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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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**Declarations under Rule 4.17:**

— of inventorship (Rule 4.17(iv))

**Published:**

— with international search report (Art. 21(3))

[Continued on next page]

(54) Title: INJECTION BLOW MOULDING APPARATUS AND METHOD

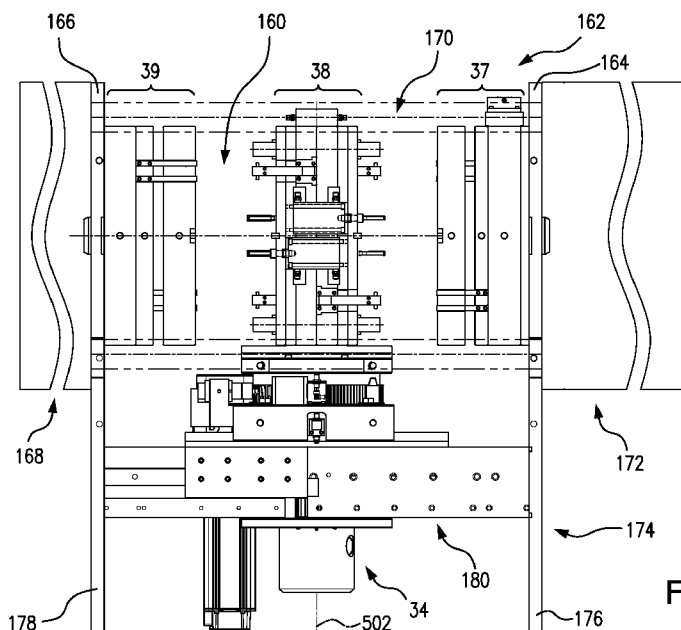


FIG. 5

(57) Abstract: A molding apparatus has an injection section for injecting material for forming parisons. A blowing section (39) is opposite the injection section (37) for expanding parisons, the blowing section shiftable in a first direction toward and away from the injection section between a compressed/contracted condition of the molding apparatus and an expanded/extended condition of the molding apparatus. A transfer section (38) between the injection section and the blowing section is rotatable by 180° about a second axis transverse to the first direction between a first condition and a second condition. The transfer section has a first side and a second side. Each side has a plurality of core members received in injection cavities and blow cavities during injection and blowing. In the first condition, the first side faces the injection section and the second side faces the blowing section. In the second condition, the first side faces the blowing section and the second side faces the injection section.

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— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

**(88) Date of publication of the international search report:**  
3 January 2013

**INTERNATIONAL SEARCH REPORT**

International application No  
PCT/US2012/031547

**A. CLASSIFICATION OF SUBJECT MATTER**  
INV. B29C49/06  
ADD.  
  
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)  
B29C

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)  
EPO-Internal, WPI Data

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 887 316 A (HESTEHAVE BORGE) 3 June 1975 (1975-06-03) column 4, line 20 - line 59; figures 1-6 column 5, line 3 - line 50 -----	1,2,4, 13,14,20
X	US 4 077 759 A (SAUMSIEGLE ROBERT W ET AL) 7 March 1978 (1978-03-07) column 4, line 35 - line 57 column 5, line 47 - column 6, line 14; figures 1-5 -----	1,2,4, 13,20,21
X	DE 38 11 465 A1 (UNIPLAST KNAUER & CO [DE] KNAUER SYSTEC ENG GMBH [DE]) 19 October 1989 (1989-10-19) column 4, line 14 - column 5, line 38; figures 5, 6 ----- -/--	1,2,4, 13,20,21

Further documents are listed in the continuation of Box C.

See patent family annex.

\* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "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)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "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
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "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
- "&" document member of the same patent family

Date of the actual completion of the international search  16 July 2012	Date of mailing of the international search report  14/11/2012
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer  Ingelgård, Tomas
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## INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2012/031547

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 818 213 A (ROY SIEGFRIED S [US]) 4 April 1989 (1989-04-04)  column 10, line 55 - line 68; figure 10 -----	1,2,4, 13,14, 20,21
X	US 3 838 961 A (YOGOSAWA T ET AL) 1 October 1974 (1974-10-01)  column 1, line 5 - line 27; figures 3-6 -----	1,2,4, 13,14, 20,21

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2012/031547

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
US 3887316	A	03-06-1975	CA 1012717 A1 US 3887316 A	28-06-1977 03-06-1975
US 4077759	A	07-03-1978	AU 482589 B2 AU 6320773 A AU 8720075 A CA 1021510 A1 CH 578416 A5 CH 595206 A5 DE 2360010 A1 DE 2365986 A1 FR 2208777 A1 GB 1459223 A GB 1459224 A GB 1459225 A GB 1459226 A JP 49098871 A JP 54015065 B US 3941539 A US 4039644 A US 4077759 A US 4128374 A	19-02-1976 05-06-1975 19-02-1976 29-11-1977 13-08-1976 15-02-1978 06-06-1974 17-03-1977 28-06-1974 22-12-1976 22-12-1976 22-12-1976 22-12-1976 18-09-1974 12-06-1979 02-03-1976 02-08-1977 07-03-1978 05-12-1978
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US 4818213	A	04-04-1989	NONE	
US 3838961	A	01-10-1974	NONE	

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2012/031547

## Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 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 No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

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

see additional sheet

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 fees, this Authority did not invite payment of additional fees.
  
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.:

1, 2, 4, 13, 14, 20, 21

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1, 2, 4, 13, 14, 20, 21

Method and apparatus providing for the rotating transfer between the blowing and the injection stations

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2. claims: 3, 5-7, 15-19

Method and apparatus providing for engaging and disengaging movements of platens in the first direction.

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3. claims: 8-12, 22, 23

Method and apparatus providing for a design of core members

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