

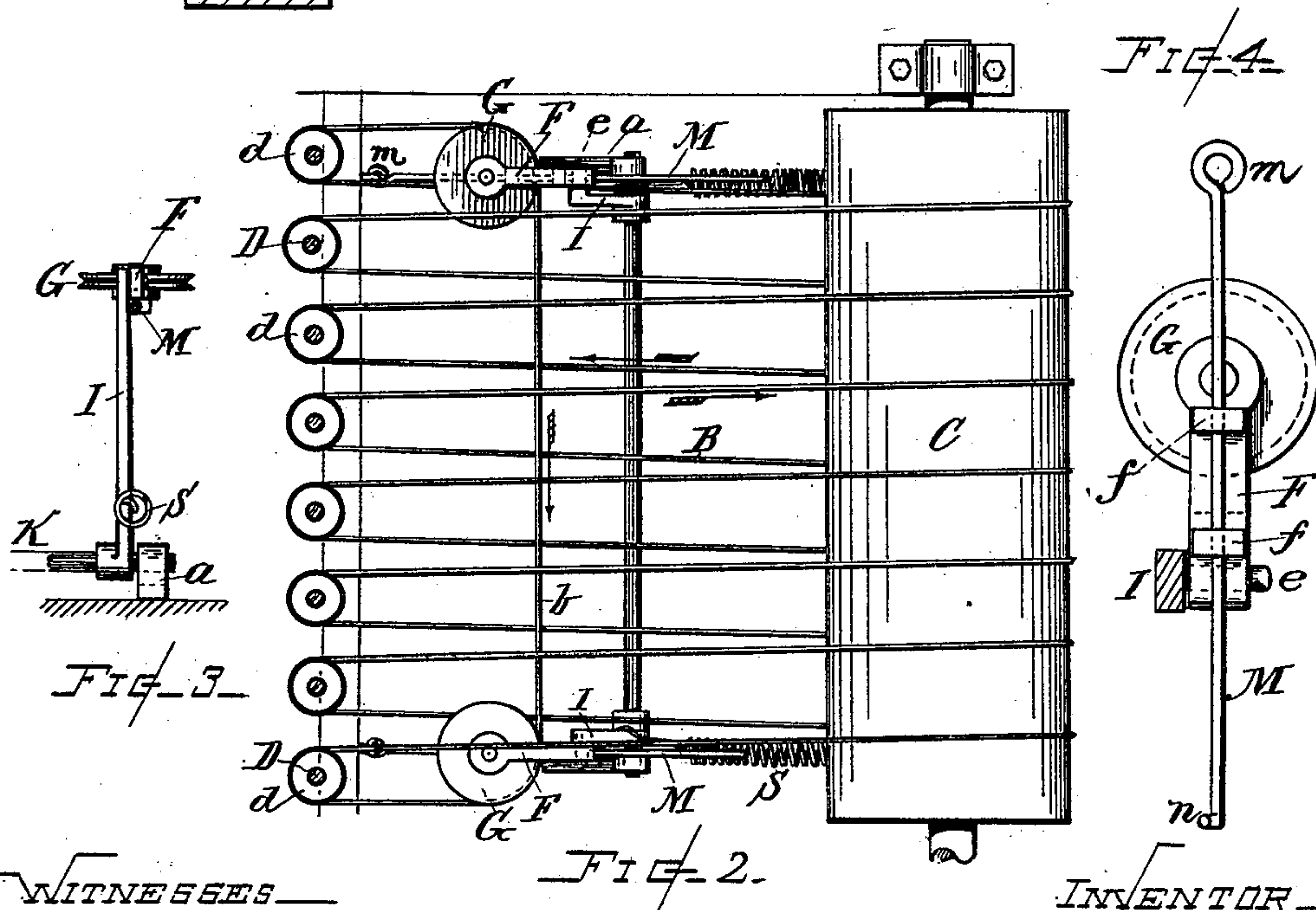
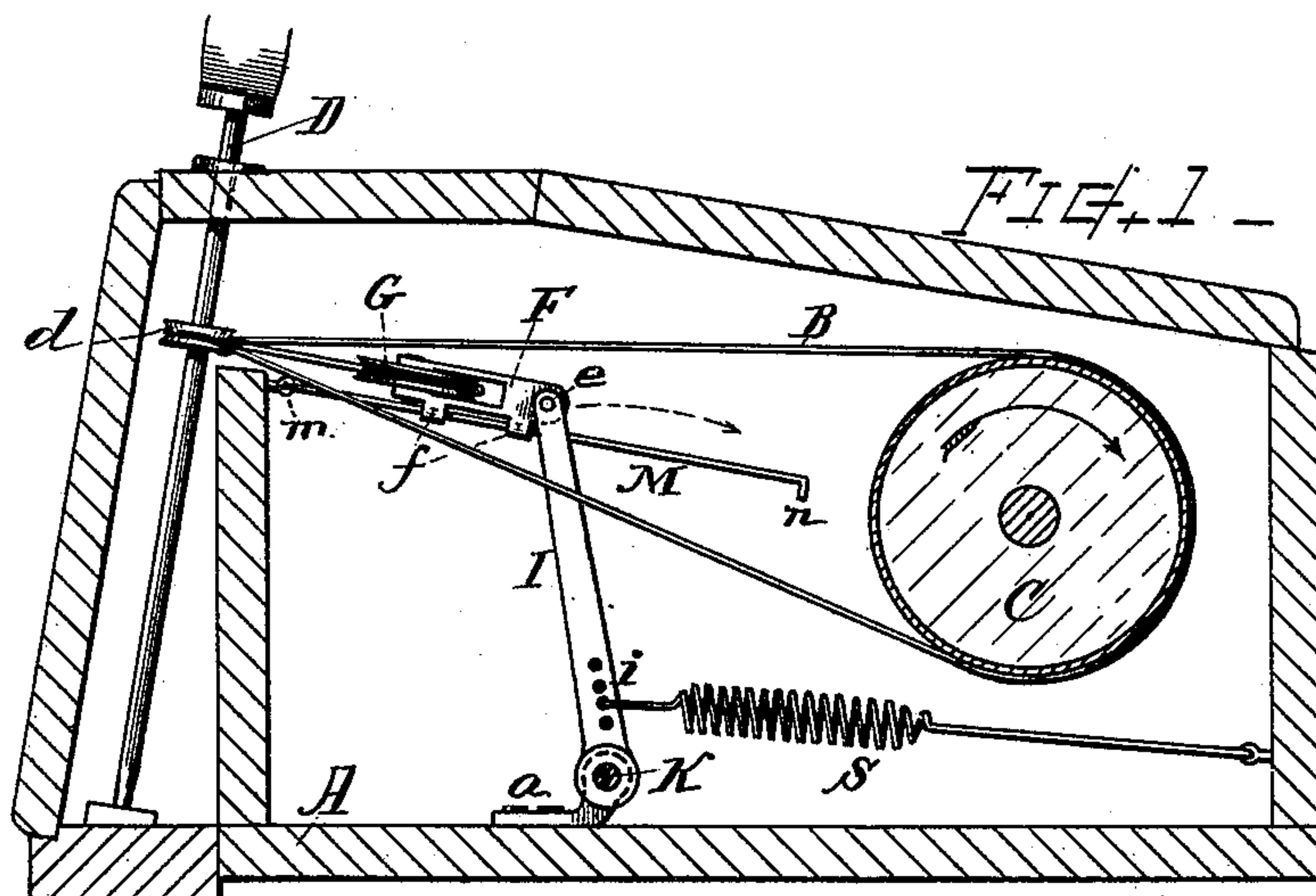
(No Model.)

