

No. 849,812.

PATENTED APR. 9, 1907.

J. PERRIN.

DRAWING APPARATUS FOR SPINNING SHORT STAPLED FIBERS.

APPLICATION FILED APR. 13, 1905.

2 SHEETS—SHEET 1.

Fig 1.

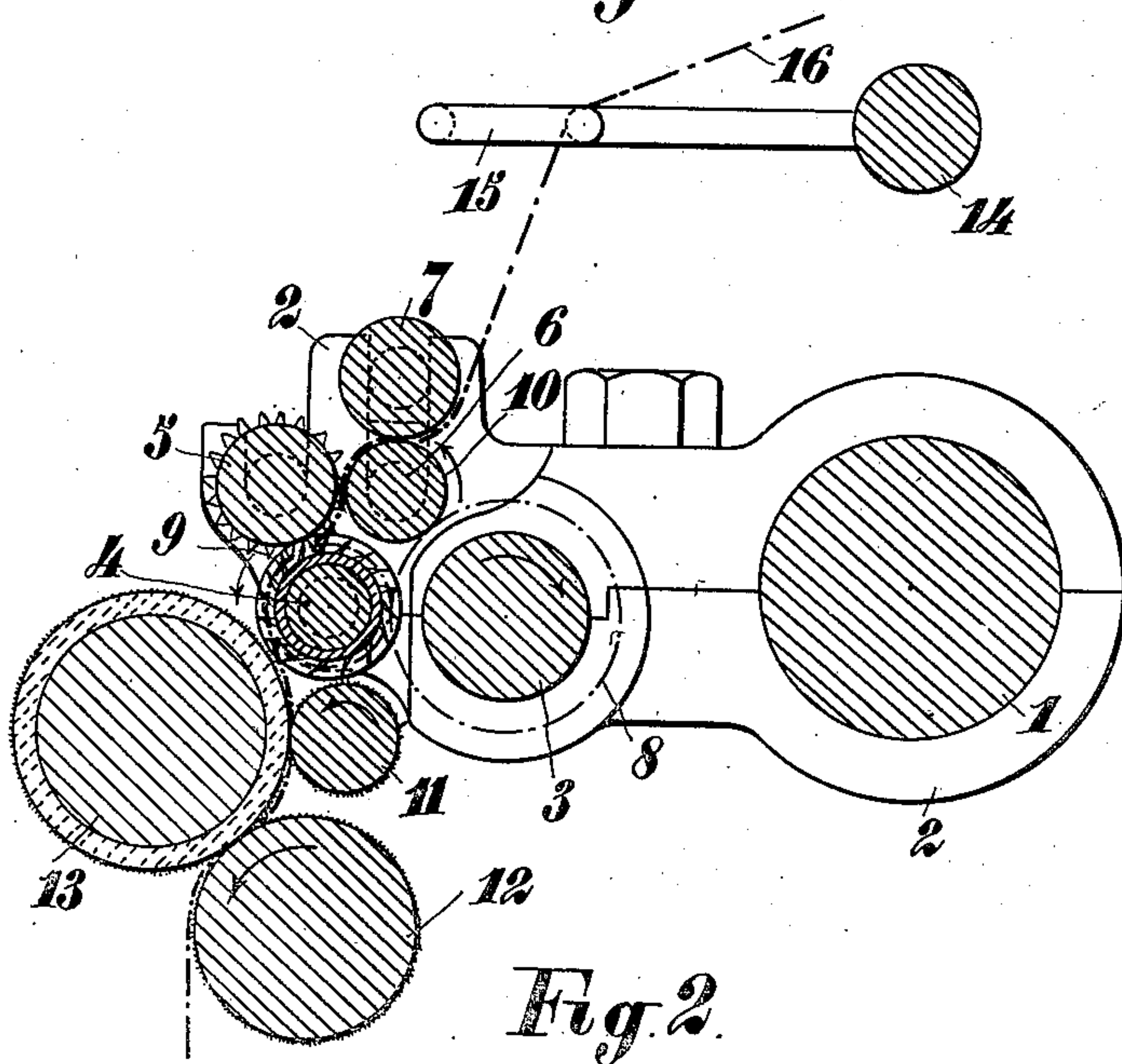
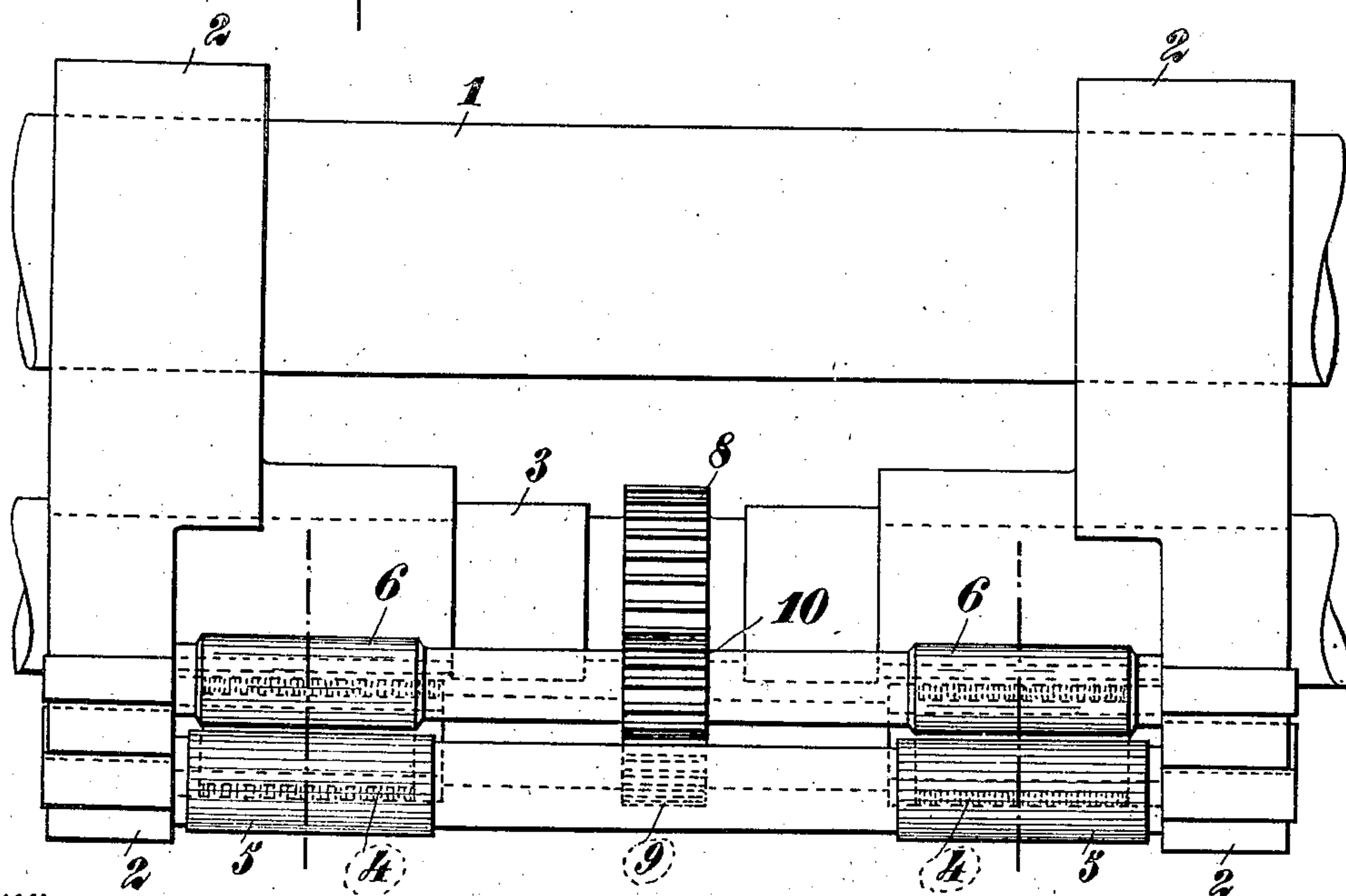


