

BUSINESS

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Concurrent Technologies Corp. awarded patent

BY MARK PESTO
MPESTO@TRIBDEM.COM

Concurrent Technologies Corp. has been awarded a patent for "Additive Manufacturing Using Metals from the Gaseous State," a concept that the Johnstown-based scientific research and development company said "advances the already state-of-the-art additive manufacturing process."

"This is a different approach for additive manufacturing," Edward J. Sheehan Jr., Concurrent Technologies Corp. president and CEO, said in a statement released last week.

"Our engineers creatively applied a basic metallurgical theory for the manufacture of a real part. Their work illustrates the innovative solutions that

"Their work illustrates the innovative solutions that CTC's engineers, scientists and other professionals create to help our clients achieve their goals."

**EDWARD SHEEHAN JR.,
CONCURRENT TECHNOLOGIES CORP.
PRESIDENT AND CEO**

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Additive manufacturing is a process in which layers of solid material are deposited on a substrate to create a three-dimensional object from a computer-generated design.

CTC's patented process uses carbon monoxide, a gas that reacts with any of 18 different metals to form a more complex gas at high temperatures. The metal, in turn, is then deposited on a hotter substrate that defines the shape of the finished object. This action frees up the original carbon monoxide to

react with additional metallic atoms and continue the additive process.

"This process ... effectively produces seamless, thin-walled, metallic components," CTC officials stated. "Thin-walled components, including those with arbitrary shapes and without internal support structures, are challenging to produce with most other forms of (additive manufacturing)."

The inventors of the process are Juan Valencia, Ph.D., adviser engineer; Mike Tims, adviser engineer; and Joe Pickens, former CTC employee. The number of the patent is 9,587,309 B1.

Mark Pesto is a reporter for The Tribune-Democrat. Follow him on Twitter @markpesto.