

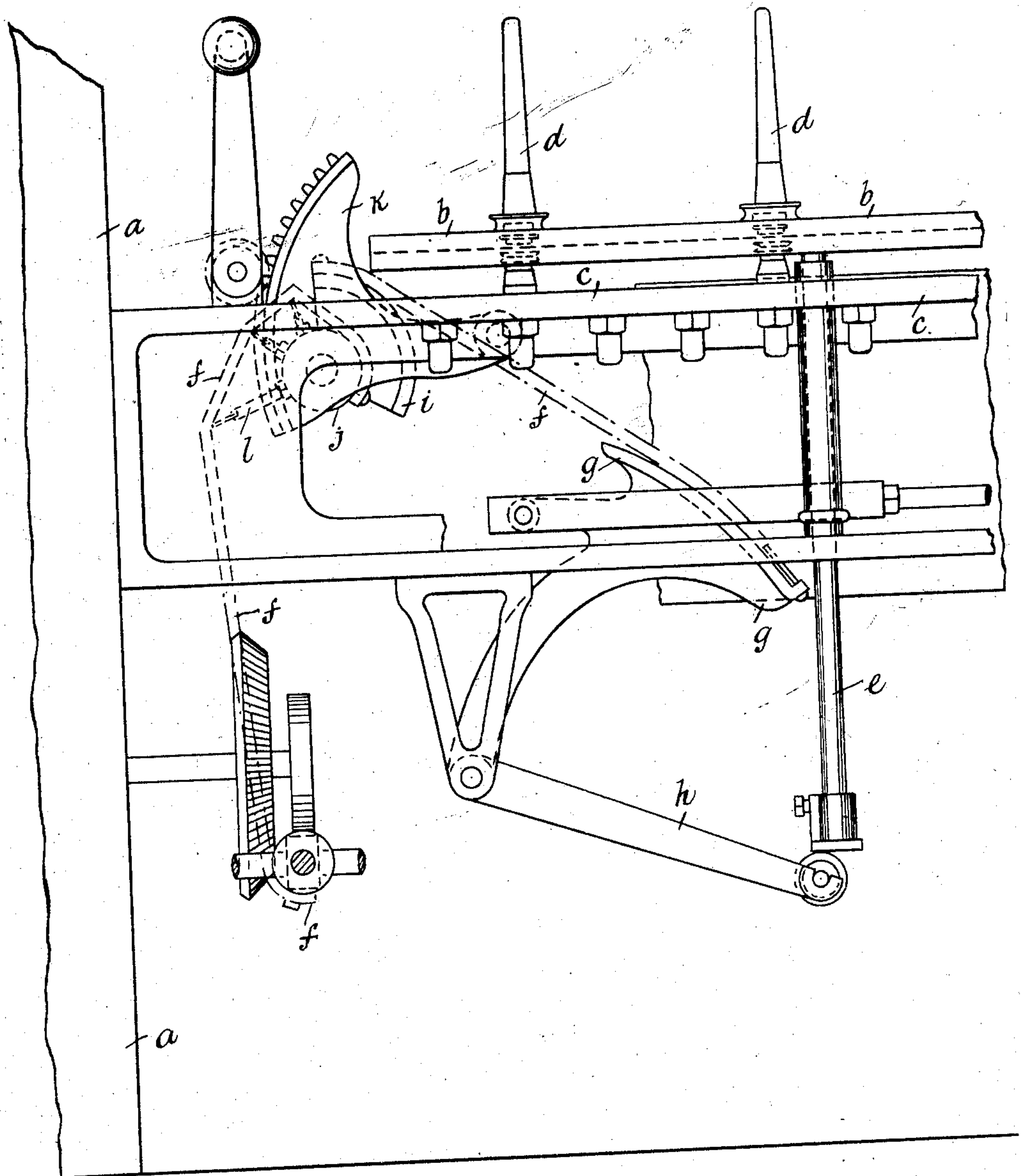
No. 865,144.