Fig 2.



Witnesses
Walter M. Chapin
Arthur Victor

Inventor
Joseph Perrin.
by Rosenbaum & Stockbridge
Attys.

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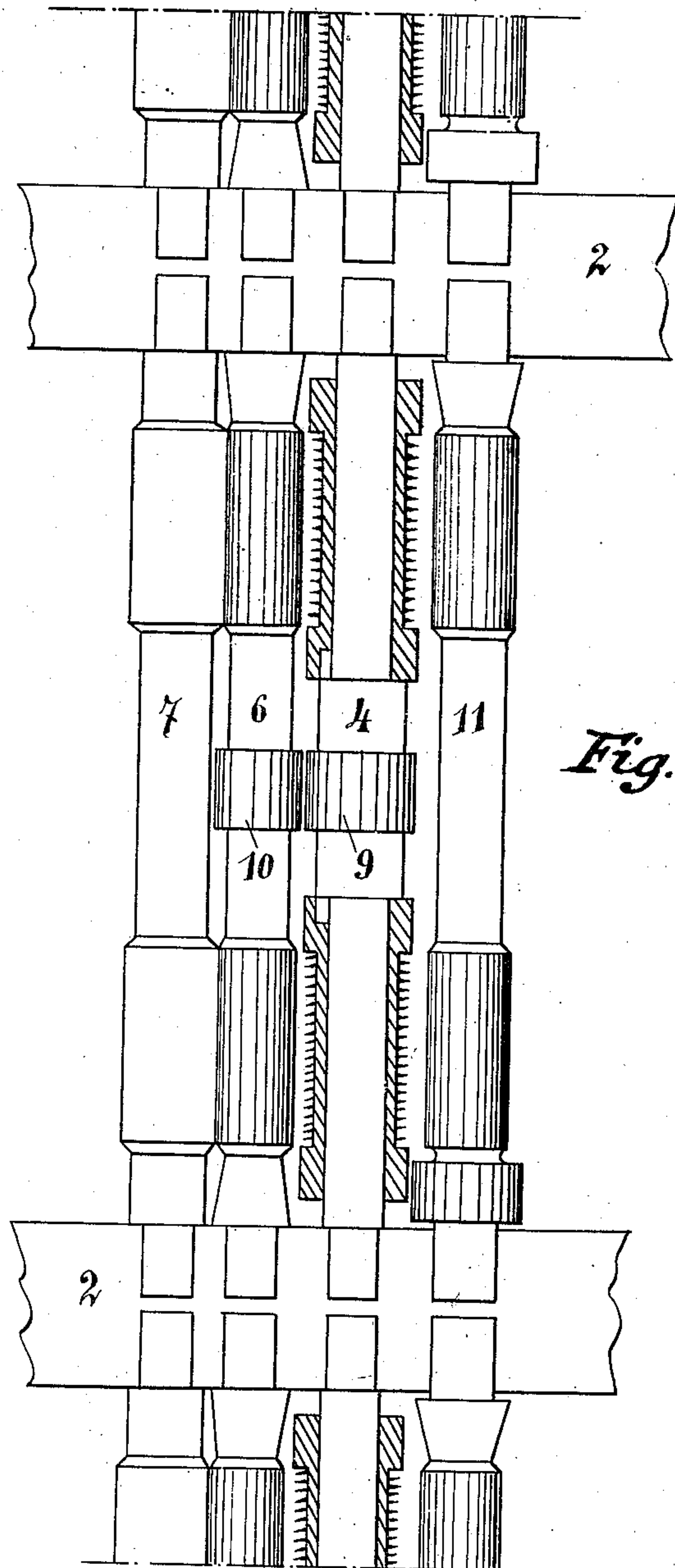


Fig. 3.

Witnesses:
Halden Chapin
May Bird

Inventor:
Joseph Perrin.
by Rumbaut Stockbridge
Attys.

UNITED STATES PATENT OFFICE.

JOSEPH PERRIN, OF COURS, FRANCE.

DRAWING APPARATUS FOR SPINNING SHORT-STAPLED FIBERS.

No. 849,812.

Specification of Letters Patent.

Patented April 9, 1907.

Application filed April 13, 1905. Serial No. 255,289.

To all whom it may concern:

Be it known that I, JOSEPH PERRIN, a citizen of the French Republic, residing at Cours. in the Department of Rhone and Republic of France, have invented new and useful Improvements in Drawing Apparatus for Spinning Short-Stapled Fibers, of which the following is a specification.

My invention relates to an apparatus for drawing textile fibers; and the principal object of the invention is to provide for drawing short as well as long fibers by the same apparatus and to improve the quality of the yarn produced.

