

(No Model.)

H. RENARD.

SILK SPINNING AND DOUBLING MACHINE.

No. 358,299.

Patented Feb. 22, 1887.

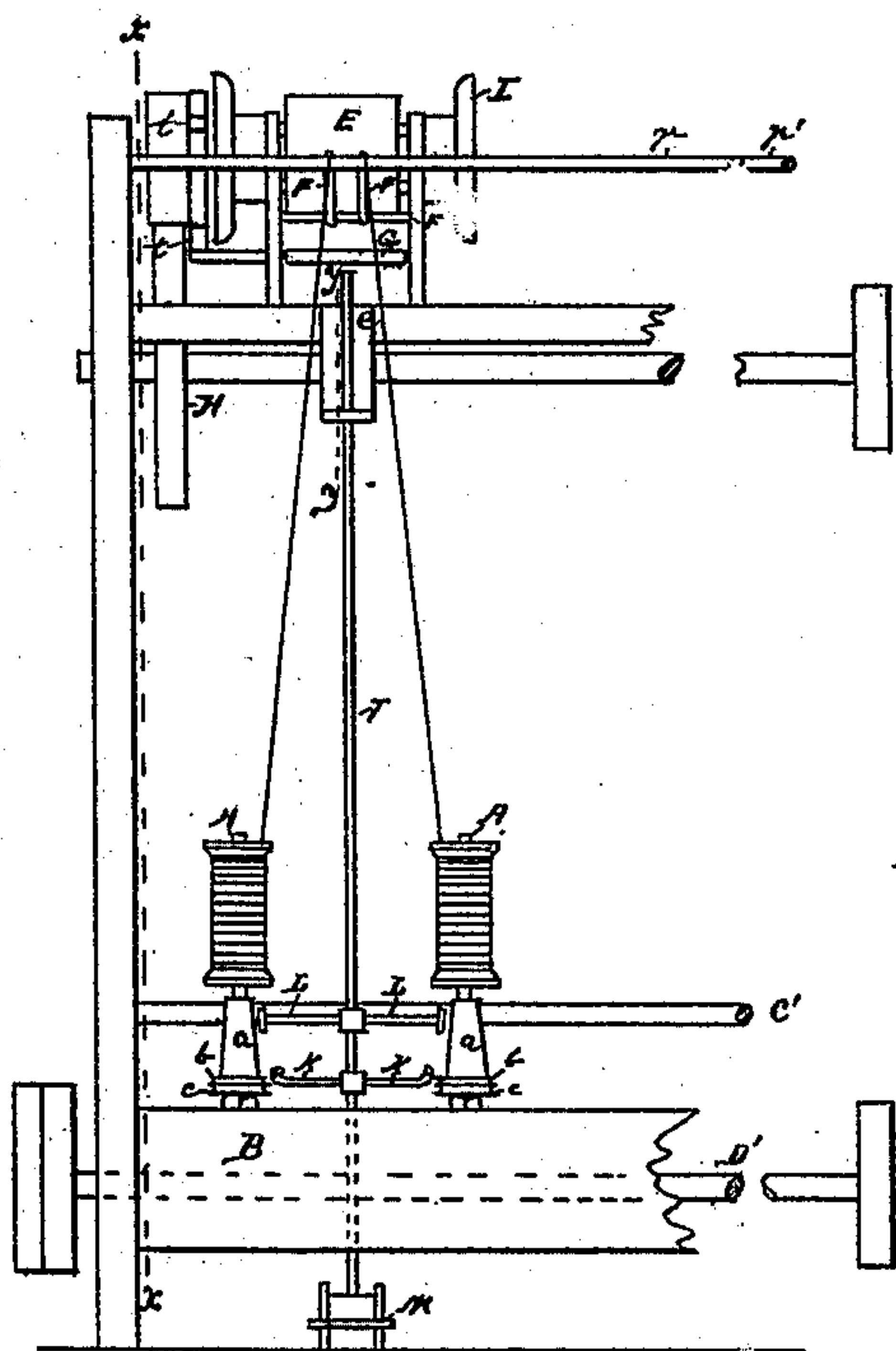


Fig. 1.

