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(54) Title: THRESHOLD SEAL AND ELONGATE SEAL MEMBER

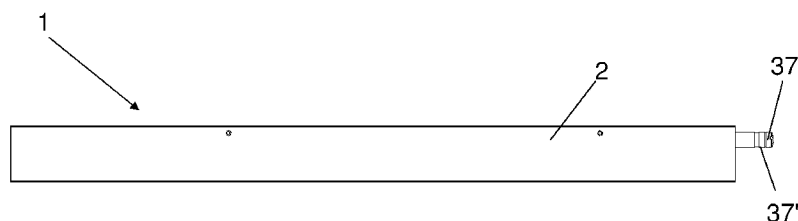


Figure 1

(57) **Abstract:** A threshold seal comprises a casing, a seal carrier, and an actuation mechanism which is operable to move the seal carrier with respect to the casing between a retracted position and an extended position; wherein the actuation mechanism includes an actuation member movable relative to the casing to control deployment of the seal carrier; wherein movement of the actuation member is controlled by a button which protrudes from the casing; wherein the position of the button relative to the actuation member may be set to control the extent to which the button protrudes from the casing relative to the position of the actuation member; and wherein the button comprises a plurality of visual indicators which may be used to assist with setting the position of the button with respect to the actuation member, and wherein the position of the button relative to the actuation member is continuously variable between an outer position corresponding to a maximum protrusion of the button for a given actuation member position and an inner position corresponding to a minimum protrusion of the button for a given actuation member position.



INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2014/052412

A. CLASSIFICATION OF SUBJECT MATTER
INV. E06B7/215
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)
E06B

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	EP 1 469 159 A2 (ATHMER FA F [DE]) 20 October 2004 (2004-10-20) paragraphs [0007], [0018] - [0032]; claims 11,13; figures 4a-4c, 8a-8b -----	1-7



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

14 November 2014

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2014/052412

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.:

see additional sheet(s)

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: 1-7

A threshold seal comprising a casing, a seal carrier, and an actuation mechanism which is operable to move the seal carrier with respect to the casing between a retracted position and an extended position; wherein the actuation mechanism includes an actuation member movable relative to the casing to control deployment of the seal carrier; wherein movement of the actuation member is controlled by a button which protrudes from the casing; wherein the position of the button relative to the actuation member may be set to control the extent to which the button protrudes from the casing relative to the position of the actuation member; and wherein the button comprises a plurality of visual indicators which may be used to assist with setting the position of the button with respect to the actuation member, and wherein the position of the button relative to the actuation member is continuously variable between an outer position corresponding to a maximum protrusion of the button for a given actuation member position and an inner position corresponding to a minimum protrusion of the button for a given actuation member position.

2. claims: 8-22

A threshold seal as claimed in any preceding claim, wherein the actuation mechanism includes a first actuation element pivotally connected to the seal carrier at a first location, and a stabilising element pivotally connected to the seal carrier at a second location spaced from the first location; wherein the first actuation element transmits a force to the seal carrier to move the seal carrier between the retracted position and the extended position, the force having a component aligned with a longitudinal axis of the seal carrier; and wherein the stabilising element is adapted to resist movement of the seal carrier in the direction of its longitudinal axis.

3. claims: 23, 24

A threshold seal as claimed in any preceding claim, wherein the casing has first and second opposing side walls and a connecting wall extending between the first and second side walls to define a substantially U-shaped channel section, wherein at least one of the side walls includes a region of increased wall thickness adjacent the connecting wall.

4. claims: 25, 26

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

A threshold seal as claimed in any preceding claim, wherein the seal member is adapted to seal against a floor surface external to the threshold seal when in its extended position, wherein the seal member includes a wiper element which is integrally formed with the seal member, and wherein the wiper element is in sliding contact with an inner face of a side wall of the casing as the seal member moves between the retracted position and the extended position.

5. claims: 27-33

A threshold seal as claimed in any preceding claim, comprising an actuation cable which is operable in tension to pull the seal carrier from the extended position towards the retracted position and operable in compression to push the seal carrier from the retracted position towards the extended position.

6. claims: 34-41

An elongate seal member for use with the seal carrier of the threshold seal as claimed in any one of the preceding claims, the seal member having a substantially A-shaped profile portion formed by first and second struts extending from a common apex to first and second feet respectively and a linking section extending between the first and second struts, wherein a first contact point is defined in the linking section between the first and second struts and second and third contact points are defined by the first and second feet respectively, the seal member being arranged such that, when the first contact point is deflected towards the apex due to engagement with a surface, the second and third contact points are moved inwardly towards the first contact point and are compressed into the surface.

7. claim: 42

A threshold seal as claimed in any of claims 1 to 26, wherein the actuation mechanism comprises a lever which is pivotally connected to the seal carrier.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2014/052412

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
EP 1469159	A2	20-10-2004	DE 20306091 U1	03-07-2003
			EP 1469159 A2	20-10-2004
