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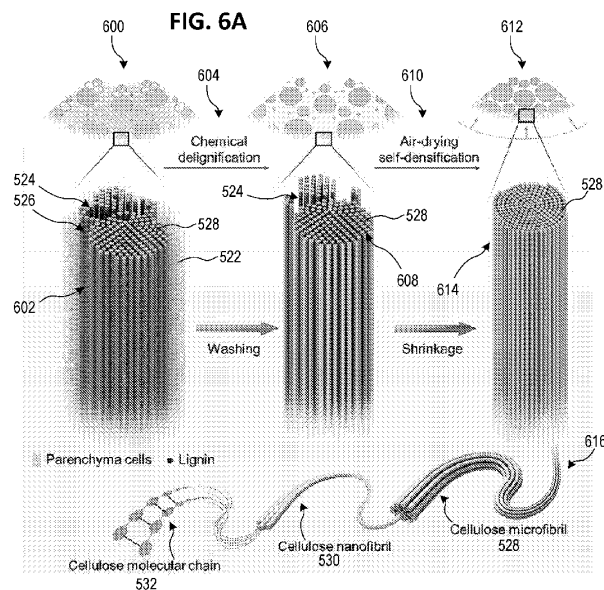
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(54) Title: EXTRACTION OF DELIGNIFIED, CELLULOSE-BASED FIBERS FROM NATURAL PLANT MATERIAL, AND MATERIALS INCORPORATING SUCH FIBERS



(57) Abstract: A piece of natural plant material is subjected to one or more chemical treatments to remove substantially all lignin therefrom, thereby allowing the extraction of delignified, cellulose-based fibers. For example, the natural plant material can be a grass, such as bamboo or gladiolus. Subsequent drying of the extracted fiber densifies the structure, yielding improved mechanical properties. In some embodiments, the extracted fibers can be used, either alone or in combination with other materials, as a structural material. For example, the extracted fibers can be embedded within, infiltrated with, coated by, or otherwise combined with a polymer or concrete to form a composite material.

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