

(No Model.)

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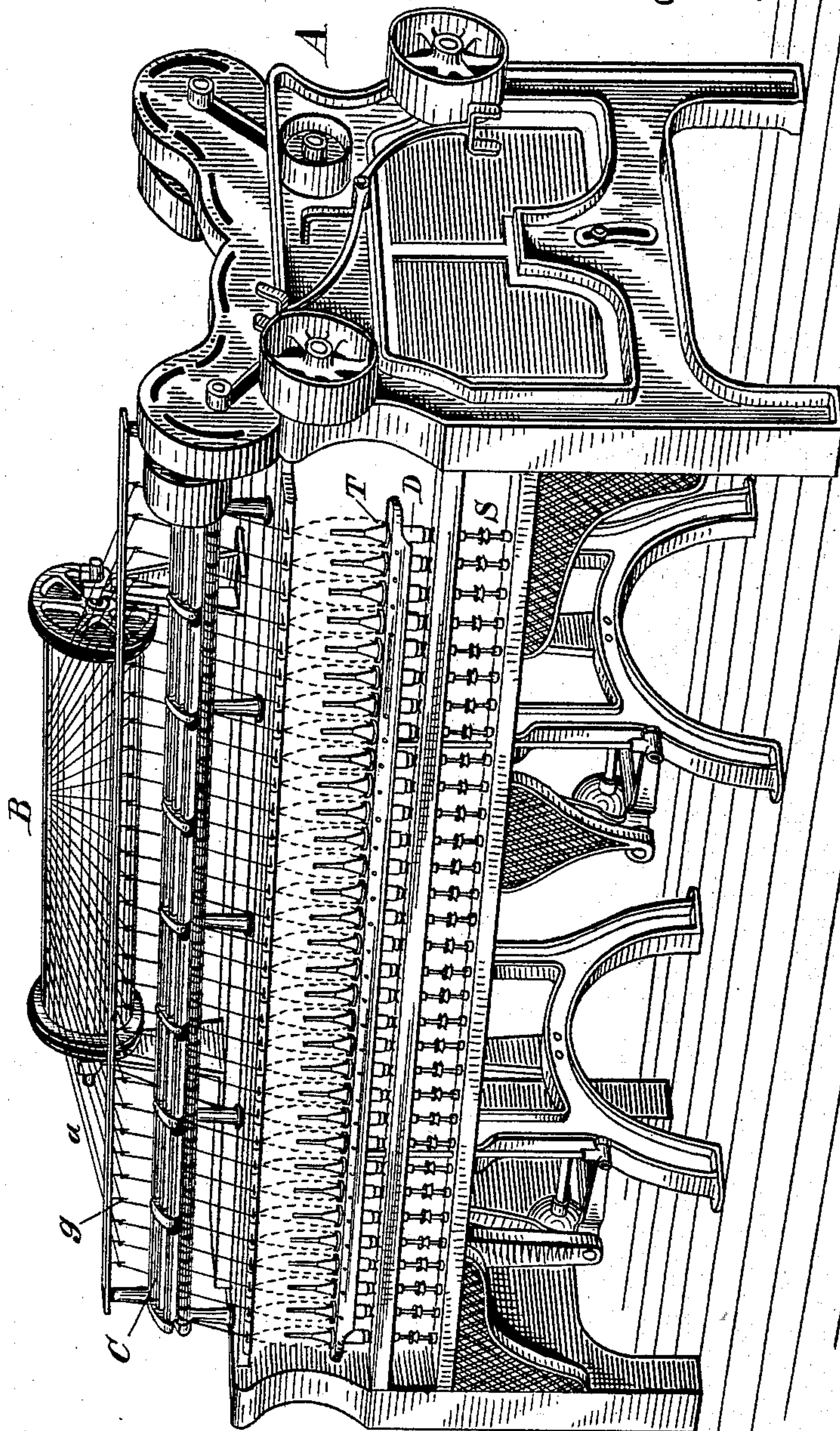
R. C. NEWELL.

ART OF PREPARING YARN FOR FILLING, &c.

No. 388,436.

Patented Aug. 28, 1888.

Fig. 1.



WITNESSES:

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INVENTOR.

Roscius C. Newell.
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(No Model.)

