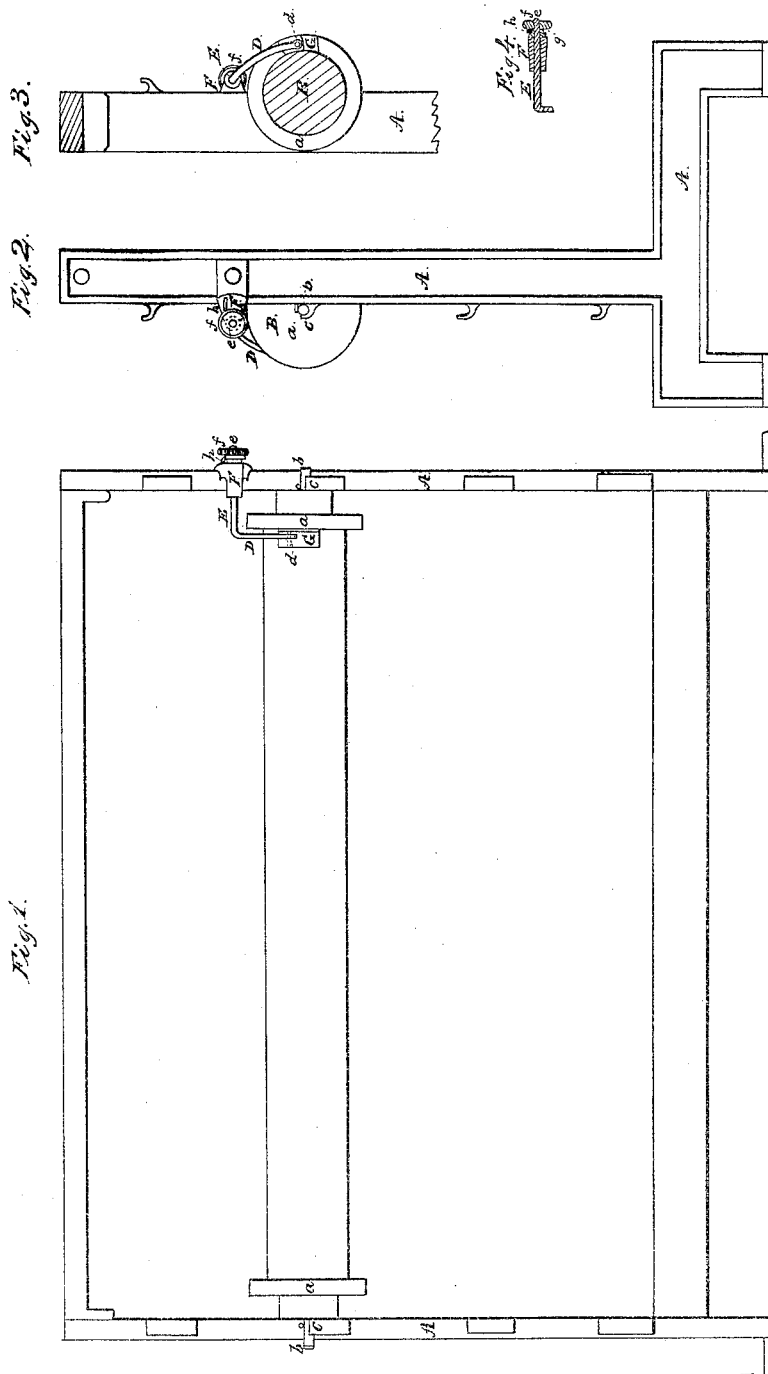


B. Saunders.
Thread Dressing Mach.

N^o 45,082.

Patented Nov. 15, 1864.



Witnesses.

C. R. Hale Jr.
Frederick Curtis

Inventor.

Benjamin Saunders
by his attorney
R. W. Eddy

UNITED STATES PATENT OFFICE.

BENJAMIN SAUNDERS, OF NASHUA, NEW HAMPSHIRE.

IMPROVEMENT IN FRICTION APPARATUS FOR WARP-DRESSER BEAMS.

Specification forming part of Letters Patent No. 45,082, dated November 15, 1864.

