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## EASY SIEVE CLEANING SYSTEM IN MATERIAL MANAGEMENT STATION

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## **Easy Sieve Cleaning System in Material Management Station**

**Abstract:** To clean a powder sieve in an additive manufacturing printer, an aspiration system integrated into the mesh sieve is connectable to an external vacuum cleaner to aspirate waste powder without damage to the delicate mesh.

This disclosure relates to the field of additive manufacturing.

A technique is disclosed that easily cleans a powder sieve in a 3D printer.

Some 3D printers for additive manufacturing use a powder as the raw material for fabricating parts layer-by-layer. After each layer is formed, some of the powder that was not used in forming that layer of the part can be recycled in a material management subsystem. Smaller size powder particles can be reused without impairing the quality of fabricated parts, while larger powder particles cannot. The powder recycling system uses an inline sieve to separate the powder particles by size, and periodically the sieve needs cleaning to remove the waste material. The sieve is difficult for a user to access in the printer, and it has a delicate mesh which can be easily damaged during manual cleaning.

According to the present disclosure, and as understood with reference to the Figure, an externally-accessible aspiration port 20 is connected to an aspiration system integrated in the mesh sieve 30 of a material management subsystem 10.

Openings in the sieve frame 40 allow removal by aspiration of material that has collected in the mesh 50 of the sieve 30. Ducts connect these sieve frame openings with the aspiration port 20 external to the material collection system. An external vacuum cleaner (not shown) is connectable by a user to the aspiration port 20 to aspirate waste from the sieve 30 without difficulty or damage.

The disclosed technique advantageously allows fast and easy collection of waste material separated by the sieve without direct access to the delicate mesh by the user. It also allows the waste material to be removed without the chance of contamination of the printer itself.

***Disclosed by Ismael Chanclon, Xavier Alonso Becerro, and Gema Garcia, HP Inc.***

