

# UNITED STATES PATENT OFFICE.

JOSEPH RANDALL TUSSAUD AND FRANCIS CURTIUS TUSSAUD, OF 58 BAKER STREET, PORTMAN SQUARE, ENGLAND.

## IMPROVEMENT IN THE PREPARATION OF ARTIFICIAL SKINS WITH NATURAL HAIR.

Specification forming part of Letters Patent No. 126,166, dated April 30, 1872.

*To all to whom it may concern:*

Be it known that we, JOSEPH RANDALL TUSSAUD and FRANCIS CURTIUS TUSSAUD, both of No. 58 Baker street, Portman Square, in the county of Middlesex, England, have invented "improvements in obtaining the separation of hair or other covering from the skins of animals and in the application thereto of artificial skins;" and we do hereby declare that the following is a full and exact description thereof.

Our improvements have reference to means by which the hair or other such covering to the skins of animals may be held in correct relative positions as on the natural skin while that skin is removed and until a substitute for such skin is applied to the roots of such hair or other covering to retain them in position; and our improvements have reference to means for acting first on the hair on the natural skin previous to the application of the temporary holding means, and also to the use of glue, size, or gelatine, applied in solution, so as to form, when cool, a body to hold the hair or other covering in position during the removal therefrom of the natural skin and the application to the roots thereof of a substitute for such skin.

In carrying out our improvements we operate upon the hair or other covering and natural skin previous to the application of such temporary holding means, for the purpose of loosening the one from the other, by subjecting them to soaking in lime-water or other suitable means, as practised by tanners. If desired, the skins may then be washed in water to free them of the superabundant lime or other mixture of water in which the soaking has been effected, and then they may be hung for a time to drain off excess of moisture. The glue, size, or gelatine is then applied to the hair or other such covering by pouring it thereon in a fluid or semi-fluid condition and in sufficient quantity, or by immersion of the skin in a bath of such matter. When a sufficient coating of the glue, size, or gelatine has been applied to the skin to hold the hair or other such covering thereof in correct relative position during the removal of the natural skin, such skin, with this temporary holding means applied is then laid so as to prevent the holding means from

running off until it has become sufficiently cool or set to hold the hair or other such covering in position when the natural skin may be pulled from the roots of the hair or other such covering, leaving the hair or other such covering held by the glue, size, or gelatine employed as the temporary holding means, with the roots of hair or other such covering projecting therefrom. The matter or composition to form the artificial skin will then be applied in a liquid state to such roots of hair or other such covering while the hair or other such covering is being held by the glue, size, or gelatine.

The artificial skin may be formed of India rubber, gutta-percha, or compounds thereof, ("vulcanized" or "prepared,") boiled or other oils capable of being rendered suitably drying, or other suitable adhesive matters, which may be strengthened, if desired, by woven fabrics.

When employing boiled linseed or other oils its adhesiveness may be increased by the combination therewith of a small quantity of litharge or other suitable drying or adhesive matter.

In order to render the caoutchouc and gutta-percha more lasting and less affected by changes of temperature, we combine with them sulphur in any suitable manner capable of producing those results, preferring to apply to the artificial skins of caoutchouc or gutta-percha a solution of chloride or hypochloride of sulphur in bisulphuret of carbon, (or other suitable solvent of caoutchouc or gutta-percha.) When using bisulphuret of carbon, we take forty parts thereof and add to it one part of chloride or hypochloride of sulphur prepared as neutral as possible, and we allow the solution to remain in contact with the artificial skin of caoutchouc or gutta-percha a longer or shorter time, according to the thickness or substance of the article; but we find that for general purposes a thin sheet is generally sufficiently changed in less than a minute.

When the caoutchouc or compounds thereof used to form the artificial skin has become sufficiently set to hold the hair or other such covering firmly by the roots thereof, and the process of vulcanization or preparing, as above referred to, has been effected, then the artificial skin, with the hair or other such covering



thereon, is well washed in hot water, by which the glutinous or gelatinous matter which has been employed as the temporary holding medium may be readily removed.

In some cases we employ carbonate, sulphite, sulphate, phosphate, acetate, or hyposulphite of soda as a substitute for the animal glue or gelatine. In such case the salt is employed in a state of fusion, or as a saturated solution, such that when cool it will set to a sufficient degree of solidity to hold the hair or other covering in correct relative position.

Having thus described our invention and means which we adopt in carrying the same into effect, we would have it understood that what we claim is—

The acting first on the hair on the natural skin by soaking the same in lime-water or other suitable liquid such as practiced by tanners,

and the use of glue, size, gelatine, carbonate, sulphate, sulphite, phosphate, acetate, or hyposulphite of soda to hold the hair or other covering during the removal of the natural skin, and the application to the roots thereof of India rubber, gutta-percha, vulcanized or prepared, boiled or linseed-oils capable of being rendered suitably drying, or other suitable adhesive matters, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

J. R. TUSSAUD.

F. C. TUSSAUD.

Witnesses:

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England.*