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The Director

of the United States Patent and Trademark Office has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this United States

Patent

grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America, and if the invention is a process, of the right to exclude others from using, offering for sale or selling throughout the United States of America, products made by that process, for the term set forth in 35 U.S.C. 154(a)(2) or (c)(1), subject to the payment of maintenance fees as provided by 35 U.S.C. 41(b). See the Maintenance Fee Notice on the inside of the cover.

Anders Iversen

DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE



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(12) **United States Patent**
Chen et al.

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(54) **REGENERATIVE DISPLACER FOR USE IN A STIRLING ENGINE**

(56)

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* cited by examiner

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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ABSTRACT

A regenerative displacer for use in a stirling engine includes two opposite covers with respective through openings, a body engaging the covers to define an accommodation space therein, a regenerator disposed in the accommodation space, and a rod inserted through the regenerator and one of the covers into a cooling portion of the stirling engine. The regenerator has a plurality of channels. Each channel has two open ends and a heat collecting net engaging each open end. Working gas passing through the regenerative displacer can be concentrated at the open ends and can absorb and release heat quickly because of the heat collecting nets, thereby increasing the efficiency of heat exchange and a temperature difference of the working gas in a thermodynamic cycle. Accordingly, pressure is increased to facilitate a quick reciprocation of a power piston of the stirling engine, and this increases output power and saves energy.

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CPC **F02G 1/057** (2013.01); **F02G 5/02** (2013.01)

(58) **Field of Classification Search**
CPC F02G 1/057; F02G 5/02
See application file for complete search history.

4 Claims, 5 Drawing Sheets

