

CATION OF TEXTILES & FIBERS,

Patented May 8, 1928.

1,668,875

UNITED STATES PATENT OFFICE.

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METHOD OF TREATING FUR SKINS AND THE LIKE.

No Drawing.

Application filed October 14, 1925. Serial No. 62,451.

Our present invention relates to methods of bleaching fur skins and the like, and aims to devise methods of the general character specified which are simple to practice, easy, convenient and economical to put into practice, which require simple, cheap and readily obtainable reagents and apparatus for their practice, and which produce bleached fur skins and the like possessing superior characteristics for the intended purpose, such as bleached fur skins and the like being characterized by the superior strength of the leather and hair portions of such bleached fur skins and the like, the superior lustre of the hair portions of such bleached fur skins and the like, and the superior appearance of such bleached fur skins and the like, the strength of the leather and hair portions, and the lustre of the hair portions, of such bleached fur skins and the like comparing quite favorably with these respective properties of the fur skins and the like in their natural, unbleached condition.

In the accompanying specification we shall describe an illustrative embodiment of the process of the present invention, particularly as applied to the bleaching of fur skins for the production of bleached fur skins having the hair and leather portions of the same substantially unaffected as to strength, and the lustre of the hair portions substantially unimpaired. It is, however, to be clearly understood that our invention is not limited to the specific embodiment thereof herein described for purposes of illustration only. It is further to be understood that our invention is not limited to the treatment of the particular kind of fur skins or equivalent materials described herein by way of illustration merely, the invention being capable of general application and being adapted for the successful bleaching of other specific materials.

While various types and classes of fur skins, for example, may be bleached in accordance with the principles of the present invention, we may, for example, use brown moufflons as being an example of the class of fur skins to which the principles of the present invention may be applied with particular success. The brown moufflons may first be washed or "killed" in an alkaline solution, for example, a solution of sodium carbonate. This washing operation ordinarily re-

quires from about two to about three hours. The washed or "killed" skins are then rinsed and thoroughly hydro-extracted. However, the washing or "killing" operation may be omitted, since the subsequent treatment will substantially accomplish the same results, together with many others, as are accomplished by the washing or "killing" treatment just described.

We now subject the fur skins or the like, whether or not the same have first been washed or "killed" as above described, and whether the same comprise brown moufflons or some other material adapted to be treated in accordance with the principles of the present invention, to the action of the bleaching agent. Preferably the bleaching agent comprises hydrogen peroxide. We prefer to use a form of hydrogen peroxide free from acids, particularly mineral acids, since we find that the presence of such acid or acids, especially when brought into contact with an alkali or alkaline reagent, or its equivalent, as may happen in the latter stages of the present process, generates heat and produces metallic salts, both of which agencies cause a more rapid action of the hydrogen peroxide than is desirable, and often brings about singeing or other harmful oxidation of the hair and leather portions of the fur skins and the like being bleached.

While the hydrogen peroxide bleach, for example, may be used of the ordinary strength in which such reagent is usually obtainable in the market, which is in the strength of a 3% solution, we may use the hydrogen peroxide in greater strengths, since by means of the principles of the present invention a more concentrated hydrogen peroxide may be used without adversely affecting the fur skins and the like being bleached. For example, we may use a strength of hydrogen peroxide solution up to 7½%, or even higher. Preferably we use this reagent in strengths of from about four to about seven per cent, preferably the latter strength.

To the hydrogen peroxide solution, of the strength or strengths just designated, we add an alkali or alkaline reagent. The purpose of this reagent is to accelerate the bleaching action but without doing this in a manner which will tend to singe or otherwise adversely affect the hair or leather por-

tions of the fur skins or the like being treated. For this purpose we prefer to employ a solution of ammonia, for example, a concentrated solution of ammonia in an amount equal to about $\frac{1}{2}$ to $1\frac{1}{2}$ per cent, by volume, of such a concentrated solution, to a unit volume of the solution of hydrogen peroxide or other bleach employed.

