

UNITED STATES PATENT OFFICE.

GERHARD SANDERS, OF PATERSON, NEW JERSEY.

METHOD OF PREPARING WATER USED IN PROCESS OF DYEING TEXTILE FIBERS.

No. 894,234.

Specification of Letters Patent.

Patented July 28, 1908.

Application filed June 11, 1907. Serial No. 378,454. (Specimens.)

To all whom it may concern:

Be it known that I, GERHARD SANDERS, a citizen of the United States, residing in Paterson, Passaic county, New Jersey, have invented a certain new and useful Improvement in the Methods of Preparing Water Used in the Process of Dyeing Textile Fibers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention consists in an improved method of treating water employed in the process of dyeing textile fibers, such as wool, silk, cotton and the like, and it has for its object to so treat the water that when mixed with the proper dyeing substances the dyed material will offer a softer "feel" and a higher luster, while also being better adapted to receive and permanently hold the color.

In carrying out my invention, I take a suitable wood, containing tannin, such as oak, more or less finely divide it, as by grinding, and then mix it with an acid, such as muriatic acid; the proportion, in bulk, of acid to wood is about five to one. I then boil the mixture for about three hours. After the mixture is cooled, the liquid is poured off and the resultant solid portion or pulp is thoroughly washed or cleansed so as to rid the pulp of the acid. The pulp is then placed in a suitable receptacle and enough water introduced to just about cover it, and having put in the water washing soda in the proportion of about 15 lbs. of soda to 100 lbs. of the pulp, the mixture is boiled for about one hour. The mixture is then cooled, the liquid is poured off and the resultant solid portion or pulp again cleansed or washed until it is free of the soda. The thus treated wood product or pulp is now put in a long cylinder in compressed condition and water forced through it, the pulp acting as a filtering body and not only mechanically abstracting from the water the impurities contained therein but chemically operating thereon. The water so treated, when used in the process of dyeing textile fibers, very materially affects the latter so that a piece of goods, as for instance plush, when compared with another the water

used in the dyeing of which has not been thus treated, will at once present a much higher luster, a softer "feel" etc. Besides, the character of the fibers is so essentially affected that they not only better receive but more permanently hold the dye. This is due to the tannin left in a sparingly soluble form in the wood-pulp; if the wood were not treated as herein described by the acid, first, and then by the soda, or corresponding media, the tannin at full strength would undesirably and very materially discolor the material to be dyed, such as delicate light shades, while if the tannin were entirely neutralized or removed from the wood the effect which it imparts to the water, *i. e.*, the softening thereof, and which produces the softer feel and higher luster which I obtain, would be lost.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. The method of treating water to be used in the dyeing of textile fibers which consists in subjecting finely divided wood containing tannin to the action of an acid in the presence of heat at the boiling point, separating the solid portion from the liquid portion of the resultant mixture, subjecting said solid portion to the action of an alkaline solution in the presence of heat at the boiling point, separating the solid portion from the liquid portion of the mixture last resulting, and finally causing the water to be passed through the solid portion of said last resulting mixture, substantially as described.

2. The method of treating water to be used in the dyeing of textile fibers which consists in subjecting finely divided wood containing tannin to the action of a tannin-fixing agent, then subjecting the thus-treated wood to a neutralizer of the fixing agent, and finally causing the water to be passed through the wood so treated, substantially as described.

In testimony that I claim the foregoing, I have hereunto set my hand this 10th day of June, 1907.

GERHARD SANDERS.

Witnesses:

JOHN STEWARD,
WM. A. MERZ.