To all whom it may concern:

Be it known that I, BENJAMIN SAUNDERS, a resident of Nashua, in the county of Hillsborough and State of New Hampshire, have invented a new or Improved Friction Apparatus for Warp-Dresser Beams; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a front elevation, and Fig. 2 an end view, of a warp dresser beam frame or stand, and my invention as applied to one of its section beams or rollers. Fig. 3 is a transverse and vertical section taken through the friction-weight and its vibratory supporting-arm. Fig. 4 is a longitudinal section of the sliding journal and the adjusting mechanism thereof, to be hereinafter described.

My invention is for the purpose of obtaining a variable friction on the yarn such as will maintain it at or about a uniform or the proper degree of tension while it may be in the act of being unwound from the beam for the purpose of being sized or dressed.

The friction weight or block of my apparatus is caused by the action of gravity and a vibratory arm to which such block is applied to adjust itself to the yarn on the beam, as the diameter of the said yarn may decrease, the friction growing less or diminishing with such decrease in the diameter of the yarn, the same serving to render the tension to all intents and purposes practically uniform.

In the drawings, A denotes the frame or stand for supporting a series of the section or dresser beams or rollers, one of which is represented at B, as provided with two heads, *a a*, and having its journals *b b* supported in bearings *c c*, of the usual form and kind.

A friction-weight or metallic block, G, is not only arranged in rear of the beam and against its periphery or the curved surface of the yarn when wound on the beam, but is placed close alongside of the inner face of one of the heads *a*, and has its surfaces next adjacent to the head and the yarn covered with a facing of cloth or leather. The weight G is supported by a vibratory arm, D, to the lower end of which the weight is to be hinged, as shown at *d*, in order that the weight may turn and fit to the periphery of the mass of yarn as the diameter thereof may diminish

and the vibratory arm may be more or less depressed toward the axis of the beam.

The said vibratory arm is to be arranged relatively to the beam in manner as shown in Figs. 1, 2, and 3, and is to project from a slide rod or journal, E, which runs through and when in use turns freely in a stationary bearing or box, F, extended from the stand or frame A. At its outer end the said journal is provided with a male screw, *e*, on which a milled nut, *f*, is screwed. The shank of the said milled nut has a groove, *g*, formed in and around it for the reception of a pawl or retainer, *h*, which is jointed to the bearing F, and so as to be capable of being turned up and out of the said groove whenever occasion may require. The retainer, while allowing the milled nut to be revolved on its screw, maintains such nut in one position, and as a consequence the sliding journal will be moved longitudinally whenever the milled nut may be put in revolution on its screw. By screwing up the nut the friction-block G may be drawn against the head of the beam, so as with it to produce more or less friction while the beam may be in rotation. This friction is additional to that produced by the pressure of the weight G on the yarn itself, which, as the weight may move toward the axis of the beam, will diminish in consequence of the weight being controlled by the vibratory arm.

By having the friction-block applied to the vibratory arm and the latter affixed to a sliding journal, as described, we are enabled to raise the block off the beam and out of its way so as to enable the beam to be raised out of its bearings.

I claim—

1. The application of the friction-weight G to the dresser-beam by means of a vibratory arm, D, and in manner and so as to operate with such beam substantially as hereinbefore described.

2. The application of the friction-weight G to the vibratory arm D by means of a hinge-connection, or its equivalent, in order that the weight may be free to adjust itself to the periphery of the yarn on the dresser-beam.

3. The combination of the sliding journal E with the stationary bearing F and the vibratory arm D and weight G, applied to the sec-

tion or dresser beam, substantially as described.

4. The combination of the adjusting-screw *e* and nut *f* with the sliding journal, the vibratory arm and the friction-weight, applied to the section or dresser beam in manner as specified.

5. The combination of the retainer *h* and the groove *g* with the milled nut *f*, the screw

e, the sliding journal, the vibratory arm, and the friction-weight applied to the section or dresser beam in manner and so as to operate therewith substantially as hereinbefore explained.

BENJAMIN SAUNDERS.

Witnesses:

P. H. HILL,

J. G. KIMBALL.