

# UNITED STATES PATENT OFFICE.

CARL THEODOR TREDUP, OF GODESBERG, GERMANY.

PROCESS OF OBTAINING GOFFERING EFFECTS ON YARNS, TISSUES, OR THE LIKE.

No. 918,397.

Specification of Letters Patent.

Patented April 13, 1909.

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*To all whom it may concern:*

Be it known that I, CARL THEODOR TREDUP, a subject of the King of Prussia, residing at 118 Römerstrasse, Godesberg-on-the-Rhine, Germany, have invented certain new and useful Improvements in Processes of Obtaining Goffering Effects on Yarns, Tissues, or the Like, of which the following is a specification.

10 The effects commonly produced by goffering on tissues, like for example silk-finish, crêpe-finish, reps-finish, mohair and the like have the great disadvantage of being very sensitive to moisture so that, for instance, they vanish entirely or at least to a greater part by damp ironing. Likewise, goffering and gloss are destroyed in places where drops of water are sprinkled on the material. Attempts have been made to remove this fault by soaking the material with a solution of albumin and then goffering and drying simultaneously, *i. e.* calendering with a hot roller. By this method the albumin is coagulated by the heat and forms a waterproof layer on both sides of the tissue, so that the material may be moistened without losing its goffering-finish. This process, however, entails great inconveniences, more especially it has been found that the hot calender-rollers shortly become quite smeared over with albuminous matter and are thereby rendered unfit for further use. Besides, the tissue sticks so fast to the rollers, that it has to be torn from them, which of course, badly affects the finish and the wear of the goods.

Now I have invented a new process by which these inconveniences are avoided and nevertheless goffering-effects are obtained on yarns or tissues which are proof against ironing and moisture. According to this new process the material is first soaked with a solution of albumin or casein or a similar mixture or solution and then not goffered and dried simultaneously, but first calendered with a cold or moderately heated roller, so that a coagulation of the liquid is not brought about at first. After this the material is subjected, in a suitable manner, to dry heat and a following treatment by steam, with or without pressure, sufficient to coagulate the albumin or other impregnating fluid, so as to form an insoluble coating on either side of the yarn or tissue. Natu-

rally the expert will be able to vary this process or add such measures as he thinks fit. Thus, for instance, the material may receive a preparatory treatment of any kind, or the hardness of the coating may be lessened by suitable additions to the impregnating fluid, like oil etc., or by an additional treatment such as steaming, passing through a hot bath or the like. It may also, of course, be found convenient for certain colors, or in order to obtain certain new effects, to dye the impregnating fluid suitably or to choose such albuminous substances as may recommend themselves. What is essential for this new process is, that the coagulation of the impregnating fluid should not take place simultaneously with calendering, but after calendering.

The processes that were known hitherto, so far as they are at all practicable, only apply to the so-called silk-finish and fail entirely in cases of deeper goffering; this new process, however, proves successful as well for microscopic effects as for deeper and coarser or for very deep and very coarse impressions. All effects are fixed with like surety and they all are particularly proof against ironing.

A further advantage of this new process lies in its simple way of working. Apart from the impregnating, which is a separate manipulation, the new process hardly takes more time than is required by any ordinary finishing. The costs of the impregnating bath represent, per yard of material, only a small fraction of the expense caused by the older processes, especially that of fixing goffering-effects by means of nitrocellulose. Especially the latter process can only be applied, in view of its costliness, to the very best qualities of yarn, not to middling and common sorts, which constitute by far the greater part of the whole consumption.

In the treatment of paper with viscose, embossing of the paper and fixing of the viscose has been previously attempted by steaming or aging. The fixing or decomposing action of the viscose, however, is essentially different from a coagulation of albumin. According to the present invention, a method is provided whereby the defects of previous methods are obviated and by a treatment of the material with albumin,



goffering effects upon the fabrics or other materials are obtained which will withstand ironing.

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

1. A process of obtaining goffering effects on yarns, tissues or the like, which are proof against ironing or moisture, consisting in impregnating the goods first with a bath containing a coagulating substance, then calendering the impregnated goods with rollers having a temperature insufficient to cause coagulation, and then exposing them, in a suitable manner, to dry heat, sufficient to coagulate the impregnating matter and to form an insoluble coating.

2. A process of obtaining goffering effects on yarns, tissues or the like, which are proof against ironing or moisture, consisting in impregnating the goods first with a bath containing a coagulating substance, then calendering the impregnated goods with rollers having a temperature insufficient to cause coagulation, and then exposing

them, in a suitable manner, to dry heat and to steam, sufficient to coagulate the impregnating matter and to form an insoluble coating.

3. A process of obtaining goffering effects on yarns, tissues or the like, which are proof against ironing or moisture, consisting in impregnating the goods first with a bath containing a coagulating substance, then calendering the impregnated goods with rollers having a temperature insufficient to cause coagulation, and then exposing them, in a suitable manner to dry heat and to steam under pressure, sufficient to coagulate the impregnating matter and to form an insoluble coating.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CARL THEODOR TREDUP.

Witnesses:

LOUIS VANDORN,

HELENE STELZER.