UNITED STATES PATENT OFFICE.

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PROCESS OF COATING WOVEN FABRICS, PAPER, AND THE LIKE.

1,141,224. Specification of Letters Patent. Patented June 1, 1915.

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To all whom it may concern:

Be it known that I, OTTO CARL EMIL PAUL WAWRZINIOK, a citizen of the Empire of Germany, residing at Nürnbergerstrasse 30b, Dresden, in the Kingdom of Saxony and German Empire, have invented an Improved Process of Coating Woven Fabrics, Paper, and the like, of which the following is a specification.

This invention relates to an improved process of connecting together fabrics or sheets of paper or the like by means of adhesive substances, the process being also applicable to the manufacture of artificial leather and for the coating or water-proofing of woven fabrics or paper for other purposes.

According to this invention the adhesive substances or coatings are applied to the material not in their final adhesive form but in a form which, so far as the final purpose is concerned, may be regarded as non-adhesive, for example in a dry or slightly plastic condition, this non-adhesive coating being subsequently rendered adhesive and made to bind one sheet to the other or to become permanently attached to its fabric by being moistened with a solvent in the form of steam, gas or spray.

The advantage of the process according to this invention lies in the fact that a considerable saving is effected of solvent and since the process can be much more rapidly carried out it necessitates the employment of less labor. Moreover, the adhesive or gluing substances adhere to fibers of the fabrics to be glued together in a far more satisfactory manner.

The process further enables ingredients to be added to the adhesive substances which could not otherwise be mixed with them were the adhesives used in liquid form, and the coating or adhesive substance can according to this invention be put on in a single operation to any desired thickness which has hitherto been impossible.

While formerly it was necessary to store the adhesive substances in a state of solution, thereby entailing losses from the volatile solvents evaporating, according to this invention the adhesive substances may be stored in a pulverized condition either separately or ready mixed with the weighting substances if such are used. Alternatively a paste may be formed consisting of dry adhesive substances, other dry ingredients such as pulverized cork, pulverized leather or the like, or substances for increasing the weight or for coloring purposes, and a fluid such as oil or water which will form a paste but not dissolve the adhesive substance. The adhesive substance is applied to the woven fabric or paper in some well-known manner whereupon the fabrics thus treated are according to this invention subjected to the action of solvents in the form of steam, gas or spray.

In the manufacture of artificial leather according to this invention the operation may be described by way of example as follows:—Nitro-cellulose or celluloid waste is pulverized, mixed with paint in dry form, and moistened with castor oil to maintain the substance in a comparatively plastic but still non-adhesive state; in some cases the weight increasing substances such as granulated cork, leather, wood or sand, are added. The non-adhesive mass thus obtained, which is rendered plastic by the castor oil or some other neutral liquid, is applied to the surface of the fabric in some well known manner. The coated fabrics are then caused to pass through a closed chamber filled with solvents in a heated condition and in the form of steam, gas or spray, for instance, acetic ether alcohol, acetone, or a mixture of the same. Owing to the high temperature of the solvents the coating substance is temporarily dissolved and caused to adhere in a thorough manner to the surface of the fabric. The coating substance absorbs only as much of the solvent as it requires for its complete solution, and the layer is not made wet through as in the case of processes at present in use. The coated fabric is then introduced into a drying chamber where the excess of the solvent which may still remain in the substance is evaporated and recovered in the known manner.

It will be appreciated that the process is applicable to all industries where strips or sheets of woven or other fabric are to be joined together or to be provided with a waterproof or other coat.

Claims:

1. The process of treating flexible woven fabrics, paper or the like, which consists in applying to the surface of the flexible fabric to be coated adhesive material in powdered form and in a non-active state, in which

state the adhesive material is capable of being spread over and evenly laid on or removed from said surface, and then subjecting the material thus coated to an agent which renders active the non-active adhesive material to cause it to firmly adhere to the fabric and form thereon a flexible surface coating, substantially as described.

2. The process of treating flexible woven fabrics, paper or the like, which consists in applying to the flexible fabric to be coated adhesive material in powdered form and moistened by an agent which is inactive to dissolve the adhesive, whereby adhesive material applied to the material to be coated can be spread over or removed from said material, and subjecting the fabric with the non-active adhesive thereon to the action of a solvent in gasified form, to cause the adhesive to become active and form a pliable surface coating on said fabric.

3. The process of making artificial leather, which consists in applying to a strip of fabric, a layer of adhesive material in a plastic but inactive state and consisting of nitrocellulose or its equivalents mixed with oil paint, and then subjecting the fabric with the layer of inactive adhesive to the action of a solvent which renders the adhesive active to affix it to the fabric and form thereon a pliable surface coating.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

OTTO CARL EMIL PAUL WAWRZINIOK.

Witnesses:

OTTO WOLFF,

C. J. HUGO DUMMEY.