

UNITED STATES PATENT OFFICE.

EDMUND KNECHT, OF MANCHESTER, ENGLAND.

PROCESS OF RESERVE AND DISCHARGE ON TEXTILE FABRICS.

SPECIFICATION forming part of Letters Patent No. 702,566, dated June 17, 1902.

Application filed March 18, 1902. Serial No. 98,827. (No specimens.)

To all whom it may concern:

Be it known that I, EDMUND KNECHT, Ph.D., a subject of the King of Great Britain and Ireland, residing at Manchester, in the county of Lancaster, England, have invented new and useful Improvements in Processes of Reserve and Discharge on Textile Fabrics, of which the following is a specification.

This invention relates to improved methods of and means for preventing coloration in printing on textile fabrics and for discharging colors already produced on such fabrics, especially when azo colors are employed. The discharge of existing coloration may be localized or general, while the prevention relates to restricted areas, and in either case it may be accompanied with the production of a different coloration, if desired.

In the production of discharge effects in printing upon textile materials which have been dyed with azo dyes the destruction of the color has hitherto usually been effected by printing a discharge-paste upon the dyed material, this paste containing as an essential constituent a reducing agent, either stannous chlorid or sodium hydrosulfate being commonly employed. I have found that by employing as a new reducing agent for the purposes of this invention a titanous salt—that is to say, a salt derived from the oxid Ti_2O_3 —such, for example, as titanous chlorid ($TiCl_3$)—much better results are obtained than by using any of the reducing agents hitherto employed for the purpose.

The titanous salts which I employ for the purpose of my invention although hitherto little known in commerce can be readily produced from commercial titanous salts by well-known chemical or electrochemical processes.

I will describe in what manner I may carry out my invention in practice by the aid of typical examples.

Example I—The total destruction of azo dye colors on textile fabrics.—A warm or hot solution of titanous chlorid having been prepared, the goods are immersed and turned in this solution for about fifteen minutes. The strength of the titanous solution will obviously vary according to the depth of shade of the dyed fabric and according to the nature of the dyestuff or dyestuffs to be de-

stroyed. As a rule the solution will contain titanous salt not exceeding five per cent. of the weight of the goods to be treated.

Example II—Production of a white discharge on cotton piece goods dyed with benzo-purpurin 4B.—The dyed fabric is printed with a discharge printing-paste prepared by mixing one hundred grams of thickening of a suitable consistency made from strongly-calcined dextrin with from one to five grams of titanous chlorid and two to ten grams of ammonium sulfocyanid. After printing the goods are dried, steamed for two minutes in a rapid-aging apparatus, and washed. By the addition of suitable coloring-matters to the discharge printing-paste colored discharges can be obtained at discretion in place of white discharges.

Example III—Production of a white resist under paranitranilin-red on cotton piece goods.—The pieces, prepared in the usual manner with betanaphthol, are printed with a resist-paste made up from one hundred grams of dextrin thickening of suitable consistency and ten grams of titanous chlorid, after which they are dried at a moderate temperature and are then passed through a solution of diazotized paranitranilin to which sodium acetate has been added. After having remained in contact with the diazo solution for a sufficient length of time to allow of the development of the color in the unprinted parts the pieces are washed and dried in the usual manner.

Hitherto in preventing the formation of color in the application of nitroso-blue or of the so-called “insoluble” azo dyes, such as paranitranilin-red, very strong solutions containing as much as five hundred grams per liter of stannous chlorid or of potassium sulfite have had to be employed to produce the desired result; but it will be seen by Example III that the result may be obtained by a much smaller quantity of the titanous salt.

I have described my process as involving the use of titanous chlorid in the above examples, for the reason that this particular salt is the more generally convenient and available; but I desire it to be understood that I may employ equivalent molecular proportions of the titanous sulfate, oxalate, sulfocyanid, or other salts or mixtures of them.

What I do claim as my invention, and what I desire to secure by Letters Patent, is—
The process of preventing the production and effecting the discharge of color in textile fabrics, which consists in treating the goods with a titanous salt contained in a solvent medium, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDMUND KNECHT.

Witnesses:

WILLIAM E. HEYS,
ARTHUR WILLWARD.