No. 731,409. PATENTED JUNE 16, 1903.

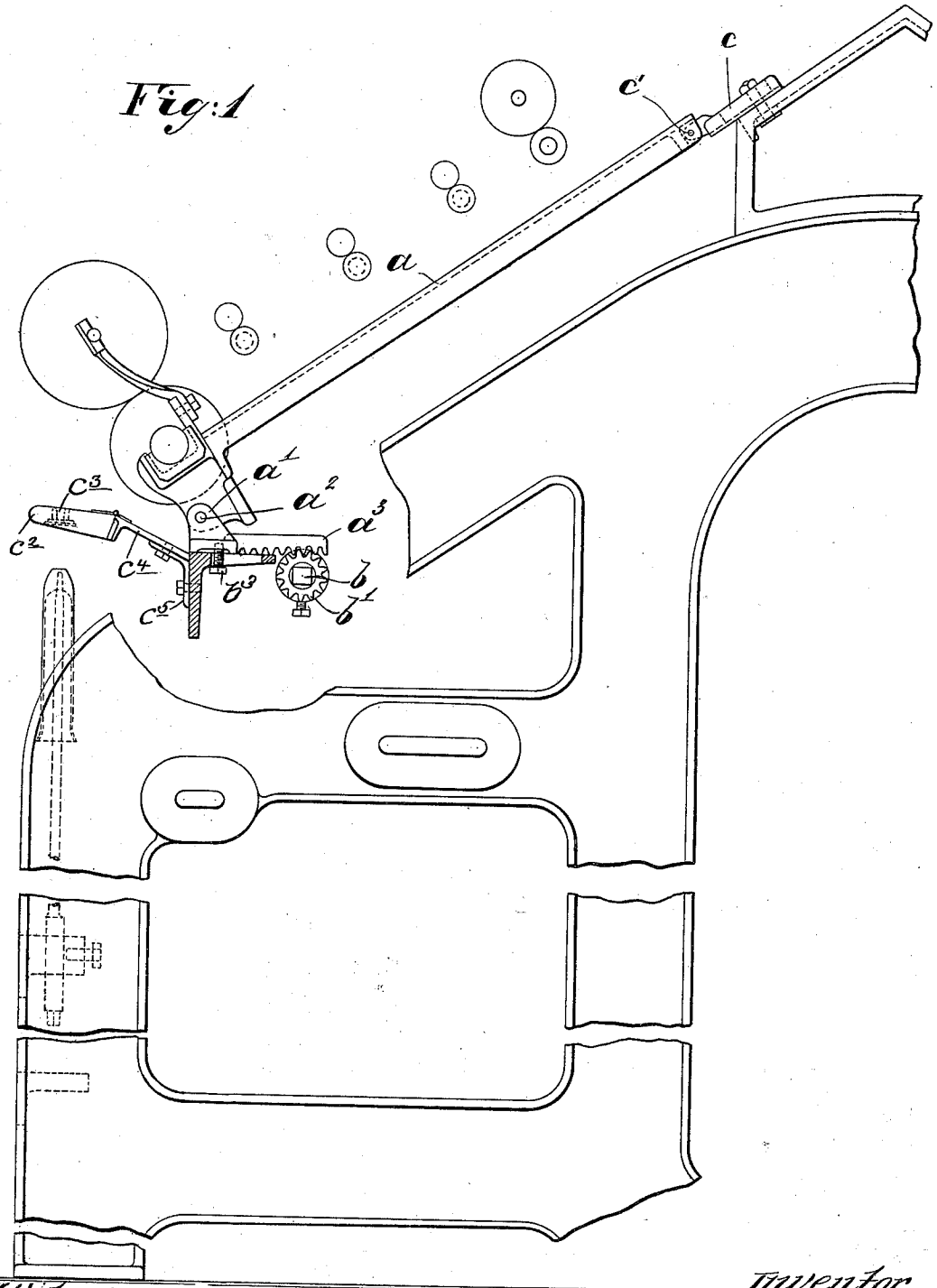
S. SHACKLETON.

