(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 3 112 573 A1**

(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(43) Date of publication:
04.01.2017 Bulletin 2017/01

(21) Application number: **15752248.3**

(22) Date of filing: **22.01.2015**

(51) Int Cl.:
E06B 1/20 *(2006.01)*

(86) International application number:
PCT/ES2015/000014

(87) International publication number:
WO 2015/124809 (27.08.2015 Gazette 2015/34)

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

(30) Priority: **24.02.2014 ES 201400197**

(71) Applicant: **Puertas Padilla, S.L.**
30330 Murcia (ES)

(72) Inventor: **PADILLA PEDREÑO, Ginés**
E-30330 Murcia (ES)

(74) Representative: **Herrero & Asociados, S.L.**
Alcalá 35
28014 Madrid (ES)

(54) TELESCOPIC WALL-CLAMPING FRAME

(57) In order to obtain a regulation of over 65 millimetres and improve the installation of the product, the invention consists of a unit formed by a frame, to which an angle pressure is attached, consisting of two steel profiles joined at a minimum distance by means of welding points. The internal profile is L-shaped and the internal one is similar, with an end fold. This pressure angle serves to guide, house and secure the wall clamp correctly by means of the pressure it exerts on it, so the unit is coupled to a variable thickness wall and creates a space to place various insulating materials.

We have planned a version in which the frame and one piece of the pressure angle form a single element attached to the second piece of the pressure angle with screws, thus supporting the wall clamp as in the first version.

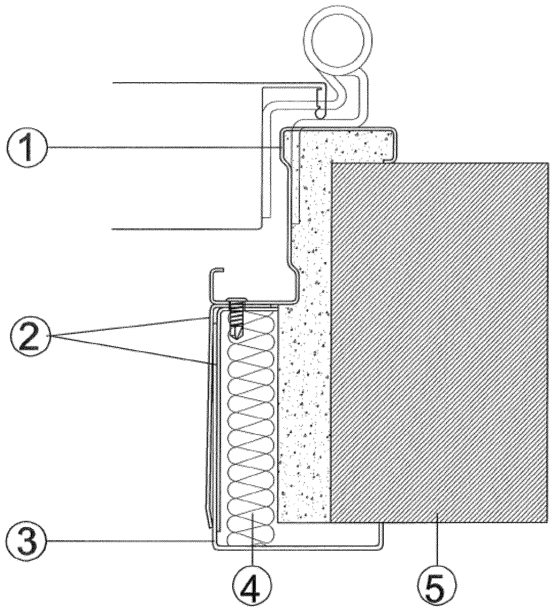

FIG. 1

EP 3 112 573 A1

Description

PURPOSE OF THE INVENTION

[0001] This invention refers to a new telescopic wall-clamp frame unit, meant to regulate based on the wall thickness of the work, improve the quality and speed of the installation and serving as a fire-break.

HISTORY OF THE INVENTION

[0002] The invention pertains to the construction Technology Area, specifically, manufacture of doors with steel frame.

[0003] Doors with steel frame and fire-break system are widely known in the State of the Art, but regarding their installation, is common knowledge they are usually installed before finishing the work, which may cause a poor appearance of the door on the work, as it might receive blows, stains, scratches or other imperfections during it. There is also the risk of an incorrect handling of the door that may cause an incorrect adhesion of the concrete on the side of the door, which affects both the final appearance of the door and its physical characteristics, resistance and durability.

[0004] To optimise these aspects, a widely known technique is installing fixed size wall-clamping frames that form a constructive system based on their placement on a preestablished wall width. They are installed by securing them to the door frame and can adjust to the total width of the wall, with the inconvenience of not being able to adjust them, as they have fixed manufacturing measures.

[0005] Regarding adjustable or telescopic frames, several models are known in the market, with regulation ranges of around 25 millimetres, which serve to cover some minor irregularities of the wall surface but cannot adapt to a wide range of wall thicknesses. This is the case of the tool to secure a steel door frame described on invention ES 1 060 095 U, which has an inconvenience: the adjustment to the wall width depends on the tension screws joining the pieces, so the maximum adjustment is the size of the screw, and it can only be adjusted to a certain type of frame.