J. GAUNT.

BAND TENSION REGULATOR FOR SPINNING MACHINES.

No. 403,833.

Patented May 21 1889.



WITNESSES

W. R. Barton
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FIG. 2.

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JAMES GAUNT, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO JOSEPH M. BASSETT, OF SAME PLACE.

BAND-TENSION REGULATOR FOR SPINNING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 403,833, dated May 21, 1889.

Application filed March 13, 1889. Serial No. 303,362. (No model.)

To all whom it may concern:

Be it known that I, JAMES GAUNT, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Band-Tension Regulators for Spinning-Machines, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

The object of my invention is to afford an efficient and practical mechanism for controlling and regulating the tension of continuous bands employed for operating a series of spindles in spinning-machines and to afford a mechanism therefor in which two band tightening and guiding sheaves at the respective ends of the machine or section are supported on upright swinging arms mounted upon and connected together by a rocker-shaft, so as to operate in unison, and the sheave-carriers combined with guiding devices that maintain the sheaves in proper relation to the spindle-whirls, as more fully hereinafter explained. These objects I attain by the mechanism illustrated and described, the particular subject-matter claimed being hereinafter definitely specified.

In the drawings, Figure 1 is a sectional view of my improved band-regulator and so much of a spinning-machine as will illustrate the nature of my invention. Fig. 2 is a plan view of the same. Fig. 3 is an elevation view of one of the supporting arms and sheaves; and Fig. 4 is a bottom view of the sheave, its carrier, and guiding device, with the supporting-arm shown in section.

