(No Model.)

J. H. CONGDON.

STAND FOR DRAWING ROLLS OF SPINNING AND OTHER MACHINES.

No. 304,296. Patented Sept. 2, 1884.

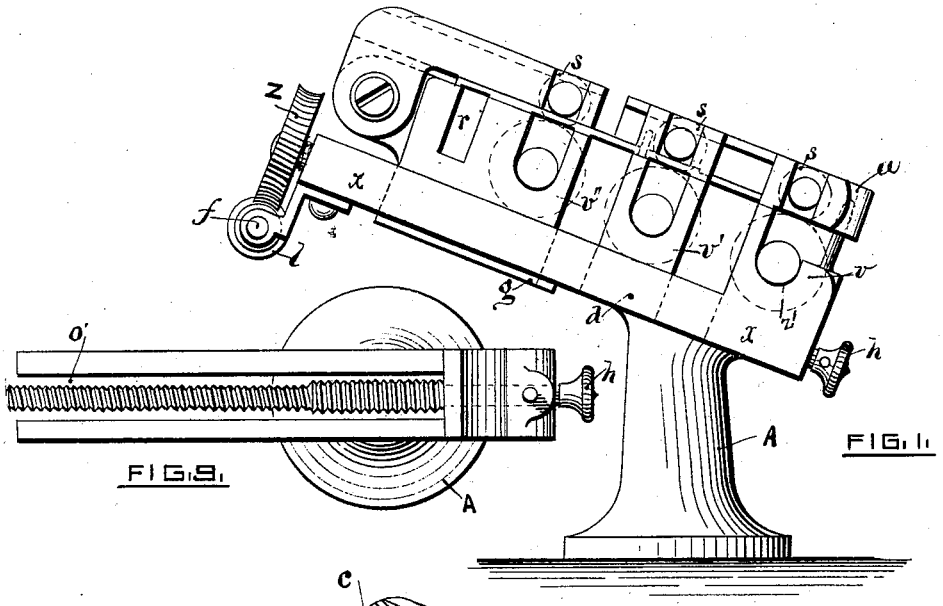

FIG. 9.

FIG. 1.

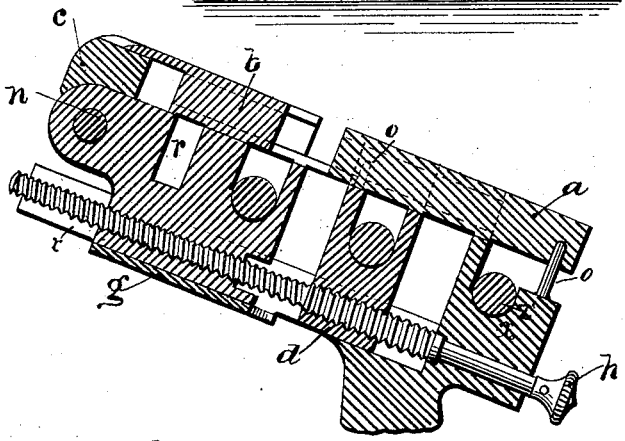

FIG. 2.

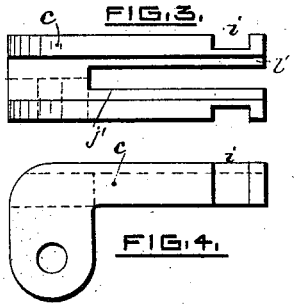

FIG. 3.

FIG. 4.

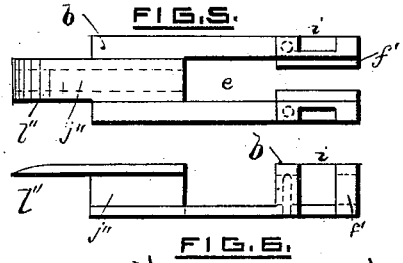

FIG. 5.

FIG. 6.

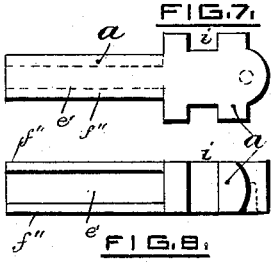

FIG. 7.

FIG. 8.

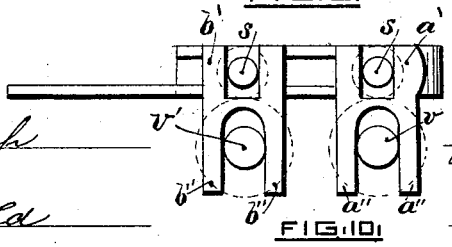

FIG. 10.

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JOSEPH H. CONGDON, OF ANTHONY, RHODE ISLAND.

STAND FOR DRAWING-ROLLS OF SPINNING AND OTHER MACHINES.

SPECIFICATION forming part of Letters Patent No. 304,296, dated September 2, 1884.

