



(12) **United States Patent**  
**Nilsson**

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(54) **CHANNEL SYSTEM**

(56) **References Cited**

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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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(57) **ABSTRACT**

(51) **Int. Cl.**  
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Present invention relates to a channel system for improving the relation between pressure drop and heat, moisture and/or mass transfer of fluids flowing through said system, said channel system comprising at least one channel comprising at least a first and a second flow director, said channel having a cross-section area A and a first and a second cross-section area A<sub>1</sub>, A<sub>2</sub> at respective flow director, said flow directors extending in a fluid flow direction and transversely to said channel, and comprising an upstream portion, deviating, in said fluid flow direction, from a channel wall of said channel inwardly into said channel, a downstream portion returning, in said fluid flow direction, towards said channel wall, and an intermediate portion located between said upstream and downstream portions, wherein said first cross-section area A<sub>1</sub> at said first flow director is smaller than said second cross-section area A<sub>2</sub> at said second flow director.

(52) **U.S. Cl.**  
CPC ..... **F01N 3/2821** (2013.01); **F28D 9/0062** (2013.01); **F28F 3/025** (2013.01); **F28F 13/06** (2013.01); **F28F 13/12** (2013.01)

(58) **Field of Classification Search**  
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See application file for complete search history.

**33 Claims, 7 Drawing Sheets**

