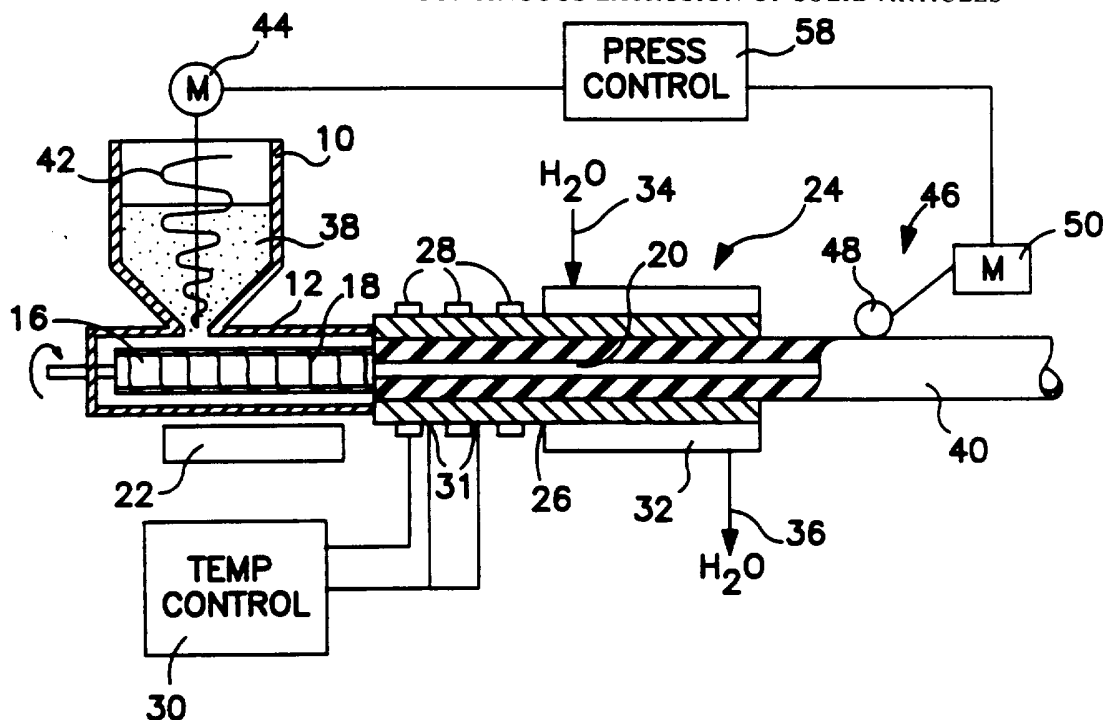




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁵ : B29C 47/34, 47/90 47/92 B01D 39/20	A3	(11) International Publication Number: WO 92/17327 (43) International Publication Date: 15 October 1992 (15.10.92)
(21) International Application Number: PCT/US92/02838 (22) International Filing Date: 6 April 1992 (06.04.92) (30) Priority data: 682,182 8 April 1991 (08.04.91) US 778,266 17 October 1991 (17.10.91) US (71) Applicant: KOSLOW TECHNOLOGIES CORPORATION [US/US]; 180 Osborne Street, Bridgeport, CT 06605 (US). (72) Inventor: KOSLOW, Evan, E. ; 14 Twelve O'Clock Road, Weston, CT 06883 (US). (74) Agents: RAUCHFUSS, George, W., Jr. et al.; Parmelee, Bollinger & Bramblett, 460 Summer Street, Stamford, CT 06901-1301 (US).		(81) Designated States: AT (European patent), BE (European patent), CH (European patent), DE (European patent), DK (European patent), ES (European patent), FR (European patent), GB (European patent), GR (European patent), IT (European patent), JP, LU (European patent), MC (European patent), NL (European patent), SE (European patent). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i> (88) Date of publication of the international search report: 18 February 1993 (18.02.93)

(54) Title: METHOD AND APPARATUS FOR THE CONTINUOUS EXTRUSION OF SOLID ARTICLES**(57) Abstract**

A method and apparatus for the continuous extrusion of composite solid articles (40) from feed mixtures (38) comprising a substantially uniform mixture of particulate binder material and particulate primary material in which the feed mixture is forced through an extrusion die (26) of substantially uniform cross-section, which cross-section is not substantially smaller than the cross-section of the inside diameter of the extruder barrel (12), and subject to heat, pressure and cooling which consolidates the feed mixture whereby it emerges from the die as a solid composite article (40) and in which the pressure in the extrusion die is supplied by back-pressuring means (46) external of the die. Solid filter elements of activated carbon particles for a wide variety of filtering applications may be formed using the process and apparatus.

