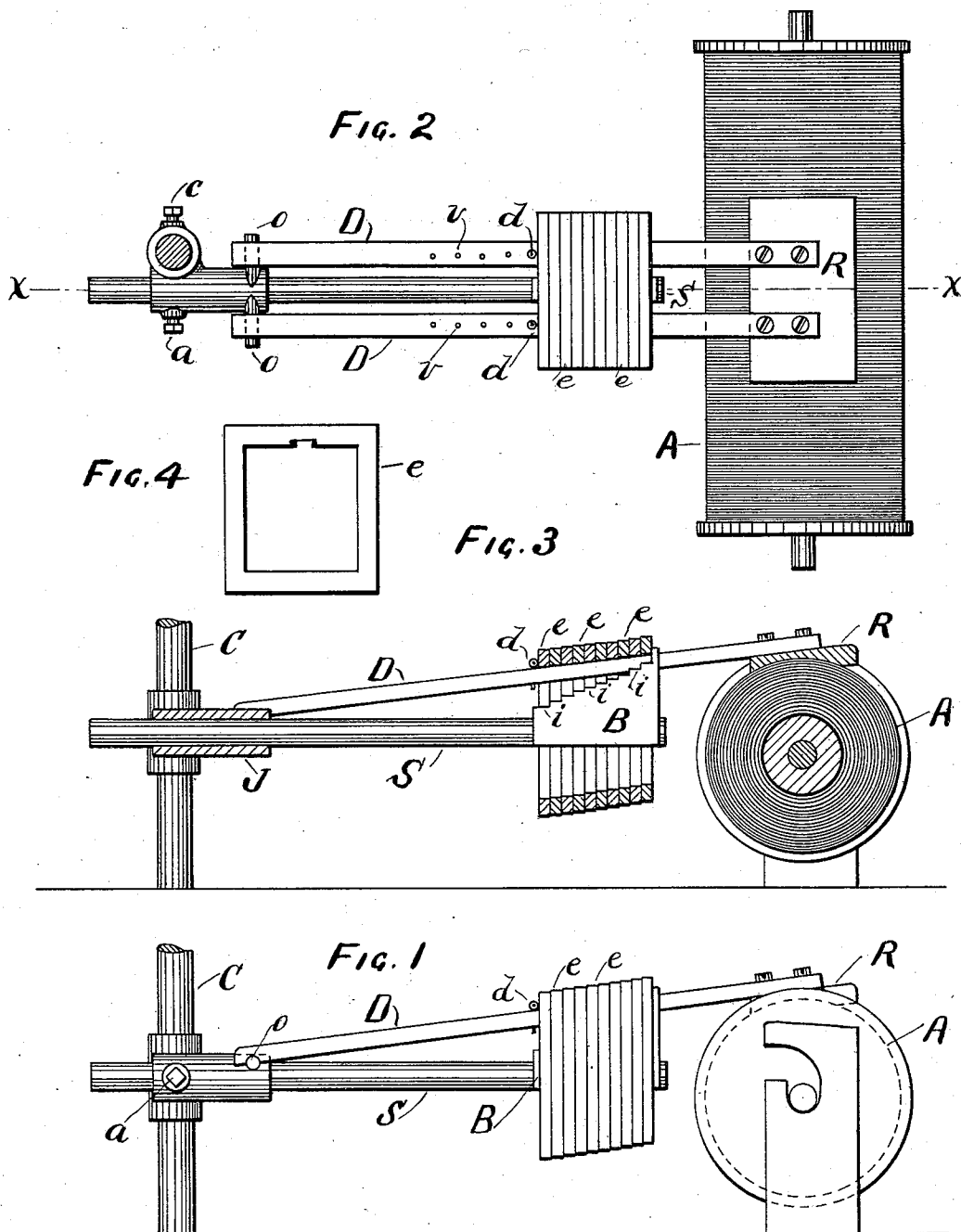


(No Model.)

H. J. TROST.
TENSION REGULATOR FOR YARN BEAMS.

No. 565,945.

Patented Aug. 18, 1896.



Witnesses:

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HUGO J. TROST, OF OLNEYVILLE, RHODE ISLAND.

TENSION-REGULATOR FOR YARN-BEAMS.

SPECIFICATION forming part of Letters Patent No. 565,945, dated August 18, 1896.

Application filed June 8, 1896. Serial No. 594,764. (No model.)

