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(71) Applicants:
- **Mercader Sepúlveda, Jaime**
  08227 Terrassa (Barcelona) (ES)
- **Iranzo Perez, Cristina**
  08227 Terrassa (Barcelona) (ES)
- **Zacarias Sales, Rafael**
  08227 Terrassa (Barcelona) (ES)

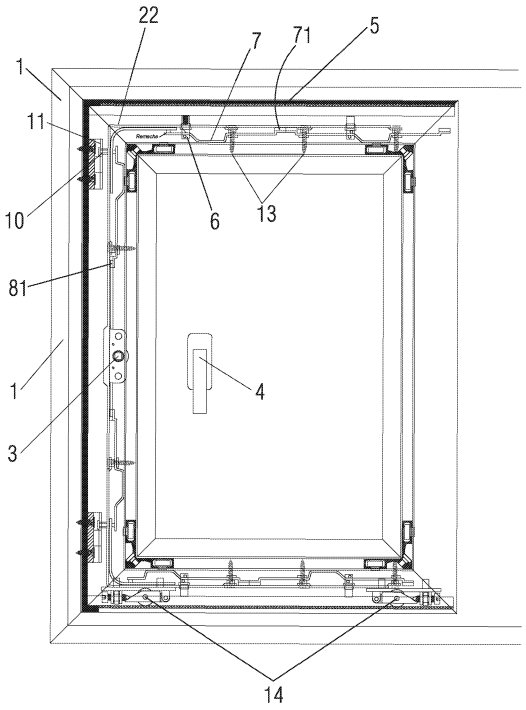
(72) Inventors:
- **Mercader Sepúlveda, Jaime**
  08227 Terrassa (Barcelona) (ES)
- **Iranzo Perez, Cristina**
  08227 Terrassa (Barcelona) (ES)
- **Zacarias Sales, Rafael**
  08227 Terrassa (Barcelona) (ES)

(74) Representative: **Isern-Jara, Nuria**
Avda. Diagonal 463 Bis 2°
08036 Barcelona (ES)

(54) DEVICE FOR TRANSFERRING THE CLOSING MOVEMENT OF SLIDING WINDOWS

(57) The invention relates to the registration of a device for the transmission of the closing movement of the cremona seals on sliding aluminum windows, PVC, wood, steel, polyurethane, and generally all kinds of materials. In particular it relates to a fixture of steel, divided into several independent elements interconnected, that are responsible for transmitting the movement of the locking fittings to the inner sealing gaskets leaves sliding windows thereby ensuring one greater seal between said sheets and fixed elements or frames, such that the invention is particularly suitable for installation in areas of particularly severe weather, and more energy efficient.

FIG.1



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Description

OBJECT OF THE INVENTION

[0001] The present invention relates to the registration of a device for the transmission of the closing movement of the "Cremona" (system locks or vertical bolts) to the seals / gasket of tightness (a form of lid to seal connections) on sliding aluminium windows, PVC, wood, steel, polyurethane, and generally all kinds of materials.

[0002] More specifically, the invention relates to a fixture of steel, divided into several independent elements interconnected, that are responsible for transmitting the movement of the locking fittings to the inner sealing gaskets leaves thus aiming sliding windows forms a better seal between said sheets and fixed elements or frames.

[0003] The window that is proposed is particularly suitable for installation in areas of particularly severe weather, and more energy efficient.

BACKGROUND OF THE INVENTION

[0004] To date, the known sliding windows sealing of tightness characteristics based on the interposition of felts (small rod of cloth sewn to a rigid base) between the sheets (movable elements) and the frame (fixed elements).

[0005] However, this configuration has the main drawback connected to the limited effectiveness of such high wear felts, which results in reduced efficiency in terms of tightness.

[0006] A second set of sliding windows that are using rubber gaskets as interposer, which requires "elevate" the leaves where these are housed together in order to separate them from the frames and get a proper sliding without friction. In this case, the biggest drawback is "raising" the leaves, which requires the use of reinforced fittings, able to withstand the loads due to the weight of the glass, this will have to oversize sheets and frames employees, which in most cases makes it impractical to install in usual buildings.

[0007] Finally, a third set of sliding windows based on the opening and closing movement of the internal rubber gaskets, using special fittings built into a specific channel in the interior of leaves. This system limits dramatically, both building materials (aluminium only), and possible variations in construction measures leaf and frame, so that it is applicable only in a narrow range of measures. Also the use of unique hardware and special dimensions make little versatile with a higher cost of production, so it is almost commercially non-viable.

