

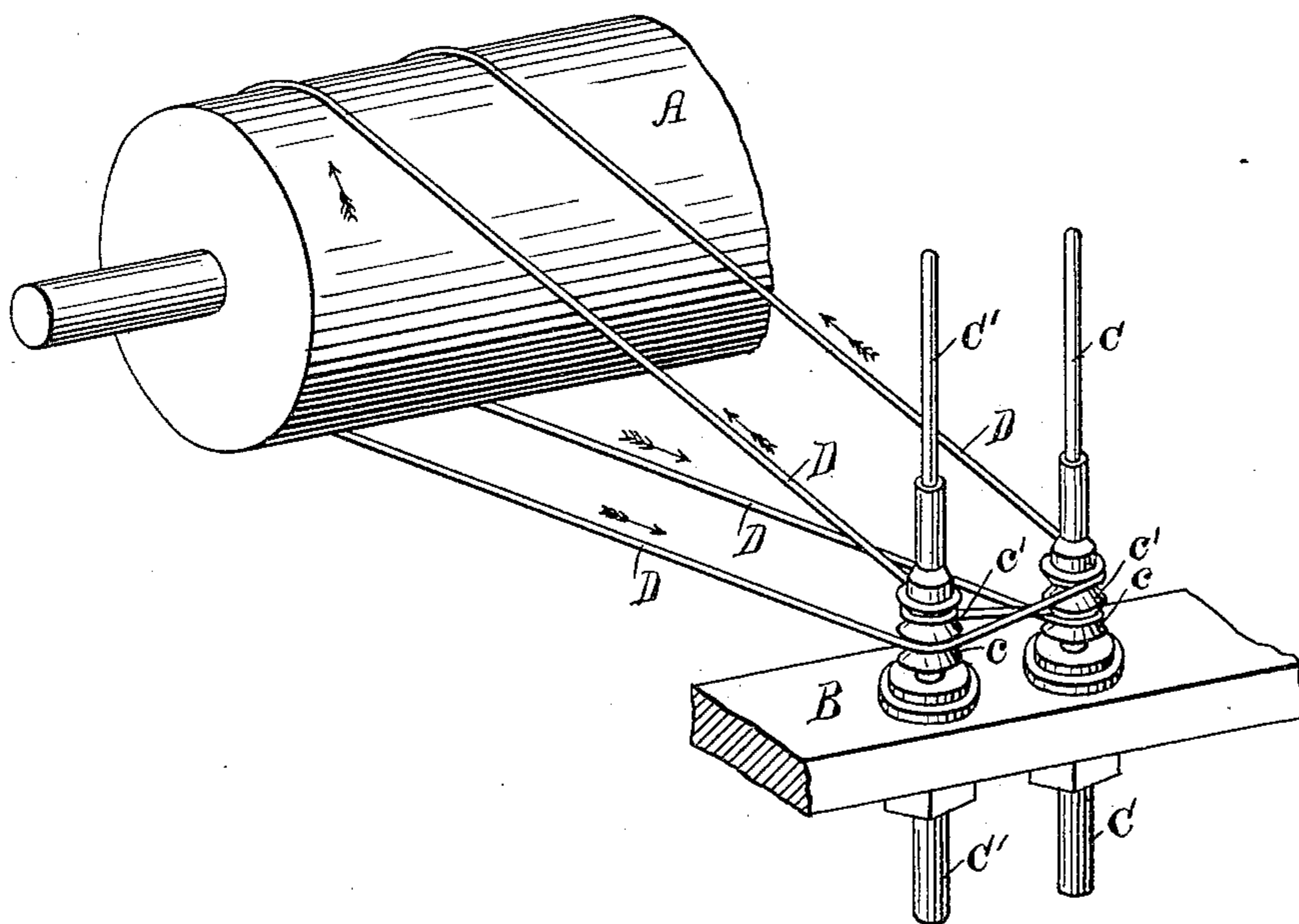
(No Model.)

G. M. WHITIN.

SPINNING AND TWISTING MACHINE.

No. 318,405.

Patented May 19, 1885.



