

UNITED STATES PATENT OFFICE.

THOMAS HOLLIDAY, OF HUDDERSFIELD, COUNTY OF YORK, ENGLAND.

PRODUCING AZO COLORS UPON VEGETABLE FIBER.

SPECIFICATION forming part of Letters Patent No. 252,317, dated January 17, 1882.

Application filed April 21, 1881. (No specimens.) Patented in England April 14, 1881.

To all whom it may concern:

Be it known that I, THOMAS HOLLIDAY, a subject of the Queen of Great Britain and Ireland, residing at Huddersfield, county of York, England, have invented a certain new and useful Process of Producing and Fixing Azo Colors on Vegetable Fibers, and a certain new and useful product resulting therefrom; and I do hereby declare the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My improved process consists in treating the fiber which is to be dyed—as, for instance, cotton or other vegetable fiber, with oil and an alkali in such a manner as to oxidize the oil on the fiber, and then subsequently treating it with one of the component bodies from which the azo color is to be produced. By means of this process the element of the azo color first brought in contact with the oil upon the fiber enters into combination therewith, and, with the oil, cannot be washed from the fiber, but becomes an integral part of the substance which is to enter into combination with the second element in order to produce the azo color. The azo colors to which I refer are those formed by combinations made on the fiber of diazo or diazo-azo compounds with the phenols, naphthols, or any other of the phenolic bodies, whether further substituted or not.

As an example of my process the following operations may be performed: Cotton yarn may be steeped in a solution of, say, three per centum of oil, preferably sulphonated and neutralized with soda. The superfluous oil in the yarn is then wrung out and the yarn dried, and after the oil is sufficiently oxidized on the fiber I proceed to wash off in a weak solution of sal-soda. I then dry the yarn, then wash off in water, and again dry the yarn. The yarn is then ready for the formation of an azo color. To effect this formation of the color the yarn thus

prepared may be passed through a one per cent. solution of naphthol in hot water. The naphthol and oil enter into a combination, and when the yarn is cooled it may be then passed through a one per cent. solution of, say, the diazo compound of amidoazo-benzole, and then passed through a weak alkaline solution, the color thus being formed in combination with the oxidized oil as well as the fiber. The color thus formed may easily be distinguished from color formed without the combination of the oil by its fastness and better color under soaping or similar treatment.

Instead of first treating the oiled yarn with the naphthol or similar body, I may first treat it with the azo compound; but I prefer the method stated.

I do not claim, broadly, the oiling of fiber previous to subjecting it to a dye-bath, the same being old; but

What I claim as my invention, and desire to secure by Letters Patent, is—

The process of producing a fast azo color upon vegetable fiber, which consists in subjecting the fiber to the action of oil followed by an alkali, so as to oxidize the oil on the fiber, subsequently subjecting the oiled fiber to the action of a naphthol or phenolic body, and then of producing the azo color upon the fiber by treating the same with a diazo compound, thereby fastening the color upon the fiber in conjunction with the oil, as distinguished from the process of presenting the fiber to a color already formed, substantially as described.

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

THOMAS HOLLIDAY.

Witnesses:

EDWARD COCKSHAW,
WILLIAM HEPPENSTALL.