

UNITED STATES PATENT OFFICE.

HENRI DÉSIRÉ TURGARD, OF NANTERRE, FRANCE.

PROCESS OF DENITRATION OF NITRO-CELLULOSE AND ITS COMPOUNDS.

SPECIFICATION forming part of Letters Patent No. 508,124, dated November 7, 1893.

Application filed July 29, 1893. Serial No. 481,863. (No specimens.) Patented in France January 13, 1892, No. 218,759.

To all whom it may concern:

Be it known that I, HENRI DÉSIRÉ TURGARD, of the city of Nanterre, near Paris, France, have invented a certain new and useful Process for the Denitration of Nitro-Cellulose and its Compounds, (for which I have obtained Letters Patent in France for fifteen years, dated January 13, 1892, No. 218,759,) of which the following is a full, clear, and exact description.

My invention relates to a process for the denitration of nitro-cellulose and its compounds such as celluloid, xyloidine and the like.

For many uses nitro-cellulose, and its compounds, require to be denitrated in order to render them less explosive and deprive them of their characteristic inflammable properties. For instance, the threads of nitrated cellulose employed in the manufacture of filaments for incandescent electric lamps necessarily require to be denitrated before being carbonized. Similarly the threads of artificial silk obtained from nitro-cellulose require to undergo the same treatment in order to prevent their too-ready inflammability. Hitherto the denitration of nitro-cellulose has been effected by the employment of hydro-sulphate of ammonia or ammonium sulphide or other alkaline hydro-sulphates, but the filaments are liable to be stained by the deposit of sulphur consequent on the easy decomposition of these matters.

My invention consists in a process whereby the same object is attained by the addition to hydro-sulphate of ammonia of any metallic sulphide, sulphide of silver for example, soluble in hydro-sulphate of ammonia whereby the objections above indicated are avoided.

My invention may be carried out in practice in the following manner: With an apparatus for providing sulphureted hydrogen I combine washing bottles and cause the gas to

enter a bottle containing a nitrate of silver solution and then through one or more bottles filled with ammonia in order to intercept the gas not used. The sulphureted hydrogen converts the nitrate of silver into sulphide of silver which is collected by means of a filter. To prepare the denitrating solution, the silver sulphide is dissolved in hydrosulphate of ammonia in the proportion of about two grams per liter. This solution when diluted in water is used for effecting the denitration of threads or slabs of nitrated cellulose or their compounds by immersion, care being taken that the temperature does not exceed about 20° centigrade. If by this treatment the denitrated matters acquire an objectionable brown tint they may be bleached or whitened by means of any suitable decolorizing agent, such as oxygenated water for example.

It is to be understood that the mode of preparation hereinbefore indicated may be varied without departing from the invention which resides in the process of denitration of nitro-cellulose and its compounds by means of a solution of any metallic sulphide soluble in hydrosulphate of ammonia.

I claim—

The hereindescribed process for denitrating nitro-cellulose and its compounds such as celluloid, xyloidine and the like which consists in immersing the said material in a solution of hydro-sulphate of ammonia and a metallic sulphide, substantially as specified.

The foregoing specification of my process for the denitration of nitro-cellulose and its compounds signed by me this 5th day of July, 1893.

HENRI DÉSIRÉ TURGARD.

Witnesses:

ROBT. M. HOOPER,
ALBERT MOREAU.