

(No Model.)

H. LIAUTIER.
FLIER FOR TWISTING SILK.

No. 297,140.

Patented Apr. 22, 1884.

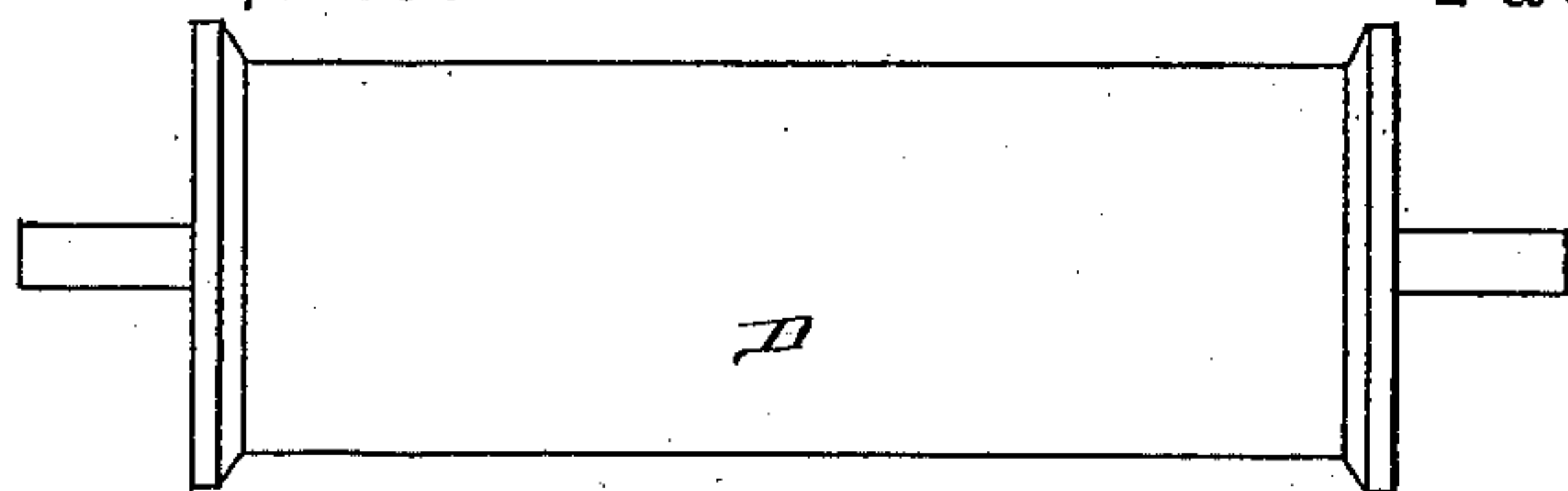


Fig. 1.

