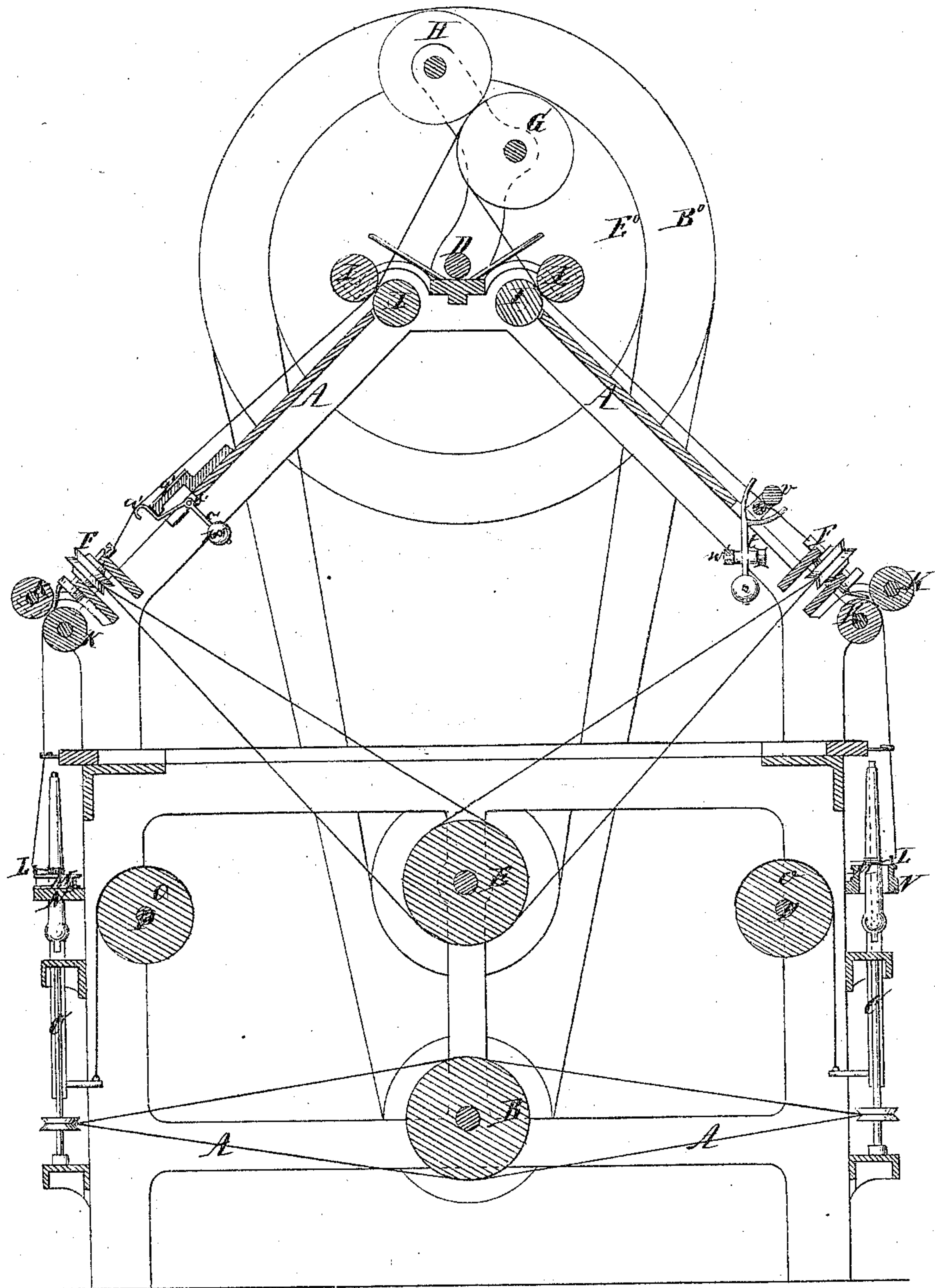


**C. MARTIN.**  
**Devices for Regulating the Twist in Spinning-Frames.**  
 No. 140,056. Patented June 17, 1873.

*Fig: 1.*



*Witnesses:*  
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*Chas. Wahlen.*

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*Attys*

C. MARTIN.

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Fig. 2.

