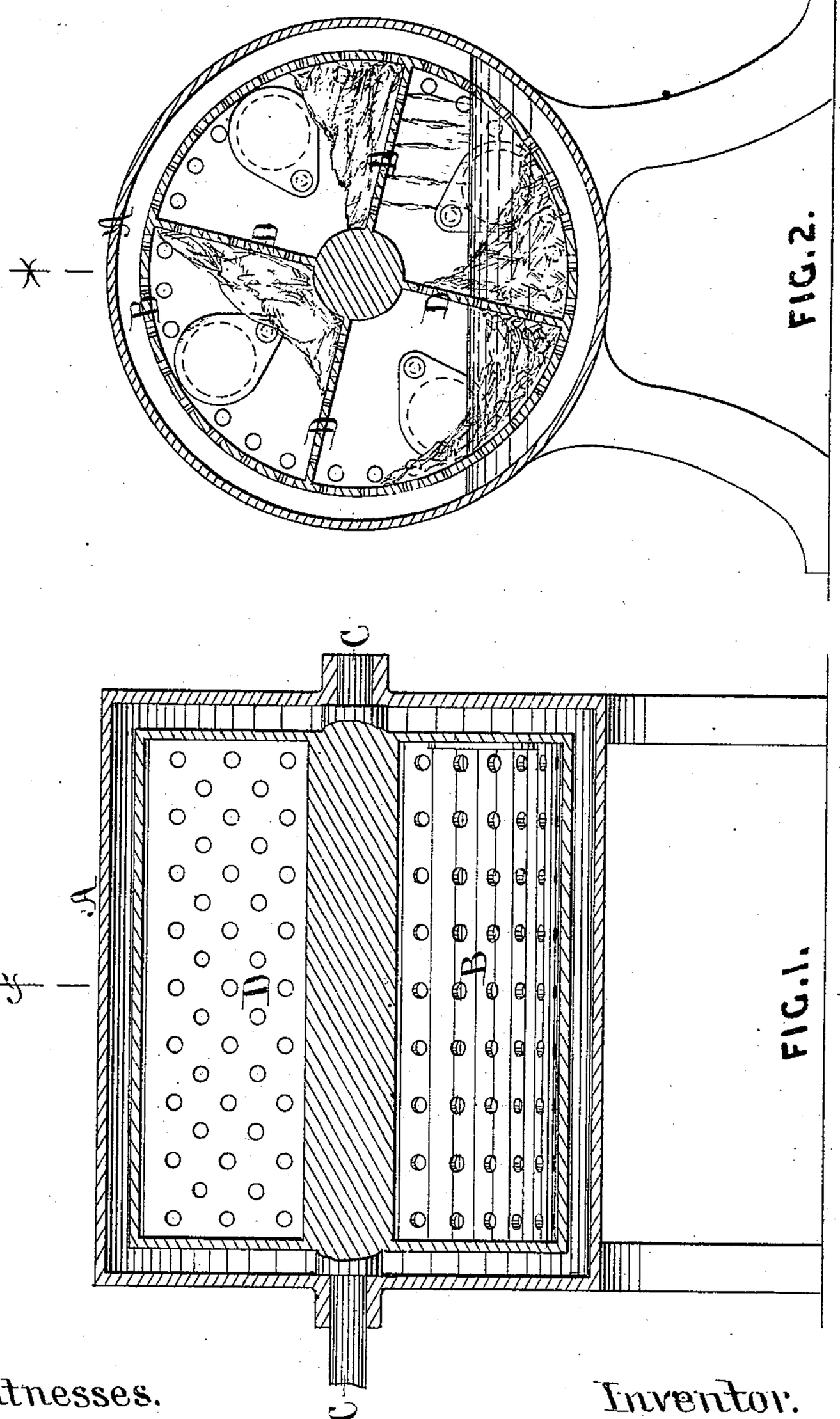
C. F. SCATTERGOOD.

PROCESS OF STARCHING GOODS.

No. 284,983. Patented Sept. 11, 1883.



Witnesses.

William H. Low

Henry V. Scattergood.

Inventor.

Chas. F. Scattergood.

UNITED STATES PATENT OFFICE.

CHARLES F. SCATTERGOOD, OF ALBANY, NEW YORK.

PROCESS OF STARCHING GOODS.

SPECIFICATION forming part of Letters Patent No. 284,983, dated September 11, 1883.

Application filed January 10, 1877.

To all whom it may concern:

Be it known that I, CHARLES F. SCATTERGOOD, of the city and county of Albany, and State of New York, have invented a certain new and useful Improvement in the Process of Starching Goods, of which the following is a specification.

My invention relates to a mode of starching collars, cuffs, and other articles of wearing-apparel that are made of several thicknesses or layers of textile fabric, and in which it is necessary to introduce and equally distribute a large amount of starch through each and every one of the several thicknesses, in order to produce the high and even degree of finish required for such articles.