Application filed July 5, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH H. CONGDON, of Quidnick Mills, Anthony, in the county of Kent and State of Rhode Island, have invented certain new and useful Improvements in Stands for Drawing-Rolls of Spinning and other Machines used in Working Textile Substances, of which the following is a full and correct description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to the stands that hold the rollers used in drawing out the sliver in spinning and other machinery, and has for its object the regulation of the distance between the rollers, to suit said rolls to the different lengths of staple that may be used. This object I accomplish by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 shows a side elevation of a roller-stand with the cap-bars, also the shaft, worm-wheel, and worm-gear by which the mechanism that adjusts the rollers is operated. Fig. 2 is a vertical section of a part of the same, the screw being shown in elevation. Figs. 3 to 8, inclusive, show the parts into which the cap that holds the top rollers in place is divided, drawn out separate from each other. Figs. 3 and 4 respectively show top and side views of the back cap-piece, *c*. Figs. 5 and 6 show, respectively, top and side views of the middle cap-piece, *b*. Figs. 7 and 8 show, respectively, top and side views of the front cap-piece, *a*. Fig. 9 is a top view of the stand, with the sliding parts that hold the rollers removed to show the position of the screw *h*. Fig. 10 is a side elevation of the cap which supports the inner ends of the top rolls, *s s*, between the stands.

In the drawings, A is the lower part of the stand, of the usual or ordinary construction. Secured to the upper part of the stand A is a slanting frame or bar, *x*. This frame *x* is formed with a bearing, *Z'*, for holding the front roll. Traveling backward and forward in a slot, *o'*, Fig. 9, formed in the frame *x*, are the projections on the under sides of the blocks *d g*, which form, respectively, the bearings for the journals of the middle and back rollers, *v' v''*. A screw, *h*, is placed in this slot *o'*, with a bearing in the front part of the stand A, a shoulder being made on the screw inside of the bearing, and a head secured to the outer end of the screw, to prevent it from moving endwise in its bearing. The screw *h* has a thread cut on it from the shoulder to the other end; but on that part of it that lies under the back roller, *v''*, the thread is made of double the pitch, or one-half the number to the inch, that it is on the part that lies under the middle roller, *v'*, so that the block *g*, which has a hole in that part of it that extends down into the slot *o'*, with a screw-thread in it fitting that part of the screw *h*, shall be moved twice as fast, when the screw is turned, as the block *d*, which also has a hole made in that part extending down into the slot *o'*, with a screw-thread in it fitting that part of the screw *h* that is under the middle roller. As it is necessary that each top roll should retain its position directly over the lower roller, with which it operates, the caps that hold them, instead of being made in one piece, as is usually done, are divided into three pieces, so that each top roll may be held independently of the others, and these caps are held in their proper places over the lower rollers by being controlled by pins and by the roller-bearings below. The front cap-piece, *a*, is held by the pin *o* in the front part of the stand, such pin entering into a hole in said cap-piece. The middle cap-piece, *b*, is held by the pin *o* in the block *d* in like manner. The back cap-piece, *c*, is secured to the block *g* of the pivot *n*, and has a slot, *j'*, cut vertically through its front end, and is also rabbeted out on its top, at *l'*, to receive the rear projecting end, *l''*, of the middle cap-piece, *b*, the neck *j''* thereof, Fig. 6, being adapted to slide in the slot *j'* of said cap-piece *c*. The middle cap-piece, *b*, is also slotted vertically, as at *e*, and rabbeted out on its top and under side, at *f'*, to receive the projecting tongues *f'' f''* on the top and bottom of the piece *a*, and the neck *e'* between the tongues *f'' f''* is adapted to slide in the slot *e* of piece *b*, Fig. 5. Each of the cap-pieces *a*, *b*, and *c* has recesses *i i i* made in both sides of it to receive the journals of the top rolls, *s s s*.

In Fig. 10 are shown the two cap-pieces *a'*

b', located on the middle bearings of the lower rollers, between two stands to hold the inner ends of the top rolls. They are held in place by the prongs $a'' b''$, which extend down on each side of the lower rollers, so that when the rollers are moved forward or back the cap-pieces are carried with them by the prongs.

A shaft, f, supported in bearings on the back ends of the roller-stands, has fastened on it a worm-wheel, l, for each stand. These wheels engage in worm-gears z, one of which is secured to the back end of each screw h in such manner that by turning the shaft f all the screws can be operated at once, and the distance between the rollers changed without stopping the machine.

The operation is as follows: When the shaft f is turned, the worm-wheels l, by means of the worm-gears z, turn all the screws h in the machine and move the blocks d and g, with the rollers $v' v''$, to or from the front roller, v. As the middle roller, v', is moved a certain distance, it is necessary for the back roller to move twice as far to obtain the same amount of space between the back and middle rollers as there would be between the middle and front rollers. This is accomplished by making, as before stated, that part of the screw h that moves the back roller with a thread of double the pitch of that portion that moves the middle roller.

Having thus described my improvement, what I claim as my invention is—

1. A drawing-roller stand having a separate movable bearing for the middle roller and another for the back roller, in combination with mechanism whereby the distance between the front and middle rollers and the distance between the middle and back rollers can be adjusted at one and the same operation, substantially as and for the purpose set forth.

2. The combination of the stand A, differential screw h, and the blocks d and g, constructed and operating substantially as set forth, for the purpose specified.

3. The combination of the movable cap-pieces a b c with the stand A, blocks d and g, screw h, and pins o, substantially as and for the purpose specified.

4. The combination of the intermediate cap-pieces, $a' b'$, having prongs $a'' b''$, and lower rollers, v v'', with a drawing-roller stand having movable roller-bearings and mechanism for adjusting them, substantially as and for the purpose set forth.

5. The combination of the shaft f, worm-wheel l, and worm-gear z with a roller-stand having a separate movable bearing for the middle roller and another for the back roller, substantially as and for the purpose specified.

JOSEPH H. CONGDON.

Witnesses:
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