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INTERNATIONAL SEARCH REPORT

PCT/US 92/02838

International Application No

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) ⁶		
According to International Patent Classification (IPC) or to both National Classification and IPC		
Int.Cl. 5 B29C47/34; B29C47/90; B29C47/92; B01D39/20		
II. FIELDS SEARCHED		
Minimum Documentation Searched ⁷		
Classification System	Classification Symbols	
Int.Cl. 5	B29C ; B01J ; B01D	
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched ⁸		
III. DOCUMENTS CONSIDERED TO BE RELEVANT⁹		
Category ¹⁰	Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹²	Relevant to Claim No. ¹³
P,X P,Y X	<p>WO,A,9 107 270 (C. ANDERSSON) 30 May 1991</p> <p>see page 13, line 10 - line 17; figure 1 see page 14, line 4 - line 21; figure 2 ---</p> <p>PATENT ABSTRACTS OF JAPAN vol. 12, no. 183 (M-703)(3030) 28 May 1988 & JP,A,62 294 529 (MITSUI TOATSU CHEM INC.) 22 December 1987 see abstract ---</p> <p style="text-align: right;">-/--</p>	<p>1-6, 14-17 7-13, 18-31</p> <p>1, 14, 16</p>
<p>¹⁰ Special categories of cited documents : ¹⁰</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"&" document member of the same patent family</p>		
IV. CERTIFICATION		
Date of the Actual Completion of the International Search		Date of Mailing of this International Search Report
10 DECEMBER 1992		21. 01. 93
International Searching Authority		Signature of Authorized Officer
EUROPEAN PATENT OFFICE		TOPALIDIS A.

III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)		
Category °	Citation of Document, with indication, where appropriate, of the relevant passages	Relevant to Claim No.
Y	<p>DATABASE WPI Week 7639, Derwent Publications Ltd., London, GB; AN 76-73236X 391 & JP,A,51 092 858 ((SUME) SUMITOMO ELEC IND KK) 15 August 1976 see abstract</p> <p>---</p>	7-13, 18-31
A	<p>EP,A,0 384 716 (KOSLOW TECHNOLOGIES CO.) 29 August 1990 cited in the application see column 2, line 50 - column 3, line 6 see column 16, line 11 - line 24 see column 16, line 49 - line 54 see column 26, line 19 - line 23 see column 26, line 32 - line 53 see column 27, line 9 - line 19 see column 29, line 53 - column 30, line 14 see examples 29-32,39,41</p> <p>---</p>	1-13
A	<p>DE,A,2 616 197 (WAVIN B.V.) 28 October 1976 see page 7, line 12 - line 18; figure 1 see page 8, line 4 - line 11; figure 2 see page 9, line 5 - line 8 see page 9, line 19 - line 21</p> <p>---</p>	14,17
A	<p>US,A,4 664 683 (P.J. DEGEN) 12 May 1987</p> <p>see column 3, line 29 - line 68; examples</p> <p>---</p>	1,3,4, 12,13, 23,24, 30,31
A	<p>US,A,4 665 050 (P.J. DEGEN) 12 May 1987 see column 4, line 21 - line 27 see column 6, line 16 - line 26</p> <p>---</p>	1
A	<p>FR,A,2 645 047 (A. WEBER, S.A.) 5 October 1990 see page 4, line 11 - line 21 see claims 6,7</p> <p>---</p>	7,18,25
P,A	<p>EP,A,0 432 438 (KURARAY CHEMICAL CO., LTD.) 19 June 1991 see page 3, line 33 - page 4, line 14</p> <p>---</p>	8,19,26
A	<p>EP,A,0 072 998 (SIEMENS AG) 2 March 1983 see page 2, line 22 - line 26</p> <p>---</p>	8,19,26
	<p>---</p> <p>-/--</p>	

III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)		
Category *	Citation of Document, with indication, where appropriate, of the relevant passages	Relevant to Claim No.
A	FR,A,2 371 953 (VEBA-CHEMIE) 23 June 1978 see page 1, line 9 - line 13 see claims 1,2; examples 1,2 ---	8,26
A	US,A,4 150 045 (R.K. SINHA) 17 April 1979 see abstract see examples ---	9-11, 20-22, 27-29
A	EP,A,0 320 036 (METALLGESELLSCHAFT AG) 14 June 1989 see column 1, line 30 - line 39; claim 1 ---	20-22
A	EP,A,0 345 381 (AMERICAN CYANAMID CO.) 13 December 1989 see page 3, line 31 - line 53 -----	23,24

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 92/02838

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see PCT/ISA/206 dated on 08.10.92

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

**ANNEX TO THE INTERNATIONAL SEARCH REPORT
ON INTERNATIONAL PATENT APPLICATION NO. US 9202838
SA 59270**

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report. The members are as contained in the European Patent Office EDP file on
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**ANNEX TO THE INTERNATIONAL SEARCH REPORT
ON INTERNATIONAL PATENT APPLICATION NO. US 9202838
SA 59270**

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Page 2

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