As heretofore practiced at the large laundering establishments, the mode of starching such articles has been as follows: After washing and wringing the goods as dry as possible they are dipped into thin cold starch and rubbed between the hands to work the starch well into the fabric. They are then wrung, by twisting them by hand, so as to complete the saturation of the goods by the thin starch. After this each piece must be spread out flat, with its face downward, and thick cold starch rubbed in from the back side until the starch has passed completely through each successive layer of the fabric and until it appears on the face of the article. In the performance of the latter step great care must be exercised to avoid the unequal distribution of the starch, whereby clots of starch between the layers will be produced and the formation of wrinkles in any of the layers of the fabric, whereby the beauty of the finish will be spoiled. The operation is necessarily slow, requires the employment of a great number of skillful operatives, and consequently is very expensive.

The object of my invention is to accomplish the operation of starching collars, cuffs, and other laundry articles by mechanical means in a much more perfect manner and at a greatly reduced cost as compared with any process heretofore known and used for the purpose; and to this end my invention consists in immersing the goods into hot fluid starch, and then, without removing them from the machine used for that purpose, subjecting them to repeated percussive beatings, in order to drive the starch thoroughly through each layer of the fabric of which the article is composed, and by continuing this operation until a sufficient quantity of the starch is thoroughly and evenly distributed through the articles for producing the body required for stiffening and finishing such goods in the best manner. The mechanism for effecting this process may be varied in its construction so long as it is capable of meeting the requirements of the process as above set forth.

The accompanying drawings illustrate a machine adapted to perform all the mechanical duty required for my process. It represents a dash-wheel of the ordinary construction, and therefore it does not constitute any part of my invention. Figure 1 is a longitudinal section of said machine at the line *x x*, and Fig. 2 a transverse section at the line *y y*.

A is the exterior casing for containing the dash-wheel, and it likewise serves as a vat or receptacle for the hot starch; B, the dash-wheel, consisting of a perforated cylindrical case adapted to rotate on its journals C inside of the casing A, and divided, by means of the perforated partitions D, into a series of compartments.

The casing A should be filled to a depth equal to about one-eighth of its diameter with starch raised to a scalding heat, or about 150° Fahrenheit, at which point it will be in a perfectly fluid state, and it is essential that it should be maintained in this hot fluid condition during the entire operation of starching the goods, in order to produce the best results of my process. The goods, after having been washed and wrung as dry as possible, are placed in the dash-wheel until each compartment is about one-half filled, thereby leaving sufficient room for the goods to produce the percussive action required. The dash-wheel is then set in motion, and as it revolves the contents of each compartment in succession are first immersed in the hot fluid starch, of which an excessive quantity will adhere to the goods; then as the goods are tumbled by the rotations of the wheel from one extreme part of the compartment to the other the starch will be driven into and evenly distributed through each layer of the fabric; and this action occurs successively in each compartment at each revolution

of the wheel until the starching is perfected, for which purpose the wheel is required to rotate for about twenty minutes at a peripheral speed of about four hundred feet per minute.

By having the starch in a heated condition at the commencement of the rotations of the dash-wheels the goods can be repeatedly immersed therein during the entire time required for the operation without lowering the temperature of the starch to such a degree that its condition will become clotted or lumpy, and fail to become evenly distributed through the goods, and by repeatedly immersing the goods in the hot starch and alternating such immersions with percussive beatings the formation of clots of starch between the layers of fabric is prevented, which clots destroy the finish of the work and can only be removed therefrom by washing. When the goods have become thoroughly filled with the starch, which fact can only be properly determined by examination, they should be removed from the dash-wheel and placed in a hydro-extractor or other suitable apparatus for removing any superabundant quantity of the starch from them.

In the old and well-known process of "clear starching," to which my process bears a faint analogy, the goods are first immersed in thick starch that is cold enough to permit the insertion of the bare hands of the operative, then the articles are removed from the starch, and each one is separately subjected to a beating by clapping it between the bare hands until it presents a clear appearance. It will be seen that this older process differs from mine in the following respects: first, by the use of thick cold starch, instead of hot fluid starch, and second, by being only once immersed in the starch and subjected to one beating. Starch of the consistency required for such purposes can only be maintained in a fluid condition by keeping it hot, and it is a well-known fact that hot starch, from its adhesive nature, is one of the severest and most terrible agents known for producing scalds on human flesh, and this fact precludes its use where hand-beating is resorted to.

The lack of fluidity in the condition of the starch used in the older process above referred to precludes the possibility of driving the starch through the several thicknesses of the material of which collars, cuffs, &c., are composed, even if recourse be had to a long-continued beating, for the only effect produced by such beating on cold jellied starch is to reduce it to a granulated condition, which prevents it from entering the fabric.

I claim as my invention—

The process herein described for starching collars, cuffs, and other articles composed of several thicknesses of textile fabric, consisting in immersing such articles in hot fluid starch, and then, while they are yet in the starch-containing receptacle, subjecting them to a series of percussive beatings by mechanical means, substantially as herein specified.

CHAS. F. SCATTERGOOD.

Witnesses:

WILLIAM H. LOW,

HENRY V. SCATTERGOOD.