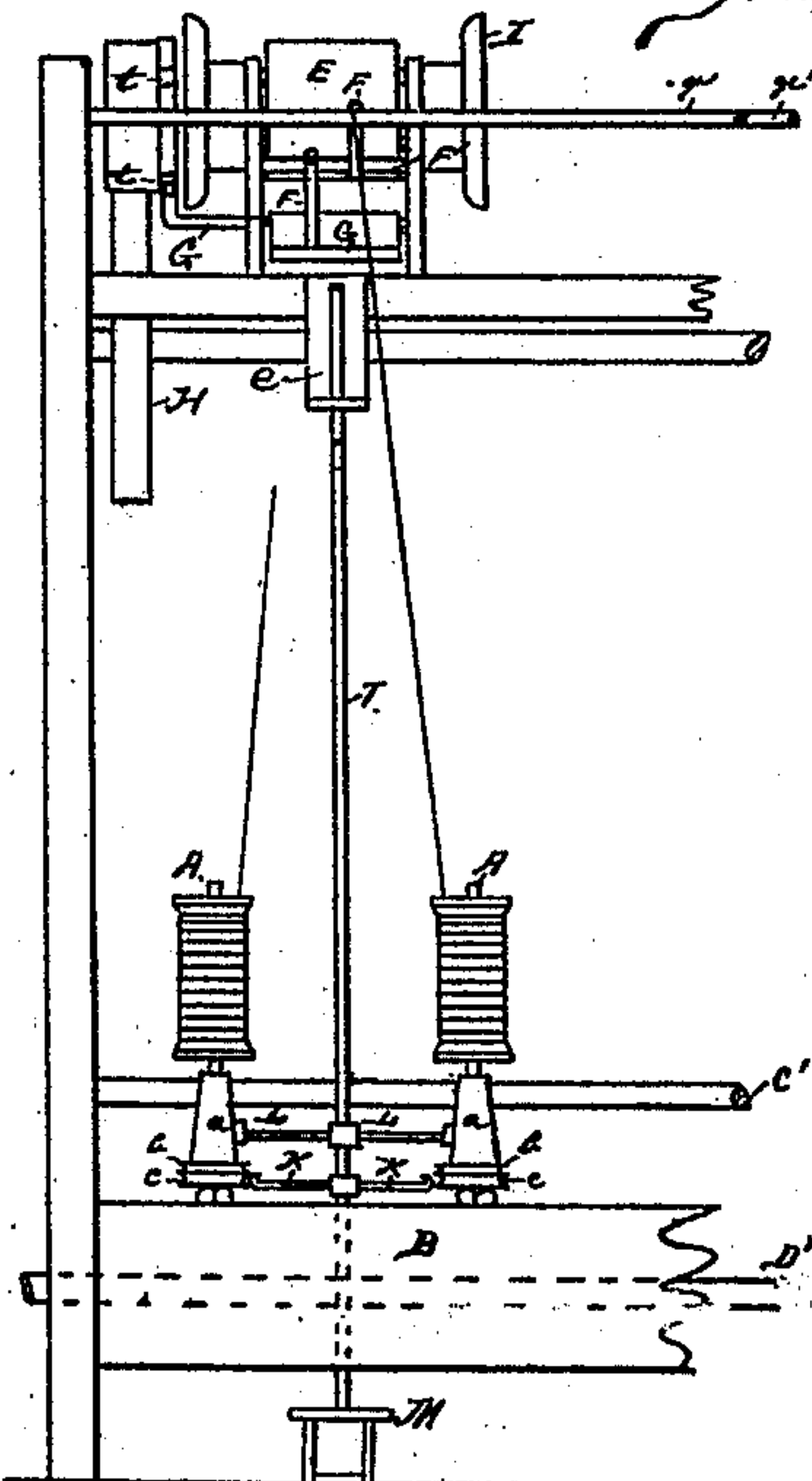


Fig. 2.

