April 28, 1931. F. K. HENDRICKSON 1,803,186

SPINDLE DRIVING MECHANISM

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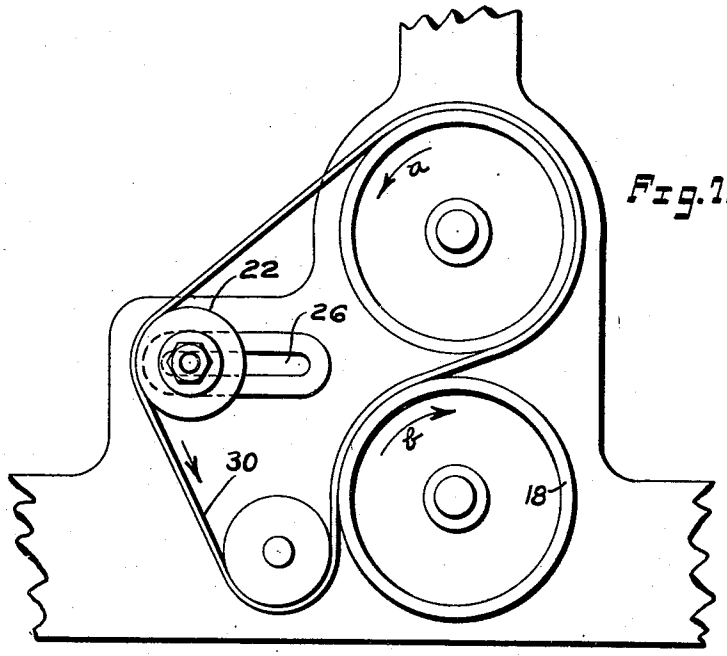


Fig. 1.

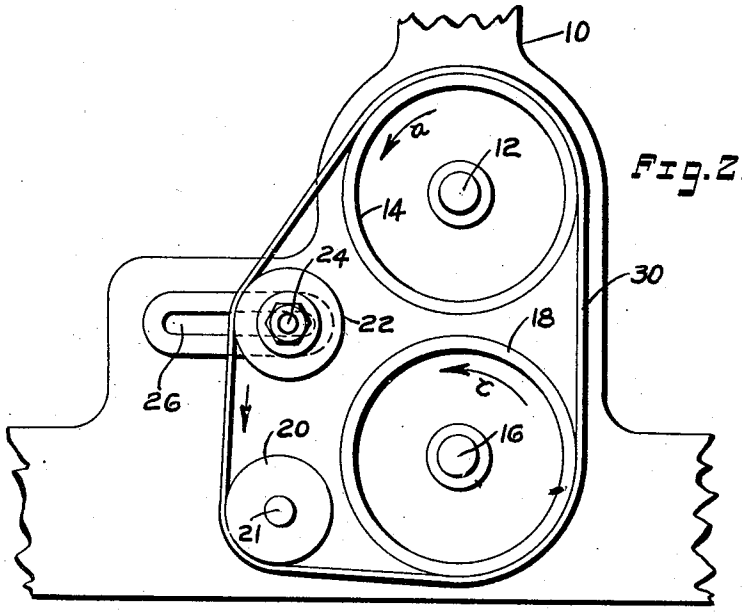


Fig. 2.

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UNITED STATES PATENT OFFICE

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SPINDLE-DRIVING MECHANISM

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This invention relates to spinning or twisting machines and particularly to the mechanism for driving the spindles in such machines. It is desirable under certain conditions to reverse the twist of the threads produced by the machine, which result is most readily accomplished by reversing the direction of rotation of the spindles.

It is the general object of my invention to provide improved driving mechanism in a spinning or twisting machine by which the spindles may be rotated in either direction and by which the reversal of rotation may be quickly and easily accomplished.