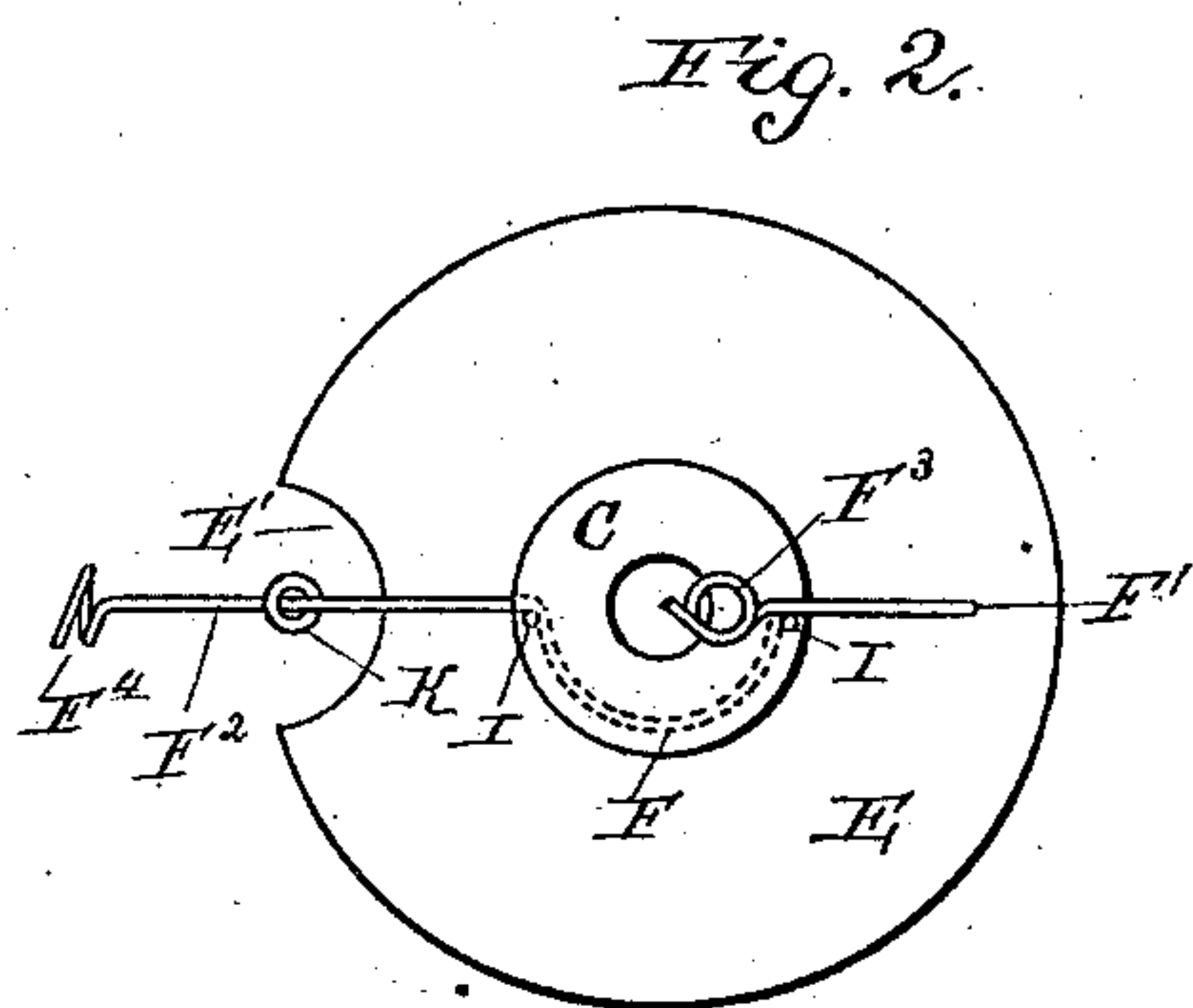
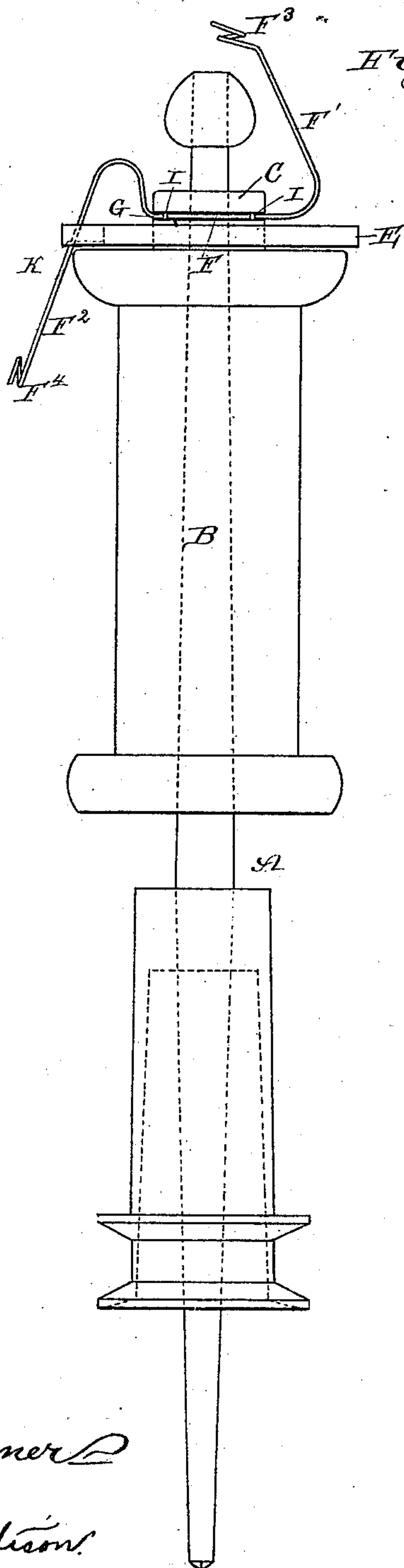


Fig. 2.

