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WITNESSES

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SPINDLE STOP-MOTION ATTACHMENT FOR SPINNING MACHINES.

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To all whom it may concern:

Be it known that I, ERNEST C. CUSHMAN, a citizen of the United States, and a resident of Westerly, in the county of Washington and State of Rhode Island, have invented new and useful Improvements in Spindle Stop-Motion Attachments for Spinning Machines, of which the following is a full, clear, and exact description.

This invention relates to attachments for stop motions provided in conjunction with spinning machines.

Ordinarily in constructing spinning machines, the spindles are rigidly mounted on the spinning rails. Provided in conjunction with each spindle is a whorl which may be projected into engagement with the spindle-operating member when it is necessary to stop a particular spindle. The operation of the whorl to disengage the spindle-operating member from the spindle moves the spindle-operating member away from the latter. Thus the disengaging of the spindle-operating member from one spindle affects the adjacent spindle, causing what is known as "slack twist." To eliminate the defects referred to above, a swing-type spindle has been developed, but this type of spindle cannot be applied to the ordinary spindle rails.

The general object of this invention is the provision of a simply constructed, durable and efficient attachment for spinning machine stop motions adapted for mounting on any spinning rail and capable of disassociating any spindle from the spindle-operating member and stopping it without interfering with the operation of adjacent spindles.

This object is accomplished by providing a base adapted for mounting on any spindle rail, slidably mounting on the base a spindle-carrying member provided with means for normally retaining the spindle in engagement with the spindle-operating means, and associating with the spindle-carrying member a member for operating it to withdraw the spindle from the spindle-operating means.

This and other objects of the invention will be more clearly understood from the following detailed description and accompanying drawings.

Figure 1 is an end elevation of the spindle stop motion attachment;

Figure 2 is a side elevation of the spindle

stop motion attachment showing its construction;

Figure 3 is a section along the line 3—3, Figure 2, showing a top plan view.

Referring to the above-mentioned drawings, a spindle rail 10 of the ordinary type is shown carrying the spindle stop motion attachment. This spindle stop motion attachment includes a base 11, in the form of a U-shaped plate, provided with a depending lug 14 extending at right angles to the base. This lug is provided for engaging the spindle rail to retain the base rigidly in position when it is connected to the spindle rail 10 by a bolt 15. A plurality of lugs 12 are formed on the base 11 and have their upper ends bent inward so as to lie parallel to the base. These ends of the lugs 12 lying parallel to the base and spaced therefrom present guides in which a plate 13 is slidably mounted. The means described above for attaching the base to the spindle rail includes a bolt 15 and a depending lug 14 in the form of a plate. It will be readily seen that this type of base may be mounted on any type of spindle rail.

Formed in the outer end of the plate 13 is an opening 19 for receiving the beveled head 20 of a dog 21. Extending upward from the plate 13 and integral with the wall of the plate defining the inner side of the opening 19 is a lug 18. This lug has a vertical groove 22 formed therein for receiving the apex of a V-shaped spring 23. The arms of the V-shaped spring 23 seat on lugs 16 formed on the base 11. This spring 23 serves to normally project a spindle 24 carried by the plate 13 and depending between the arms of the U-shaped base 11 against a belt 25 which serves as a driving member for the spindle. The dog 21 is attached to a rod 26 operated by the stop motion of the spinning machine. In order to properly position the dog 21, it is provided with an eye 27 adapted for slidably mounting on the rod 26 and provided with a set screw 28 for fixing it in any desired position. The head 20 of the dog is located in line with the opening 19 provided in the plate 13.

Carried by the plate 11 is a bracket 33, the upper end of which projects over the sliding plate 13. Mounted on the upper end of this bracket 33 by means of a bolt 32 is a plate 31 having a notch 30 for receiving

the spindle 24 formed therein. The curved face of the notch 30 may be lined with any material such as leather or the like normally used for mounting on brakes. Thus the plate 31 is converted into a brake for the spindle 24.

The operation of this device is as follows:

When a thread breaks during the operation of a spinning machine, the stop motion operates the rod 26, raising the dog 21. When the dog 21 is raised the beveled head 20 is projected into the opening 19, drawing the plate, as viewed in Figure 3, downward, moving the spindle 24 away from the belt 25. The depending portion of the spindle 24 moves between the arms of the U-shaped base 11. When the spindle has been moved away from the belt 25 it is projected against the brake 31, stopping its rotation. After the thread has been connected, the dog 21 is withdrawn from the plate 13, permitting the spring 23 to project the plate 13, as viewed in Figure 3, upward, carrying the spindle 24 into engagement with the belt 25.

I would state in conclusion that while the illustrated example constitutes a practical embodiment of my invention I do not limit myself strictly to the exact details herein illustrated since manifestly the same can be considerably varied without departing from the spirit of the invention as defined in the appended claims.

Claims:

1. In combination with a driving member, a spinning spindle comprising a base, a plate mounted to reciprocate on the base, a spindle carried by the plate and normally retained in engagement with the driving member, and means directly engaging the plate to move the spindle out of engagement with the driving member.

2. In combination with a driving member, a spinning spindle comprising a base, a plate movably mounted on the base, a spindle carried by the plate and normally retained in engagement with the driving member, means directly engaging the plate to move the spindle out of engagement with the driving member, and means for stopping the rotation of the spindle when it is moved out of engagement with the driving member.

3. A spinning spindle for mounting on spinning machines provided with a spindle-operating member, comprising a base for mounting on the spinning machine, a plate movably mounted on the base, a spindle carried by said plate and normally retained in engagement with the spindle-operating member, means directly engaging the plate to move the spindle out of engagement with the spindle-operating member, and a brake for engaging the spindle when it is moved out of engagement with the spindle-operating member.

4. A mechanism of the character described, comprising a sliding plate, a spindle on the plate, motion transmitting means normally engaging the spindle, and a dog having a cam face to engage the plate and move the same to a position to disengage the spindle from its motion transmitting means.

5. A mechanism of the character described, comprising a sliding plate, a spindle on the plate, a belt normally engaging the spindle and transmitting motion thereto, said plate having an opening therein, and a dog movable through said opening and adapted to engage a wall thereof to move the plate to a position to separate the spindle from the belt.

ERNEST CLARENCE CUSHMAN.