[0006] On the other hand, telescopic frame solutions based on similar models must be mentioned, but they have nothing in common with the object of this invention, as they are not a part of the steel frame door manufacturing field since they are manufactured with different materials and purposes. This is the case of invention ES 2 080 651 R, created from materials that are not steel, with a lower mechanical resistance than steel; besides, these solutions don't serve as fire-breaks.

DESCRIPTION OF THE INVENTION

[0007] The invention consists of a telescopic wall-clamping frame unit, that serves as a fire-break, manufactured from steel, to solve the following problems: obtaining an adjustment of over 65 millimetres and improving the quality and speed of the product on-site installation. This invention includes a pressure angle that is attached to the frame as well as a wall clamp coupled to them.

[0008] The pressure angle is screwed to the frame secured to the wall; the pressure angle consists of two metallic profiles, attached at a minimum distance from each other by means of welding points. The internal profile has a 90° L shape and the external one is similar, but with an end fold. The pressure angle serves as a guide to lodge the wall clamp correctly, whose length can be adjusted depending on the specifications of the work. The frame to which the pressure angle plus wall clamp unit is attached is variable: it does not have to be a specific type of frame.

[0009] The telescopic wall-clamping frame is assembled after finishing the work, so the installation time is lower as the pressure angle shape, which serves as a fixed measure guide for the wall clamp, makes the installation simpler: there is no need to screw and the parts only have to be fitted in, given that the guide has the minimum distance to serve as a fastener and regulates the total length of the invention, because the wall clamp can cover the entire length of the pressure angle. The geometrical properties of the unit improve the physical and mechanical characteristics and the resistance of the telescopic wall-clamping frame, as this section has a high inertia to external efforts; in other words, it tends to remain stable from external mechanical aggressions.

[0010] As this invention is a highly adjustable telescopic frame there is no need to verify beforehand the fixed measure on-site and it also solves possible problems related to wall thickness or irregularities, as it is extendible and covers a wide regulation. This regulation is around three times higher than current solutions. The invention is based on the ability of the wall-clamping profile to cover a distance of over 65 millimetres thanks to the guideline provided by the pressure angle, so it can adapt to walls of very different thicknesses.

[0011] This invention also improves the mechanical characteristics of the door: it covers the entire width of the wall so the wall is protected, and the joint between the door and the wall and the lining are preserved. Specifically, it provides a higher resistance to the fire-break door in case of a fire because the joint between the telescopic wall-clamping frame and the total width of the wall is more resistant than in traditional solutions, where a part of the wall remains uncovered. Moreover, introducing several insulating materials between wall and frame is possible.

DESCRIPTION OF THE DRAWINGS

[0012] In order to facilitate the understanding of this descriptive document, as an integral part, we provide now two illustrative, non-limiting figures showing the object of

the invention.

Figure 1.- It shows a plan view of the telescopic wall-clamping frame, retracted, containing a frame (1), a pressure angle (2), a wall clamp (3), an internal space (4) and a wall (5).

Figure 2.- It shows a plan view of the telescopic wall-clamping frame, extended, with the same elements as the previous figure.

Figure 3.- It shows a plan view of another possible configuration of the telescopic wall-clamping frame, retracted, containing a modified frame (6), and L-shaped profile (7), a wall clamp (3), an internal space (4) and a wall (5).

Figure 4.- It shows a plan view of another possible configuration of the telescopic wall-clamping frame, extended, with the same elements as the previous figure.

PREFERABLE ASSEMBLY OF THE INVENTION

[0013] The invention is used on steel frame doors. The frame (1) is attached to the wall (5) by traditional fastening means: clamps or screws. The pressure angle (2) is meant to be screwed to the frame (1) via pre-existing holes.