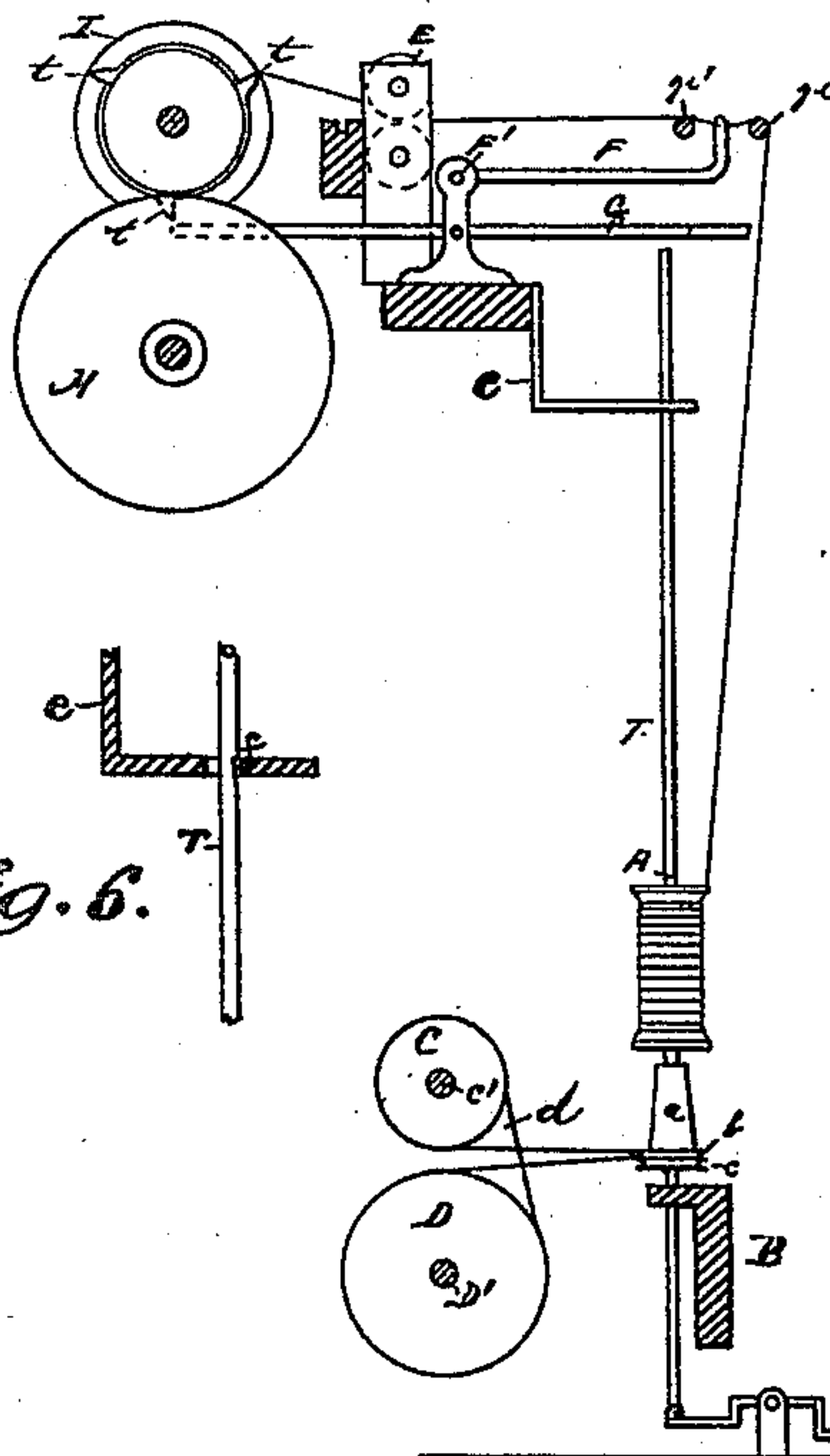


Fig. 3.

