UNITED STATES PATENT OFFICE.

ALFRED FISCHESSER AND JOSEPH POKORNY, OF LUTTERBACH, GERMANY; SAID POKORNY ASSIGNOR TO SAID FISCHESSER.

PROCESS OF DYEING.

SPECIFICATION forming part of Letters Patent No. 457,488, dated August 11, 1891.

Application filed April 20, 1891. Serial No. 389,593. (No specimens.)

To all whom it may concern:

Be it known that we, ALFRED FISCHESSER and JOSEPH POKORNY, the first a subject of the Emperor of Germany and the second a subject of the Emperor of Austria, both residing at Lutterbach, Alsace, Germany, have invented a new and useful Improvement in Process of Dyeing and Printing Fibrous Materials and Fabrics, of which the following is a specification.

This invention relates to the direct production of insoluble azo coloring-matters upon fabrics either by printing or by dyeing. One of the ingredients usually employed in carrying out such production of coloring-matters is alpha or beta naphthol. According to our invention, by which we obtain very valuable new tints, we substitute for the ingredients above mentioned beta-oxynaphthoic acid, the melting-point of which is 216° Celsius and the chemical formula is $C_{10}H_6(CO,OH)3OH$. For instance, by preparing a fabric in an alkaline solution of the said beta-oxynaphthoic acid and printing upon the same a thickened solution of tetrazodized dianisidine a blue is obtained which resembles indigo and resists washing and soap.

Instead of dianisidine the following amido substances can be employed, viz: aniline, toluidine, xylidine, cumidine, amidoazo-xylol, amidoazo-benzole, amidoazo-toluol, the various nitro-anilines and nitro-toluidines, alpha or beta naphthylamines, benzidine, tolidine, diamidodiphenol ether, amido-naphthols, acetparaphenylene-diamine, thioparatoluidine, or mixtures of the same. Magenta can be employed as amine, and will also give good results.

It is evident that instead of the above-mentioned amines others can be used. They are, however, scarcer, but they produce the same effects as those named. The tints obtained differ from those which the respective amines give with alpha or beta naphthol. Thus, for instance, beta-naphthylamine gives a Bordeaux aniline a yellowish red, nitro-aniline a fiery red, tolidine a deep violet. The colors can also be produced by dyeing upon yarn and piece-ware. The textile fibers, whether cotton, wool, silk, or jute, are changeably impregnated with the solution of the diazo or tetrazo compound and the beta-oxynaphthoic acid herein described in an alkaline solution, or vice versa. It is also advantageous to oil the fiber first, like with Turkey-red dyeing. Insoluble metallic soaps may also be precipitated on it. The most vlauable shades produced by dyeing are greenish blue with dianisidine, reddish blue with tolidine, and dark violet (mauvine) with benzidine. A passage through weak acid after dyeing is useful in order to develop the color well.

We claim—

The improvement in the process of dyeing and printing fibers and fabrics, consisting in alternately impregnating or coating the fiber or fabric with diazotized amido substance and with beta-oxynaphthoic acid, the melting-point of which is 216° Celsius, substantially as herein set forth.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ALFRED FISCHESSER.
JOSEPH POKORNY.

Witnesses:
ALBERT FISCHER,
ALPHONSE HAROLD.