(No Model.)

H. RENARD.

TWISTING MACHINE.

No. 361,544. Patented Apr. 19, 1887.

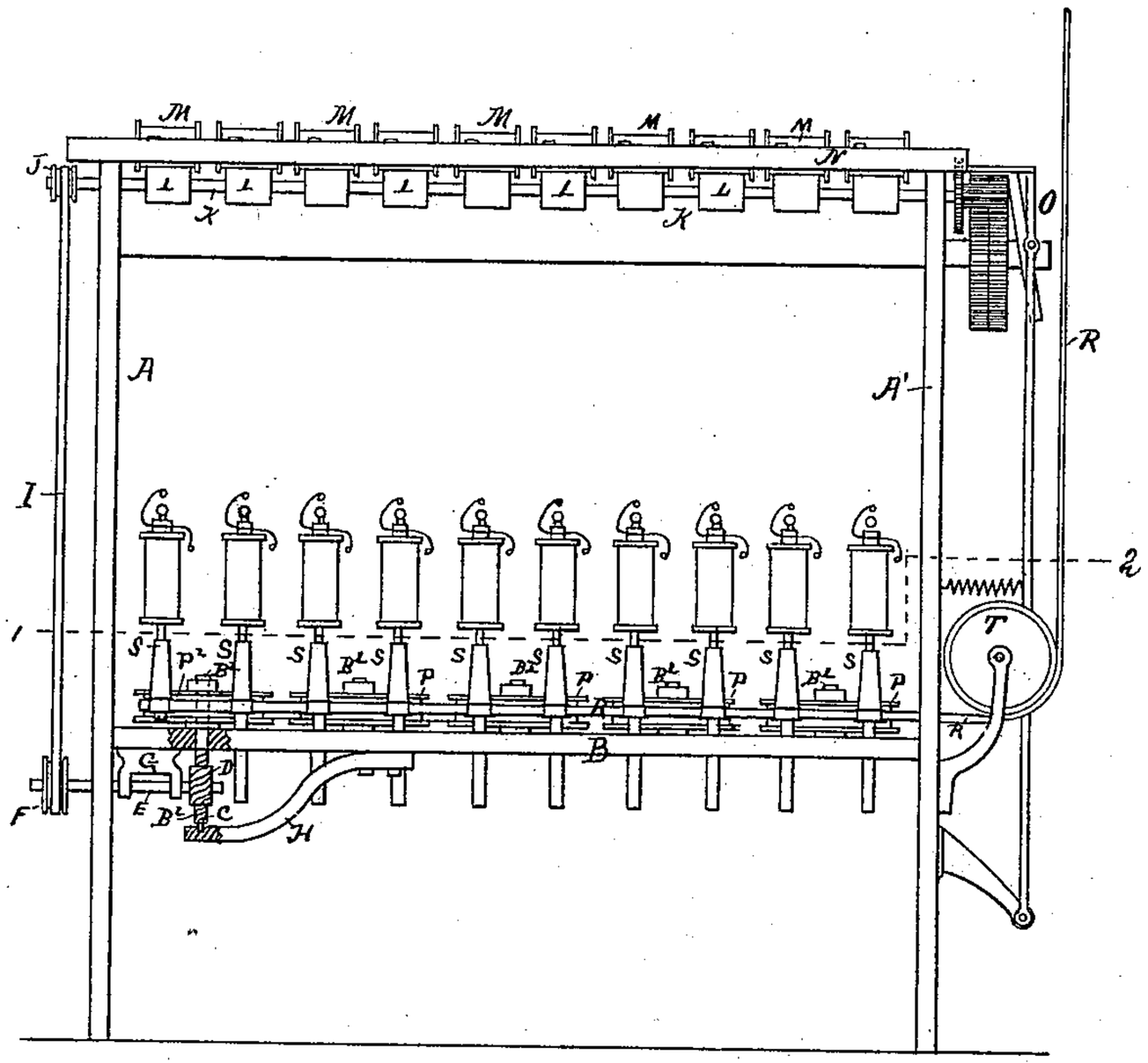

Fig. 1.