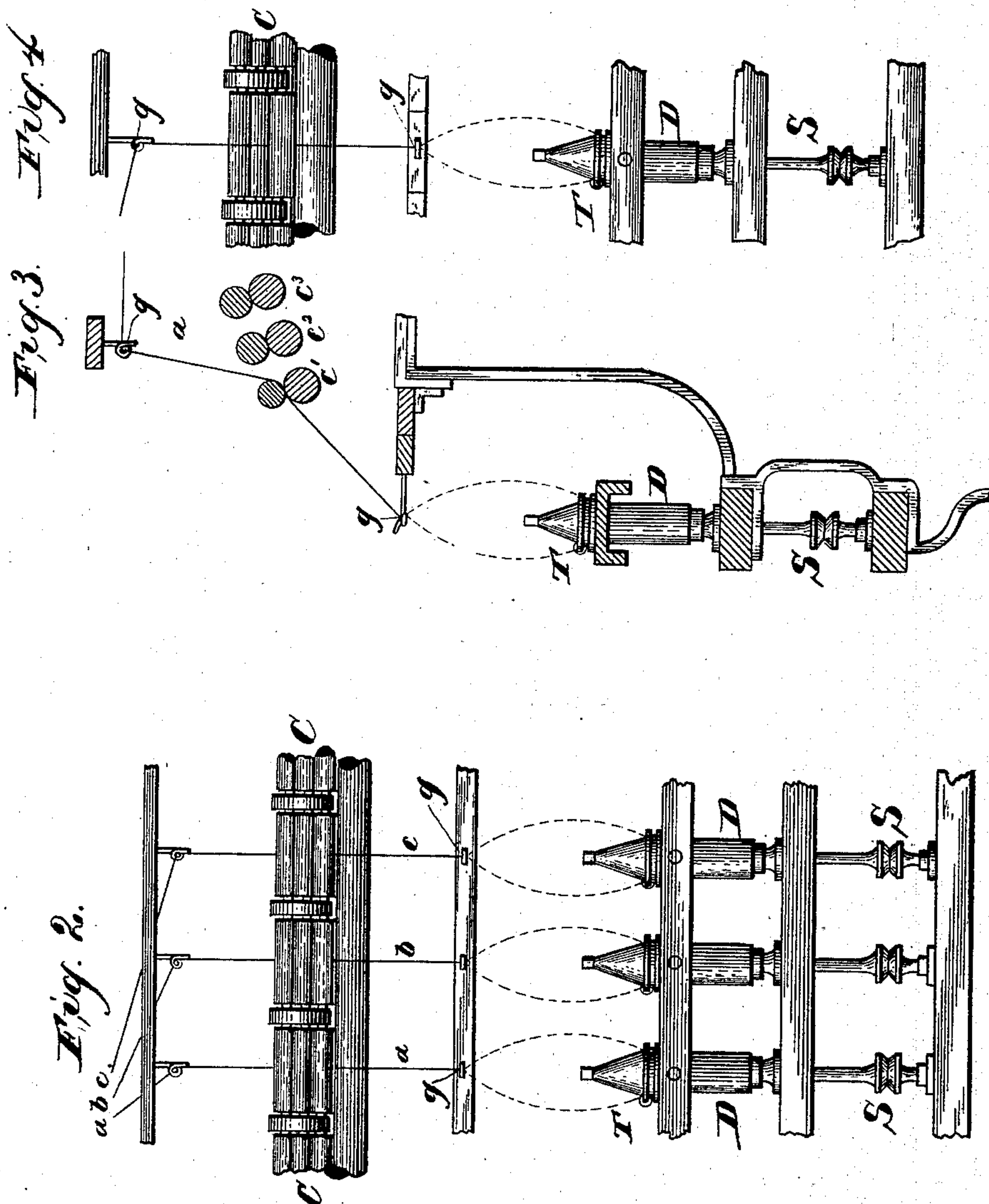
2 Sheets—Sheet 2.

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Patented Aug. 28, 1888.



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UNITED STATES PATENT OFFICE.

ROSCIUS C. NEWELL, OF PALMER, MASSACHUSETTS.

ART OF PREPARING YARN FOR FILLING, &c.

SPECIFICATION forming part of Letters Patent No. 388,436, dated August 28, 1888.

Application filed June 24, 1886. Serial No. 206,175. (No model.)

To all whom it may concern:

Be it known that I, ROSCIUS C. NEWELL, of Three Rivers, Palmer, Hampden county, State of Massachusetts, have invented Improvements in the Art of Preparing Yarn for Filling, &c., of which the following is a specification.

My invention consists in the improvement in the art of preparing yarn for filling or other purposes, which consists in winding the same upon beams and rewinding it therefrom upon bobbins, while simultaneously therewith increasing or diminishing the twist therein to regulate the amount of said twist, substantially as hereinafter described.

In the accompanying drawings, Figure 1 is a view in perspective of a filling-spinning frame with a beam of yarn thereon for carrying out my invention. Fig. 2 is a view in front elevation of a section of a line of rolls and spindles arranged for carrying out my invention. Fig. 3 is a view in cross-section of another arrangement of rolls for the same purpose. Fig. 4 is a view in front elevation of the arrangement shown in Fig. 3.

