

UNITED STATES PATENT OFFICE.

ALBRECHT SCHMIDT AND ERICH KRONHOLZ, OF HÖCHST-ON-THE-MAIN, GERMANY, ASSIGNORS TO FARBWERKE VORM. MEISTER LUCIUS & BRÜNING, OF HÖCHST-ON-THE-MAIN, GERMANY, A CORPORATION OF GERMANY.

PROCESS OF CHLORINATING INDIGO.

No. 812,598.

Specification of Letters Patent.

Patented Feb. 13, 1906.

Application filed February 28, 1905. Serial No. 247,775.

To all whom it may concern:

Be it known that we, ALBRECHT SCHMIDT, Ph. D., chemist, a citizen of the Empire of Germany, and ERICH KRONHOLZ, Ph. D., chemist, a citizen of the Empire of Austria-Hungary, both residing at Höchst-on-the-Main, Germany, have invented certain new and useful Improvements in the Manufacture of Chlorinated Indigo Dyestuffs, of which the following is a specification.

We have found that by means of sulfurylchlorid chlorinated derivatives of indigo may be obtained. It is preferable to employ dry indigo-white; but indigo may also be used, though with less advantage. The operation is carried out, for instance, by stirring indigo-white or indigo, preferably with some diluent, into a paste, to which is added, while stirring, a quantity of sulfurylchlorid, according to the degree of chlorination desired.

Example I.—Three hundred and fifty parts, by weight, of indigo-white, preferably containing some dry hydrosulfit N F, are stirred into two thousand parts, by weight, of tetrachlorid or other suitable indifferent liquid solvent—such, for instance, as carbon bisulfid and the like—and treated, while stirring, with six hundred and seventy-five parts, by weight, of sulfurylchlorid. The whole is allowed to stand while being stirred from time to time until all sulfurylchlorid has disappeared. The product of chlorination is separated by filtering and distilling off the solvent. If a less chlorinated product is desired, less sulfurylchlorid has to be used. For

the indifferent solvent gaseous sulfurylchlorid may be used and directly applied on indigo-white or indigo or either of them treated with solid solvents, such as sodium sulfate, ferrous sulfate, and the like. Carriers, such as iodine, are not absolutely necessary for the action of sulfurylchlorid, but may be used.

Example II.—Twenty-seven parts, by weight, of indigo are divided in about two hundred cubic centimeters of tetrachlorid and treated, for instance, with sixty-eight parts, by weight, of sulfurylchlorid. The whole is allowed to stand at ordinary temperature until all sulfurylchlorid has disappeared. The product of chlorination is isolated in the usual manner. The chlorinated indigoes thus obtained dye, according to the degree of chlorination, redder and clearer than indigo and of a similar shade as the corresponding brominated products.

Having now described our invention, what we claim is—

The process herein described for the manufacture of chlorinated indigo dyestuffs, which consists in treating an indigo body with sulfurylchlorid.

In testimony that we claim the foregoing as our invention we have signed our names in presence of two subscribing witnesses.

ALBRECHT SCHMIDT.
ERICH KRONHOLZ.

Witnesses:

JEAN GRUND,
CARL GRUND.