

UNITED STATES PATENT OFFICE.

ARNOLD KELLER, OF NEWARK, NEW JERSEY, ASSIGNOR OF ONE-HALF HIS
RIGHT TO THOMAS H. THOMPSON, OF SAME PLACE.

IMPROVEMENT IN PROCESSES OF DYEING COTTON.

Specification forming part of Letters Patent No. **147,010**, dated February 3, 1874; application filed
August 4, 1873.

To all whom it may concern:

Be it known that I, ARNOLD KELLER, of Newark, in the State of New Jersey, have invented an Improved Process of Coloring Cotton, of which the following is a specification:

This process is for coloring Turkish red—a fast color.

This scale of ingredients is made up for one hundred pounds of cotton yarn.

The various processes are indicated by the following numbers:

1. Boil the yarn three hours in ten pounds of sal-soda, in water enough to cover the yarn. Then rinse and wring out to dry.

2. To one gallon of fish-oil add two gallons of soda-lye, 27°, (American scale,) and one-half pound tungstate of soda, and one pail of cows' dung. When well mixed dip the yarn in it, and let it remain in the liquor two or three hours; then wring it out well.

3. To one gallon of fish-oil add one-half pound tungstate of soda and two gallons of the soda-lye, 27°; then dip and hang in the air until partly dry, and then dry in a room of 160° heat.

4. Dip the yarn in soda-lye, 5°, and hang in the air until partly dry, and then dry in a room of 160° heat.

5. The same as No. 4. This repetition is not always necessary.

6. Lay the yarn for one hour in soda-lye, 3°, then wring out and dry in a room of 130° heat.

7. Lay the yarn for one hour in lukewarm water, then wring it out well, then take five pounds of alum and dissolve in hot water, and add one pint of soda-lye, 27°. Dip the yarn, and take out and lay it away from six to eight hours, then wash, and dry in a room of 130° heat.

8. Boil twenty-five pounds of sumac in water, and dip the yarn in the hot liquor, and take it out and lay away for two or three hours. Wring out well. Then dissolve fifteen pounds of alum in water, and add one quart of soda-lye, 42°. Dip, and take out, and lay away six or eight hours. Rinse well and dry in a room of 120° heat.

9. To one hundred pounds of madder add twenty pounds of sumac and six gallons of blood. Mix in a kettle with water enough to cover the yarn, put in the yarn and let it heat two hours before it comes to a boil, and let it boil one hour, and take it out and rinse it.

10. Boil the yarn in soda-lye from 3° to 5° ten to fifteen hours, wash, and wring out.

11. Dissolve one pound of salts of tin in water, and add one pint of a liquid preparation of saltpetre. Dip the yarn and wring it out. This process is not always necessary.

12. Dissolve five pounds of oil soap in a kettle of boiling water. Boil the yarn in this two or three hours, afterward rinse, and dry in the shade.

By these processes a reliable fast color—Turkey red—is secured, and at a much less expense than by any other process known to the inventor.

I claim—

The combined process herein, substantially as described, for dyeing cotton Turkey red, fast color.

ARNOLD KELLER.

Witnesses:

HORACE HARRIS,
JOHN CRAIG.