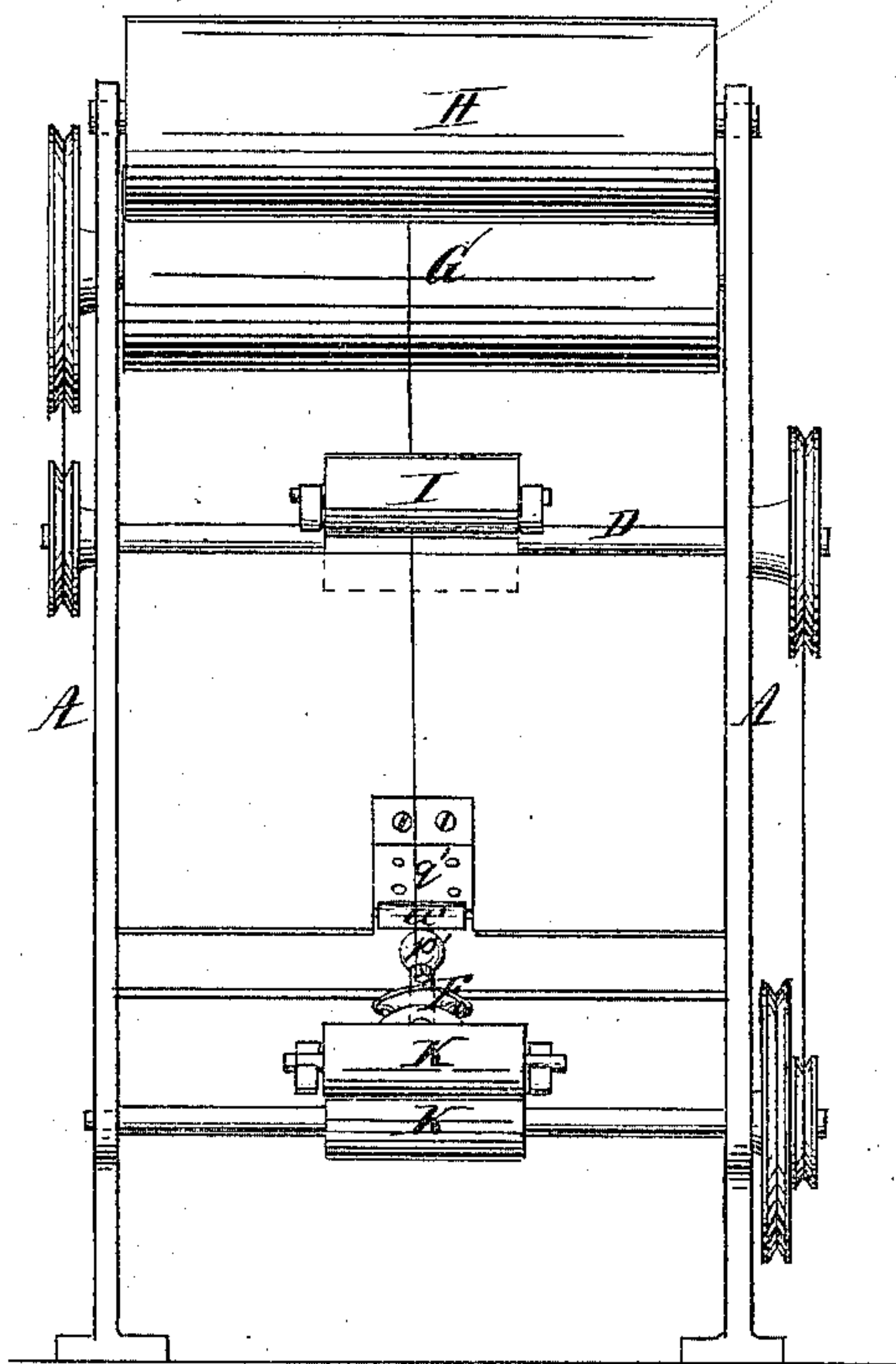


Fig. 3.

