E. J. MARTIN.

Spindle for Cleaning and Smoothing Silk and other Threads.

No. 202,448. Patented April 16, 1878.

Fig. 1.

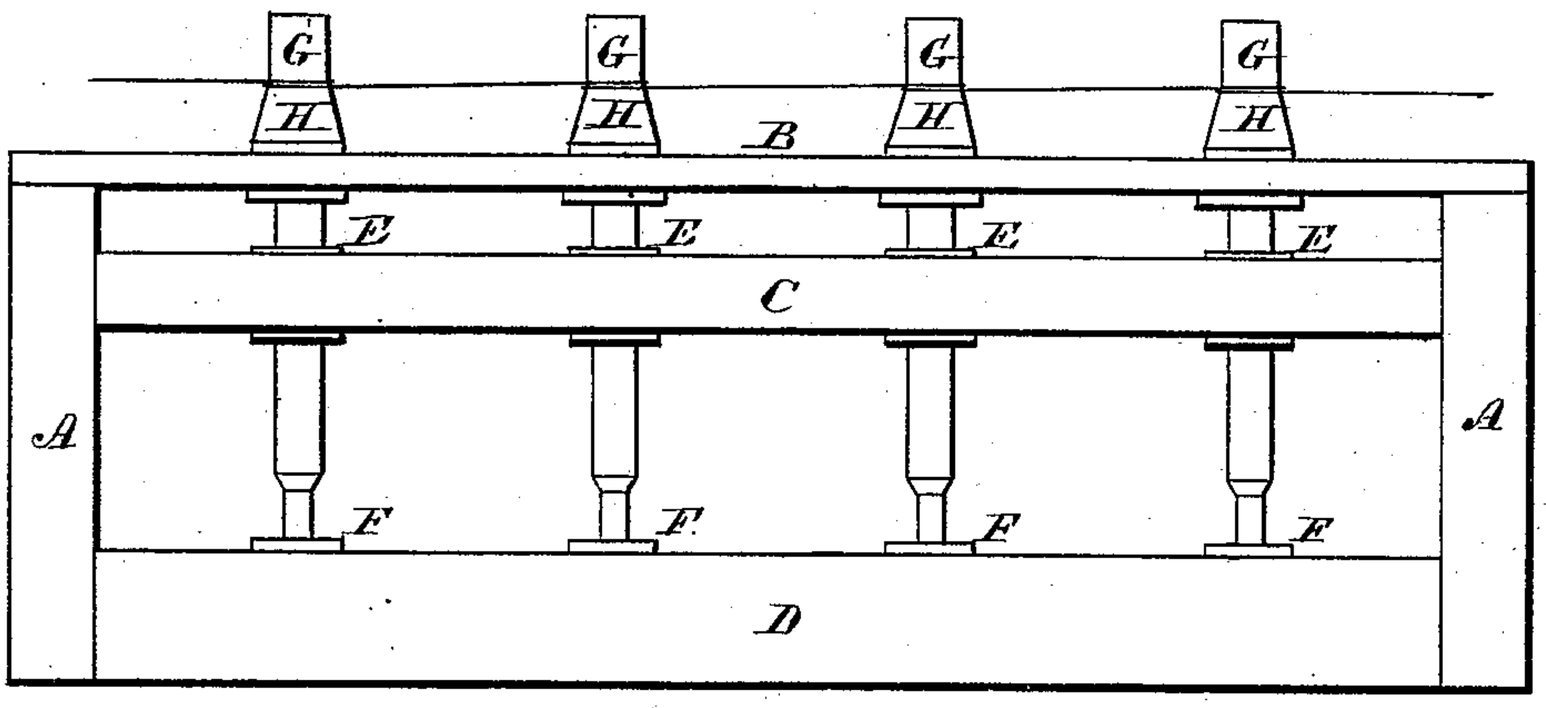
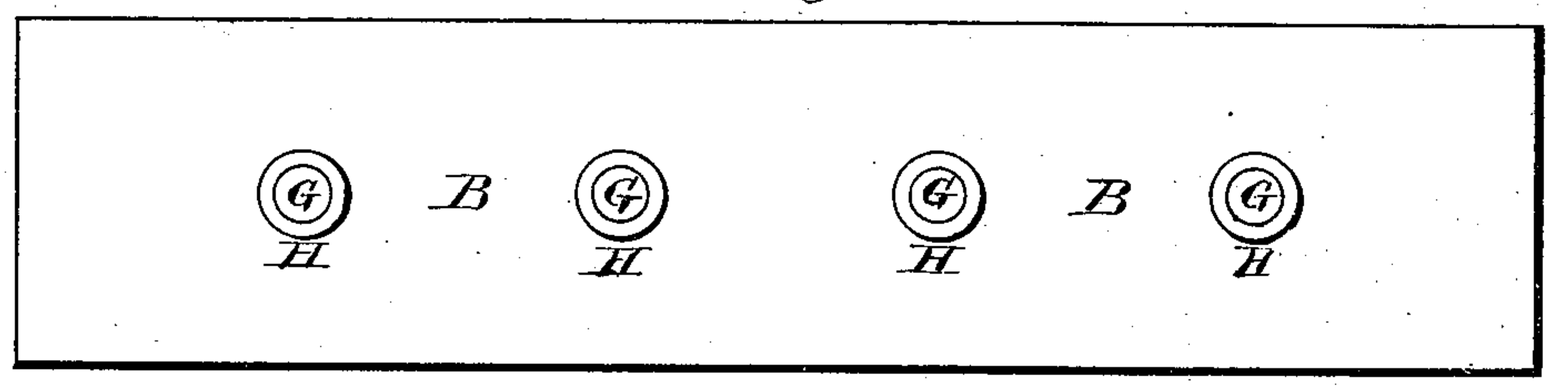


