

# ALIEN PROPERTY CUSTODIAN

## METHOD OF TREATING HUMAN HAIR

Dénes Bartók, Budapest, Hungary; vested in the Alien Property Custodian

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My invention relates to a method of treating human hair, and more particularly to a method of straightening or smoothening curled hair on living persons.

Many attempts have been made to smoothen human curled hair but without much success. So far as I know, the only method which makes it possible to straighten or smoothen curled human hair for a very short time, consists in treating the hair with a substance which causes the hairs to stick together, thereby overcoming the tendency of the hairs to curl. Aside from the fact that with this known method the sticking substance on the hairs dries relatively fast whereupon the individual hairs return to their original curled condition, hair treated with the said substance looks very greasy and loses its natural appearance.

It is an object of my invention to overcome the above mentioned drawbacks and to create a method adapted to smoothen curled living human hair without causing a greasy sticky appearance.

It is a further object of my invention to provide a method of straightening or smoothening curled human hair so as to keep the hair in straightened or smoothened condition for weeks and even for months.

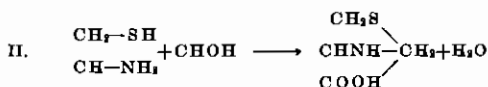
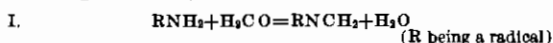
It is a further object of the invention to create a hair treating method of the above mentioned character which is cheap and simple in application.

While the above referred to known method of straightening curled human hair is a mere mechanical process, my new method is primarily a chemical one. It has been found that the curling of the hairs depends primarily on the location of the hair glands and the chemical composition of the hairs which are regarded as chemical compounds comprising albuminous substances, amino acids, and sulphur containing cystin links. It is believed that the albuminous substances bind the sulphur containing cystin links which latter form, so to speak, the bridges between the amino acids, thereby maintaining the curled condition of the hairs.

My experiments have proved that it is possible to change the chemical composition of the hairs by splitting up the amino acid molecules and separating the cystin links, thereby creating new holding elements counteracting the tendency of the hairs to curl. Consequently, according to the present invention, I treat the human hair with aldehydes or such compounds which are adapted to yield aldehydes. The invention furthermore includes a mechanical treatment which com-

prises the combined employment of heat and pressure.

Aldehydes react with amino acids, i. e. the fundamental substance of the hair, and form synthetic condensation products, for instance according to the equations:



As will be seen from the above equations which are given merely as examples and do by no means limit the invention thereto, various reactions are possible. It is assumed that the aldehyde reacts with the free amino groups of the lateral chains connecting the polypeptide chains. In this connection it is to be noted that due to the employment of steam new groups are formed. With regard to the second reaction, the same may be interpreted so that two molecules combine. The thus formed products constitute a resisting layer on the surface or in the interior of the hairs and prevent a curling of the hairs.

My new method is preferably carried out in the following manner:

An aldehyde solution is spread over or otherwise brought into contact with the hair to be treated, whereupon, after a short time, say for instance 10 to 12 minutes, the hair is ironed by a, preferably electrically heatable, roller. The roller may have a partially even and partially fluted or corrugated surface. If and wherever desired, the ironing of the hairs may be carried out in such a manner that a slight curling of the hair remains, thereby producing permanent waves to any desired extent.

My novel method has no harmful effect on the hair, particularly in view of the fact that in contradistinction to prior methods of producing permanent waves, the heat treatment lasts only a few minutes, e. g. 1 to 3 minutes.

After the hair is treated according to my invention, it may be washed or treated like any other hair without affecting the smoothening of the hair or disturbing the chemically prepared permanent waves. This condition will last until the treated lengths of the hairs have been replaced by new portions of the hair grown after the last treatment, varying with the speed with which the hair grows.

It is advisable to protect the skin of the head against the influence of the aldehyde, although, so far, no harmful effects have been noted when

the aldehyde solution was carefully spread over the hair. To this end, combs or comb-like plates provided with a layer of felt may be used for covering the skin of the head. At the same time, such comb or plate will prevent the heated roller from accidentally contacting the skin of the head. If desired, a protecting plate may be adjustably connected with the heated roller, or the heated roller may be associated with a second roller adapted to be adjusted relative to the first roller so that the hair to be treated may be passed between the first roller and the plate or between the two rollers respectively. The protecting plate or the second roller may also be connected with a cooling system to prevent the protecting plate or the second roller from becoming heated by the heated roller.

The treatment according to my invention is preferably carried out under a hood covering the hair to be treated while care is taken to remove or withdraw the aldehyde vapors whenever they are formed.

The hair treated according to my novel method does not change its colour, does not become brittle and does not show any disadvantages over non-treated hair. One of the outstanding features of hair treated according to my invention consists in that the hair does not lose its smoothness when getting wet.

The concentration of the treating liquid may be varied to any desired degree in accordance with the individual requirements. When using a weak solution, the hair is to be wetted two or more times and to be ironed after each wetting process.

The aldehydes or aldehydes yielding compounds are employed in aqueous solution if they are soluble in water, or are employed in emulsions or non-combustible and non-explosive organic solving means.

DÉNES BARTÓK.