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HENRY A. GARDNER, OF WASHINGTON, DISTRICT OF COLUMBIA

LUMINOUS FILAMENT

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The present invention relates to artificial filaments and resides more particularly in artificial filaments having phosphorescent properties and to processes for preparing the same.

In my co-pending application Ser. No. 191,276 filed May 13, 1927, I have disclosed the powerful action of relatively small amounts of titanium compounds in causing certain optical effects when embedded in extruded filaments such as artificial silk. The action of these compounds in absorbing the rays of light and thus giving to the clear filaments a dull appearance similar to that of real silk, is disclosed.

I have now found that even more novel optical effects may be obtained by the introduction of a substance having phosphorescent properties, which substances give to the filaments novel effects in the dark.

The invention will be more fully described by reference to the following example which illustrates a preferred method for producing phosphorescent filaments.

A light-emitting substance or "radio-active" material is selected such as, for instance, a titanium oxide or similar material treated with radium bromide. About 5 grams of such material are incorporated by thorough admixture with about 100 grams of a viscous solution of cellulose filament-forming material, such as a solution of cellulose acetate in acetone, solutions of cellulose ethers, of viscose or of other filament-forming material. The resulting mixture is subsequently extruded through capillaries to form artificial filaments which later may be further processed in the manner known in the manufacture of artificial silk. The filaments thus produced exhibit a remarkable and beautiful phosphorescent glow when brought into a darkened room.

Substantially the same phosphorescent effects as are obtained by the incorporation into the artificial filament of a radio-active material may be produced by substituting for the radio-active bodies set out in the above examples substantially equivalent amounts of other phosphorescence-producing bodies, such as, for example, barium sulfide, calcium sulfide, chlorophene, and the like.

The phosphorescent filaments produced by the foregoing process or by an equivalent process are susceptible to subsequent dyeing treatment with organic dyestuffs in the known manner whereby to produce various colors which will give novel effects due to the phosphorescent properties of the base filament.

I claim:

As a new article of manufacture an artificial silk filament consisting essentially of cellulose and containing a compound of titanium and a radio-active substance, the latter in relatively small amount.

In testimony whereof, I affix my signature.

HENRY A. GARDNER.