T. YATES.  
RING SPINNING MACHINE.  
APPLICATION FILED SEPT. 2, 1905.

PATENTED SEPT. 3, 1907.

2 SHEETS—SHEET 1.

FIG. 1



Attest:

Paul A. Blair  
Wadde E. Keir

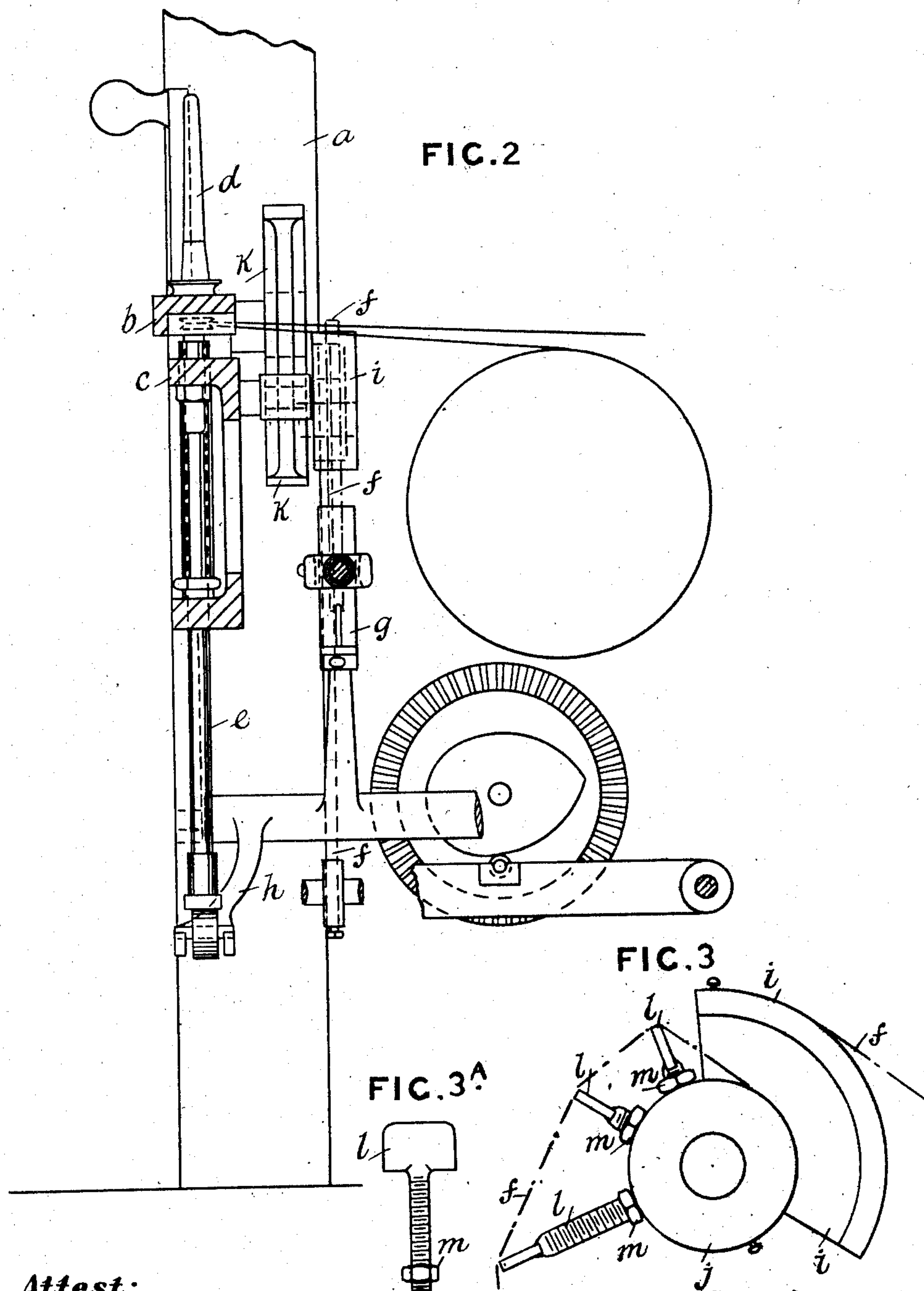
Inventor:

Thomas Yates

by Howson and Howson Attys.