[0014] Once with the unit formed by the frame (1), pressure angle (2) fastened to the work, the wall clamp (3) is assembled and moved inside the pressure angle (2) until reaching the wall thickness of the work (5). This way, the unit can be adapted to, e.g., a 115 mm thick wall or a 180 mm thick wall, as the maximum adjustment possible is 65 millimetres.

[0015] The pressure angle (2), which represents the main innovation of this invention, consists of two metallic profiles joined at a minimum distance by means of welding points, the internal profile is L-shaped and the external one is similar, with an end fold.

[0016] There is an internal space (4) between the pressure angle (2), the wall clamp (3) and the wall (5) which can hold any insulating material, fire-break materials are preferred. The protective element of the back side of the telescopic wall-clamping frame is meant to be determined by a cement mortar screed covering its entire length, so the mechanical characteristics of the frame are preserved.

[0017] A second option for the assembly of the invention is forming a modified frame (6) with the frame and one of the pieces of the pressure angle, which will be coupled to the second piece of the pressure angle, an L-shaped profile (7) with screws, as in the previous model. The wall clamp (3) is introduce in the guide in an analogous manner as the previous one and the unit is installed and works in the same way, also forming an internal space (4) for placing any insulating materials, the only difference being the fasteners between the mentioned parts.

[0018] After an extensive description of this invention and how to install it, we deem further explanations unnecessary for an expert on the subject to understand its scope and the benefits it provides. We state that, given its simplicity, it can be put into practice by different assembly methods than the one explained as an example. The protection provided by this invention will also be applicable to these assembly methods as long as its base principle is not altered, changed or modified.

Claims

1. Telescopic wall-clamping frame consisting on a steel frame (1) and a wall clamp (3) with the **distinctive characteristic** of including a pressure angle (2) which is mechanically fastened to the frame (1), so the unit can be coupled to a variable thickness wall (5) and creates an internal space (4).

2. Telescopic wall-clamping frame, according to revendication 1 with the **distinctive characteristic** of its pressure angle (2) being formed by two steel profiles attached at a minimum distance by means of welding points, where the internal profile is L-shaped and the the external profile is similar to the internal profile and contains an end fold, so the pressure angle serves to guide, house and secure the wall clamp (3) correctly.

3. Telescopic wall-clamping frame, according to revendication 1, with the **distinctive characteristic** of its frame consisting on a modified frame (6) to which an L-shaped profile (7) is mechanically fastened to create a pressure angle capable of housing the wall clamp (3), so the unit can be coupled to a variable thickness wall (5) and create an internal space (4).

4. Telescopic wall-clamping frame, according to the previous revendications, with the **distinctive characteristic** of having an internal space for placing various insulating materials within it (4).