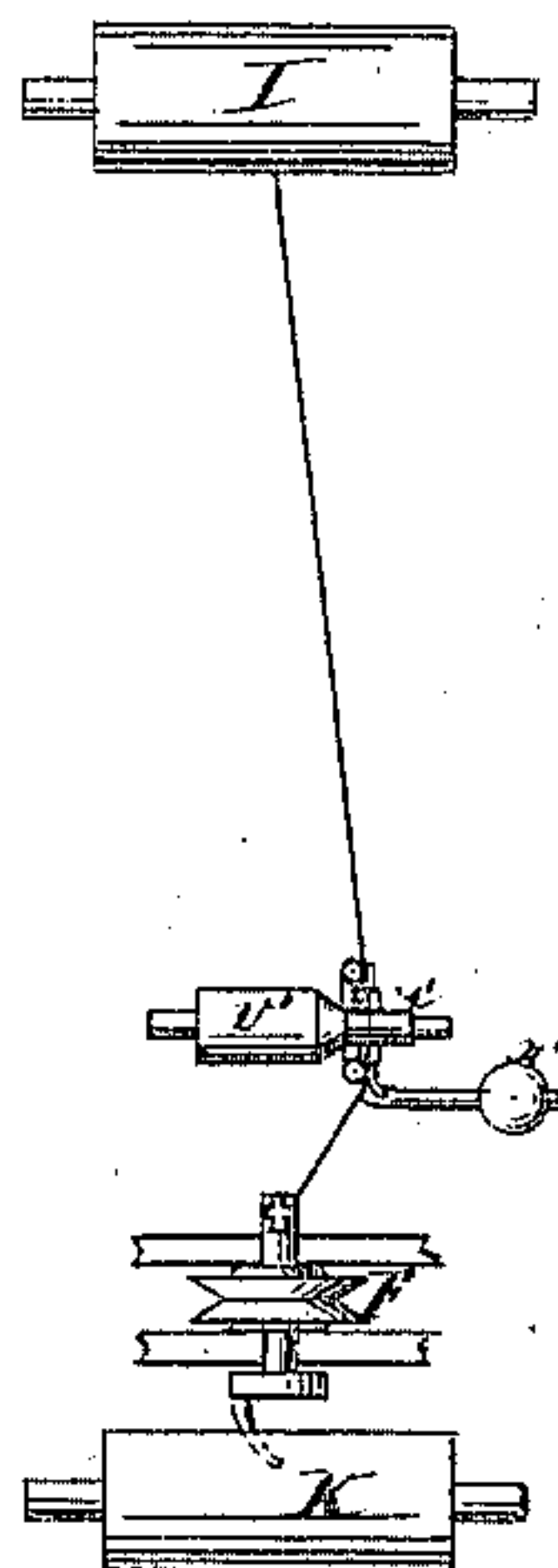


Fig. 4.

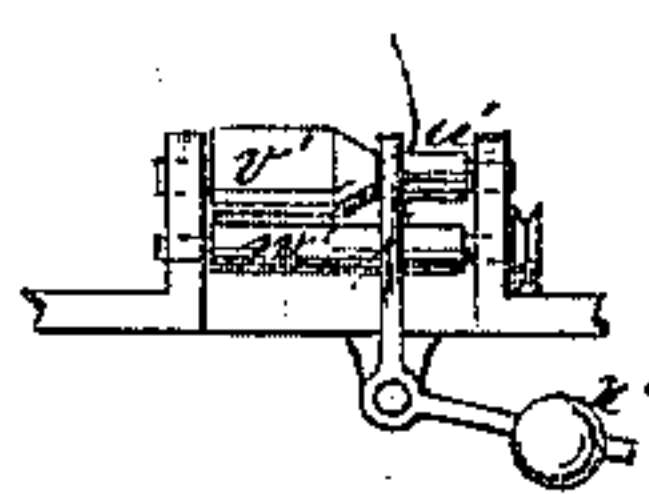
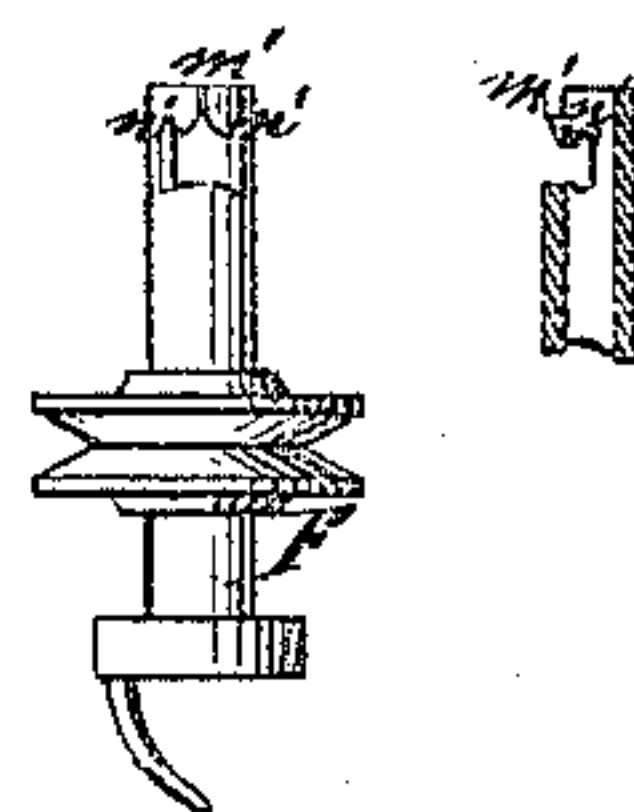


Fig. 5. Fig. 6.



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# UNITED STATES PATENT OFFICE.

CELESTIN MARTIN, OF VERVIERS, BELGIUM.

## IMPROVEMENT IN DEVICES FOR REGULATING THE TWIST IN SPINNING-FRAMES.

Specification forming part of Letters Patent No. 140,056, dated June 17, 1873; application filed April 4, 1873.

*To all whom it may concern:*

Be it known that I, CELESTIN MARTIN, of Verviers, in the Kingdom of Belgium, have invented a new and useful Improvement in Spinning-Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents a transverse vertical section of my invention. Fig. 2 is a front view of the same. The remaining figures are details which will be referred to as the description progresses.

