

J. B. Fuller.

Drawing Roller for Spinning

N^o 54,067.

Patented Apr. 17, 1866.

Fig. 1.

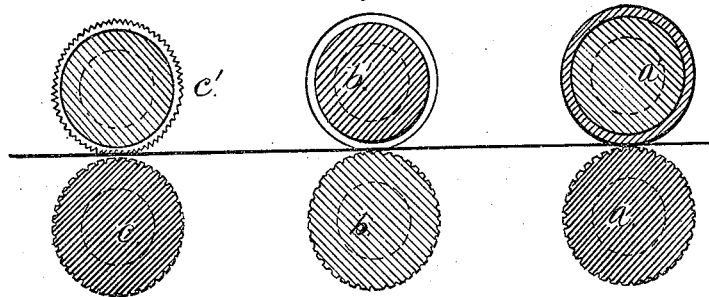
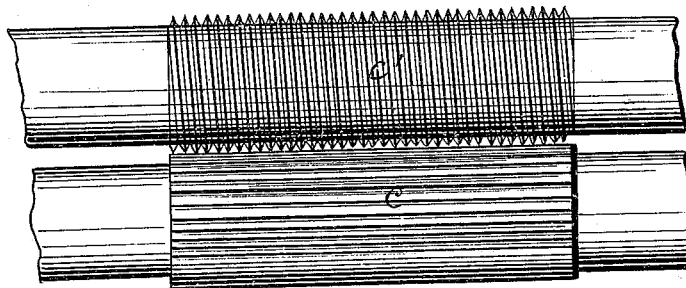


Fig. 2.



Witnesses:

A. S. Elkins

H. C. Lathrop.

Inventor.

Jim B Fuller

UNITED STATES PATENT OFFICE.

JIM B. FULLER, OF NORWICH, CONNECTICUT, ASSIGNOR TO HIMSELF AND
JAMES P. UPHAM, OF CLAREMONT, NEW HAMPSHIRE, AND EDWIN T.
RICE, OF NEW YORK, N. Y.

IMPROVEMENT IN ROLLERS FOR SPINNING-MACHINES.

Specification forming part of Letters Patent No. 54,067, dated April 17, 1866.

To all whom it may concern:

Be it known that I, JIM B. FULLER, of Norwich, in the county of New London and State of Connecticut, have invented a new and useful Improvement in Holding-Rollers used in Drawing-Frames, Speeders, and Spinning-Frames for Working Fibers of Unequal Lengths, such as Flax, Hemp, Wool, &c.; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawings, making part of this specification, wherein—

Figure 1 is a transverse section, showing the position of the rollers of an ordinary cotton-drawing frame with my improved roller applied; and Fig. 2 is an elevation of my improved roller resting on the lower roller of said drawing-frame.

Similar marks of reference denote the same parts.

Heretofore in drawing and spinning such fibers as flax, hemp, &c., gill-pins have been employed in various ways, such as gill-bars, gill-rollers, &c., for the purpose of holding the main body of the sliver while the front rollers draw out each filament as soon as it comes to them, forming a finer sliver, the fineness depending on the relative velocity of the front roller to that of the gill pins or teeth.

My improvement consists in the employment of a roller or rollers having grooves or spaces cut around them in such a manner that the outside of the roller shall form either sharp points or sharp edges. These points or edges, resting on the bottom roller, will leave small open spaces between each two adjacent points or edges, through which the long fibers may be drawn by the front rollers, while the main body of the sliver is held back by the projecting edges or points, thus preventing any fibers being carried forward faster than the motion of the intermediate holding-roller until their ends are caught by the front or drawing rollers and drawn out. These points or edges may be made in various ways. The grooves may be cut around the roller at right angles to its axis or spirally, or a right and left hand thread may be cut around it, crossing each other and forming points at each intersection, or these

sharp points or edges may be formed between any other character of grooves. I prefer to construct a roller by cutting a spiral groove around a fluted roller.

c', Fig. 1, shows a section of a roller fluted similar to the bottom roller of an ordinary cotton-drawing frame, and also with a spiral thread cut around it, thus forming points that are nearer together than it would be practicable to place gill-pins.

In the drawings, *a a'* represent the front rollers of an ordinary cotton-drawing frame; *b* represents the bottom middle roller of said frame, and *c c'* the back rollers. *b'* represents my improved roller employed as a middle top roller, the same being shown as grooved annularly around a plain roller.

The operation of my invention is as follows: The sliver, prepared in any usual manner, is drawn slowly in between the rollers *c* and *c'*, and by them carried forward to the rollers *b b'*, which run just enough faster than *c c'* to straighten the fibers. It then passes to the point or bite between the front rollers, *a* and *a'*, where the fibers are caught at once and drawn out between the grooves in the roller *b'* into a finer sliver. Should any fibers adhere together the points or edges on the rollers *c'* or *b* will prevent their being drawn through by any of the other fibers until the fibers themselves pass through sufficiently to be drawn by the front roller.

If the fibers operated on are not of a greater length than the distance between the front and back pairs of rollers, then my improved roller may be applied as the middle top roller, at *b'*, the pairs of rollers at *a a'* and *c c'* being of any ordinary character. If the staple is very long only two pairs of rollers are required, the back pair being composed of my improved roller above a plain or longitudinally-grooved roller, as at *c c'*, or my improved roller may be introduced in both the middle and back pairs, as at *b' c'*.

This improvement is applicable to the ordinary cotton railway-head drawing-frames, speeders, and spinning-frames, rendering them suitable for working flax, hemp, jute, and other fibrous and textile substances of unequal

length. It is also applicable to the ordinary linen-drawing frames, speeders, and spinning-frames, thus dispensing with the gill-bars and gill-rollers used in such frames.

I do not claim a fluted roller, as such are used in drawing cotton, linen, &c.; but

What I claim, and desire to secure by Letters Patent, is—

A roller constructed and operating substantially as and for the purposes herein specified.

In witness whereof I have hereunto set my signature this 9th day of January, 1866.

JIM B. FULLER.

Witnesses:

A. S. ELKINS,

H. E. LATHROP.