YARN CONTROLLER FOR SPINNING MACHINERY.

APPLICATION FILED OCT. 6, 1902.

NO MODEL. 3 SHEETS—SHEET 1.

Fig. 1



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 3 SHEETS—SHEET 2.

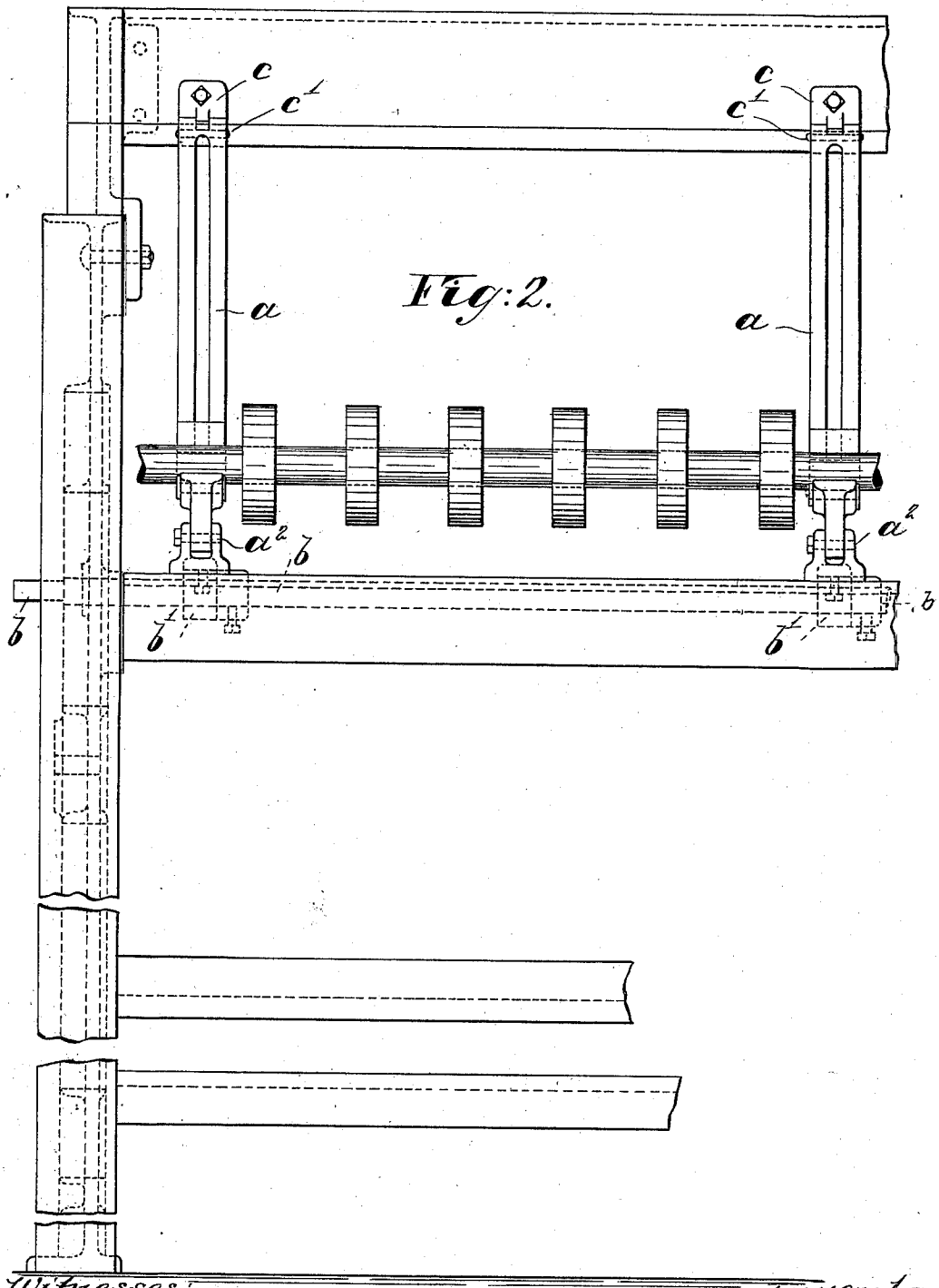


Fig: 2.

