Patented Aug. 7, 1928. 1,679,477

UNITED STATES PATENT OFFICE.

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RESERVE DYEING ON VEGETABLE FIBERS.

No Drawing. Original application filed April 27, 1925, Serial No. 26,289, and in Germany May 7, 1924. Divided and this application filed May 20, 1926. Serial No. 110,536.

This application is divisional of application Ser. No. 26,289.

The hitherto known reserve processes consist of mechanical or chemical operations. To the first type belongs the binding and the covering of the vegetable fibers (yarns and fabrics) by substances insoluble in water so that the dyestuffs employed can only soak in and be fixed on the unbound or uncovered parts of the fabric. To the second class belongs the application of certain agents, preferably of salts, which react chemically during the dyeing or during the development of the dyes. All these processes depend, however, on certain conditions. If the reserve agents employed are removed during the dyeing process or during the development of the dyes, or if they do not resist these operations until the end of the dyeing, then the desired reserve effect does not occur and the fabric is dyed uniformly throughout as if the reserving agents had not been used at all.

It is known from German specification No. 346,883 and others, that it is possible to render vegetable fibers (yarns, loose material, fabrics) completely immune against substantive dyestuffs by treating them after alkalinization with solutions of aromatic carboxylic acid chlorides or aromatic sulpho acid chlorides. Both the alkalinization and the action of the aromatic acid or sulpho-acid chlorides are so effected that the whole of the vegetable fibers is brought into the solutions of the respective agents.

It has now been shown in a surprising manner that this esterification can also be used for the topical alteration of the vegetable fibers, in view of the production of reserve effects, for example, in a suitable printing process. It was not at all to be foreseen from the more active treatment in solution that the short superficial and sparing local treatment, as it takes place for example in the printing process, would suffice to produce the desired esterification. This process affords permanently reserving patterns with unexpected dyeing properties, which remain fast even after hot washing operations, after hot neutral, acid or alkaline dye baths.

The production of such reserve effects is now utilized in the process for reserve dyeing on vegetable fibers forming the subject of the present invention. This process consists in first treating topically the vegetable fibers by a local printing with a suitable alkalizing agent, such as for example a concentrated alkaline solution, with or without thickening agent, with or without the addition of alcohol, with or without an alcoholic solution of an alkali alcoholate, then in applying thereon in dry or moist condition, an esterifying aromatic acid chloride, such as an aromatic carboxylic acid chloride, or an aromatic sulpho acid chloride, in pure or dissolved condition, and finally after the resulting esterification in thoroughly washing the vegetable fibers being thus locally altered at the places of the aforesaid print, to constitute what is commonly termed as reserve effects. Thereupon the fibers can be dyed, without the locally altered esterified places taking up the dye, so that they appear white on a colored ground. But, it has been found that before dyeing the unaltered vegetable fibers, it can be advantageous to dye the reserve effects produced by the said local esterification on the fiber, with basic dyestuffs or with gallocyanine derivatives, so that they appear colored on a white ground. The vegetable fibers thus previously dyed can then be subsequently dyed with substantive dyestuffs on the unaltered parts, or the procedure can be carried out in the reserve way taking into consideration the relative power of precipitation of the various dyestuffs used.

As dyestuffs, there may be used in all above operations the usual coloring matters which are suitable for carrying out the improved processes. The fibers may be in form of loose material, yarns or fabrics.

What we claim is:

1. A process for reserve dyeing on vegetable fibers, which consists in treating topically the vegetable fibers by a local printing with an alkalizing agent, thereupon applying an esterifying aromatic acid chloride to produce a topical alteration of the locally printed fiber, thus constituting reserve effects, then washing subsequently to the esterification, thereupon dyeing the reserved parts thus obtained and finally effecting a subsequent dyeing of the unaltered vegetable fibers.

2. A process for reserve dyeing on vege-

table fibers, which consists in treating topically the vegetable fibers by a local printing with an alkalizing agent, thereupon applying an esterifying aromatic sulpho acid chloride to produce a topical alteration of the locally printed fiber, thus constituting reserve effects, then washing subsequently to the esterification, thereupon dyeing the reserved parts thus obtained and finally effecting a subsequent dyeing of the unaltered vegetable fibers.

3. A process for reserve dyeing on vegetable fibers, which consists in treating topically the vegetable fibers by a local printing with an alkalizing agent, thereupon applying an esterifying aromatic sulpho acid chloride to produce a topical alteration of the locally printed fiber, thus constituting reserve effects, and subsequently washing after the esterification, thereupon dyeing the thus obtained reserved parts with a basic dyestuff and finally effecting a subsequent dyeing of the unaltered vegetable fibers.

4. A process for reserve dyeing on vegetable fibers, which consists in treating topically the vegetable fibers by a local printing with an alkalizing agent, thereupon applying an esterifying aromatic sulpho acid chloride to produce a topical alteration of the locally printed fiber, thus constituting reserve effects, subsequenly washing after the esterification, thereupon dyeing the thus obtained reserved parts and finally effecting a subsequent dyeing of the unaltered vegetable fibers with a substantive dyestuff.

5. A process for reserve dyeing on vegetable fibers, which consists in treating topically the vegetable fibers by a local printing with an alkalizing agent, thereupon applying an esterifying aromatic sulpho acid chloride to produce a topical alteration of the locally printed fiber, thus constituting reserve effects, then washing after the esterification, thereupon dyeing the thus obtained reserved parts with a basic dyestuff and finally effecting a subsequent dyeing of the unaltered vegetable fibers with a substantive dyestuff.

6. A process for reserve dyeing on vegetable fibers, which consists in treating topically the vegetable fibers by a local printing with an alkalizing agent, thereupon applying an esterifying aromatic sulpho acid chloride to produce a topical alteration of the locally printed fiber, thus constituting reserve effects, then washing after the esterification thereupon dyeing the thus obtained reserved parts with a gallocyanine derivative and finally effecting a subsequent dyeing of the unaltered vegetable fibers with a substantive dyestuff.

7. A process for reserve dyeing on vegetable fibers which comprises treating predetermined areas of said fibers with an alkalizing agent, esterifying said treated areas with an aromatic acid chloride, whereby reserve effects are produced, washing said fibers, dyeing said treated areas and finally dyeing the untreated areas.

8. A process for reserve dyeing on vegetable fibers which comprises treating predetermined areas of said fibers with an alkalizing agent, esterifying said treated areas with an aromatic sulpho acid chloride, whereby reserve effects are produced, washing said fibers, dyeing said treated areas and finally dyeing the untreated areas.

9. A process for reserve dyeing on vegetable fibers which comprises treating predetermined areas of said fibers with an alkalizing agent, esterifying said treated areas with an aromatic acid chloride, whereby reserve effects are produced, washing said fibers, dyeing said treated areas with a basic dyestuff and finally dyeing the untreated areas.

10. A process for reserve dyeing on vegetable fibers which comprises treating predetermined areas of said fibers with an alkalizing agent, esterifying said treated areas with an aromatic sulpho acid chloride, whereby reserve effects are produced, washing said fibers, dyeing said treated areas with a basic dyestuff and finally dyeing the untreated areas.

In witness whereof we have hereunto signed our names this 10th day of May, 1926.

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