A preferred form of the invention is shown in the drawings in which

Fig. 1 is an end elevation of parts of a spinning or twisting machine embodying my improvements; and

Fig. 2 is a view similar to Fig. 1 but showing the direction of spindle rotation reversed.

Referring to the drawings, I have shown a portion of the end frame 10 of a spinning or twisting machine. A main driving shaft 12 is rotatably mounted in the frame 10 and is provided with a pulley or sprocket 14 which is continuously rotated in the direction of the arrow *a*. A second shaft 16 is rotatably mounted in the frame 10 and supports the drum or cylinder by which the spindles are rotated. The shaft 16 is provided with a pulley or sprocket 18 firmly secured thereto.

A guide pulley 20 is rotatably mounted on a stud 21 on the frame 10, and a second guide pulley 22 is rotatably mounted on a stud 24 which is adjustable lengthwise of a slot 26 in the frame 10. The stud 24 may be clamped in any desired position in the slot 26. A belt or chain 30 engages the driving pulley or sprocket 14, the guide pulleys 20 and 22, and the cylinder pulley or sprocket 18.

When the belt or chain 30 is arranged to pass over the cylinder pulley 18, as shown in Fig. 1, the cylinder will be rotated in a clockwise direction, as indicated by the arrow *b*. With this arrangement of the belt or chain 30, the guide pulley 22 is adjusted near the outer end of the slot 26 to take up the slack in the belt or chain 30.

If it is desired to reverse the direction of rotation of the cylinder pulley or sprocket 18, the belt or chain 30 is passed under the pulley 18, as indicated in Fig. 2, and the guide pulley 22 is adjusted at the inner end of the slot 26 to provide the increased length of belt required to pass under and around the pulley 18. With the parts thus arranged, as indicated in Fig. 2, the cylinder pulley 18 will be rotated in a counterclockwise direction, as shown by the arrow *c*.

The peripheries of the pulleys 14 and 18 are preferably somewhat closely adjacent and the guide pulleys are preferably offset laterally. This relative position of parts permits a very compact arrangement, while maintaining adequate lap of the belt on the pulleys in both running positions thereof.

I am thus able to provide a quiet and silent running chain or belt drive for the cylinder, and the direction of rotation of the cylinder may be reversed by merely changing the path of the belt or chain 30 and the position of the guide pulley 22. I thus avoid the use of reversing gears or other complicated or noisy mechanism, and I provide a construction which may be operated quietly and with equal satisfaction and efficiency for either direction of spindle rotation.

It will be understood that the terms "pulley" and "belt," as used in the claims, include sprockets and chains as equivalent structures.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:—

1. In a spinning or twisting machine, a driving shaft, a cylinder shaft, pulleys on said shafts, a belt connecting said pulleys, a guide pulley mounted on a fixed bearing, and a second guide pulley mounted on a laterally adjustable bearing, said first guide pulley being positioned to guide the belt into contact with the cylinder pulley when the belt is passed either over or under said cylinder pulley, and said second guide pulley

being adjustable to take up slack in said belt in either driving position thereof.

2. The combination in a spinning or twisting machine as set forth in claim 1, in which the periphery of the driving pulley is closely adjacent the periphery of the cylinder pulley, and in which the guide pulleys are positioned at one side of the center line joining said driving and cylinder pulleys.

3. The combination in a spinning or twisting machine as set forth in claim 1, in which the periphery of the driving pulley is closely adjacent the periphery of the cylinder pulley, and in which the guide pulleys are positioned at one side of the center line joining said driving and cylinder pulleys, and in which the movable guide pulley is adjustable in a direction substantially perpendicular to said center line.

4. In a spinning or twisting machine, a driving pulley, a cylinder pulley, a belt connecting said pulleys and a guide pulley effective to selectively guide said belt into driving contact with said cylinder pulley at points at opposite sides of the axis thereof, whereby the pulley may be caused to rotate in either direction.

In testimony whereof I have hereunto affixed my signature.

FRED K. HENDRICKSON.