

# UNITED STATES PATENT OFFICE.

ROBERT R. GRAF, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF TO  
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## COMPOSITION FOR MAKING FABRICS FIRE-PROOF.

SPECIFICATION forming part of Letters Patent No. 436,599, dated September 16, 1890.

Application filed June 13, 1890. Serial No. 355,359. (No specimens.)

*To all whom it may concern:*

Be it known that I, ROBERT R. GRAF, a citizen of the United States, and a resident of Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Compositions for Making Fabrics Fire-Proof; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in compounds for rendering textile and woven fabrics, dress goods, paper, paint, and other substances or material fire-proof.

The invention consists in the novel composition hereinafter fully set forth and claimed.

In preparing my improved compound I take of sulphate of ammonia, seven parts; phosphate of ammonia, five parts; sal-ammoniac, two parts; sodium tungstate, six parts; and clear water, one hundred parts. These materials or substances are thoroughly mixed and commingled together, the result being a clear, colorless liquid, in which the solid particles are held in suspension.

The dress goods or other fabrics which it is desired to render fire-proof are dipped into this solution and thoroughly impregnated or saturated therewith. They are then removed and dried without wringing, when they are ready for ironing. The ironing or mangling should be performed with brass plates, so as to avoid any liability of spotting the material

or fabric, which is liable to happen with ordinary iron mangles or sad-irons.

The fabrics thus impregnated with the solution will be rendered almost absolutely fire-proof, as they will not burn with a blaze under the highest temperatures, but simply be charred or carbonized.

Any description of textile or woven fabric may be impregnated with the solution, and paint may also be rendered fire-proof by adding to one hundred parts of the same twenty-five parts of pulverized lime should also be added to the paint compound, the amount varying with the different pigments used.

A small proportion of lime may also be used in the solution when employed for impregnating fabrics, the amount varying according to the character and nature of the goods.

Having thus described my invention, what I claim is—

A fire-proof composition consisting of sulphate of ammonia, phosphate of ammonia, sal-ammoniac, lime, sodium tungstate, and water, in about the proportions herein specified.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

ROBERT R. GRAF.

Witnesses:

JNO. T. MADDOX,  
AUGUST PETERSON.