DESCRIPTION OF THE INVENTION

[0008] The present invention has been developed in order to provide a device that solves the previously stated disadvantages, in addition providing other additional advantages that will be apparent from the accompanying description below.

[0009] It is therefore an object of the present invention to provide a device for transmitting movement of closure sliding windows of the type which comprises a fixed rectangular outer frame and an inner rectangular frame containing the sheet horizontally sliding window along the inside the outer frame, the inner frame including one Cremona/handles to block and / or releasing the inner framework from the outer framework. In particular, the device is characterized by the fact that it comprises sealing gaskets
(tightness) disposed above and below between the outer frame and inner frame slid able, said seals (tightness) being movable by sealing means connected to the Cremona/handle, such that said means actuating transform the rotational movement of the Cremona/handle in an up / down linear motion of the sealing (tightness) rings so that in a closing position, the seals are in direct contact with the inside of the outer frame while a second release position, the seals are spaced apart a distance or predetermined height relative to the outer frame.

[0010] Thanks to these characteristics, a reliable and easy to manufacture device that provides a greater degree of tightness of the window when in a closed condition, without the need to oversize sheets and frames used in the manufacture of the window is provided.

[0011] According to a preferred embodiment of the invention the drive means comprises:

- a vertically accommodated inside a recessed portion situated in a horizontal plate which runs between an inner profile and an outer profile, in which the horizontal plate has at least two horizontal sections at different levels interconnected by a sloping section
- actuator displaceable bolt, acting on the actuator pin,
- a movable vertical shaft coupled to the Cremona/handle vertically so moved vertically by the rotary action of the Cremona/handle, and
- an elastic strap that passes partially about a guide at right angles and which is supported at the outer profile of the inner frame, the horizontal and vertical shaft of the elastic strip coupled integrally by means of respective rivets being.

[0012] Preferably, the actuator slides inwardly bolt through a self-lubricating bushing fixed on the outer profile of the inner frame.

[0013] According to another aspect of the invention, the vertical plate has a latch bolt which moves on a frame disposed in the outer housing, making the latch bolt pin actuator and movement are synchronized.

[0014] To complement the description being made and with the object of helping to better understand the features of the invention according to a preferred practical embodiment thereof, accompanying as an integral part of said description, a set of drawings that are illustrative and not limiting were represented:

BRIEF DESCRIPTION OF THE DRAWINGS

[0015]

Figure 1 - This is a view in side elevation of a window provided transmission device according to the present invention;
Figures 2a, 2b and 2c - are sectional plan views of components of aluminium windows, wood and PVC, respectively, and
Figures 3a and 3b -. Are partial views in section of a portion of the window where the inner frame is in a closed position and an open position, respectively.

DESCRIPTION OF A PREFERRED EMBODIMENT

[0016] As shown in the accompanying figures, a device for the transmission of the closing movement is provided in sliding windows, said windows being of the type comprising mainly an outer rectangular frame (1) fixed to a wall and an inner rectangular frame (2) containing the foil window, sliding horizontally along the interior of the outer frame (1), including the inner frame (2) an Cremona/handle (3) attached to a handle (4) which serves to lock and / or release the inner frame relative to the outer frame. In Figure 1 shows the handle (4) separated from the cremona/handle (3) to be lighter.

[0017] Additionally, sealing gaskets (5), made of rubber, rubber or the like, are arranged above and below between the outer frame (1) and the slid able inner frame (2), said gaskets (5) movable by a means connected to the cremona/handle (3) described below. Such drive means are the same for the top and the bottom of the window.

[0018] Now, with particular reference to the actuation means comprise a metal actuator bolt (6) that acts as a cam, such that it can move vertically and is housed inside a metallic slotted portion located in a horizontal plate (7) that elapses between an inner profile (21) and an outer profile (22) of the inner frame (20), wherein the horizontal flange has two horizontal sections at different levels connected by an inclined portion, which act on the actuating bolt (6) , so that it moves up and down. It also has a vertical metal plate (8) which moves vertically and is coupled to the cremona/handle (3) so it is scrolled by the rotating action of Cremona (3). In Figures 3a and 3b can be clearly seen as operating the vertical and horizontal strips with respect to the sealing rings (5), so that in Figure 3a the seal (5) is separated from the outer frame (1) while 3b that the seal (5) is in contact with the outer frame (1), so it provides a sealing condition.

[0019] Additionally, an elastic band passes partially about a guide (9) at right angles and which is supported at the outer profile of the inner frame, the horizontal and vertical plate coupled to the elastic strip integrally by means of respective rivets (12) being.