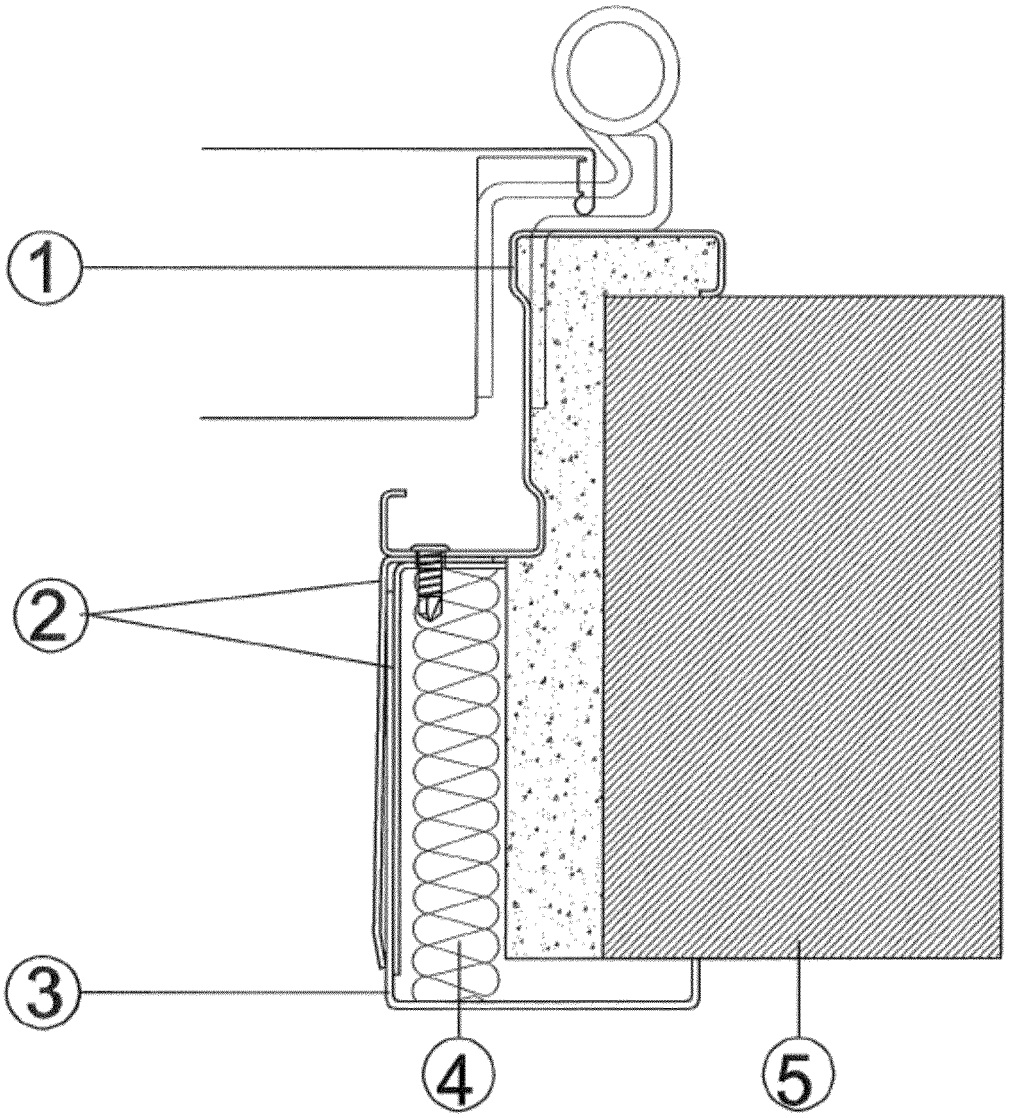

FIG. 1

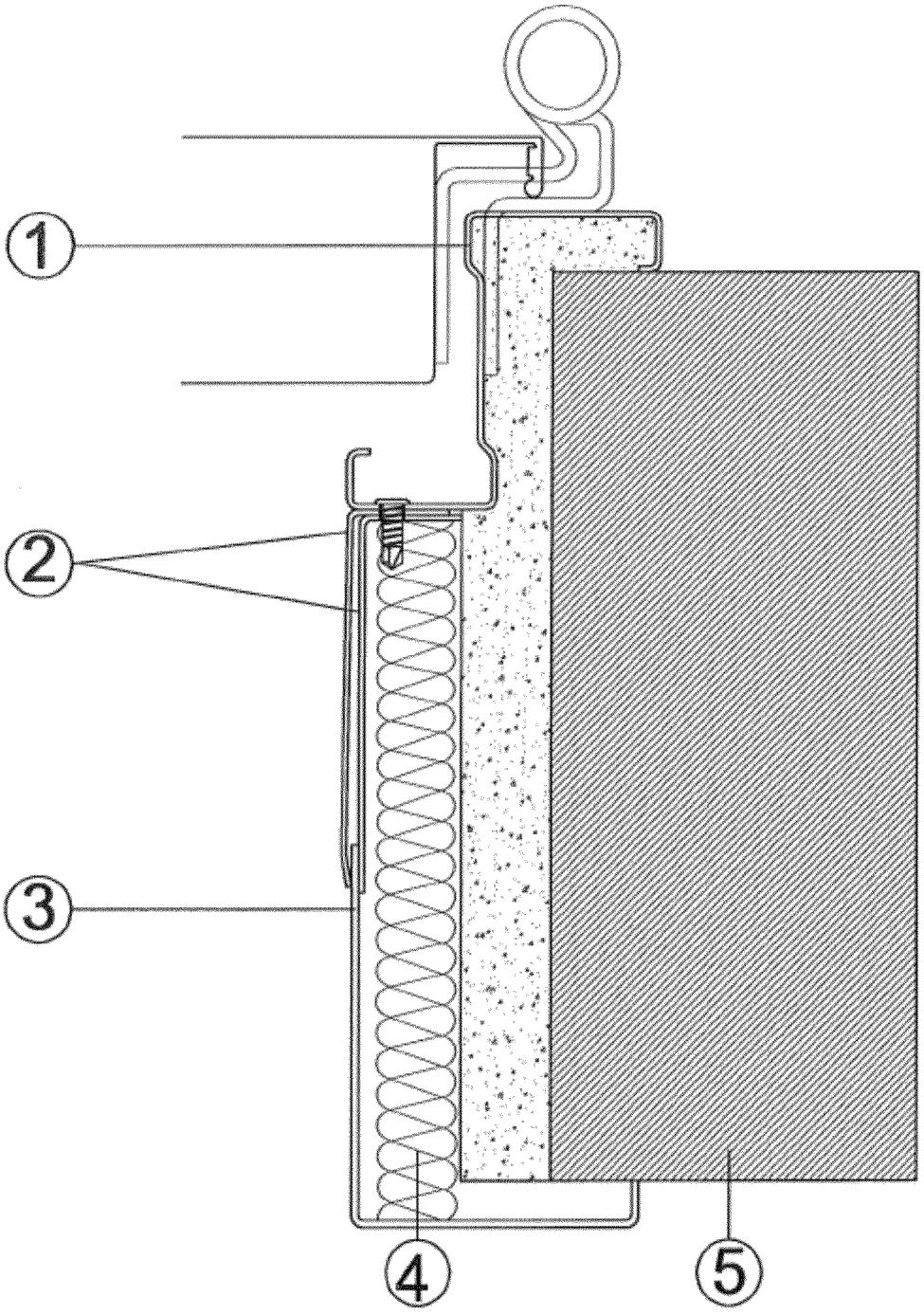

FIG. 2

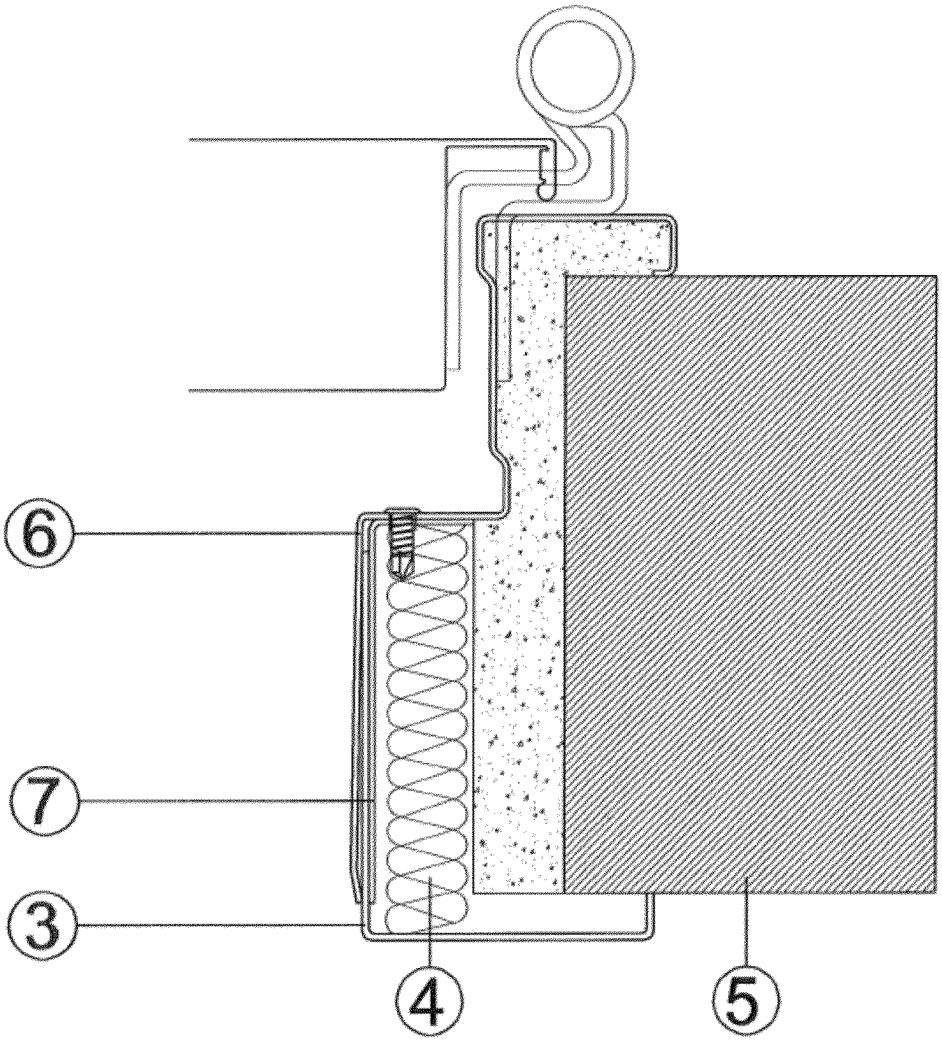

FIG. 3

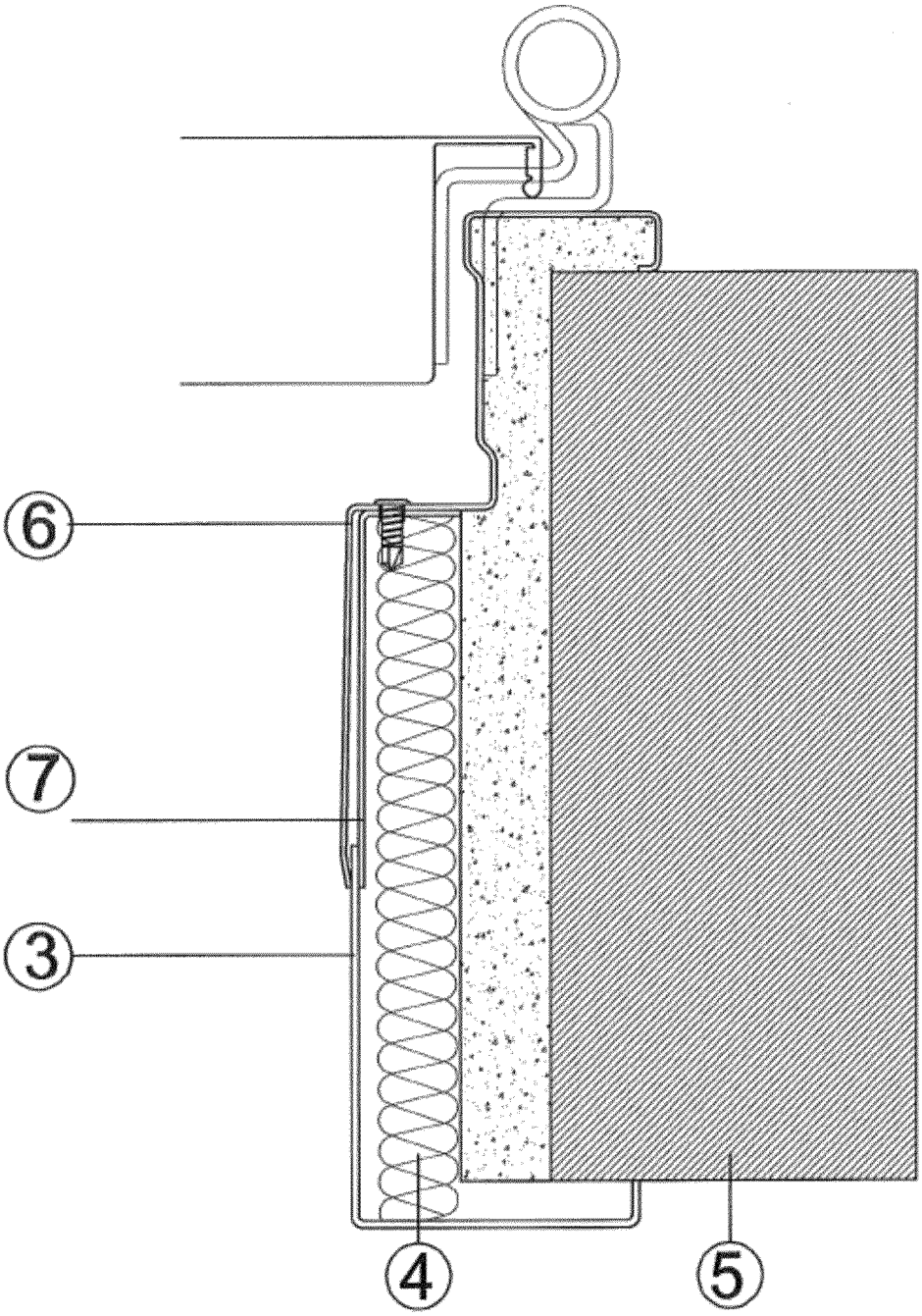

FIG. 4

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2015/000014

A. CLASSIFICATION OF SUBJECT MATTER

E06B1/20 (2006.01)

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)

EPODOC, INVENES

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2826282 A (RALPH GOLDBERG) 11/03/1958, column 2, line 54 - column 3, line 35; figures.	1,2