Similar letters indicate corresponding parts.

The object of this invention is to regulate the twist of each separate thread in a spinning-machine, while the same is being drawn out, in such a manner that when the twist of a thread exceeds the desired limit and, consequently, the drawing out of such thread is rendered insufficient, the twist is automatically retarded, and by these means all the threads are drawn out to a uniform thickness and twisted to a uniform degree.

In the drawing, the letter A designates the frame of a spinning-machine which forms the bearings for a drum, B, from which motion is imparted to the spindles C, said drum deriving its motion from a pulley, B<sup>o</sup>, mounted on the driving-shaft D. On this shaft is also mounted a pulley, E<sup>o</sup>, which imparts motion to a drum, E, from which motion is transmitted to the tubes F. The spool H rests upon a cylinder, G, and the thread is paid out by the rollers I. The tubes F produce the twist, and the thread is drawn out by the drawing-rollers K, the speed of which is somewhat greater than that of the rollers I. From the rollers K the thread passes to the spindles C, being guided by means generally used for this purpose.

Different devices have been proposed for the purpose of preventing the thread from twisting too much between the tube F and feed-rollers I. Some have used a fixed iron bar placed between the feed-rollers I and the drawing-rollers K, compelling the thread to form a curved or broken line in order to

stop or moderate the twist. Some have given a reciprocating motion to said bar, while others have used rotating shafts with wings, so that each wing, on striking the threads, forces the same into a broken or curved line, whereby the twist is moderated. All such devices are so constructed that they operate in the same manner on all the threads without regard to the difference in the size of the individual threads. But it is well known that the threads drawn out from a spool differ materially in size according to the good or bad working of the card which produces them, and it is therefore indispensable to regulate the twist of each thread separately—that is to say, to give to each separate thread the twist necessary to produce a regular drawing out according to its degree of fineness. This object has been attained by my invention.

In operating my machine I impart to the tubes F the speed required to produce sufficient twist for the finest threads that may be delivered from the spools placed on the machine. But if a thread of great size is unwound from the spool and fed to the machine this thread, on being twisted to the same degree as the fine threads, naturally becomes strained to a greater degree.

Under each thread I place a regulator, *c'*, which swings on a pivot, *o'*, and is subjected to the action of a counterpoise, *p'*, the weight of which is regulated in such a manner that the regulator *c'* keeps the thread clear of the friction-surface *q'*, while the strain of said thread does not reach a certain limit. But as soon as the strain of the thread exceeds this limit the regulator recedes and the thread bears upon the friction-surface, and thereby the twisting of the thread between the friction-surface and the feed-rollers is stopped or moderated and the drawing-rollers K are enabled to draw out said thread more freely than before. When the strain of the thread is again reduced the regulator *c'* throws said thread out of contact with the friction-surface, and by these means each individual thread is twisted and drawn out to a degree corresponding to its particular size or fineness.

The friction-surface *q'* is shown on the left-hand side of Fig. 1 and in Fig. 2.

On the right-hand side of Fig. 1 and in Figs.



3 and 4 I have shown a modification of my regulator, Fig. 3 being a plan or top view and figure 4 a front elevation of the same.

In this case the regulator *t* is bifurcated, one of its branches being situated in front and the other in the rear of the rollers *w v*, while the thread between the feed-rollers *I* and the twisting-tube *F* extends across the forked end of said regulator, as shown in Fig. 3.

The regulator swings on a pivot, *w'*, (Fig. 4,) and the counterpoise *x'* of said regulator serves to keep the thread clear of the rollers *v w* as long as its tension does not reach a certain limit.

The roller *w* revolves by a belt or cog-wheel, and it carries the roller *v* by friction. If the tension of the thread exceeds the desired limit the regulator turns on its pivot and the thread is allowed to pass in between the two surfaces of the rollers *w v*, and thereby its twist is stopped between the feed-rollers *I* and said rollers *w v* until the strain of the thread is again reduced.

In Figs. 5 and 6 I have shown a front view

and a section of my twisting-tube *F*. This tube is provided with a slit, *m'*, extending down to the opening, the sides of which form the twisting-hooks *n'*. By means of this slit I am enabled to introduce the thread while the tube *F* is running. After the thread has been passed down through the tube so that it catches between the drawing-rollers *K* it is pressed slightly against the side of said tube, and as it strikes the slit *m'* it slides out into one of the hooks *n'*, and by the action of this hook the thread is carried around and the twist is produced.

What I claim as new, and desire to secure by Letters Patent, is—

The arrangement, on a spinning-machine, of a self-acting regulator, acting on each individual thread, substantially as and for the purpose herein shown and described.

New York, April 1, 1873.

CELESTIN MARTIN.

Witnesses:

A. LACROIX,  
LÉON KOSKELKORE.