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CATION OF TEXTILES & FIBERS,
Draftsman

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UNITED STATES PATENT OFFICE

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PROCESS OF BLEACHING

No Drawing. Application filed July 9, 1928, Serial No. 291,474, and in Austria June 30, 1927.

It has previously been proposed to bleach feathers, skins, furs, hair, bristles etc., by placing them in a weakly alkaline bath containing hydrogen peroxide. However, in this process the materials have been more or less damaged by the bath because of the length of immersion necessary to complete the bleach.

I have now found that these materials and other delicate animal and vegetable fibres can be bleached with no damage to the goods if they are treated with hydrogen peroxide in vapor form.

Treatment of such goods with hydrogen peroxide vapor bleaches the hair and fibres much more satisfactorily, especially in the case of soft furs, than when they are placed in a liquid bleach bath. This treatment causes no gumminess in the hair and the bleaching is especially uniform. Bleaching with gaseous peroxide has the further especial advantage of using very small quantities of hydrogen peroxide. In order to avoid deleterious action on leather when furs are bleached, it is advisable to protect the leather before treatment by coating or pretreatment with fatty materials.

The goods to be bleached are placed in a closed room in which is an open vessel containing hydrogen peroxide solution of suitable strength. This solution may be 30% hydrogen peroxide and should be quite stable; this stability may be secured by addition agents of various kinds. Preferably the hydrogen peroxide solution is placed in wide shallow pans so located that no particles of hair or fibre or other foreign material which might cause a decomposition of the peroxide can drop into the vessel. The closed room can now be heated in any suitable manner so that the solution evaporates slowly. The vapors coming in contact with the material to be bleached will give a complete and uniform bleaching action.

Example.—Furs were first lightly brushed on the skin side with a suitable fat and then so hung in the bleaching chamber that they did not touch each other. A wide shallow pan containing 30% hydrogen peroxide solution was placed in the chamber so located and protected that no foreign particles could fall into it. The chamber was closed and heated by steam or hot air to a suitable temperature, e. g. 50° C. Ventilation was very slight so as to avoid unnecessary peroxide loss. Considerable bleaching took place in 8 hours. Bleaching by this method is usually wholly complete in 30–40 hours.

The concentration of the peroxide remaining in the evaporating pan continuously increases giving an increased bleaching action if the treatment continues.

The peroxide solution at the start of the bleaching process should be one which can be concentrated to 70–75% hydrogen peroxide without undue loss. To prevent too high an increase in concentration water may be added from time to time after the bleaching action continues, e. g. when about one half the liquid has evaporated. When the bleaching is complete the furs are removed and dried, e. g. at 40° C.

Claims:

1. Process of bleaching which comprises subjecting the material to be bleached to the action of gaseous hydrogen peroxide.

2. Process of bleaching which comprises subjecting the material to be bleached to the action of hydrogen peroxide vapors at a temperature of 50° C.

3. Process of bleaching which comprises subjecting the material to be bleached to the action of vapors from a 30% hydrogen peroxide solution at a temperature of 50° C.

4. Process of bleaching delicate animal fibres which comprises subjecting them to the action of gaseous hydrogen peroxide.

5. Process of bleaching furs, hides, and pelts which comprises protecting the leather with a suitable fatty material and then subjecting the material to be bleached to the action of gaseous hydrogen peroxide.

6. Process of bleaching furs, hides and pelts which comprises projecting the leather with a suitable fatty material and then subjecting the material to be bleached to the action of gaseous hydrogen peroxide at about 50° C.

7. Process of bleaching furs, hides and

pelts which comprises protecting the leather with a suitable dressing and then subjecting the material to be bleached to the vapors of a 30% hydrogen peroxide solution at a temperature of 50° C.

Signed at Vienna, Austria, June 25, 1928.

GUSTAV BAUM.