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2 SHEETS—SHEET 2.



Attest:  
Paul A. Blair  
Mary E. Keir

Inventor:  
Thomas Yates  
by *Howe and Howe* Attys.



# UNITED STATES PATENT OFFICE.

THOMAS YATES, OF GREENGATE MILLS, SALFORD, ENGLAND, ASSIGNOR TO LANGWORTHY BROTHERS & COMPANY LIMITED, OF GREENGATE MILLS, SALFORD, ENGLAND.

## RING-SPINNING MACHINE.

No. 865,144.

Specification of Letters Patent.

Patented Sept. 3, 1907.

Application filed September 2, 1905. Serial No. 276,902.

*To all whom it may concern:*

Be it known that I, THOMAS YATES, a subject of the King of Great Britain and Ireland, and residing at Greengate Mills, Salford, in the county of Lancaster, England, have invented new and useful Improvements Applicable to Ring-Spinning Machines, of which the following is a specification.

The object of this invention is to produce by simple means better and firmer cops than has hitherto been possible in ring-spinning machines, and at the same time to wind about twice the quantity or number of yards of yarn on each cop of the same diameter as usual.

The present invention is a modification of the invention forming the subject of my application for Letters Patent in the U. S. Serial No. 232,363, filed November 11, 1904.

The manner in which my present invention is to be performed or carried into practical effect will be readily understood on reference to the two sheets of illustrative drawings hereunto annexed in which

Figure 1 is a front elevation of part of the end of a ring frame showing the parts which are affected by my invention as applied to the "Howard and Bullough" type of ring-spinning machines. Fig. 2 is an end-view of the same partly in section, Fig. 3 is an enlarged side elevation of the auxiliary quadrant hereinafter more particularly referred to, and Fig. 3<sup>a</sup> a face view of a detached portion thereof.

In the framework *a* of the machine is mounted the spindle rail *c* which supports the spindles and pirns *d*. The ring rail *b* is lifted by the lifting rods or "pokers" *e*, which are actuated through the quadrant *g* and the lever *h* by the lifting chain *f* which is wound upon a drum rotated by suitable mechanism. Instead of passing this lifting chain over a pulley provided with cam surfaces

in order to regulate the speed at which the ring rail *b* is lifted, I have found that a much greater variety of speed and a much more accurate adjustment thereof may be secured by the new means which form the subject of this invention. Instead of running the chain in a single length from the quadrant *g* to the winding drum, I break it at the pulley and attach the end of the length which reaches to the quadrant *g*, to a segment *i* on the "pulley" *j*. The length of the chain which extends to the winding drum I attach to the pulley *j* and pass over radial arms *l* of various lengths on the pulley. These arms in addition to being of various lengths are also made adjustable with relation to their length. I have shown them as screw threaded rods, screwing into the pulley, and provided with securing nuts *m*. By this means I make it possible to vary at will the speed at which the ring rail travels, since the greater the speed with which the pulley is rotated, the faster is the quadrant *g* pulled over and the lever *h* kicked up. The arms *j* have the same effect as if the pulley were provided with a cam face, the cam of which is adjustable at will. By this means I am able to secure a bobbin or cop of any desired shape, or adapt the wind to any shape of spindle and pirn.

I claim as my invention

In a ring spinning machine, a ring rail, a lifting rod therefor, a lever actuating said lifting rod, a chain secured to said lever, and means for actuating said chain, in combination with a pulley having arms adjustable in relation to their length, whereby the speed at which said lever is effected may be varied at will.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses.

THOMAS YATES.

Witnesses:

W. F. KERSHAW,  
F. MATHER.