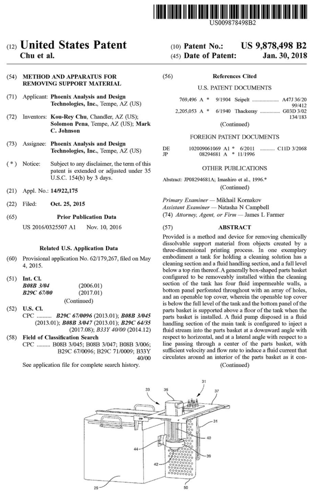
U.S. Patent on the Method and Apparatus for Removing 3D Printing Support Materials Awarded to PADT



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Chu et al.

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(54) METHOD AND APPARATUS FOR REMOVING SUPPORT MATERIAL

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CPC ***B29C 67/0096*** (2013.01); ***B08B 3/045*** (2013.01); ***B08B 3/047*** (2013.01); ***B29C 64/35*** (2017.08); *B33Y 40/00* (2014.12)

(58) **Field of Classification Search**
CPC B08B 3/045; B08B 3/047; B08B 3/006; B29C 67/0096; B29C 71/0009; B33Y 40/00
See application file for complete search history.

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(57) **ABSTRACT**

Provided is a method and device for removing chemically dissolvable support material from objects created by a three-dimensional printing process. In one exemplary embodiment a tank for holding a cleaning solution has a cleaning section and a fluid handling section, and a full level below a top rim thereof. A generally box-shaped parts basket configured to be removeably installed within the cleaning section of the tank has four fluid impermeable walls, a bottom panel perforated throughout with an array of holes, and an openable top cover, wherein the openable top cover is below the full level of the tank and the bottom panel of the parts basket is supported above a floor of the tank when the parts basket is installed. A fluid pump disposed in a fluid handling section of the main tank is configured to inject a fluid stream into the parts basket at a downward angle with respect to horizontal, and at a lateral angle with respect to a line passing through a center of the parts basket, with sufficient velocity and flow rate to induce a fluid current that circulates around an interior of the parts basket as it con-
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PADT's Support Cleaning Apparatus (SCA) System is the Standard for Soluble Support Removal and is Bundled with Many Stratasys 3D Printers

TEMPE, Ariz. - Oct. 2, 2018 - *PRLog* -- To meet the need for improving the process of removing support material often required to hold up a part during 3D Printing, PADT, the Southwest's largest provider of simulation, product development, and additive manufacturing services and products, developed its Support Cleaning Apparatus (SCA) systems. PADT today announced that it has been awarded a U.S. patent for its SCA system invented by Rey Chu, Solomon Pena and Mark C. Johnson.

PADT's SCA systems are currently sold exclusively by Stratasys, Ltd. (SSYS) for use with any of the Stratasys printers that use the Soluble Support Technology (SST) material. Known for its innovation in the industry, this award marks PADT's 4th patent to-date.

"When Stratasys first introduced its soluble support material that can be dissolved with chemicals to help remove supports in the 3D Printing process, we knew that existing support removal devices were not reliable or efficient enough to handle the innovation," said Rey Chu, co-founder and principal, PADT. "We used computational fluid dynamics simulation, our extensive product development skills, and knowledge from over two decades of 3D Printing experience to design the industry's most efficient and reliable support cleaning solution. We are proud that our SCA system has now been granted patent protection."

The patent protects the intellectual property applied by PADT to achieve its industry-leading performance and reliability goals of soluble support removal. Critical information in the patent includes how the SCA system is laid out and has different sections, each with a purpose for achieving the intended results. It also identifies the geometry and orientation of the system that forces the water to move in a specific pattern that cleans the parts more efficiently.

About PADT Support Cleaning Apparatus Systems

PADT shipped its first SCA system in November 2008 and has since reached more than 12,000-unit sales worldwide. There are currently two units in the SCA family, the SCA-1200HT with a 10x10x12" part basket and the larger SCA 3600 with a 16x16x14" part basket. They offer temperature ranges suitable to remove support from all Fused Deposition Modeling (FDM) and PolyJet materials including: ABS, ASA, PC, Nylon, and PolyJet Resins.

The PADT SCA system has received impressive reviews from 3D printing practitioners. PADT is using its experience, the IP captured in this patent, and new concept to develop additional systems to satisfy a broader set of needs across the 3D Printing industry. For more information on the PADT SCA family of products, please visit http://www.padtinc.com/sca.

About Phoenix Analysis and Design Technologies

Phoenix Analysis and Design Technologies, Inc. (PADT) is an engineering product and services company that focuses on helping customers who develop physical products by providing Numerical Simulation, Product Development, and 3D Printing solutions. PADT's worldwide reputation for technical excellence and experienced staff is based on its proven record of building long-term win-win partnerships with vendors and customers. Since its establishment in 1994, companies have relied on PADT because "We Make Innovation Work." With over 80 employees, PADT services customers from its headquarters at the Arizona State University Research Park in Tempe, Arizona, and from offices in Torrance, California, Littleton, Colorado, Albuquerque, New Mexico, Austin, Texas, and Murray, Utah, as well as through staff members located around the country. More information on PADT can be found at www.PADTINC.com.

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Source	PADT, Inc.
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