UNITED STATES PATENT OFFICE.

ADOLPHE VIOL AND CESAIRE PIERRE DUFLOT, OF PARIS, FRANCE.

IMPROVEMENT IN PROCESSES FOR BLEACHING FEATHERS.

Specification forming part of Letters Patent No. **202,078**, dated April 2, 1878; application filed August 30, 1877.

To all whom it may concern:

Be it known that we, ADOLPHE VIOL and CESAIRE PIERRE DUFLOT, of Paris, France, manufacturers, have invented a new Process of Bleaching Feathers, of which the following is a specification:

Feathers, particularly ostrich-feathers, which are of the highest value, irrespective of the gray, brown, and black feathers which constitute the chief parts of birds' plumage, are found of different tints. Some are naturally pure white, and require only cleansing and bleaching to fit them for sale. Others are also white, of a dull leaden tint, which renders them unfit for sale, except as defective white feathers at a great reduction of price. Others, again, have a mixture of white and gray. These, which are chiefly feathers of female birds, present the same difficulties in their sale as those previously mentioned.

The principal object of our invention is to give to these two classes of feathers, which are deficient in whiteness, all the purity of white feathers of the highest quality, rendering their tint an unblemished white, and thereby highly increasing their value.

The process which we adopt for this purpose is based upon the fact that feathers dipped in resinous essences, such as turpentine and other products of the distillation of resinous gums, or in other essences, such as those of lavender or thyme, or, finally, in bituminous hydrocarbons, become bleached under the action of light and heat.

In applying this reaction practically we immerse the feathers to be bleached, particularly ostrich-feathers, in baths of the materials above mentioned, and allow them to soak therein a longer or shorter time, according to the amount of color to be discharged, maintaining the baths at an average temperature of 89° to 90° Fahrenheit, and exposing their contents as much as possible to the light.

When we consider that the feathers are sufficiently bleached, which generally occupies three to four weeks, we spread and shake them, so as to get rid of every trace of the liquid in which these were soaked, and then dry and prepare them in the ordinary way, cleaning and bleaching them as usual.

The above description suffices to explain the practical application of our process. We may add, however, some details which our experiments have shown to be useful.

In respect of the essence employed, we have found turpentine, either crude or rectified, satisfactory; but the other essences referred to, either alone or mixed, may be used.

The vessels employed for the baths should be open, as the air plays some part in the bleaching process, as well as heat and light. The vessels should be in a place naturally or artificially warmed.

The feathers should be well exposed to the daylight, and for this purpose they are spread out horizontally in shallow basins, or suspended vertically in glass vessels.

Though we have mentioned ostrich-feathers as the principal subject of our process, it is applicable to other feathers for preparing not only those that are to be white, but also those that are to be dyed, particularly with delicate tints. In some cases the feathers, instead of being soaked in a liquid bath, may be exposed to the vapors of the suitable essences.

We do not broadly claim the use of hydrocarbons for bleaching feathers, as such, we are aware, is not new.

What we claim as our invention, and desire to secure by Letters Patent, is—

The herein-described process for bleaching feathers, consisting in the immersion of the feathers in a resinous bath of regulated temperature, and at the same time exposed to both light and air, substantially as specified.

In testimony whereof we have signed our names to this specification before two subscribing witnesses.

A. VIOL.
C. P. DUFLOT.

Witnesses:
J. ARMENGAUD, Jeune,
ROBT. M. HOOPER.