[0020] As shown, the vertical plate (8) comprises a latch bolt (10) moving on a housing, also known as keeper (11) disposed at the inside of the outer frame (1) of the window.

[0021] The horizontal plate (7) and the vertical shaft (8) has at one end a toothed portion (71) and (81) respectively oriented to face to the outside profile (22).

[0022] At the bottom of Figure 1 can be a pair of adjustable bearings (14) located in ends of the inner frame (2), so as to allow sliding of the inner frame (2) along the length of the outer frame (1).

[0023] Mentioned that the device described herein is compatible with fastening systems known in the art such as those called "sixteen channel" applicable in the field of woodworking (windows, etc.).

[0024] The details, shapes, dimensions and other accessory elements, as well as the materials used in manufacturing the device of the invention can be appropriately substituted by others that are technically equivalent and do not deviate from the essentials of the invention or the scope defined by the claims which are included below.

Claims

1. Device for the transmission of the closing movement in sliding windows of the type comprising an outer rectangular frame (1) and an inner rectangular fixed frame (2) containing the sheet horizontally sliding window along the inside of the outer frame, including the inner frame one cremona (3) for locking and / or release the inner frame from the outer rectangular frame (1) , **characterized in that** it comprises sealing gaskets (5) arranged between the upper and lower outer frame and rectangular inner frame (2) slide , the said gaskets (5) movable by drive means connected to the cremona (3) , such that said actuation means transforming the rotational movement of the cremona in an ascending / descending linear movement sealing joints (5) , so that in a closed position , the sealing rings (5) are in direct contact with the inside of the outer frame (1) while in a second release position , the 0 sealing (5) are separated by a distance or predetermined height relative to the outer frame (1) .

2. Device for the transmission of the closing movement Sliding window according to claim 1, **characterized in that** the drive means comprise:

a vertically accommodated inside a recessed portion situated in a horizontal plate (7) extending between an inner profile and an outer profile, in which the horizontal plate (7) has at least two horizontal sections at different levels movable actuator pin interconnected by an inclined section, acting on the actuator pin (6),
a movable upright plate (8) vertically coupled to the espagnolette (3) so that is moved vertically

by the rotary action of the espagnolette (3), an elastic band which partly runs on a guide at right angles and which is supported at the outer profile of the inner frame (2), the horizontal plate (7) and vertical (8) coupled to the elastic strip jointly being by respective rivets.

3. Device for the transmission of the closing movement Sliding window according to claim 2, **characterized by** the fact that the drive pin (6) slides inwardly through a self-lubricating bushing fixed on the outer profile of the inner frame (2).

4. Device for the transmission of the closing movement Sliding window according to claim 2, **characterized by** the fact that the vertical shaft (8) has a bolt latch (10) moving on a housing arranged on the outer frame (1).

5. Device for the transmission of the closing movement Sliding window according to claim 2, **characterized by** the fact that the horizontal plate (7) has at one end a toothed portion (71) oriented to the outside profile face (22).

6. Device for the transmission of the closing movement Sliding window according to claim 2, **characterized by** the fact that the vertical shaft (8) has at one end a toothed portion (81) oriented to the outside profile face (22).