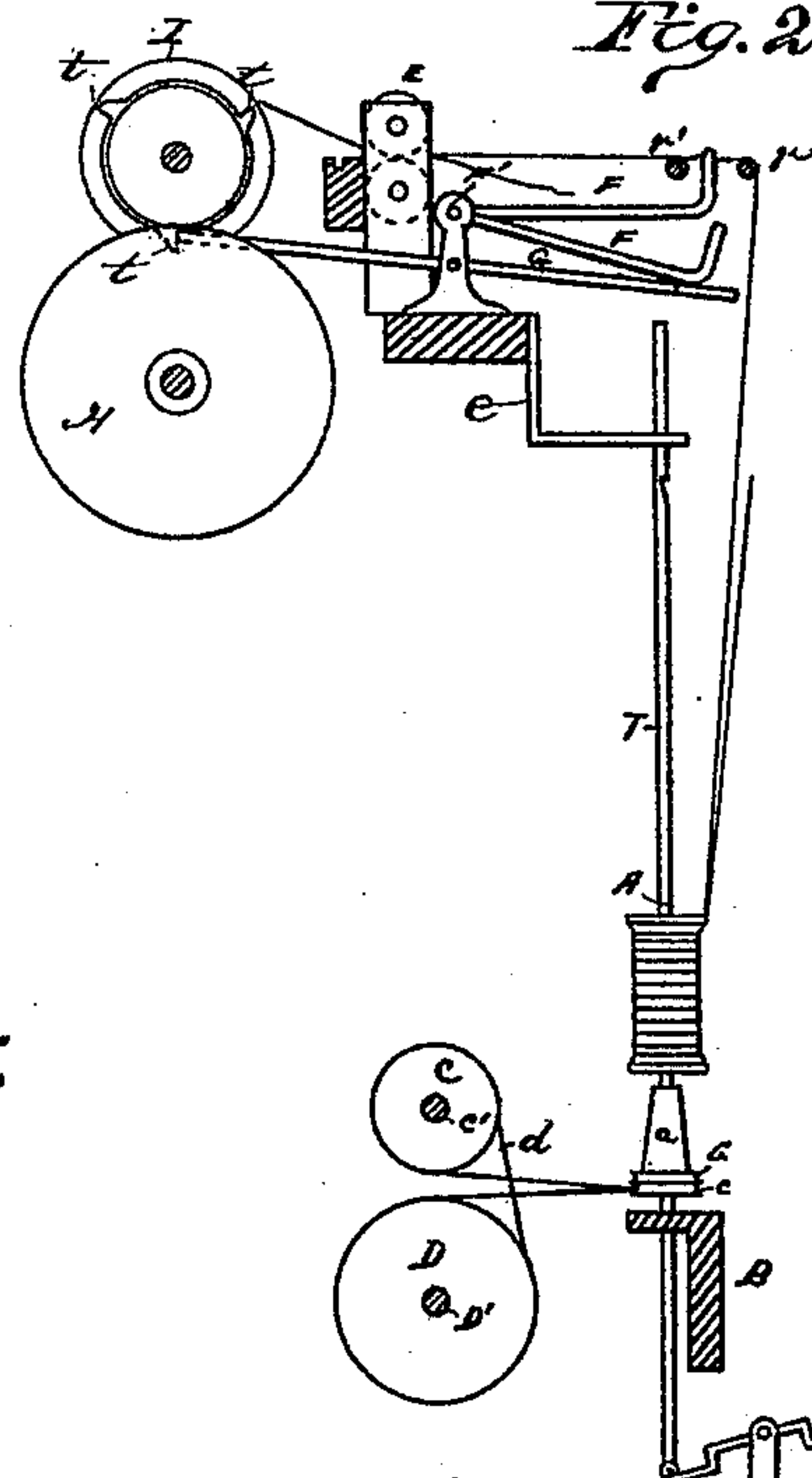


Fig. 4.

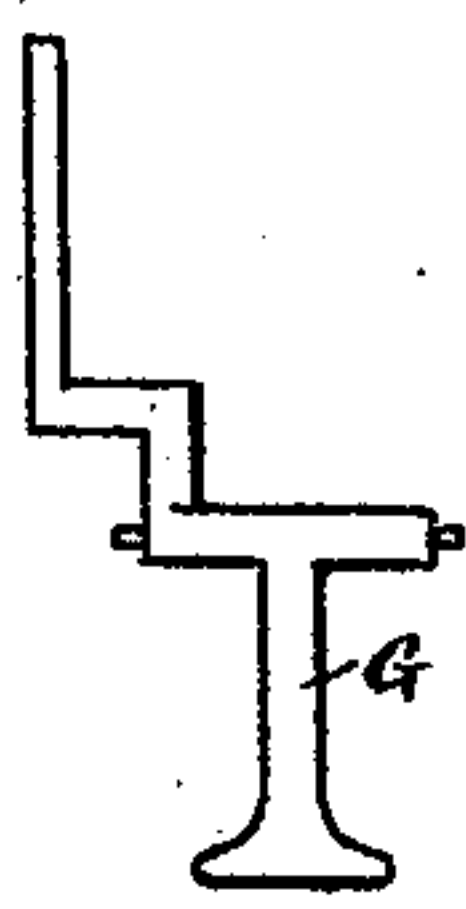


Fig. 5.

