

P. A. CHADBOURNE.

TENSION DEVICE FOR TWISTING MACHINES.

No. 180,546.

Patented Aug. 1, 1876.

Fig. 1

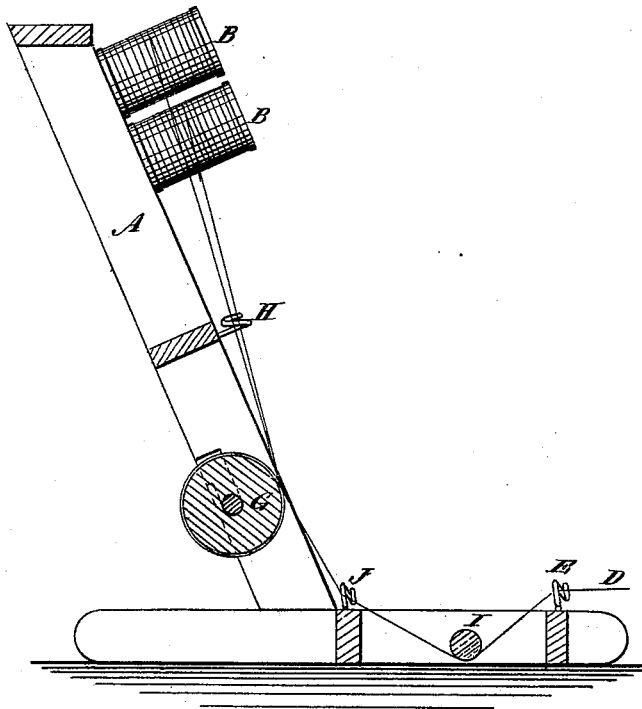
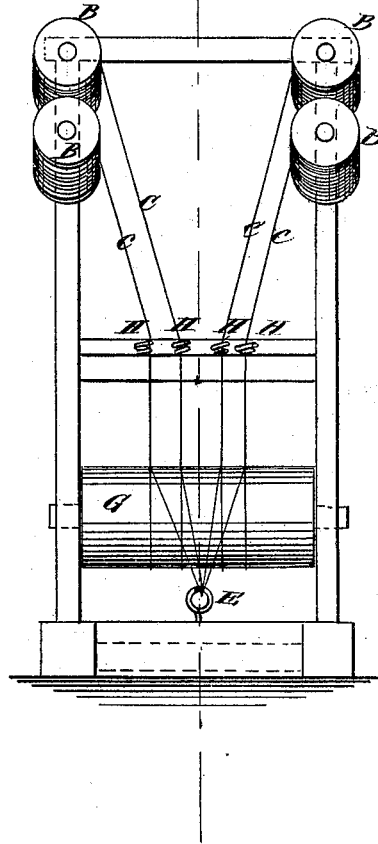


Fig. 2



WITNESSES:

*C. Nèveux*  
*John Goethals*

INVENTOR:

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# UNITED STATES PATENT OFFICE.

PAUL A. CHADBOURNE, OF WILLIAMSTOWN, MASSACHUSETTS.

## IMPROVEMENT IN TENSION DEVICES FOR TWISTING-MACHINES.

Specification forming part of Letters Patent No. **180,546**, dated August 1, 1876; application filed June 12, 1876.

*To all whom it may concern :*

Be it known that I, PAUL A. CHADBOURNE, of Williamstown, Massachusetts, have invented a new and Improved Tension Device for Twisting-Machines, of which the following is a specification:

My invention is a contrivance of guide-eyes and a roller with the spool-stand, from which the threads are supplied to the twister, whereby the tension of all the threads is more uniform than in the common arrangement.

Figure 1 is a sectional elevation of my improved tension device, taken on the line *xx*, Fig. 2, and Fig. 2 is a front elevation.

A is the spool-stand, from which the threads C are drawn in the common arrangement to the point D, for twisting, each thread being drawn from a separate spool, B, and only passing through an eye, E, whereby they are subject to considerable variations in tension, owing to the winding of the spools being different, and to other causes. I therefore propose to pass them around a roller, G, after leaving the spools for regulating the tension, and in order to run them on the roller properly I arrange a guide, H, for each thread between the spools and the roller. From the roller the threads pass to the point of twisting, preferably through a guide, J, and under a rod, I. The roller is acted upon by the combined tension of all the threads from all the spools, and it is turned

by the combined tension of all the threads passing from it. But as the threads cannot slip upon the roller the tension of each thread coming from the roller is the same.

Any variation of tension in a thread above the roller does not affect the tension of the same thread as it comes from the roller.

The surface of the roller may be sanded to prevent the thread from slipping under great variation of tension above the roller.

The roller takes the threads from the spools, and is turned by the threads themselves as they are drawn from it. As the threads cannot slip on the roller the force to be overcome is the combined tension of all the threads, and is equally distributed, so that there is the same tension upon each thread as it leaves the roller.

The roller being revolved by the threads, and thus rendered automatic, is greatly superior to such as are moved by separate machinery; hence,

What I claim is—

The combination, with the spool-stand A, of the tension-roller G, and an independent guide, H, for each thread, substantially as specified.

PAUL A. CHADBOURNE.

Witnesses:

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