

UNITED STATES PATENT OFFICE

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WATERPROOFING AND TO THE TREATMENT OF MATERIALS WITH A VIEW TO
RENDERING THEM RESISTANT TO THE ACTION OF ATMOSPHERIC CONDITIONS

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This invention relates to waterproofing and particularly to the waterproofing of gut. Gut, as is well known, is used for a variety of purposes under tension as, for instance, in the stringing of tennis rackets and it is found that in consequence of variations in humidity of the atmosphere the tension of the gut varies with the result that it may be subjected to stress resulting in its breakage.

The invention is based upon the observation that higher fatty acid esters of cellulose dissolved in suitable solvents may be employed for waterproofing or rendering gut resistant to the effects of variation in atmospheric humidity.

The invention consists in gut waterproofed or rendered resistant to the action of humidity by treatment with compositions containing in solution higher fatty acid esters of cellulose and articles, particularly tennis rackets, strung with such gut.

By the expression "higher fatty acid esters" as used herein is meant esters of fatty acids the glycerides of which constitute the essential constituents of non-drying oils and fats and as an example of such fatty acid esters the stearic acid esters may be given.

Certain esters of cellulose of higher fatty acid are insoluble in the majority of organic solvents while others, for instance di-stearate of cellulose, are soluble in solvents such as xylol and in the form of a solution may be conveniently employed in carrying the invention into effect.

A suitable composition in accordance with the invention adapted for use as a varnish or impregnating medium is cellulose di-stearate dissolved in xylol.

By the treatment of gut with such compositions it may be rendered resistant to the action of humidity and for this and other reasons may exhibit a greater resistance to wear than gut which has not been treated.

In a particular case it was found that by impregnating the gut strings of lawn tennis rackets with solutions of cellulose di-stearate in xylol the gut after the rackets had been in use and exposed to atmospheric conditions over a period of several weeks exhibited no sign of wear and no breakage of the gut oc-

curred whereas in similar conditions rackets strung with untreated gut or gut treated in known manner needed mending several times during the same period.

Gut treated with compositions containing higher fatty acid esters of cellulose is found to be much more resistant to atmospheric conditions than gut which has been treated in known manner with varnishes consisting of solutions of resin alone or in admixture with oils or with drying oils.

Presumably, the advantages of compositions in accordance with the invention as applied to the treatment of gut, for instance, are to be attributed to the resistance of the same to the saponifying influence of moist air and to their greater resistance to the penetration of moisture as compared with the varnishes or compositions which are ordinarily used.

Where desirable or necessary oils or resins, fatty oils of a non-drying, semi-drying, or drying character, or mineral oils or waxes, artificial or synthetic resins or mixtures of these materials may be included in the compositions to be applied to the gut, to be waterproofed.

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

1. Gut treated with a higher fatty acid ester of cellulose.
2. Gut treated with a stearic acid ester of cellulose.
3. Gut treated with a stearic acid ester of cellulose in association with a modifying agent.
4. Gut treated with a stearic acid ester of cellulose in association with an oleaginous material.

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

RICHARD LANT.