UNITED STATES PATENT OFFICE.

FRED B. WILKINS, OF CLINTON, MASSACHUSETTS.

FINISHING WOVEN COTTON FABRICS.

SPECIFICATION forming part of Letters Patent No. 270,868, dated January 16, 1883.

Application filed August 7, 1882. (No specimens.)

To all whom it may concern:

Be it known that I, FRED B. WILKINS, of Clinton, in the county of Worcester, State of Massachusetts, have invented a certain new and useful Improvement in Finishing Woven Cotton Fabrics, of which the following is a description and specification sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to use the same.

The invention relates more especially to the treatment of that class of woven fabrics known as "ginghams;" and it consists in enveloping the fabrics in heavy woolen blankets, and then subjecting the wrapped fabrics to the action of steam under pressure in a close vessel, as hereinafter more fully set forth, whereby said fabrics are rendered more pliable and the texture greatly improved.

It is well known that ginghams, as ordinarily made and finished, have a stiff, harsh feeling, and when manufactured into the articles of clothing for which they are adapted do not "drape" or hang gracefully, after the manner of cashmeres and cloths of a like nature—a feature which is considered very desirable in dress goods.

My improvement is designed to obviate these difficulties and objections, and to that end I make use of the following process: I take the ordinary ginghams of commerce, or the ginghams usually found in the market, in cuts of thirty or forty yards, more or less, each woven and finished in the ordinary manner, and fold the cuts loosely, for convenience, into folds of about one yard in length. The cuts are then separately wrapped or enveloped in thick woolen blankets or wrappers and placed in a closed tank or steam-tight vessel of proper and convenient form, and submitted to the action of steam under pressure a proper length of time—usually about thirty or forty minutes—after which they are taken from the receiver, the wrappers removed, and the cloth is calendered in the usual manner by being passed over either cold or heated cylinders. The steam permanently swells the fibers of the threads, closes up the spaces between them, thickens the fabric, and renders it exceedingly soft and pliable. It also gives the colors a much brighter appearance, and generally improves the looks of the goods. The size or starch with which the gingham is dressed is "cooked" and to a great extent removed by the action of the steam and the subsequent calendering of the goods; but I also take the cloth as it comes from the loom, and before it is sized or finished in the ordinary manner, and steam-finish it, as described, or in the same manner that I finish the starched or sized goods. The calendering may be omitted in either case, if desired; but it is preferable to calender the goods after they are steamed.

I am aware that ginghams and similar cloths have been submitted to the action of steam as the web leaves the loom; but as the steam was in the form of a jet, it produced very imperfect results. It also condensed rapidly, and the water of condensation, acting on the fugitive colors of the cloth, caused them to "run" badly, thus greatly injuring the fabric.

I am also aware that cloths have been subjected to the action of steam under pressure by passing them from one roller to another within a steam-chest.

In my process the heavy blankets in which the cloths are enveloped cause a uniform permeation of the fabrics by the steam, and the fabrics are protected from the immediate access of air when the steam is removed, whereby they undergo a sort of sweating process, which has a beneficial effect.

I find that nearly all woven cotton fabrics, both white and colored, may be improved by my process of steam-finishing, as described, and therefore do not confine myself to its use in finishing ginghams, although it is more especially adapted for that purpose.

I am aware that it is not new to place a web of thin cloth over a web of gingham, then to roll the two fabrics up together in alternating layers, and then to subject the roll to the action of steam, and I do not claim the same.

Having thus explained my invention, what I claim is—

1. The process of finishing ginghams and other woven cotton fabrics, which consists in completely wrapping said fabrics in heavy

woolen blankets, and then subjecting them, while so wrapped, to the action of steam under pressure, substantially as described.

2. The process of finishing gingbams and other woven cotton fabrics, which consists in loosely folding said fabrics, then completely wrapping the folded fabrics in heavy woolen blankets, and then subjecting the folded and wrapped fabrics to the action of steam under pressure, substantially as described.

FRED B. WILKINS.

Witnesses:
C. M. DINSMORE,
E. C. HEATH.