

UNITED STATES PATENT OFFICE.

CHARLES F. HIME AND JOHN H. NOAD, OF LONDON, ENGLAND.

PROCESS OF WATERPROOFING AND PRESERVING TEXTURES AND OTHER MATERIALS.

SPECIFICATION forming part of Letters Patent No. 456,821, dated July 28, 1891.

Application filed October 22, 1889. Serial No. 327,840. (No specimens.) Patented in England May 8, 1889, No. 7,715; in Belgium May 8, 1889, No. 86,160; in France May 8, 1889, No. 198,076; in Germany May 9, 1889, No. 50,936; in Canada November 4, 1889, No. 32,739; in Victoria November 18, 1889, No. 7,278; in New South Wales November 20, 1889, No. 1,859; in Turkey November 26, 1889, No. 158; in New Zealand November 28, 1889, No. 4,095; in Italy December 5, 1889, LII, 103; in Cape of Good Hope December 17, 1889, C. D. 28; in Natal December 18, 1889; in Tasmania December 23, 1889, No. 780/10; in South Australia December 23, 1889, No. 1,486; in South African Republic December 24, 1889, No. 141; in Brazil December 27, 1889, No. 813; in Queensland December 30, 1889, No. 910; in Spain February 1, 1890, No. 10,241; in Austria-Hungary February 17, 1890, No. 44,671; in India March 28 and April 24, 1890; in Straits Settlements May 2/6, 1890; in Ceylon May 30, 1890, No. 345; in Hong-Kong June 13, 1890, and in Portugal January 7, 1891, No. 1,539.

To all whom it may concern:

Be it known that we, CHARLES FREDERICK HIME and JOHN HENRY NOAD, citizens of England, residing, respectively, at 100 St. Paul's Road, Camden Town, London, in the county of London, England, and at 12 Prestbury Road, East Ham, London, in the county of Essex, England, have invented a new and useful Process of Waterproofing and Preserving Textures and other Materials, (for which we obtained patents in Great Britain, dated May 8, 1889, No. 7,715; in Austria-Hungary, dated February 17, 1890, No. 44,671; in Belgium, dated May 8, 1889, No. 86,160; in Brazil, dated December 27, 1889, No. 813; in France, dated May 8, 1889, No. 198,076; in Germany, dated May 9, 1889, No. 50,936; in Italy, dated December 5, 1889, Vol. LII, 103; in Portugal, dated January 7, 1891, No. 1,539; in South African Republic, dated December 24, 1889, No. 141; in Turkey, dated November 26, 1889, No. 158; in Spain, dated February 1, 1890, No. 10,241; in India, dated March 28 and April 24, 1890; in New South Wales, dated November 20, 1889, No. 1,859; in Canada, dated November 4, 1889, No. 32,739; in Victoria, dated November 18, 1889, No. 7,278; in New Zealand, dated November 28, 1889, No. 4,095; in Tasmania, dated December 23, 1889, No. 780/10; in South Australia, dated December 23, 1889, No. 1,486; in Queensland, dated December 30, 1889, and April 16, 1890, No. 910; in Ceylon, dated May 30 and July 5, 1890, No. 345; in Hong Kong, dated June 13, 1890; in Straits Settlements, dated May 2/6, 1890; in Natal, dated December 18, 1889, and in Cape of Good Hope, dated December 17, 1889, C. D. 28,) of which the following is a specification.

Textures and other materials have been waterproofed and preserved against decay or ravages of insects by treating them with cupro-ammonia; but this treatment is in many

cases objectionable on account of its affecting the colors and dyes of the materials treated.

Our invention relates to means of waterproofing and preserving without materially affecting the colors or dyes of the materials treated. For this purpose we dissolve cotton or other substance containing cellulose in a strong solution of cupro-ammonia containing at least four per cent., by weight, of copper, the quantity of cellulose being about three per cent., by weight, of the solution. From this solution we precipitate the copper by adding scrap-zinc to the solution, and we thus convert the liquid into a colorless mucilaginous solution of ammonia, zinc, and cellulose. In a bath of this mucilaginous liquid we soak the texture or other material, so that it is thoroughly impregnated. We then squeeze out the superfluous liquid and dry the material, calendering it if necessary.

Having thus described the nature of our invention and the best means we know for carrying the same into practical effect, we claim—

The herein-described process of waterproofing and preserving textures and other materials, which consists in treating them with a solution of cellulose and ammonia-zinc, substantially as specified.

In testimony whereof we have signed our names to this specification, in the presence of two subscribing witnesses, this 30th day of September, A. D. 1889.

CHARLES F. HIME.
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Witnesses:

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