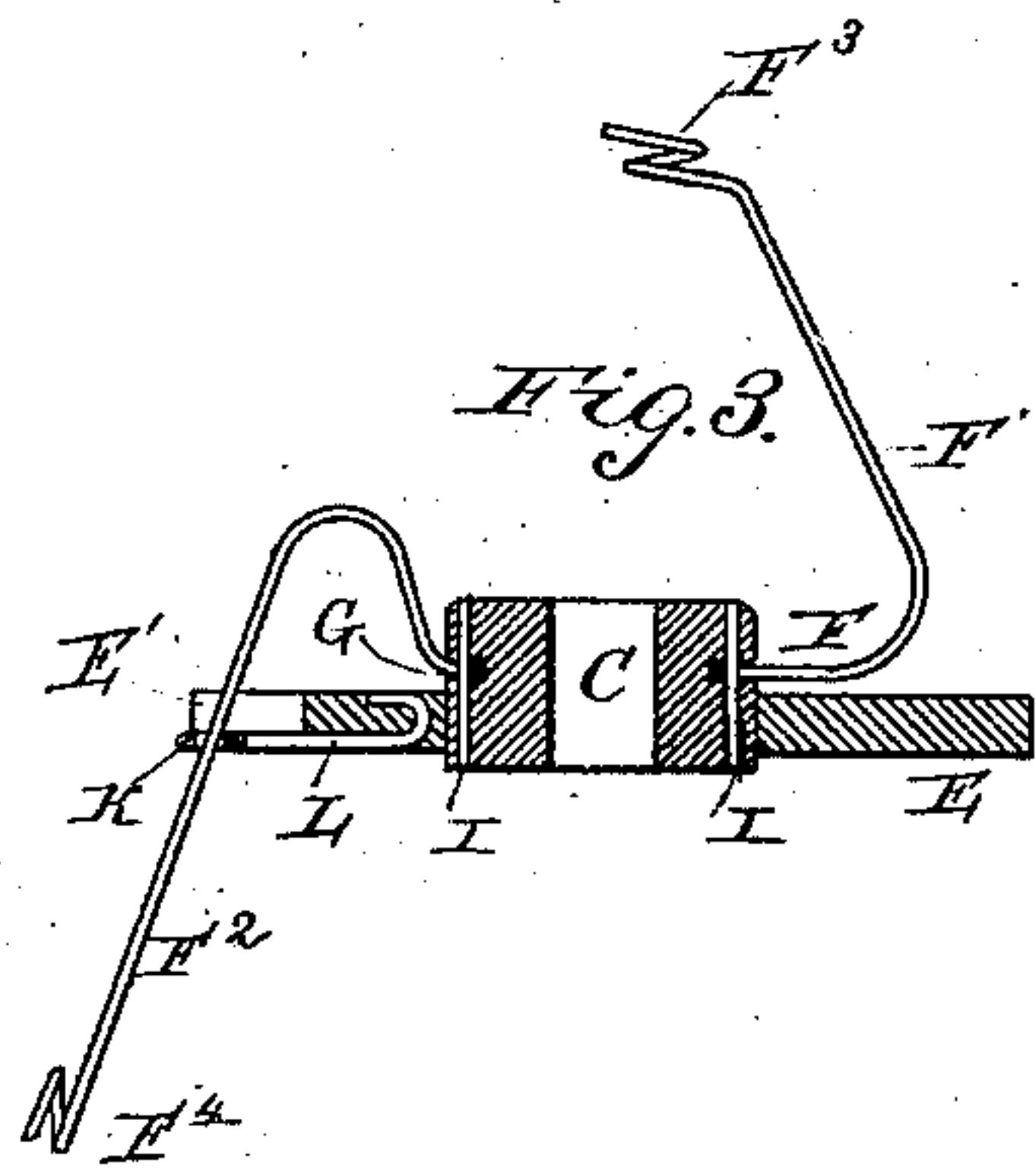


Fig. 3.