Referring to Fig. 1, A is a filling-spinning frame of well-known construction from which the roving-creel has been temporarily removed and the beam of yarn B has been mounted thereon between the two lines of rolls on opposite sides of the frame, the ends or threads of said beam of yarn B passing through guides and spinning-rolls C C, the guide-wires g, and travelers T to the shuttle bobbins or quills D D, which are rigidly but removably attached to and revolve with the spindles of said frame. The steel rolls C C are so geared that the surfaces of all will run at the same speed, and the gearing from the cylinder of the frame is arranged to drive the front roll at such a speed that there will be very little twist given to the moving thread, each thread being acted upon independently of the others in the process of winding after having passed through the rolls.

Fig. 2 shows the threads a b c passing through rolls C, guide-wires g g g, and travelers T T T to bobbins D D D on their spindles S S S.

Figs. 3 and 4 show the thread a passing through only the front rolls, C', of the spinning-rolls, the rolls C² and C³ running idle or

disconnected, resulting in obvious advantages in the saving of labor and power when different grades of yarn are used.

In the art as heretofore practiced mechanisms have been employed that would serve only for the purpose of quilling or winding yarns onto shuttle bobbins or quills.

In practicing my invention a filling-spinning frame of ordinary construction having its roving-creel removed temporarily and proper speeds imparted to its rolls and spindles is combined with a beam of yarn mounted thereon, and serves a better purpose than mechanisms heretofore specially constructed for quilling machines. Among the advantages gained are the saving of valuable space by having the beam of yarn supported on or above the frame instead of having said beam at the side of the mechanism and the ability to more widely separate the threads from said beam before passing into the rolls, resulting in less liability to breakage and tangling. By mounting the beam on the frame it is made possible and convenient for the attendant, in case of breakage of the yarns before passing through the rolls, to find the broken ends from either side of the frame. All the ends on said beam so mounted being readily accessible to the attendant from either side of the frame, it is obvious that any necessary piecing of broken ends is greatly facilitated.

Among the advantages of my invention over known methods are that the quilling or winding of yarn can be done at greater speed without risk, resulting in a saving of labor by the increased product per spindle in a given time, and a consequent saving in the cost of quilling or winding yarn onto shuttle bobbins or quills.

The tension of the yarn can be so regulated by the size, weight, and number of the travelers in my invention that the yarn can be wound on the bobbins or quills with any desired degree of compactness, so that more yarn can be placed in a shuttle, resulting in another saving over known methods by increasing the product of the loom with a consequent decrease in the cost of weaving.

By changing the twist-gears and with suitable travelers upon the rings in said frame more twist can be added to the yarn in the process of quilling or winding of yarn onto

shuttle bobbins or quills, giving the cloth a more firm wiry appearance and producing a heavier firmer feeling to the woven cloth; or, in case a softer or woolly feeling should be desired, by reversing the course of the spindles, imparting proper speeds to the rolls and spindles, and care being taken to use suitable travelers on the rings in the frame twist may be taken out of the yarn in the process of quilling or winding yarn onto shuttle bobbins or quills, enhancing the quality and value of the woven fabric into which the yarn thus quilled enters. This desirable result has not heretofore been effected in the process of quilling or winding yarn on shuttle bobbins or quills, and is only accomplished by my invention, in practicing which are employed the rings and travelers in connection with the rolls and the bobbins rigidly affixed to positively-driven spindles.

The advantage of passing the ends or threads from a beam through two lines of rolls on opposite sides of the frame and the advantage of regulating the tension of the yarn by the use of rings and travelers between the rolls and bobbins rigidly attached to positively driven spindles, as afforded by my invention, cannot be overestimated in the process of quilling from a beam.

There are other advantages gained by the use of my invention over prevailing methods of handling the filling-yarn in short skeins in the processes preparatory to the process of winding or quilling which will be obvious to those skilled in the art to which my invention pertains.

It is due to state that the beam of yarn can be taken from the said filling-spinning frame, the roving-creel be replaced thereon, and the mechanism in the space of a few moments be changed from a quilling-machine and adapted for the entirely-different operation of spinning.

By the term "positively-driven spindle" I mean a spindle joined to and rotated at a uniform speed with that of its whirl, in contradistinction to spindles provided with loose whirls rotated by friction or designed to slip to avoid a too great strain on the yarn.

Further description of positively-driven spindles may be found in United States Letters Patent No. 261,275, issued July 18, 1882, to G. E. Taft for "spindle and bearing therefor."

What I claim is—

1. The improvement in the art of preparing yarn for filling or other purposes, which consists in winding the yarn from beams onto shuttle bobbins while simultaneously therewith increasing or diminishing the twist therein, substantially as described.

2. The improvement in the art of preparing yarn for filling or other purposes, which consists in winding the yarn upon beams and re-winding it therefrom upon bobbins while simultaneously therewith increasing or diminishing the twist therein to regulate the amount of said twist, substantially as described.

ROSCIUS C. NEWELL.

Witnesses:

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CHAS. B. FISK.