

UNITED STATES PATENT OFFICE.

GUSTAV CHRISTIAN DÖRR, OF FRANKFORT-ON-THE-MAIN, GERMANY.

PROCESS OF DYEING VEGETABLE FIBER.

1,047,923.

Specification of Letters Patent.

Patented Dec. 24, 1912.

No Drawing.

Application filed March 24, 1911. Serial No. 616,701.

To all whom it may concern:

Be it known that I, GUSTAV CHRISTIAN DÖRR, residing at No. 15 Mainluststrasse, Frankfort-on-the-Main, Germany, a subject of the German Emperor, have invented new and useful Improvements in the Process of Dyeing Vegetable Fiber, of which the following is a specification.

This invention has for its object to provide an improved process for soaking and dyeing in a single dye-bath all kinds of vegetable fiber such as cotton, flax, jute, ramie, and the like with direct or substantive dye-stuffs.

The present inventor has discovered that owing to their contained alkali, potassium silicate and sodium silicate possess the property of saponifying and removing spinning oils and other impurities adhering to the fiber and thereby cleaning the fiber, and above all that, owing to their contained silica or silicic acid, they also possess the property of precipitating direct or substantive dye-stuffs onto and into the fiber.

The improved process now consists in adding a silicate of an alkali such as potassium silicate or sodium silicate to the dye bath.

The improved process is carried out as follows, the proportions of the several substances being given solely by way of example. The dye bath is prepared with 20 grams of alkali silicate per liter of bath, and the dye liquor. The fiber to be dyed is placed in the bath at the temperature of blood heat, is turned over, and the bath is heated gradually to boiling. The boiling is continued for about 30 to 60 minutes, and the fiber is preferably left in the bath for an

equal period of time with the object of deepening the shade.

The improved process has the advantage that the dye bath is almost exhausted, and that the dyed fiber is faster to washing than is the case with the existing processes of dyeing with salts, etc., and further that the dye is not so liable to run from the dyed fiber into adjacent undyed vegetable fiber when being washed or fulled. Owing to the property of alkali silicates of removing impurities from vegetable fibers, it is not necessary with the improved process to boil the fiber before placing the latter in the dye bath. On being left for about 15 minutes in the hot silicate dye bath, the fiber becomes completely soaked and will take the dye uniformly. Organic and inorganic salts and Turkey red oil or its derivatives, may be added to the dye bath.

Having now described my invention what I claim as new and desire to secure by Letters Patent is:—

1. The process of soaking and dyeing vegetable fiber in a single bath of a direct or substantive dye containing a silicate of an alkali which soaks and cleans the fiber and precipitates the dyestuff thereon, as set forth.

2. The process of soaking and dyeing vegetable fiber in a single bath of a direct or substantive dye containing a silicate of an alkali and an addition of a salt, as set forth.

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

GUSTAV CHRISTIAN DÖRR.

Witnesses:

KARL MERZ,
JEAN GRUND.