FIG. 1

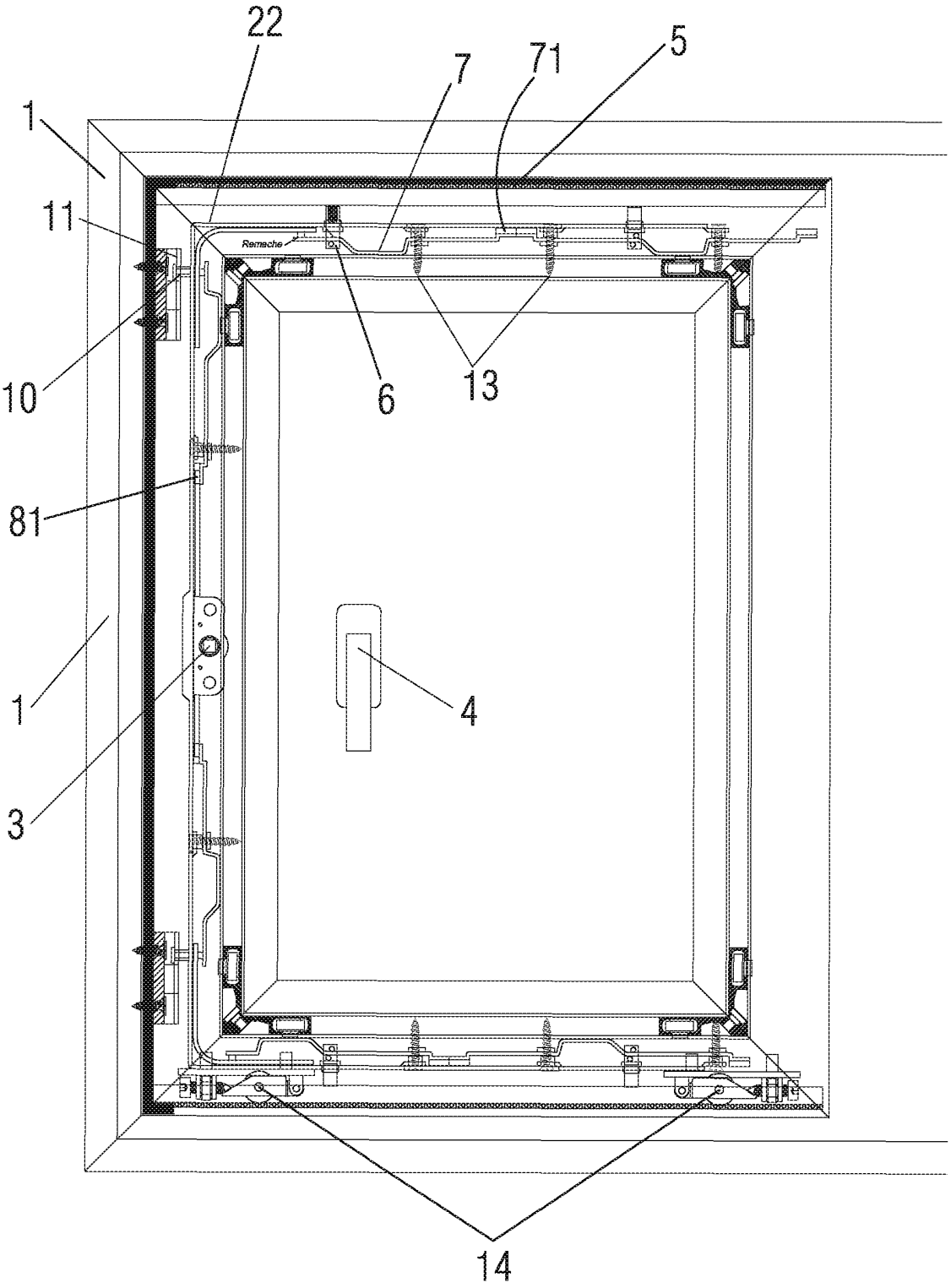


FIG.2a

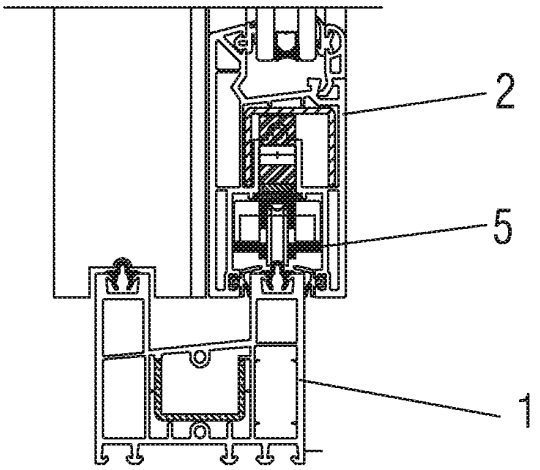


FIG.2b

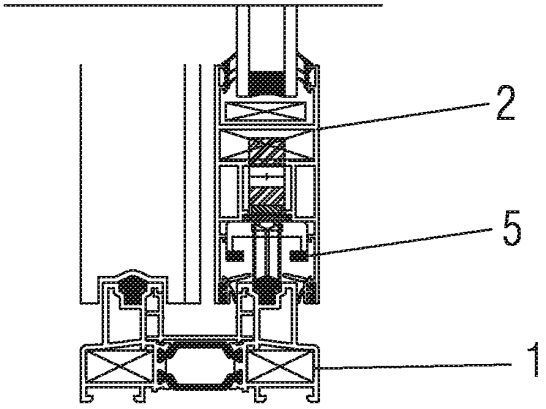
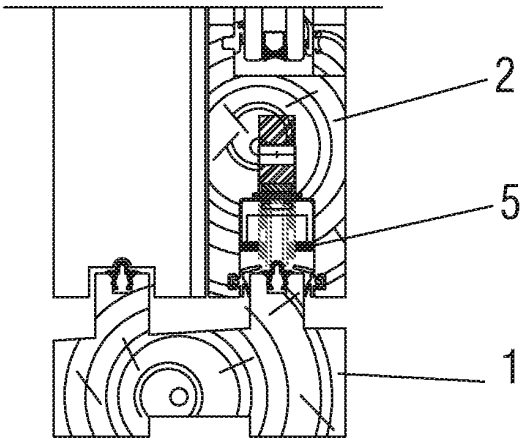