X	US 4179849 A (KUFFNER REINHOLD O) 25/12/1979, abstract; column 4, lines 42 - 57; figure 2.	1,3
X	WO 9707313 A1 (HADAD MICHAEL) 27/02/1997, page 5, line 5 - page 8, line 11; page 9, lines 9 - 10; figures.	1
Y		4
X	DE 2422180 A1 (HESS HERBERT) 20/11/1975, figure 1.	1
X	US 5220748 A (CHADBOURNE WINGATE) 22/06/1993, column 3, lines 18 - 47; figure 4.	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 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	Date of mailing of the international search report
13/04/2015	**(23/04/2015)**
Name and mailing address of the ISA/ OFICINA ESPAÑOLA DE PATENTES Y MARCAS Paseo de la Castellana, 75 - 28071 Madrid (España) Facsimile No.: 91 349 53 04	Authorized officer M. Sánchez Robles Telephone No. 91 3495431

Form PCT/ISA/210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2015/000014

C (continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of documents, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	DE 29923167U U1 (RIEDEL KLAUS) 11/05/2000, abstract; figure.	4

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/ES2015/000014

Patent document cited in the search report	Publication date	Patent family member(s)	Publication date
US2826282 A	11.03.1958	NONE	
US4179849 A	25.12.1979	NONE	
WO9707313 A1	27.02.1997	ZA9606874 A AU6696196 A AU6203996 A	06.05.1997 12.03.1997 20.02.1997
DE2422180 A1	20.11.1975	NONE	
US5220748 A	22.06.1993	NONE	
DE29923167U U1	11.05.2000	NONE	

Form PCT/ISA/210 (patent family annex) (July 2009)

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- ES 1060095 U **[0005]**
- ES 2080651 R **[0006]**