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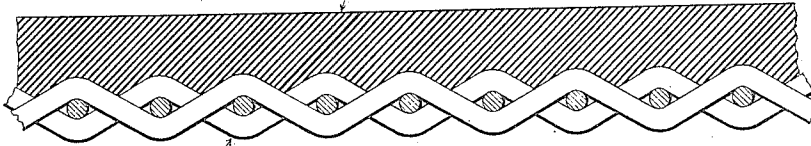
IMPREGNATION OF FABRICS FOR BALLOONS AND THE LIKE.

APPLICATION FILED JAN. 18, 1919.

1,302,064.

Patented Apr. 29, 1919.

COATING OF E.G. RUBBER, CERESIN WAX, LITHARGE AND SULFUR, APPLIED AND
SUBSEQUENTLY VULCANIZED, MAY BE APPLIED IN DISSOLVED STATE.



BALLOON FABRIC IMPREGNATED WITH SOFT PARAFFIN
OR PETROLATUM ETC.

INVENTOR.

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IMPREGNATION OF FABRICS FOR BALLOONS AND THE LIKE.

1,302,064.

Specification of Letters Patent.

Patented Apr. 29, 1919.

Application filed January 18, 1919. Serial No. 271,917.

To all whom it may concern:

Be it known that I, JOSEPH HAROLD MANDLEBERG, a subject of the King of Great Britain and Ireland, and resident of Albion Waterproofing Works, Pendleton, Manchester, England, have invented certain new and useful Improvements Relating to the Impregnation of Fabrics for Balloons and the like, of which the following is a specification.

This invention relates to the treatment of rubber or like coated fabrics or materials for use in the production of balloons and the like, and has for its object to increase in a simple and effective manner the degree of impermeability to the hydrogen or other content of the balloon or the like without materially increasing the weight of the finished fabric or material.

I have found by investigation and experiment that if the uncoated side of the fabric or material of which the balloon or the like is made be impregnated with petroleum jelly or soft paraffin, the said material possesses a considerably higher degree of impermeability to hydrogen than the untreated material, while the weight of the latter is only slightly increased.

My invention therefore comprises the impregnation of the uncoated side of the balloon or like fabric or material with petroleum jelly or soft paraffin.

In one convenient application of my invention, the balloon fabric or material after being coated on the outside with rubber or the like, and after vulcanization, has petroleum jelly or soft paraffin spread in a thin film on its uncoated side in any convenient manner. The petroleum jelly or soft paraffin may be applied direct or it may be dissolved in a suitable solvent which facilitates the application, the fabric afterward being heated for the removal of the solvent by evaporation. To obtain the best results, it is necessary to employ petroleum jelly or soft paraffin of a very high degree of purity.

I do not limit myself to any particular method of impregnating the fabric. Such impregnation may be effected before the fabric is coated, but we have found the method above described to give good results.

I desire it to be understood that petroleum jelly or soft paraffin as hereinbefore

referred to, is the yellowish semi-solid or viscous mixture of hydrocarbons usually made by purifying the residue left on distilling petroleum (*i. e.* the still bottoms left when the gasoline, kerosene, and light lubricating oil is distilled from crude petroleum).

I am aware that it has heretofore been proposed to treat rubber or rubber coated goods with petroleum jelly and other oily substances to cause the rubber to distend and swell in order to close the pores therein. Also to pass the material after coating, drying and vulcanizing through a solution of heavy hydrocarbon oil.

In the accompanying drawing I have shown in magnified section, the coated fabric forming the product of the process herein described, it being understood that the legends thereon are given for the purpose of illustration, and not for the purpose of limiting the invention thereto.

The process of the present invention may be applied to fabrics coated in accordance with the process described, and with the composition claimed, in my co-pending application 271,918 filed concurrently herewith, said composition comprising 100 parts of rubber, 1 to 5 parts of ceresin wax or other suitable wax, $\frac{1}{2}$ to 2 parts of litharge and 2 to 4 parts of sulfur, especially precipitated sulfur, together with a suitable liquid solvent or diluent such as solvent naphtha.

Having now particularly described my invention what I claim as new and desire to secure by Letters Patent is:—

1. The process of rendering the coated fabric of balloons and like gas containers more impermeable to the gaseous content of the said containers, consisting in the impregnation of the said fabric only with hydrocarbon jelly, as set forth.

2. A process of rendering coated fabric of balloons and like containers more impermeable to the gaseous content thereof, which comprises impregnating the fabric base, to which a rubber composition is permanently attached, with a jelly-like hydro-carbon material without substantially affecting the coating on said fabric.

In testimony whereof I have signed my name to this specification.

JOSEPH HAROLD MANDLEBERG.