Fig. 2.



Witnesses.

John S. Peters

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UNITED STATES PATENT OFFICE.

ELISHA J. MARTIN, OF ROCKVILLE, CONNECTICUT.

IMPROVEMENT IN SPINDLES FOR CLEANING AND SMOOTHING SILK AND OTHER THREADS.

Specification forming part of Letters Patent No. **202,448**, dated April 16, 1878; application filed October 31, 1877.

To all whom it may concern:

Be it known that I, ELISHA J. MARTIN, of Rockville, in the county of Tolland and State of Connecticut, have invented certain new and useful Improvements in Spindles for Cleaning and Smoothing Silk and other Threads; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

My improvement relates to spindles or rollers such as may be used in machines for cleaning and smoothing silk and other threads, and which operate by passing the thread around them one or more times, and giving the machine or the thread a longitudinal motion, whereby the said threads, by friction or rolling upon each other, are deprived of the fuzz or projecting irregularities, so as to smooth and finish the thread for the market.

My invention has for its object the production of a spindle that shall be better adapted for use in a machine where the thread passes continuously in one direction than has heretofore been employed. Previous to my present invention the rollers or spindles have been of a cylindrical form, or they have been made with concave faces or circumference, in the manner of a pulley-sheave. The machines upon which they have been employed have also been made so as to have a reciprocating or alternate motion in opposite directions. This has rendered the concave form desirable to prevent the thread from running off.

The plain cylindrical roller is objectionable because, in turning, the thread travels from end to end if the motion is reciprocating, or will run off at one end if the motion is in one direction; and the concave-faced roller is objectionable on account of the collecting of the fuzz in the groove of the roller, so that the thread is constantly passing over it, which interferes with the proper operation of the cleaning.

My invention consists in the production of a roller which obviates these difficulties, as will be hereinafter described.

In the accompanying drawing, Figure 1 is a side view of a cleaning-frame provided with spindles of my improved construction. Fig. 2 is a top view of the same.

A B C D is the frame for supporting the spindles. This frame is shown open, so as to give a view of the interior parts, although in practice the bearings and lower part of the spindles are inclosed to protect them from the dust and fibers from the thread.

Each spindle passes through the cover B with a joint as close as practicable without friction, and turns in a journal-box E in the beam C. The foot of the spindle rests in the bearing C upon the beam D.

The peculiarity of my invention is in the top or working part of the spindle, which consists of a cylindrical part, G, and a conical part, H. These parts may be brought together at an angle, or they may be joined by a short curve, to avoid the sharp angle at the junction. In machines where my improved spindle is to be used, the thread to be finished is intended to run continuously in one direction, and to have one or more turns given to it around the spindle, so that the longitudinal motion given to it shall tend to make it run up upon the conical portion, the inclination of which continually slips it back toward the cylindrical part. When running in this manner the thread assumes a position of equilibrium, and remains in one place upon the spindle, so that it runs smoothly without chafing or cutting, and removes the fuzz simply by its being rolled under the convolutions of the thread upon the spindle. At the same time the cylindrical and free upper end allows the circle of fuzz which forms around the spindle to pass off without hinderance.

What I claim as my invention is—

A spindle for cleaning silk and other threads, composed of a cylindrical part, G, and an inclined or conical part, H, substantially as and for the purpose herein described.

ELISHA J. MARTIN.

Witnesses:

THEO. G. ELLIS,

R. W. HAMILTON.