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UNITED STATES PATENT OFFICE.

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METALLIZING PROCESS.

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This invention relates to a process for metallizing organic substances, more particularly those of animal or vegetable origin. Such substances are for instance textile materials of all kinds (cotton, sheep's wool, silk, artificial silk and the like). The great importance of the invention resides in the fact that the threads thus treated are coated with a barely measurable layer of metal, such as is deposited in the electric atomizing process.

The process consists in that the articles to be metallized are exposed to cathode rays in a vacuum, particles of molecular size of the metal of which the cathode consists being deposited on the articles to be treated in the form of a uniform, unbroken, firmly adhering and highly lustrous coating.

The materials are exposed to radiation in a vacuum equal to a column of mercury about $\frac{1}{50}$ mm. high with a high tension direct or alternating current. When direct current is used, only the negative electrode, and when alternating current is used, both electrodes emit metal particles.

For conducting away the heat developed the electrodes are preferably provided with cooling means, for instance by constructing them in the form of coiled tubes, through which water flows.

The electrodes need not be made entirely of the metal to be atomized, but a galvanically gilded copper electrode, for instance, may be used, from which the gold is then atomized.

Gold threads as hitherto made by the methods known to the art, were so excessively thick that it was impossible or at least difficult to use them for normal textile purposes.

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

1. A process of metallizing textile fibres which consists in submitting the fibres in a vacuum to the action of cathode radiation emanating from a cooled electrode.

2. The process of metallizing textile fibres with gold which comprises subjecting the fibres in a vacuum to the action of a cooled radiating gold plated cathode.

In testimony whereof I affix my signature.

DR. JULIUS v. BOSSE.