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**Sullivan**

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(54) **REPLACEMENT FILTER WITH CARTRIDGE AND AUTOMATIC FILTER MEDIA ADVANCE AND WIRELESS COMMUNICATIONS**

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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.

This patent is subject to a terminal disclaimer.

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CPC ..... **B01D 46/18** (2013.01); **B01D 46/22** (2013.01); **B01D 46/4227** (2013.01); **B01D 46/521** (2013.01); **B01D 2273/14** (2013.01)

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

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(57) **ABSTRACT**

A replacement filter deployed within a flow channel with a housing having a first of two or more frame members and a second of two or more frame members that are detachable with an exposure slot formed within the housing. A filter media storage area is within the housing, having unexposed, folded, pleated filter media stored therein. The unexposed folded, pleated filter media is compactly held within the filter media storage area. A motor is coupled to a power supply and in communication with a controller. The motor moving a movement member that advances an unexposed portion of the stacked pleated filter media into the exposure slot, expanding and exposing the unexposed portion of the media to the flow channel while retaining pleats and creating an exposed portion of the filter media. A containment area is provided where the exposed portion of the pleated filter media is collected folded, restacked and compactly stored and retained.

**52 Claims, 21 Drawing Sheets**

