

UNITED STATES PATENT OFFICE.

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BLEACHING STRAW.

1,027,953.

Specification of Letters Patent.

Patented May 28, 1912.

No Drawing.

Application filed May 20, 1911. Serial No. 628,502.

To all whom it may concern:

Be it known that I, PERCY EDGAR WICKHAM, traveler, subject of the King of England, residing at London, England, have invented new and useful Improvements in Bleaching Straw, of which the following is a specification.

In bleaching straw by means of hydrosulfites, as hitherto practised, the straw is treated with a dilute solution of hydrosulfite at ordinary temperature. Under these conditions the bleaching action is but slight and the effect obtained is not by itself sufficient to satisfy practical requirements, so that the bleaching has been supplemented by the use of other bleaching agents, besides the hydrosulfite, usually by hydrogen peroxid. I have found that the bleaching action of hydrosulfites can be considerably increased if the bleaching be effected at a raised temperature, for instance at from about 55° to 65° C., instead of at ordinary temperature. I add to the bleaching solution an alkali, or a salt having an alkaline reaction; such, for example, as soda, sodium phosphate, or the like. After treatment in this manner, the straw can be worked up in the usual, or any suitable, way, being subjected to the usual, or any suitable, clearing and finishing treatments. It is, in some cases, advantageous, or necessary, to use two, or more, hydrosulfite baths in succession.

In carrying out my invention it is advisable that the hydrosulfite bath or, when two or more are used in succession, the first hydrosulfite bath, remains alkaline, and it is also preferred that, in the latter case, the second and any succeeding bath or baths be maintained alkaline, as, if the bath or baths, be allowed to become acid, the shade of the straw sometimes appears to suffer and the hydrosulfite decomposes more rapidly. When sodium phosphate is employed in the bath, or baths, it appears both to assist in maintaining the bath, or baths, alkaline and also to exercise a beneficial influence, as when sodium phosphate is employed the straw is generally obtained of a lighter shade after being finished and dried than is the case when sodium phosphate is not employed.

The following are examples of how this invention can be carried into practical effect, but the invention is not confined to these examples. The parts are by weight.

Example 1: Dissolve one thousand parts of powdered sodium hydrosulfite, five hundred parts of crystallized sodium phosphate, and three hundred parts of calcined soda, in one hundred thousand parts of cold water. Introduce the straw into this solution and gradually raise the temperature to about from fifty-five to sixty-five degrees centigrade; maintain this temperature for a few hours longer and then cool gradually. Remove the straw and thoroughly rinse it, and finish it by treatment for, say, two or three hours in a bath containing about two parts of oxalic acid in one thousand parts of soft water and having a temperature of, say, from thirty to forty degrees centigrade. Remove the straw and thoroughly rinse and dry it.

Example 2: Wash straw plaits in the usual way. Prepare a cold bleaching bath as follows:—sodium phosphate ten parts per thousand and sodium hydrosulfite (anhydrous) three and one-third parts per thousand of the bath, and add sufficient sodium carbonate, or potassium carbonate, to the bath so that it not only becomes distinctly alkaline, but remains alkaline to the end of the treatment. Introduce the straw into the cold bath and after, say, about two or three hours raise the temperature, gradually, to about forty degrees centigrade and keep it at this temperature for, say, from twelve to fifteen hours, and then raise the temperature to sixty degrees centigrade. Allow the bath and its contents to cool and then remove the straw and stove it for about half an hour before drying.

For certain kinds of straw, for instance Chinese mottled plait, the procedure hereinbefore described should preferably be repeated once or twice. The straw is subsequently subjected to any usual, or suitable, clearing and finishing treatments with oxalic acid and potassium carbonate (separately or in combination), with excess of potassium carbonate, and dried with sulfur stoving.

Now what I claim is:—

1. The process of bleaching straw by treating it with a hydrosulfite in an alkaline bleaching bath at a raised temperature substantially as hereinbefore described.

2. The process of bleaching straw by treating it with a hydrosulfite at a raised temperature in an alkaline bleaching bath

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containing sodium phosphate, substantially as hereinbefore described.

3. The process of bleaching straw by treating it with a hydrosulfite at a temperature of from fifty-five to sixty-five degrees centigrade in an alkaline bleaching bath containing sodium phosphate substantially as hereinbefore described.

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

PERCY EDGAR WICKHAM.

Witnesses:

HUGH ROBERTSON STEWART,
PERCY ARTHUR MOORE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