In the practice of cotton-spinning the yarn is gradually attenuated by being passed through a number of sets of drawing-rollers driven at different speeds. The space between the initial rollers and the following lines of rollers is generally based, however, on the maximum length of the fiber. This space is ordinarily too wide to draw out the shorter fiber contained in the sliver and put it in parallel order.

In carrying out my invention I aim to draw out and arrange in parallel order all of the fibers from the longest to the shortest, which constitute the sliver. I also aim to secure a much higher degree of attenuation than can be attained by the means ordinarily employed, so that further attenuation in the slubbing and roving frame becomes unnecessary.

In the drawings, Figure 1 is a transverse sectional view of drawing-rollers embodying the principles of my invention. Fig. 2 is a top view of the same, some of the parts being removed. Fig. 3 is a sectional view taken in a plane at the right of the rollers in Fig. 1 looking toward the left.

In carrying out my invention I make use of a porcupine-roller, the teeth of which are arranged to engage and comb out the fibers of the sliver. I also make use of corrugated drawing-rolls, so related to the porcupine-roller as to be capable of acting on the shortest as well as the longest fibers.

Referring to the drawings, 1 indicates a stationary frame in the form of a solid cylindrical bar supported transversely in the machine.

2 indicate what I shall term "subframes," of which there may be any number arranged at spaced intervals along the bar 1. Each of

the subframes 2 constitutes a support for a group of sectional rollers which I employ.

The drive-shaft is shown at 3 and has gears 8 thereon at intervals along its length and between the subframes 2. Journaled within the subframes 2 and extending in alined series across the machine are rollers 4, 5, 6, and 7, of which 4 is a porcupine-roller with which the roller 5 coöperates, having flutings upon its surface which enter the spaces between the teeth of the porcupine-roller. 6 and 7 are calendering-rollers, having a smooth surface and by which the sliver is engaged. All of these rollers 4, 5, 6, and 7 are sectional—that is to say, they extend between adjacent subframes 2, in which the sections are respectively journaled. In this way the various rollers virtually extend across the entire width of the machine, although the sectional parts thereof are entirely separate from one another and are all journaled in the subframes 2, so as to give greater rigidity to the rollers in spite of their small diameter. The rollers 4 and 6 have pinions 9 and 10, which mesh with the gear 8 of their particular section. In this way the rollers 4, 5, 6, and 7 may be of small diameter and delicate construction suitable to the shortest fibers of the sliver and at the same time have all requisite strength and rigidity by virtue of the sectional construction with supporting-journals spaced at short distances apart.

The drawing-rolls are indicated at 11, 12, and 13 and may have roughened or corrugated surfaces for the purpose of engaging the sliver more firmly. I prefer to make the roller 11 of small diameter and supported at each of the subframes so as to have the necessary stiffness and rigidity. By this construction the bight or point of drawing engagement of the rollers 11 and 13 is in very close proximity to the teeth of the porcupine-roller 4, so that the shortest as well as the longest fibers are drawn out and laid in parallel order.

The operation is as follows: The sliver shown at 16 enters the apparatus through the eye 15, supported by the rod 14, and thence passes through the calendering-rollers 6 and 7. By this means the sliver is somewhat flattened and passes into engagement with the teeth of the porcupine-roller, being pressed into such relation by the fluted feeding-roller 5. The sliver finally enters

the bight of the drawing-rollers 11, 12, and 13 and is pulled out thereby against the combing action of the porcupine-teeth, whereby the fibers are drawn out and laid in
5 parallel order, as required.

What I claim is—

In a drawing apparatus for short-staple fiber, a porcupine-roller composed of a series of alined sections independent of one another
10 and each having a gear, a pair of fluted feeding-rolls also composed of alined independent sections of very small diameter and closely adjacent to said porcupine-roller, said feeding-rolls also having gears thereon,
15 a pair of drawing-rolls closely adjacent to

said porcupine-roller and adapted to receive the sliver therefrom, said feeding-rolls and said drawing-rolls being disposed at opposite points on said porcupine-roller less than one hundred and eighty degrees apart where- 20 by all of the rolls are very closely arranged together, and a shaft having gears thereon arranged to positively drive all of said rolls.

In testimony whereof I have signed my name to this specification in the presence of 25 two subscribing witnesses.

JOSEPH PERRIN.

Witnesses:

L. DECHARANN,
V. BLANC.