In referring to parts, A indicates the jack carriage or frame of the spinning-machine; B, the band; C, the driving-cylinder, and D the spindles, each provided with the usual whirl, *d*. The total number of spindles in the length of the spinning-machine is divided into sections, each comprising, in practice, some twenty-four spindles, (more or less,) and the band B is continuous for each separate section of the spinner. A section of eight spindles is shown in the present drawings for illustration; but the arrangement would be

the same for a greater or less number. At each end of the section I arrange a guide-sheave, G, which is mounted in a swinging jaw or carrier, F, pivoted, as at *e*, to the upper end of an upright backwardly and forwardly swinging arm, I, the lower end of which is rigidly fixed to a rocker-shaft, K, that extends across the section and connects the two arms I, so that they operate backward and forward in unison. The shaft K is supported in bearings *a*, attached to the frame. The sheave-carrier F has perforated lugs *f* formed thereon, through which extends a guiding rod or wire, M, the forward end of which is loosely linked or pivoted to a stationary eye or holder attached to the frame at *m*, while the rear end of said rod is free to swing up and down and is bent downward or provided with a head, *n*, which serves as a stop to prevent the sheave-carrier F and arm I from swinging back against the cylinder C. A spring, S, connects one (or both) of the arms I with any suitable part of the frame, which spring exerts its force for drawing back the two sheaves G and giving the desired tension on the band. A series of holes, *i*, formed in the arm afford adjustment for varying the action of the spring.

The band B is arranged continuous from one end of the section to the other, it being carried alternately around the cylinder C and around the whirls *d* of the respective spindles in their order from one end of the section to the other. Then from the last spindle-whirl *d* it passes around the guide-sheave G, and thence directly back, as at *b*, to the opposite sheave G within the space between the upper and lower runs of the band, as illustrated, and from said latter sheave to the first spindle-whirl.

As the arms I are both rigidly attached to the rocker-shaft K, both of the regulating-sheaves G move backward simultaneously, while the carriers that support the sheave freely slide along the guide-rods M, and are thereby retained in proper relation to the whirl *d* and to the upper and lower runs of the band, whether the sheaves are at a backward or a forward position in the range or swing of the arms I. Among the advantages of this construction it may be noted that the band is strained or tightened at both ends of the sec-

tion. This affords better adjustment and with less movement than is attained by the use of the ordinary tighteners. Another advantage is that the sheaves G are maintained between the lines of band and the band is directed to the center of the whirl, so there is no liability of the band being caused to run off by reason of the variations in alignment at the end whirled when the spindle is held stationary for picking up and splicing ends, as frequently occurs in the operation of spinning-machines. The sheaves being pivoted to upright swinging arms and guided in the manner described, have little friction and operate quite easily and with a great degree of perfection, while they accommodate the expansion and contraction due to changes of humidity or temperature without impairment in the operation of the device or creating any material variation in the tension of the bands controlled by the regulator.

This invention is adapted for use on jacks, mules, ring-spinners and other machines of this class wherein a series of spindles are operated from a cylinder the axis of which is transverse in relation to the axis of the spindles.

I am aware that continuous bands and tension-regulating mechanism have heretofore been employed in spinning machinery, and I do not broadly claim such features.

I claim as my invention to be secured by Letters Patent—

1. A spindle-band regulator having a pair of pulleys or sheaves for guiding the spindle-driving band at the limits of the section or row of spindles, in combination with a rocker-shaft, a pair of swinging arms fixed upon and connected by said rocker-shaft, sheave-carriers pivoted on said swinging arms, and a tension-spring for giving backward pressure thereon, substantially as set forth.

2. The combination, with a cylinder, C, spindles D, and continuous band B, of the regulating-sheaves G, their supporting-carriers F, the upright backwardly and forwardly swinging arms I, on which said carriers are pivoted, the rocker-shaft K, connecting said arms, the guide-rods M, and tension-spring S, substantially as set forth.

3. The guide rod or wire M, having its forward end loosely attached to the frame, as at m, its rear end provided with a stop, n, and the sheave-supporting carrier having perforated lugs that embrace said guiding-wire, in combination with the band-guiding sheave, the swinging arm, the tension-spring, the spindle-band, and cylinder, substantially as and for the purpose set forth.

Witness my hand this 9th day of March, A. D. 1889.

JAMES GAUNT.

Witnesses:

CHAS. H. BURLEIGH,
ELLA P. BLENUS.