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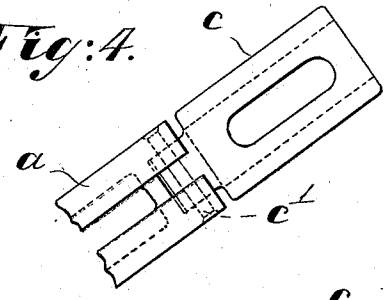
S. SHACKLETON.

YARN CONTROLLER FOR SPINNING MACHINERY.

APPLICATION FILED OCT. 6, 1902.

NO MODEL. 3 SHEETS—SHEET 3.

Fig: 4.



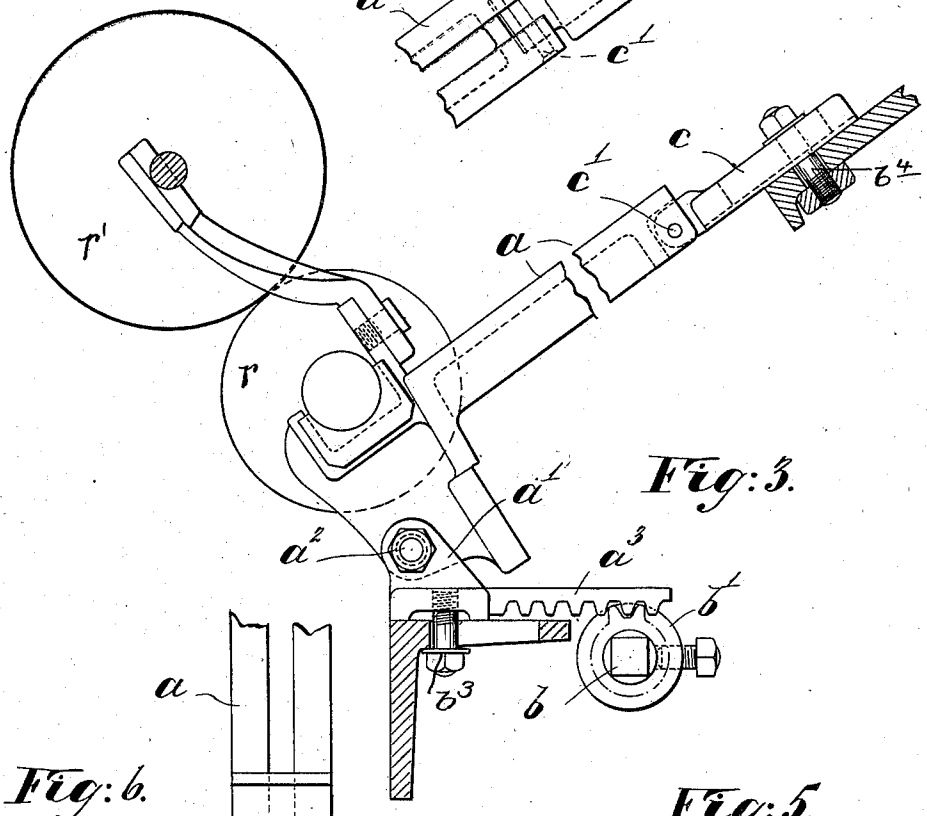


Fig: 3.

Fig: 6.