To all whom it may concern:

Be it known that I, HUGO J. TROST, of Olneyville, in the county of Providence and State of Rhode Island, have invented certain
5 new and useful Improvements in Tension-Regulators for Yarn-Beams on Dressers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying draw-
10 ings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to machines for dressing yarn preparatory to weaving, and more
15 especially to regulating the tension of the yarn as it is drawn from the yarn-beams in making up the full beam for the loom. It is fully explained and illustrated in this specification and the accompanying drawings.

20 Figure 1 represents a side elevation of one of the yarn-beams with the tension-regulating mechanism in position. Fig. 2 is a top view of the same parts shown in Fig. 1. Fig. 3 shows a vertical section of the mechanism,
25 taken on line *x x* in Fig. 2. Fig. 4 is a front view of one of the frame-weights used in the machine.

One great trouble in weaving cloth is the thin or light places that occur and make different shades in dyeing it and otherwise injure the goods. This variation in the cloth
30 is mainly caused by lack of uniform tension on the yarn when it is transferred in the dresser from the beam filled on the warper to the full beam for the loom. When the
35 beam from which the yarn is drawn is full, the yarn turns the beam much easier than it does when the beam is nearly empty, by reason of the change of leverage.

40 This invention consists in applying a friction to the yarn on the beam that shall be reduced automatically as the size of the beam is reduced in unwinding. Its construction is as follows:

45 A represents a yarn-beam in position to be unwound.

50 C is a standard secured to the floor at a suitable distance from the beam. A socket J has a hole made through it vertically to slide on the standard C, and a set-screw *c* is tapped in one side of the socket to hold it at any desired height on the standard. Another open-

ing is made through the socket horizontally to receive a bar S, and a set-screw *a* is put in the opposite side of the socket to bear against
55 the bar and hold it firmly. Two horizontal trunnions *o o* are placed one on each side of the horizontal barrel of the socket J to receive the rear ends of a double bar D, on the under side of which notches are made to fit
60 on the trunnions *o*. The front ends of the bar D are secured by bolts to a friction-pad R, that rests on the surface of the yarn on the beam A. The object of the pad R is to
65 make a friction on the yarn and to increase that friction and make it capable of variation. Weights *e e*, in the shape of frames, (see Fig. 4,) of cast metal, are placed close
70 together on the double bar D and held from sliding back by means of pins *d d*, put in holes in the bar. A number of these weights
75 *e* (represented in the drawings as being ten) are used on the bar at one time, and when the full beam A starts to unwind all the weights *e* will rest on the bar and cause the
80 full amount of friction; but as the yarn unwinds and lets the bar D and pad R down its leverage in turning the beam decreases and it is necessary to lessen the weight on
85 the bar D. This is accomplished by means of a block B, held on the bar S, which has its upper side cut into a stepped form, (see Fig. 3,) arranged to catch the weights *e e* one after
90 another on the successive steps *i i* as the bar S sinks down by the unwinding of the yarn from the beam and thus relieves the bar of the pressure of the weights gradually. As it requires more tension on the yarn to
95 turn the beam as it grows smaller, the weight on the friction-pad will be gradually removed and the friction of the pad on the yarn reduced, so that the same tension on the yarn required to turn the full beam will
100 turn the same when nearly empty. A series of holes *v v* are made in both parts of the bar D to receive the pins *d*, so that the weights *e* can be held farther in or out on the bar to lessen or increase the pressure on the pad R on the yarn-beam, and by loosening the set-screw *a* the bar S can be pushed in or out to bring the block B in proper position with regard to the weights.

When it is necessary to remove an empty beam to put in a full one, the weights *e* can

be removed back onto the socket and the bar D taken out, and by loosening the set-screw a the bar S can be slid back out of the way.

Having thus described my improvements,
5 I claim as my invention and desire to secure by Letters Patent—

10 An automatic regulating-tension for yarn-beams on dressers consisting of a combination of the following instrumentalities, a vertical standard, a socket to slide on said standard, a horizontal bar fitted to slide in an opening in said socket, a friction-pad, a double supporting-bar attached to said friction-pad

and supported at one end on trunnions on said socket, a series of weights held on said supporting-bar, a block made in a stepped form attached to said horizontal bar to receive the weights in succession as the yarn unwinds, and the supporting-bar is let down, substantially as described. 15 20

In testimony whereof I have hereunto set my hand this 5th day of June, A. D. 1896.

HUGO J. TROST.

In presence of—

FRANK BLANKENBURG,
BENJ. ARNOLD.