

# UNITED STATES PATENT OFFICE.

H. A. FLETCHER, OF SHELBURNE, VERMONT.

## IMPROVEMENT IN SIZING YARN BY STEAM.

Specification forming part of Letters Patent No. 3,166, dated July 8, 1843.

*To all whom it may concern:*

Be it known that I, HANNIBAL A. FLETCHER, of Shelburne, in the county of Chittenden and State of Vermont, have invented a new and Improved Mode of Sizing Yarn used in the manufacture of cloth; and I hereby declare that the following is a full and exact description.

The nature of my invention consists in the application of the sizing material by means of steam.

To enable others skilled in the art to make use of my invention, I will proceed to describe the manner in which the sizing material is applied.

It may be premised that in order to the manufacture of cloth to advantage, and particularly woolens, the yarn must be sized before it passes into the loom, and this is generally done by passing the yarn into a trough containing the sizing material and between various sets of rollers for the purpose of excluding any excess of the sizing material and of drying the yarn. In this mode the yarn to some extent becomes untwisted in passing from the bobbins into the trough and is platted by passing wet between the rollers or cylinders, and is more liable to friction in passing through the harness and the reed. In the mode pursued by me these difficulties are wholly obviated, and a great saving is made in expense, time, and labor, and the yarn by being retained on the bobbins until sized is left round as it passes from the jack, and the whirl or projecting parts of the yarn are laid smooth, so that little or nothing is lost by friction in passing through the harness and reed and the yarn loses none of the twist.

I place the water intended for sizing in any vessel heated by fire, and to twelve quarts of

water put in one-fourth pound of common glue and one-fourth pound of gum-arabic, then heating the mixture to such a temperature as to generate steam, place the bobbins in a basket, and insert the basket within the vessel, so as to be within the steam, but a little above the water, where I allow them to remain from fifteen to twenty minutes, then taking the basket from the steam the bobbins may be turned out on a clean floor or allowed to remain in the basket, and in fifteen minutes the yarn will become sufficiently dry to be reeled, or the bobbins may be retained in the basket or in piles any length of time without danger of rotting or of becoming sour. As the sizing material becomes diminished by evaporation I add to the water, and also in small quantities, glue and gum-arabic in equal proportions at the above rate, and the liquid becomes stronger and better adapted for sizing the longer it is used, and is not so liable to sour, except in extreme hot weather, as sizing prepared in the old mode.

The quantity of the sizing material may be varied according to the quantity of bobbins to be immersed in the steam, and the steam may be conducted from the kettle into anything sufficiently tight to retain it, as convenience may require.

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

The application of the sizing material to the yarn by means of steam, as is herein described, using for that purpose gum-arabic in connection with glue.

Burlington, January 24, 1843.

H. A. FLETCHER.

Witnesses:

J. S. ADAMS,  
CHARLES ADAMS.