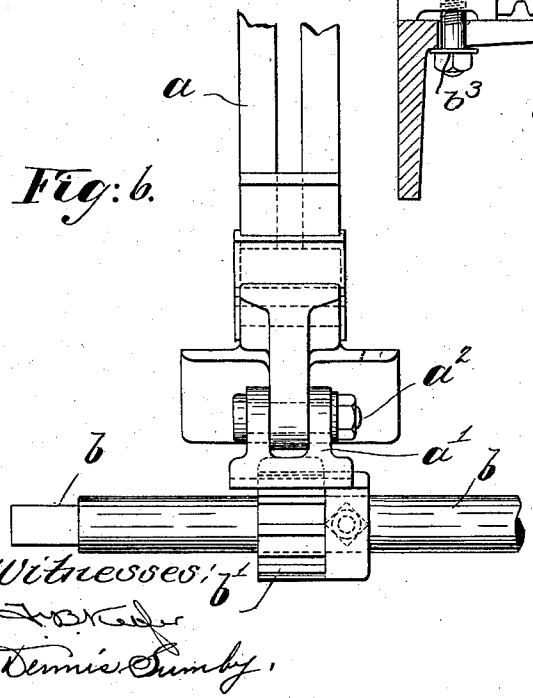
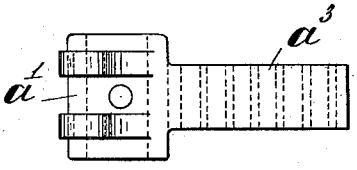


Fig: 5.



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No. 731,409. Patented June 16, 1903.

UNITED STATES PATENT OFFICE.

SUGDEN SHACKLETON, OF KEIGHLEY, ENGLAND, ASSIGNOR TO THE FIRM OF PRINCE SMITH & SON, OF KEIGHLEY, ENGLAND.

YARN-CONTROLLER FOR SPINNING MACHINERY.

SPECIFICATION forming part of Letters Patent No. 731,409, dated June 16, 1903.

Application filed October 6, 1902. Serial No. 126,166. (No model.)

To all whom it may concern:

Be it known that I, SUGDEN SHACKLETON, a subject of the King of Great Britain, residing at Keighley, in the county of York, England, have invented certain new and useful Improvements in and Relating to Ring, Cap, or Flier Spinning Machinery, of which the following is a specification.

It is well known to spinners of worsted, silk, or other yarns on the ring, cap, or flier system that the relation of the front rollers to the thread-board and the spindle plays an important part in their spinning. For the long English or luster wools it is advantageous to have the rollers set farther away from the spindles than for wools of shorter staple, such as medium crossbreds, or more especially for fine Botany wools, and for the following reasons: Long English and luster wools are strong and hard and have a more or less tendency to curl, and, moreover, are very fibrous. Therefore by setting the roller some distance away from the spindle greater pressure is brought to bear upon the pot-eye in the thread-board and the liability to curl is prevented, also the yarn immediately on leaving the "nip" of the roller proceeds in a straight line to the pot-eye without bearing upon any part of the surface of the bottom roller, thus allowing the twist (which is being put in by the revolving spindle) to be put into the yarn immediately on leaving the delivery-roller. The loose fibers are thus wrapped into the body of the yarn, the result being a rounder and fuller thread. But in less fibrous material, such as fine Botany and carded wools, it is essential that the rollers should be brought nearer the spindle and thread-board in order that the angle formed by the yarn in its passage from the roller to the thread-board shall be less acute, thus reducing the pressure of these tender yarns on the pot in the thread-board, and also so that the yarn on leaving the rollers may bear upon an arc of circumference of the same. The roller thus gives bearance to the yarn and relieves the pressure on the pot, giving the maximum of strength to the yarn with the minimum of pressure on the pot.

It has been the practice heretofore in building spinning-frames to ascertain what class of wool was intended to be spun. Then the distance from roller to spindle was made such as experience had determined to be best for that class.

