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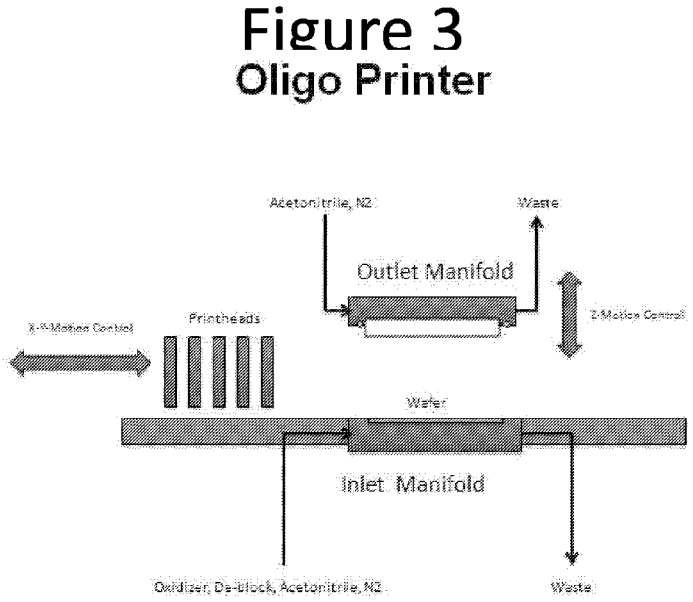

(57) **Abstract**: De novo synthesized large libraries of nucleic acids are provided herein with low error rates. Further, devices for the manufacturing of high-quality building blocks, such as oligonucleotides, are described herein. Longer nucleic acids can be synthesized in parallel using microfluidic assemblies. Further, methods herein allow for the fast construction of large libraries of long, high-quality genes. Devices for the manufacturing of large libraries of long and high-quality nucleic acids are further described herein.

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