Witnesses:

J. W. Garner
A. S. Pallison

Inventor:

Hippolyte Liautier
per Calmore & Plaisted
Attys.

UNITED STATES PATENT OFFICE.

HIPPOLYTE LIAUTIER, OF SCRANTON, PENNSYLVANIA.

FLIER FOR TWISTING SILK.

SPECIFICATION forming part of Letters Patent No. 297,140, dated April 22, 1884.

Application filed September 7, 1883. (No model.)

To all whom it may concern:

Be it known that I, HIPPOLYTE LIAUTIER, a citizen of the United States, residing at Scranton, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Fliers for Twisting Silk, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to fliers for twisting silk; and it consists in the combination of the flier-block and balance-disk, the upper portion of the block being made to project above the top of the disk for the attachment of the arms, and the arms.

It also consists in the combination of the flier-block, a balance-disk connected thereto and having a recess in its edge, and the arms; and also the combination of the flier having a groove in its side, with the disk having a recess in its edge, the wire arms, pins, and the shank having an eye for one of the arms to pass through, as will be more fully described hereinafter.

In the accompanying drawings, Figure 1 is a side elevation of a spindle having a bobbin thereon, and a flier embodying my invention as applied thereto, and a receiving-bobbin. Fig. 2 is a detailed top plan view of the flier. Fig. 3 is a detailed central vertical sectional view of the same.

A represents an ordinary spinning-spindle; B, the bobbin which is placed thereon, containing the strands of silk to be twisted; C, the flier-block, and D the bobbin upon which the twisted silk is to be wound.

Where organzine is made by the ordinary devices employed, the spindle is run at the rate of from five thousand to six thousand revolutions per minute, and any increase of the velocity of the spindle beyond that rate causes the silk threads to break, owing to the tension of the flier thereon. A great desideratum has been to obtain a flier that is capable of being run at a higher rate of speed without breaking the silk; and this is the object of my invention.

The construction of my flier is as follows: To the flier-block C, I apply a disk or balance, E, which disk may be made of any suitable material. A very light one is the most desirable, as any material addition to the weight

of the flier would increase its friction, and probably cause the threads of silk to break. In the fliers that I have constructed on this principle I have used papier-maché or paste-board, either of which serves very well.

Instead of forming the balance-disk and flier-block separately, as hereinbefore stated, they may be formed integrally, if so preferred. By the use of this balance-disk a steady and regular motion is imparted to the flier, and consequently an increased speed may be given to the spindle without the danger of breaking the silk.

F represents a wire, which is bent around the flier into a groove, G, formed therein, and secured in place by the pins I, or by any other suitable means. The outer ends of the wire are bent to form the arms F' F², and terminate in eyes F³ F⁴. A portion of the disk is cut away, as at E' to allow of the passage of the downwardly-extending arm F². When the flier is rotated at a very high rate of speed, the downwardly-extending arm F² has a tendency to move outward, owing to its elasticity, and to the centrifugal force exerted upon it, and this outward motion of the arm results in breaking the silk. To overcome this defect I provide an eye, K, through which the arm F² passes. The eye is secured to the disk by means of the shank L with which it is provided. This device prevents the arm from moving outward, as will be readily understood.

The operation of my invention is as follows: The two strands of silk that are wound upon the bobbin D are passed through the eye F⁴ of the flier, then up through the eye F³. They are twisted by the rotation of the flier, and are wound upon the horizontally rotating receiving-bobbin D.

A flier thus constructed admits of an increase of speed of the machinery over any other now in use, produces a better article of silk at a reduction of the cost thereof, and is adapted to be used in the manufacture of silk of the very finest quality.

Having thus described my invention, I claim—

1. The combination of the flier-block, the balance-disk, and the arms F' F², the upper portion of the block being made to project above the top of the disk, for the attachment of the arms, substantially as shown.

2. The combination of the flier-block, a balance-disk connected thereto, and having a recess, E', in its edge, and the arms F' F², substantially as described.
- 5 3. The combination of the flier C, having groove G, with the disk E, having cut E', wire arms F' and F², pins I, and shank L, having the eye K, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

HIPPOLYTE LIAUTIER.

Witnesses:

H. RENARD,
J. D. CLARK.