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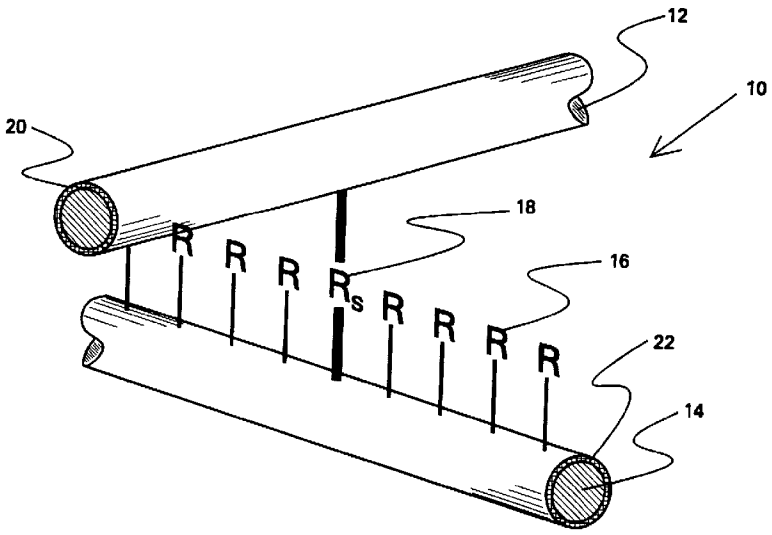
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(54) Title: STABILIZATION OF CONFIGURABLE MOLECULAR MECHANICAL DEVICES



(57) Abstract: A route to the fabrication of electronic devices is provided, in which the devices consist of two crossed wires sandwiching an electrically addressable molecular species. The approach is extrememly simple and simple and inexpensive to implement, and scales from wire dimentions of several micrometers down to nanometer-scale dimentions. The electronic devices can be used to produce crossbar switch arrays, logic devices, memory devices, and communication and signal routing devices. The construction of molecular electronic devices is achieved on a length scale than can range from micrometers to nanometers via a straightforward and inexpensive chemical assembly procedure. The molecular switchable devices in the cross-bar geometry are configurable while the conformational change is controlled by intramolecular forces that are stronger than hydrogen bonding. The method of the present invention is directed to configuring an ensemble of molecular switches in a prescribed manner in cross-bar geometry and then making such configuration either substantially permanent or stable with respect to temperature fluctuations.

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