



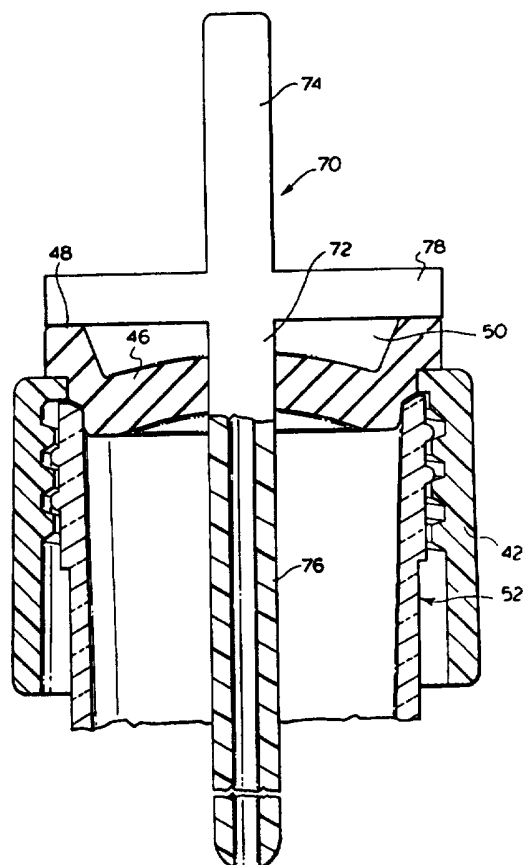
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification⁶ : B01L 3/14, B65D 51/00</p>	<p>A3</p>	<p>(11) International Publication Number: WO 95/34381 (43) International Publication Date: 21 December 1995 (21.12.95)</p>
<p>(21) International Application Number: PCT/CA95/00344 (22) International Filing Date: 14 June 1995 (14.06.95) (30) Priority Data: 2,125,811 14 June 1994 (14.06.94) CA (71) Applicant (for all designated States except US): SAMCO SCIENTIFIC INC. [US/US]; 1050 Arroyo Avenue, San Fernando, CA 91340-1822 (US). (72) Inventor; and (75) Inventor/Applicant (for US only): DAYKIN, Victor [CA/CA]; 53 Brimwood Court, Pickering, Ontario L1V 6L1 (CA). (74) Agents: JEFFREY, John, C. et al.; Suite 301, 133 Richmond Street West, Toronto, Ontario M5H 2L7 (CA).</p>	<p>(81) Designated States: US, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). 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: 4 April 1996 (04.04.1996)</p>	

(54) Title: PERFORABLE CAP FOR A BIOLOGICAL SPECIMEN CONTAINER

(57) Abstract

The present invention provides for a cap (10) for sealing a biological sample tube for use in an automated analyzer. The cap comprises a skirt portion (22) forming the side wall of the cap and having thread members (24) on the interior surface of the side wall, the skirt portion having an open top with an inwardly extending rim (26). The cap also includes a top portion (30) of a flexible self-sealing elastomeric material sealed to the skirt portion through engagement with the inwardly extending rim. The top portion may also include an upwardly extending sealing surface (48) defining a cavity which may be sealed against the external environment when the sealing surface contacts a planar surface. The present invention also provides for a sample tube (12) which has generally cylindrical side wall (14) with an open top (16) and bottom and thread members (18) provided on the exterior of the side wall near the top. The tube further has a cone-shaped sample holding divider (20) located in the interior of the tube intermediate the top and bottom.



FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	GB	United Kingdom	MR	Mauritania
AU	Australia	GE	Georgia	MW	Malawi
BB	Barbados	GN	Guinea	NE	Niger
BE	Belgium	GR	Greece	NL	Netherlands
BF	Burkina Faso	HU	Hungary	NO	Norway
BG	Bulgaria	IE	Ireland	NZ	New Zealand
BJ	Benin	IT	Italy	PL	Poland
BR	Brazil	JP	Japan	PT	Portugal
BY	Belarus	KE	Kenya	RO	Romania
CA	Canada	KG	Kyrgystan	RU	Russian Federation
CF	Central African Republic	KP	Democratic People's Republic of Korea	SD	Sudan
CG	Congo	KR	Republic of Korea	SE	Sweden
CH	Switzerland	KZ	Kazakhstan	SI	Slovenia
CI	Côte d'Ivoire	LI	Liechtenstein	SK	Slovakia
CM	Cameroon	LK	Sri Lanka	SN	Senegal
CN	China	LU	Luxembourg	TD	Chad
CS	Czechoslovakia	LV	Latvia	TG	Togo
CZ	Czech Republic	MC	Monaco	TJ	Tajikistan
DE	Germany	MD	Republic of Moldova	TT	Trinidad and Tobago
DK	Denmark	MG	Madagascar	UA	Ukraine
ES	Spain	ML	Mali	US	United States of America
FI	Finland	MN	Mongolia	UZ	Uzbekistan
FR	France			VN	Viet Nam
GAB	Gabon				

INTERNATIONAL SEARCH REPORT

International Application No
PCT/CA 95/00344

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 B01L3/14 B65D51/00

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)
IPC 6 B01L B65D

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 practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP,A,0 539 141 (TOA MEDICAL ELECTRONICS) 28 April 1993	1,5
A	see column 1; figure 1 see column 2, line 50 - column 3, line 15 ---	2-4,6-8
X	WO,A,81 01238 (COOK I) 14 May 1981 see page 3 - page 4; figures 1,2 ---	1,5
A	US,A,4 967 919 (EARHART STEPHEN B) 6 November 1990 see column 3, line 54 - line 56 see column 4, line 16 - line 18 ---	1-8
A	EP,A,0 199 356 (TERUMO CORP) 29 October 1986 see page 7, line 20 - line 32 ---	4,8
	-/--	

Further documents are listed in the continuation of box C.

Patent family members are listed in 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 document 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

9 October 1995

Date of mailing of the international search report

06.03.96

Name and mailing address of the ISA
European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+31-70) 340-3016

Authorized officer

Hodson, C

INTERNATIONAL SEARCH REPORT

Intern nal Application No PCT/CA 95/00344

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP,A,0 383 262 (TERUMO CORP) 22 August 1990 <p style="text-align: center;">-----</p>	

2

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CA95/00344

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:

- 1. CLAIMS 1-8
 - 2. CLAIMS 9, 10
- FOR FURTHER INFORMATION PLEASE FORM PCT/ISA/206 MAILED ON 10.11.95

- 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.:

CLAIMS 1-8

Remark on Protest

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

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/CA 95/00344

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP-A-0539141	28-04-93	CA-A- 2080928	23-04-93
WO-A-8101238	14-05-81	AU-B- 544837 AU-B- 6399780 EP-A, B 0047735 GB-A, B 2086043	13-06-85 22-05-81 24-03-82 06-05-82
US-A-4967919	06-11-90	CA-A- 1311978	29-12-92
EP-A-0199356	29-10-86	JP-B- 1038502 JP-C- 1553925 JP-A- 61247459 AU-B- 576427 AU-B- 5657586 DE-A- 3686347 US-A- 4682703	15-08-89 04-04-90 04-11-86 25-08-88 06-11-86 17-09-92 28-07-87
EP-A-0383262	22-08-90	JP-A- 2212768 JP-A- 2216053 US-A- 5061263	23-08-90 28-08-90 29-10-91