WITNESSES:

Owen Jenkins
Louis Rosenbaum.

Fig. 6. INVENTOR
Hippolyte Renard
by Walter Calmore
Attorney

UNITED STATES PATENT OFFICE.

HIPPOLYTE RENARD, OF SCRANTON, PENNSYLVANIA.

SILK SPINNING AND DOUBLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 358,299, dated February 22, 1887.

Application filed August 30, 1886. Serial No. 212,197. (No model.)

To all whom it may concern:

Be it known that I, HIPPOLYTE RENARD, 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 Silk Spinning and Doubling Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention consists of an improved combined silk spinning and doubling machine having applied to the spinning and windings spindles thereof mechanism for automatically stopping the revolution of the spindle when a thread breaks, all as hereinafter fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a partial front view of my machine, and Fig. 2 a section of Fig. 1 on line *xx*; Figs. 3 and 4, similar views with one faller-wire dropped and the rod T and connected parts lowered; Fig. 5, a plan of the faller, and Fig. 6 a section of the guide and support *e* on the line *yy*, Fig. 1.

In the manufacture of orgazine silk there are four operations—to wit, winding, spinning, doubling, and twisting. I put the bobbin coming from the winding-frame on the spindles A of my machine, which spindles are set in pairs on the casting B. (In the drawings but one pair of spindles are shown; but it will be understood that any number of pairs can be used.)

The spindles A are driven by belts from the pulleys C C D D, which are carried by shafts C' D', which are driven in any convenient manner. These spindles make about sixteen hundred revolutions per minute and spin the silk, which is drawn in the usual manner through the metal rollers E, and is wound on a spool, I, which, when full, is placed upon the spindle of the twister. By means of my machine the silk is spun from two to three times faster than is usual, and it is matched or doubled at the same time. I do not use fliers to draw the threads on the top bobbin, and hence there is no drag on the thread, and the tension on both strands being the same they will, after twisting, form a perfect thread. The threads, after leaving the bobbins on spindles A and before passing through rollers E, first pass over guide-

rods *r*, then through faller-wires F F, which are pivoted at F', then over guide-rod *r'*. These faller-wires are similar in all respects to the faller-wires usually employed on this class of machinery. If one of the threads breaks, the faller-wire through which it passes and which it holds up when intact drops on the faller G, (a plan of which is shown in Fig. 5,) which tilts up and engages with one of the spurs *t*, which are carried by the spindle which carries bobbin I, and causes the revolution of this bobbin to cease. At the same time the faller G strikes the top of rod T and disengages the notch *f* on rod T from the support and guide *e*, and causes this rod to drop. The notch *f* on the rod T is very small, and a very slight jar, such as is caused by the faller striking its top, is sufficient to disengage it from the support *e*. The faller G is pivoted to the support F', which also supports the pivot upon which the faller-wires F are hung. The rod T carries upon it a brake, L L, and a belt-shifter, K K, while the lower part of the spindle has a conical shape at *a*, and is furnished with a fast and loose pulley, *b c*. When the thread breaks and rod T falls, the belt *d*, which drives the spindles A, is shifted from the fast to the loose pulley by the belt-shifter K K, and at the same time the brake L is moved down the conical part *a* of the spindle A, and bearing against this conical part causes the revolutions of the spindle A to cease. When the broken strand is repaired, the attendant places his foot on the lever M, to one end of which the rod T is secured, which raises the rod to its normal position and starts the machine.

By placing upon the same frame the two machines usually employed for spinning and doubling, these two operations are performed at once, saving time and labor. The article produced is a better one and is made more rapidly than when the operations are performed separately.

Having thus described my invention, I claim—

1. The combination, with the faller G, faller-wires F, spindles A, with conical bases *a*, pulleys *b c*, pulleys C and D, and belt *d*, of the notched rod T, support *e*, brake L, and belt-

shifter K, all substantially as and for the purposes set forth.

2. The combination, with the driving pulley H, the spool-carrying spindle having the spurs 5 t, the faller G, and the faller-wires F, of the spindles A, having the fast and loose pulleys and provided with the conical portions, as described, a belt, d, operating means for such belt, and the rod T, carrying the brake L, and

belt-shifter K, substantially as and for the purposes set forth.

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

HIPPOLYTE RENARD.

Witnesses:

ANNIE C. HUTTON,
J. M. POORE.