A method and apparatus are provided for constructing a filter element, having enhanced structural capabilities, through use of a molded end cap having first and second foam portions of differing physical properties meeting at a common juncture of the first and second foam portions and simultaneously cured with one another.

**Abstract**

(57) A method and apparatus are provided for constructing a filter element, having enhanced structural capabilities, through use of a molded end cap having first and second foam portions of differing physical properties meeting at a common juncture of the first and second foam portions and simultaneously cured with one another.

**Title**

(54) AIR FILTER ELEMENT WITH COMPOSITE MOLDED END CAP

**Priority Data**


**Applicant** (for all designated States except US): BALDWIN FILTERS, INC. [US/US]; 4400 East Highway, P.O. Box 6010, Kearney, Nebraska 68848 (US).

**Inventor**; and

(75) Inventor/Applicant (for US only): EHRENBERG, Brian T. [US/US]; 1518 6th Avenue, Kearney, Nebraska 68845 (US).

**Agent**; CROWE, Lawrence E.; Reinhart Boerner Van Deuren P.C., 2215 Perrygreen Way, Rockford, Illinois 61107 (US).

**Publication**

Published: with international search report

[Continued on next page]
before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report: 26 June 2008
INTERNATIONAL SEARCH REPORT

A CLASSIFICATION OF SUBJECT MATTER
IPC: B01D 46/02 (2006.01)

USPC: 55/498,499,502,52 1, D1G. 5,264/260,257,271 1,299,46 6, D1G. 48
According to International Patent Classification (IPC) or to both national classification and IPC

B FIELDS SEARCHED
Minimum documentation searched (classification system followed by classification symbols)
U.S : 55/498,499,502,521,D1G. 5,264/260,257,271 1,299,46,6, D1G. 48

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category *</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>US 5,344,601 A (NEWTON) 06 September 1994, Abstract, col 1, line 34 through col. 2, line 2, col. 3, line 3-43.</td>
<td>1-25</td>
</tr>
<tr>
<td>Y</td>
<td>US 6,955,701 B2 (SCHRAGE) 18 October 2005, Figs 1, 4, 12 &amp; 13, col. 5, line 66 through col 6, line 36, col. 7, line 56 through col. 8, line 22, col 8, lines 31-63, col. 19, line 37 through col. 20, line 63.</td>
<td>1-25</td>
</tr>
</tbody>
</table>

* Further documents are listed in the continuation of Box C. See patent family annex.

Date of the actual completion of the international search
22 April 2008 (22.04.2008)

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O Box 1450
Alexandria, Virginia 22313-1450
Facsimile No (571) 273-3201

Authorized officer
Minh-Chau T. Pham
DEBRAH A. THOMAS
Telephone No. (571) 272-0661 PARALEGAL SPECIALIST