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(71) Applicant (for all designated States except US): **MARINE SYSTEMS TECHNOLOGY LIMITED** [GB/GB]; Unit 4, Woodford Court, Woodford Park Industrial Estate, Winsford, Cheshire CW7 2RB (GB).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **HALL, Alan John** [GB/GB]; 78 Pear Tree Park, Holme, Nr Carnforth, Cumbria LA6 1PP (GB).

(74) Agent: **LUNT, Mark**; Harrison Goddard Foote, Fountain Precinct, Balm Green, Sheffield, South Yorkshire S1 2JA (GB).

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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, RO, RS, RU, 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))

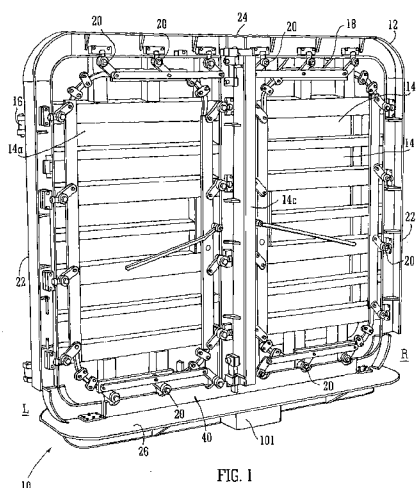
Published:

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

— 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:
5 January 2012

(54) Title: DOOR FRAME SEALS



(57) Abstract: A watertight door system (10,10') for a marine vessel comprises a door (14,14') and a door frame (12,12') having a threshold (26,26'). A circumferential seal is around an opening (18,18') of the door frame closed by the door. The seal is formed between seal components of the door and seal components of the door frame. The frame is adapted for connection to the bulkhead and comprises two sides (22,22'), a top member (24,24') and a floor trough (30,156). Means are provided to press the door against the frame when the door is in a closed position. The trough has a floor plate (28,28') substantially flush with a top edge of the trough, which floor plate is adapted to form a floor panel of the floor of the vessel, with said trough received in an aperture of the floor. The trough has a lid (40, 250) to close the trough, at least when the door is in an open position, so that the floor is rendered substantially level through the door aperture. The seal may extend along the lid (in the case of a pivoting door) or in the trough, in the case of a sliding door.

INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2011/050720

A. CLASSIFICATION OF SUBJECT MATTER
INV. B63B19/08 B63B43/26
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)
B63B

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)

EP0-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 1 249 421 A (CAILLET RENE [FR]) 13 October 1971 (1971-10-13) page 1, line 9 - page 2, line 78; figures 1-3 -----	1

☐

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 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

27 September 2011

Date of mailing of the international search report

22/11/2011

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

Martínez, Felipe

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2011/050720

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.:

1-32, 46, 47

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: 1-32, 46, 47

A door system that has a frame with a floor trough and a door, where the trough comprises a floor plate flush with a top edge of the trough and a lid to close the trough when the door is open.

2. claims: 33-37

A door system that has a frame with a top member that includes a track having supports of the door and a cam to press the door against the frame.

3. claims: 38-43

A door system that contains a door with a fire resistant board and a frame with fire resistant frame boards.

4. claims: 44, 45

A watertight door system that comprises a door, a door frame with a threshold and a circumferential seal around an opening of the door frame, which seal is formed between seal components of the door and seal components of the door frame, and an upstanding flange of the threshold forming a part of the seal components of the door frame.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2011/050720

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 1249421 A	13-10-1971	DE 1925410 A1	27-11-1969
		ES 367512 A1	16-04-1971
		FR 1576538 A	01-08-1969
		GB 1249421 A	13-10-1971
		NL 6907689 A	25-11-1969
		NO 123908 B	31-01-1972
		YU 31403 B	30-04-1973
