

UNITED STATES PATENT OFFICE.

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FRIEDR. BAYER & CO., OF ELBERFELD, GERMANY, A CORPORATION OF GERMANY.

PROCESS OF DYEING HALF-WOOLEN GOODS.

976,219.

Specification of Letters Patent.

Patented Nov. 22, 1910.

No Drawing.

Application filed August 6, 1909. Serial No. 511,534.

To all whom it may concern:

Be it known that I, GEORG RUDOLPH, colorist, citizen of the German Empire, residing at Elberfeld, Germany, have invented new and useful Improvements in Processes of Dyeing Half-Woolen Goods, of which the following is a specification.

The application Serial No. 474797 filed January 28th 1909 relates to a new process for dyeing half-wool (mixed cotton and wool goods), which process consists in dyeing at the same time the wool and the cotton in mixed cotton and wool goods from an acid bath with acid substantive cotton dyestuffs, either with or without the addition of wool dyes. I have now found that when carrying out this process in the presence of chromium compounds the wool is less strongly dyed than without this addition and it is in this way possible to boil the half woolen material for a longer time without the risk of the substantive colors being removed from the cotton and increasing the depth of the wool dyeing. Other advantages of this process are that the dyeings become more even and that by combination of suitable substantive cotton dyes with mordant dyes or other wool dyes fast to milling, shades fast to washing and milling can be obtained in one bath on loose half-wool, Vienna yarn, half-woolen rags, which could not be done according to the hitherto known methods. Furthermore when it was formerly desired to produce a bright shade on the wool in piece goods consisting of cotton warp and dark shoddy weft, it was necessary to first dye the wool in a strongly acid bath and afterward the cotton at ordinary temperature with substantive cotton dyes. Such goods can be dyed now by the new process in a much simpler way. The same dyestuffs can be used for this new process which are mentioned in the application Ser. No. 474797 *e. g.* direct yellow R extra, chloramin yellow HW, benzo fast scarlet 4BS, benzo olive, diazo black BHN, benzo chrome blue black B, direct deep black EW extra RW extra, etc.

In order to illustrate my new process more fully the following examples are given, the parts being by weight:

Example A: For dyeing 100 parts of a

half-wool piece (mixed cotton and wool) a dye bath is prepared containing in 2000 parts of water 4 parts of diazo black BHN, $\frac{1}{2}$ part of direct deep black EW extra, 0.1 part of benzo fast scarlet 4BS, 1.5 parts of wool fast blue BL. Subsequently 30-40 parts of Glauber salt, 1.5-3 parts of acetic acid 30 per cent., and at last 0.5-1 part of bichromate of potassium are added. The dye-bath is warmed and the cloth is entered at about 70° C. The temperature is then slowly raised to the boil and the boiling continued for 1-1.5 hours. A dark blue results.

Example B: A dye-bath is prepared containing for 100 parts of mixed cotton and wool goods 2000 parts of water and 3 parts of benzo olive, 1.5 parts of benzo chrome blue black B, 0.5 part of direct yellow R extra, 0.75 part of alizarin blue B, 30-40 parts of Glauber salt, 1.3-3 parts of acetic acid 30 per cent., 0.5-1 part of bichromate of potassium. The dyeing is carried out as described in Example A. A Russian green is thus obtained.

Example C: A black is obtained on dyeing as described under A from a bath containing the following ingredients: 6 parts of direct deep black EW extra, 1-2 parts of sulfone acid black 2B, 30-40 parts of Glauber salt, 1.5-3 parts of acetic acid 30 per cent., 1 part of bichromate of potassium.

I claim:—

1. In the art of dyeing half-wool the improvement consisting in dyeing at the same time the wool and the cotton in the half-woolen goods from an acid bath containing a chromium compound and acid substantive cotton dyestuffs, substantially as described.

2. In the art of dyeing half-wool the improvement consisting in dyeing at the same time with the addition of wool dyes the wool and the cotton in the half-woolen goods from an acid bath containing a chromium compound and acid substantive cotton dyestuffs, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

GEORG RUDOLPH. [L. s.]

Witnesses:

OTTO KÖNIG,
WILLY KLEIN.