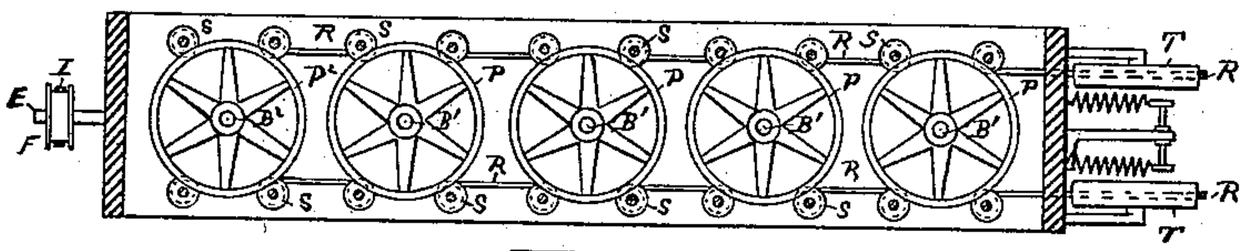

Fig. 2.

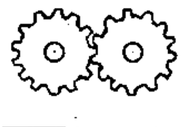

Fig. 3.

WITNESSES:

Owen B. Jenkins

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UNITED STATES PATENT OFFICE.

HIPPOLYTE RENARD, OF SCRANTON, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO THOMAS LEWIS, OF SAME PLACE.

TWISTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 361,544, dated April 19, 1887.

Application filed December 2, 1886. Serial No. 220,439. (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 Twisting-Machines, &c., of which the following is a specification, reference being had therein to the accompanying drawings.

The object of my invention is to regulate the driving of the taking-up bobbins, so that their speed will be proportional at all times to the speed of the spindles.

My machine is constructed on the same pattern as any other machine containing one row of spindles, with the exception that it is much narrower, being only twelve inches wide instead of twenty-six. I have no drum or sheave-pulley to drive the spindles, and instead and in the place occupied by the drum I have a flat board running all the length of the machine. On this board are placed a number of pulleys, around which passes an endless belt which is driven from a pulley on the main line of shafting. At both edges of the board are placed at regular distances the spindles of the machine. The endless belt, which passes around the pulleys on the center of the board, also touches the spindles and drives them, the pulleys acting as rollers to force the belt against the spindles.

It will be seen that if all the pulleys are of the same diameter they will all receive the same friction from the belt, and the same will be true of the spindles if they are properly and exactly set. Consequently, the spindles all running with the same speed, the twisting of the silk will be regular—that is to say, exactly the same for every spindle. As the belt may get slack and the speed of the pulleys and spindles be thus reduced, I drive the taking-up motion of the friction-rollers from the last pulley on the flat board.

Upon the vertical shaft of the last pulley I cut a thread, into which a worm-wheel gears, the horizontal shaft of which carries a pulley which drives a belt which passes around a pulley on the shaft of the friction-rollers and drives this shaft and the rollers. By this arrangement the speed of the taking-up bobbins is always proportional to the speed of the spindles.

In the drawings, Figure 1 is a side elevation, partly in section, of a spinning-machine embodying my improvements; Fig. 2, a section of Fig. 1 on line 1 2, and Fig. 3 an end view of the cog-wheels on the friction-roller shafts.

A A′ is the frame of the machine.

B is the board running from one end to the other.

P^2 P P are the pulleys forcing the belt against the spindles S S S.

B^2 B′ B′ are the upright shafts of the pulleys.

C is the screw upon the vertical or upright shaft of the last pulley, P^2.

D is the worm-wheel working with screw C.

E is a horizontal shaft, having at one end the gear-wheel D and at the other the change-pulley F; G, bearing for shaft E; H, bearing for the vertical shaft of last pulley, P^2.

I is a belt passing from change-pulley F to pulley J on shaft K of friction-rollers L; M, taking-up bobbins; N, traverse-bar; O, the ordinary device for giving motion to this bar; R, belt for driving pulleys P. This belt is endless and passes over a driving-pulley (not shown) on the main line of shafting.

T T are pulleys for guiding belt R to and from pulleys P.

Having thus described my invention, I claim—

The combination of the endless belt R, pulleys P, spindles S, pulley P^2, with shaft B^2 and screw C, worm-wheel D, shaft E, pulley F, belt I, pulley J, shaft K, and friction-rollers L, all substantially as and for the purposes set forth.

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

HIPPOLYTE RENARD.

Witnesses:

JOHN G. MCASKIE,

ANNIE HUTTON.