

UNITED STATES PATENT OFFICE.

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MANUFACTURE OF NITRATED CELLULOSE PRODUCTS.

1,302,455.

Specification of Letters Patent.

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No Drawing.

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To all whom it may concern:

Be it known that we, WARDLAW BROWN THOMSON, a subject of the King of England, and residing at 31 St. George's street, Cape Town, Union of South Africa, WALTER DALRYMPLE SEVERN, a subject of the King of England, and residing at Junior Civil Service Club, Greenmarket Square, Cape Town, Union of South Africa, and GEORGE TWYXCROSS, a subject of the King of England, and residing at 31 St. George's street, Cape Town, Union of South Africa, have invented certain new and useful Improvements in the Manufacture of Nitrated Cellulose Products, of which the following is a specification.

The present invention relates to nitrated cellulose products, of which explosives such as trinitrocellulose, and industrial products of the celluloid type, are examples.

According to the practice existing hitherto, it has been usual to employ cotton as the cellulose material from which the products referred to are made, owing to certain well recognized technical advantages for this purpose which cotton possesses as compared with other forms of cellulose.

As the result of careful experiment, we have discovered that the wood of the baobab tree has much the same technical qualities as cotton for the purpose in view. It is composed of almost pure cellulose and is fibrous in a high degree. Under a microscopic examination the fibers are seen closely to resemble cotton fiber and they behave very similarly in the process of nitration. The nitrated product is, like that from cotton, readily soluble in acetone. The wood at the center of the tree is the best, but the whole of the tree can be used except the bark.

The present invention accordingly consists in employing such wood as the cellulose ma-

terial in the manufacture of nitrated cellulose products. It also consists in the nitrated product so formed.

In order to prepare it for nitration, the wood is appropriately treated to reduce it to the proper mechanical condition and to remove resinous or other undesirable constituents.

This operation may be carried out as follows:—The wood is mechanically disintegrated by roughly tearing apart the fibers longitudinally and to some extent transversely, until the fibers are reduced to shreds of about 1 to 2 millimeters thickness.

It is then boiled in weak caustic soda solution, drained and washed until the soda is substantially removed. Subsequently it is treated with weak hydrochloric acid in a pulping apparatus until the fiber is substantially separated into single strands; after which, it is washed free from acid and dried. After any remaining lumps have been removed from the fiber, the latter is nitrated in the ordinary manner according to the product required.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

As a new product, nitrated baobab wood or fiber.

Signed at Cape Town this 15th day of February 1918.

In witness whereof we have hereunto set our hand in the presence of two witnesses.

W. B. THOMSON.
WALTER D. SEVERN.
G. TWYXCROSS.

Witnesses:

E. L. TWENTYMAN INNS,
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