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UNITED STATES PATENT OFFICE.

PAUL ONNERTZ, OF BERLIN-WILMERSDORF, AND ALFRED PETERS, OF BERLIN, GERMANY, ASSIGNORS TO ACTIEN GESELLSCHAFT FÜR ANILIN FABRIKATION, OF BERLIN, GERMANY.

PROCESS FOR DYEING WOOL WITH DYESTUFFS CAPABLE OF BEING CHROMED.

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To all whom it may concern:

Be it known that we, PAUL ONNERTZ and ALFRED PETERS, citizens of the German Republic, residing at Berlin-Wilmersdorf, Germany, and Berlin, Germany, our P. O. addresses being Dusseldorferstrasse 72, Berlin-Wilmersdorf, Germany, and Groben Ufer 4, Berlin So. 33, Germany, have invented certain new and useful Improvements in Processes for Dyeing Wool with Dyestuffs Capable of being Chromed, of which the following is a specification.

By treating with chromium compounds, particularly chromic acid, wool, as is known, becomes harder. This has a most detrimental effect in dyeing with dyestuffs which require a treatment with chromic acid or other chromium compounds, more especially when a high proportion of chromate is necessary for completely fixing the dye, or when, as in art-wool dyeing, a material is used which has previously been chromated.

According to our invention in dyeing wool the deterioration of the physical properties of the wool caused by chromium compounds may be prevented by adding sulfite cellulose waste liquor or the evaporated and dried form of sulfite cellulose waste liquor containing the essential constituents thereof known as cellulose pitch or a constituent of sulfite cellulose waste liquor, such as a salt of lignine sulphonic acid, a sugar, particularly a pentose or a hexose. Shade of color and fastness of dye are not affected by the addition, but the wool retains its soft and full texture ("feel") and good spinning property. Moreover sulfite cellulose waste liquor acts also as a moistening agent and promotes the even absorption of the dye.

It has already been proposed to use sulfite cellulose waste liquor in the operation of preliminary mordanting wool; the invention does not extend to this use of sulfite cellulose liquor, but is concerned with dye baths or after-treatment baths.

The following examples illustrate our invention:

1. The bath contains: 3% fast chrome brown 2R, 10% cryst. sodium sulfate, 4% acetic acid of 30% strength, 3% sulfite cellulose waste liquor of 28° Baumé specific gravity, these percentages being calculated on the weight of the goods. The wool is introduced at 60° C.; the bath is brought to the boil in half an hour and boiled for half an hour. For exhausting the bath 1.5% of sulfuric acid is added and the whole boiled for another half an hour. Then in the same bath there follows a treatment with 1.5% of the weight of the goods of potassium bichromate, a boiling for three quarters of an hour, and, finally, rinsing.

2. Into the bath containing 3% metachrome brown B, 3% metachrome mordant, 2.5% sulfite cellulose waste liquor of 28° Baumé specific gravity, the percentages being calculated on the weight of the goods; the wool is introduced at 50° C. and the bath is brought slowly to the boil and boiled for 2 hours. For the better fixation of the dyestuffs 1% of acetic acid of 30% strength is further added and the whole boiled for another half an hour.

3. The bath is prepared with 2% anthracene chromate blue XR, 1% potassium bichromate, 3% magnesium sulfate, 2% sulfite cellulose waste liquor of 28° Baumé specific gravity, the percentages being calculated on the weight of the goods; the wool is introduced at 70° C., the bath is brought to the boil in half an hour and boiled for one hour; 1–2% of acetic acid of 30% strength is slowly added and the whole boiled for another half an hour.

Having now particularly described our invention and in what manner it may be performed what we claim is,—

1. In process of dyeing wool in which a chromium compound is added to the bath, protecting the wool against the detrimental action of the chromium compound by adding sulfite cellulose waste liquor to the bath containing the chromium compound.

2. In process of dyeing wool in which a chromium compound is added to the bath, protecting the wool against the detrimental action of the chromium compound by adding constituents of sulfite cellulose waste liquor to the bath containing the chromium compound.

3. In process of dyeing wool in which a chromium compound is added to the bath, protecting the wool against the detrimental action of the chromium compound by adding a salt of lignine sulfonic acid and

a sugar to the bath containing the chromium compound.

4. In process of dyeing wool in which a chromium compound is added to the bath, protecting the wool against the detrimental action of the chromium compound by adding a sugar to the bath containing the chromium compound.

In testimony whereof we affix our signatures in presence of two witnesses.

DR. PAUL ONNERTZ.
ALFRED PETERS.

Witnesses:
LEO KERROVIUS,
Dr. MAX BRAUNS.