It may here be stated that the ammonia or its equivalent not only acts in some manner to accelerate the bleaching operation, but without adversely affecting the strength of the hair and leather portions and the lustre of the hair portions of the fur skin and the like being treated, but serves also to dissolve, by a sort of saponifying action, fatty bodies and the fatty tissues, as well as some of the other tissues, at the surfaces of the hair portions of the fur skins and the like being treated. This solvent action serves to prepare the fur skins and the like for the bleaching action and thus to accelerate such action without any substantially harmful effects.

We also prefer to have present in the bleaching reagent a saponaceous agent, such as a soap solution, as a concentrated solution of a potassium soap in an amount equal to from about 1 to about 2 per cent, by volume, of the volume of the bleaching reagent. The presence of the saponaceous body serves to render the action of the ammonia or equivalent alkaline reagent more mild and serves also to strengthen the hair and leather portions of the skin being bleached. The saponaceous body serves also in other ways to improve the quality of the final product.

While the bleaching reagent, containing the hydrogen peroxide, the ammonia, and the potassium soap, for example, and prepared as above described, may be applied in various ways to the brown moufflons or other materials being treated in accordance with the principles of the present invention, we prefer to brush the brown moufflons or other fur skin, for example, with the bleaching agent above described. This may be done with brushes in the usual manner, as will be readily apparent to those skilled in the art to which the present invention relates. A sufficient amount of the bleaching reagent above described is applied to the fur skins or the like being treated, preferably by the brushing action described above, to cause the desired bleaching action when the bleaching operation is completed, care being taken not to apply more of the bleaching reagent than is necessary for this purpose. This is for the reason that an excess of the bleaching reagent might have harmful effects in weakening the hair or leather portions of the fur skins or the like being treated.

The brushed fur skins and the like are now permitted to dry, preferably in the presence of a gaseous oxidizing medium, such as

the air. The presence of air seems in some way to facilitate the bleaching action and to yield a final product having the desired bleached and other characteristics.

We prefer that the bleaching operation shall be conducted at a temperature of from about 60 to about 100° F. The lower the temperature, the slower the bleaching operation, and vice versa. However, it is not desirable to raise the temperature too high, since this might have a tendency to drive off the ammonia and to decompose the hydrogen peroxide too rapidly, which would tend to singe the hair portions and possibly to weaken the hair and leather portions of the fur skin being treated.

Since the ammonia or its equivalent acts as a solvent for fatty substances and for the fatty and other tissues at the exteriors of the hair portions of the fur skin or the like being treated, we prefer not to have too much of this reagent in contact with the leather portions of the fur skin, since this would tend to weaken the fibers of such leather portions.

The advantages of the process are numerous and of great practical importance. The process, as illustrated above, is very simple, comprising a few easily practiced steps, and the entire process is easy, convenient and economical to carry out. The process has the further advantages that it requires but simple, cheap and readily obtainable reagents and apparatus for its complete and successful practice.

The results of the process are equally valuable. The product is characterized by its very attractive appearance. The hair and leather portions of the bleached fur skins or the like will be found to have substantially their original strength. Similarly, the hair portions of the bleached fur skins or the like will be found to have substantially the same lustre as the hair portions of the unbleached skins or the like. Other advantages of the method of the present invention and the superiorities of the resulting product will readily occur to those skilled in the art to which the same relates.

What we claim as our invention is:

1. The method of bleaching fur skins and the like, which comprises treating the same with an aqueous solution of hydrogen peroxide of a strength of more than about 3 per cent, said solution containing ammonia and a water-soluble soap.

2. The method of bleaching fur skins and the like, which comprises treating the same with an aqueous solution of hydrogen peroxide containing ammonia and a water-soluble soap.

3. The method of bleaching fur skins and the like, which comprises brushing the same with an aqueous solution of hydrogen peroxide of a strength of more than about 3 per

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cent, said solution containing ammonia and
a water-soluble soap, and thereafter causing
the fur skin or the like so treated to become
dry in the presence of a gaseous oxygen con-
5 taining oxidizing agent.

4. The method of bleaching fur skins and
the like, which comprises brushing the same
with an aqueous solution of hydrogen per-
oxide containing ammonia and a water-solu-
10 ble soap, and thereafter causing the fur skin

or the like so treated to become dry in the
presence of a gaseous oxygen-containing oxi-
dizing agent.

In testimony whereof, we have signed our
names to this specification this 6th day of 15
Oct., 1925.

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