FIG.2c



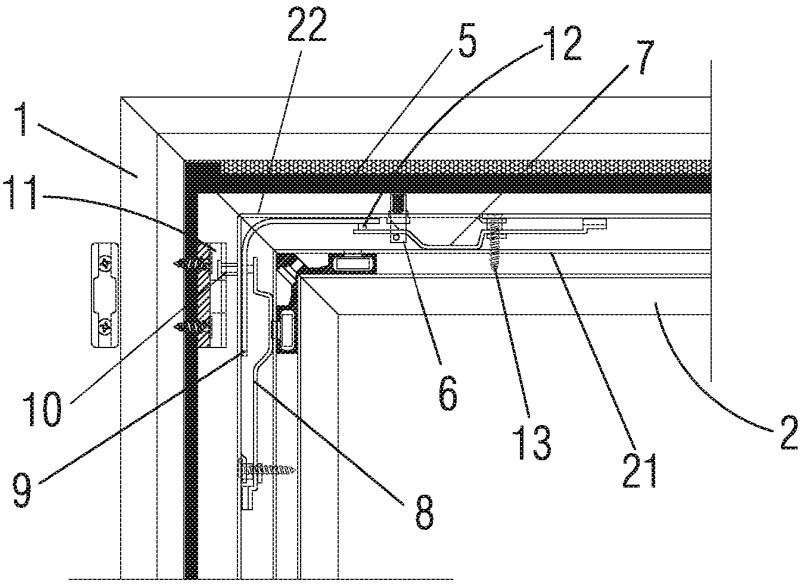


FIG.3a

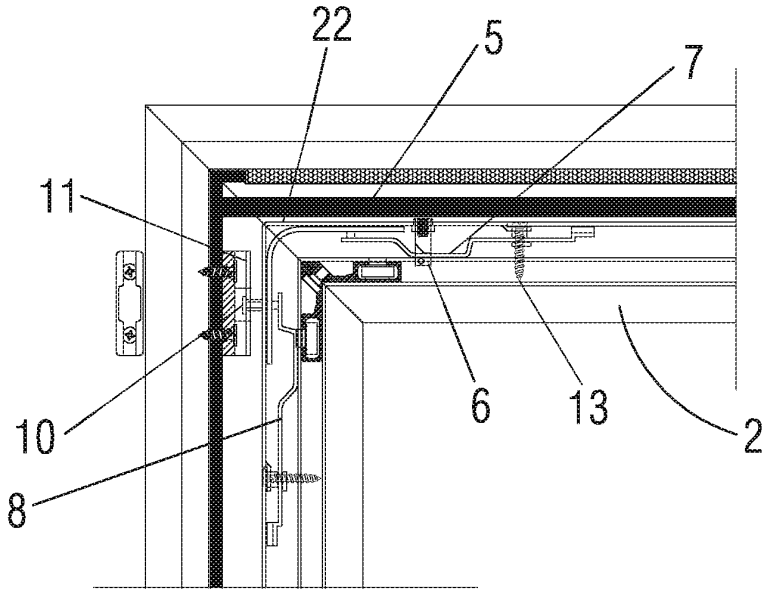


FIG.3b

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2012/070292

A. CLASSIFICATION OF SUBJECT MATTER

E06B7/21 (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, WPI, INVENES

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 1538298 A1 (ROTO FRANK AG) 08/06/2005, description; figures.	1-6
A	WO 2010057226 A1 (MAHLANGU ZWELAKHE WINSTON) 20/05/2010, description; figures.	2
A	JP 56097392 U 01/08/1981, figures.	2
A	KR 20010037748 A (JUNG HYANG IM) 15/05/2001, figures 2a, 2b and 3a & abstract from DataBase WPI. Retrieved from EPOQUE; AN 2001-587801	2
A	GB 190904412 A (CARNEGIE ROBERT ET AL.) 09/12/1909, abstract; figures.	2

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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"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
13/08/2012	**(03/09/2012)**
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 L. Molina Baena Telephone No. 91 3495554

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2012/070292

C (continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of documents, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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Form PCT/ISA/210 (continuation of second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.
PCT/ES2012/070292

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