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(54) **NANOSTRUCTURES PATTERNED BY ELECTROSTATIC PRINTING**

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See application file for complete search history.

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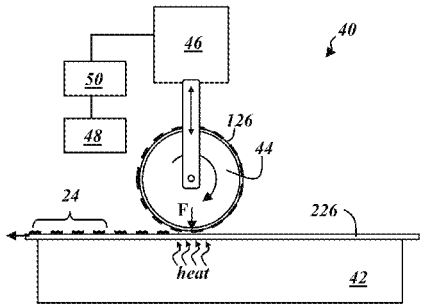
(57) **ABSTRACT**

An electrostatic printing method such as laser printing can be employed for cost-effective and scalable patterning of nanostructure growth catalysts onto growth substrates, either directly or via one or more transfer substrates. Particles comprising a nanostructure growth catalyst are deposited onto the substrate in an electrostatically defined growth pattern. Another aspect of the method includes pressing a mixture of a nanostructure growth catalyst and a binder against the substrate to bond the mixture to the substrate. Nanostructures are grown from the deposited pattern in known nanostructure growth environments. The method allows a user to define a nanostructure growth pattern using familiar, user-friendly computer programs such as word processors, CAD, or other graphics software. Carbon nanotube forests can be grown from magnetic ink character recognition (MICR) toner printed on or transferred to the substrate.

16 Claims, 13 Drawing Sheets