WITNESSES:

C. H. Leuther Jr.  
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INVENTOR:

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Attys

# UNITED STATES PATENT OFFICE.

G. MARSTON WHITIN, OF WHITINSVILLE, MASSACHUSETTS, ASSIGNOR TO  
THE WHITIN MACHINE WORKS, OF SAME PLACE.

## SPINNING AND TWISTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 318,405, dated May 19, 1885.

Application filed July 25, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, G. MARSTON WHITIN, of Whitinsville, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Spinning and Twisting Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to mechanism for driving the spindles of spinning and twisting machines, the object of my invention being to so arrange the spindle-driving bands that the elasticity of the band may be compensated for and allowed to act, while at the same time the spindles may be allowed to run with the proper regularity or evenness of movement.

To the above purposes my invention consists in the peculiar construction and arrangement of the spindle-whirls and the driving-bands, whereby each band is caused to pass continuously around one of the two whirls of each spindle, and thence only partially around the remaining whirl of each spindle, as hereinafter described and claimed.

In spinning and twisting machines it is of the utmost importance that all of the spindles be run at a uniform rate of speed, so as to produce the same working result. In this class of machines the rolls are driven at a certain or definite speed, so as to deliver a fixed quantity of sliver. When, therefore, there is too much slack in the driving-band of one or more spindles, they do not exert as much tension as the others, and consequently do not put in the required twist, the result being that a variable instead of a uniform quality of yarn is produced. My present invention produces a machine in which the slackening and slipping of the driving-band may occur without affecting the uniform running of the spindles.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawing, in which the figure illustrates in perspective a portion of a spinning and twisting machine, showing certain parts embodying my invention.

In the said drawing, A designates the driv-

ing-cylinder of a machine for spinning and twisting yarn. B designates the bolster-rail. C designates the right-hand spindle, and C' the left-hand spindle; and D designates the driving-band.

The driving-band is continuous and passes twice partially around the cylinder. Each of the spindles is provided with two whirls, *c c'*, arranged one above the other. These whirls may be of any usual or preferred form.

The band passes from under the cylinder completely around the lower whirl, *c*, of the right-hand spindle C, thence completely around the upper whirl, *c'*, of the left-hand spindle C'. From the upper whirl of the left-hand spindle C' the band passes above the driving-cylinder and partially around the cylinder, and from thence to the lower whirl, *c*, of the left-hand spindle. The band passes only partially around the lower whirl of the left-hand spindle, C', and extends from thence to the upper whirl, *c'*, of the right-hand spindle. The band passes partially around the upper whirl of the right-hand spindle C, and passes thence upward over and partially around the driving-cylinder to the lower whirl of the left-hand spindle C', at which point I began to describe the course of the band. It will thus be seen that each part of the band D drives two spindles, and that the band drives each of the spindles at two points. On one of the driving-points—that at which the band completely surrounds one of the whirls—there can be no slip of the band, while at the other driving-point—that at which the band only partially surrounds the other whirl—the band may slip. By passing the band partially around the whirl of one spindle, and passing said band completely around a whirl on the next spindle, the slip of the band will not affect the spindles, and the latter will run uniformly. Furthermore, as the band passes from the cylinder around either the upper or the lower whirl of one spindle, and then crosses to the opposite whirl of the other spindle, and from the latter back to the cylinder, the band diverges at the points of crossing and no chafing of the band occurs. Thus the elasticity of the band does not affect



the running of the spindles, and consequently the spindles are driven at a uniform rate of speed.

Having thus described my invention, I claim  
5 as new and desire to secure by Letters Patent—

1. The combination, with the driving-cylinder and the spindles having each two whirls, of the band passing completely around one whirl of the first spindle, thence completely  
10 around the other whirl of the second spindle, thence partially around the driving-cylinder, thence partially around one whirl of the second spindle, thence partially around the other  
15 whirl of the first spindle, and thence partially around the driving-cylinder and back to the starting-point, substantially as and for the purpose described.

2. The combination, with the cylinder A and the spindles C C', having each the two whirls c c', of the band D, passing first completely  
20 around the lower whirl, c, of the first spindle, then completely around the opposite whirl, c', of the second spindle, then partially around the cylinder, then partially around the lower  
25 whirl, c, of the second spindle, and then partially around the opposite whirl, c', of the first spindle, as and for the purpose set forth.

G. MARSTON WHITIN.

Witnesses:

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