My invention relates more particularly to that kind of roller carriage-stand which has its base fixed on a horizontal beam and its top feet fastened on a sloping rail. It is evident, therefore, that in moving these carrying-stands backward or forward in relation to the spindle the seatings or feet which fasten, respectively, to the beam and roving-rail assume new positions with respect to the surfaces to which they are fastened. They have therefore to be refitted, thus entailing a great deal of extra labor and precluding many from making any alteration at all, and thus limiting the capabilities of the machine.

An arrangement embodying my invention may be constructed as follows: I provide feet hinged to this main carriage-stand, the front seat acting as foot and rack, and these parts are so formed as to be capable of gearing into a rack wheel or wheels on a shaft or shafts running the whole length of the frame and working together, and the ends of the shaft at both the draft and twist ends of the frame being squared to admit of a key being used, so that the overlooker or other person can at will when spinning strong yarns put these stands back, so that the twist, if required, can go straight into the nip of the rollers, and of course on the other hand the effect of this provision will be that it will also admit of his bringing these stands forward when circumstances so require to spin a tender yarn where it is advisable that the thread should run somewhat down the face of the roller and to put as little pressure as possible upon the "pot-guide" through which the yarn is passing when in the act of spinning.

The accompanying drawings illustrate an embodiment of my invention in a spinning-frame; but I wish it to be clearly understood that these arrangements may be greatly varied without exceeding the scope of my invention.

Figure 1 shows a front elevation of one-half of a spinning-frame. Fig. 2 is a longi-

tudinal view of the same part of the frame. Fig. 3 shows in end elevation one of my carrying-stands drawn to an enlarged scale. Fig. 4 shows a front elevation of the same to the like scale; and Fig. 5 shows a plan of carrying-stand, the fulcrumed base, casting and rack to the same scale; and Fig. 6 is a front view of carrying-stand with beam removed.

The base of the carrying-stand a consists, as shown, of a pivoted or hinged piece a', suitably fulcrumed at a^2 to the base-piece, to which piece is cast a rack a^3. Mounted in suitable bearings fixed to the framework of the machine is a shaft b, on which is fixed a rack pinion-wheel b', engaging into the aforesaid rack a^3 of the base-piece a'. The top foot c of the carrying-stand a is also pivoted and is fulcrumed at c' to its fixed connection. The aforesaid shaft b protrudes through each end of the machine and can, when so desired, be operated by any suitable key or lever (not shown) to be applied on the squared end of the same, or said shaft may be actuated as by a hand-wheel or any other suitable device. When it is desired, therefore, to move the carrying-stand to any new position relatively to the spindle, it is only necessary to loosen the binding-screws b^3 and b^4, respectively under the beam and above the pivoted foot, and then turn the shaft by means such as hereinbefore described in the direction required. The base-piece and the top foot by reason of their fulcrums allow the carrying-stand to accommodate itself to its new position.

Fig. 4 is a plan view of the top foot c in Fig. 3, and the slot in same is to admit of the movement of the conveyer-stand without its coming in contact with the binding-screw b^4.

Referring to Fig. 1, c^2 is the thread-board; c^3, the pot for guiding the thread to the spindle; c^4, the rail carrying the thread-board, and c^5 the angle-iron carrying the thread-board rail c^4.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In a spinning-machine, the combination of a roving-rail, a horizontally-adjustable base, a carrying-stand yieldingly mounted on said base, a top foot yieldingly attached to said carrying-stand, and means for moving said base in a horizontal direction.

2. In a spinning-machine, the combination of a roving-rail, a horizontally-adjustable base, a carrying-stand pivotally mounted on said base, an adjustable top foot pivoted to said carrying-stand, and means for moving said base in a horizontal direction.

3. In a spinning-machine, the combination of a roving-rail, a horizontally-adjustable base, a rack attached to said base, a carrying-stand pivotally mounted on said base, an adjustable top foot pivoted to said carrying-stand, a shaft, a pinion on said shaft in engagement with the rack on said base, and means for rotating said shaft.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

SUGDEN SHACKLETON.

Witnesses:
HENRY SMITH,
THOMAS HOLMES SOUTHWELL.