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(54) **SUPPORT DEVICE FOR FURNITURE**

(57) The invention comprises two arched parts (1) made of plastic material that are coupled on a perimeter edge (2) having a closed contour which is part of a base (3) belonging to a piece of furniture (4). The perimeter edge (2) of the base (3) comprises a lower section (2a), an upper section (2b) and an intermediate section (2c) in which the other two sections, lower (2a) and upper (2b), converge. Each arched part (1) comprises a rear

portion (9) in contact with an inner face (10) of the upper section of the edge (2) of the base (3) of the piece of furniture (4); wherein said rear portion (9) is an elevation of an upper face (1a) of the arched part (1) which presses resiliently against the inner face (10) of the upper section (2b) of the edge (2). The arched parts (1) are joined at the ends thereof by a tongue-and-grooved coupling.

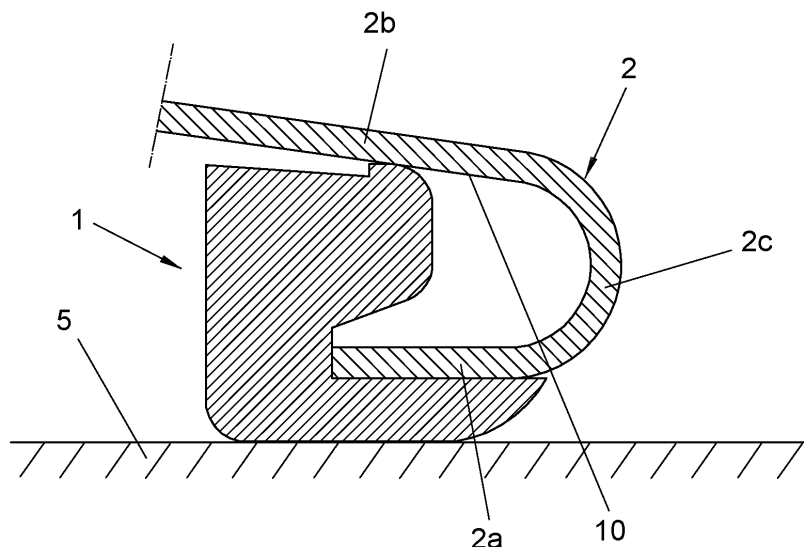


FIG. 3

Description**Object of the invention**

[0001] The present invention, as expressed in the wording of this specification, relates to a support device for furniture comprising at least one arched part made of plastic material that adapts to the edge of a base of pieces of furniture such as chairs, armchairs, stools, tables, etc.; such that the piece of furniture rests on the floor by means of this arched part, thereby achieving a positioning that protects the base of the pieces of furniture by avoiding the direct contact thereof with the floor and thus preventing the deterioration of said base and the scratching of the floor.

[0002] Based on this premise, the object of the invention is for the arched parts made of plastic material to remain anchored at all times and in a stable manner to the edge of the base of the pieces of furniture, even when the piece of furniture is dragged, highlighting the fact that, conventionally, semi-rigid profiles incorporated in the metal bases of other pieces of furniture dislodge from their location over time, especially when they are dragged, which is an obvious problem that is solved with the device of the invention.

Technical problem to be resolved and background of the invention

[0003] There are many pieces of furniture that are currently available, which include pieces of furniture with metal bases having perimeter edges with closed contours to which semi-rigid profiles, which rest on the floor, are coupled. This way, the direct contact between the perimeter edges of the metal bases and the floor is avoided. These semi-rigid profiles have a simple rectangular, universal, and unspecified structure, such that said semi-rigid profiles are not well adapted to the edges of the metal bases nor to the floor on which they rest, which causes them to loosen easily with the subsequent problems this entails.

[0004] Although the solution described avoids the premature deterioration of the base and the scratching of the floor on which the piece of furniture rests in principle, it should be noted that the anchor of the semi-rigid profile is a weak anchor that is unable to maintain the stable position of said semi-rigid profile over time, especially when the piece of furniture is dragged, with which the semi-rigid profile ends up dislodging from its coupling in the edge of the base of the piece of furniture.

[0005] In this situation, every time the semi-rigid profile dislodges from its location, it must be put back in place, this repeated problem leading to the deformation of the semi-rigid profile, which causes it to dislodge more frequently. This means that the semi-rigid profile must be replaced with another new semi-rigid profile, with the added cost that this entails. This also creates an inconvenience for the user of the piece of furniture, who also

sees how the dislodging of the semi-rigid profile causes instability in the positioning of said piece of furniture on the floor.

Description of the invention

[0006] In order to achieve the objectives and avoid the drawbacks mentioned in the previous sections, the invention proposes a support device for furniture comprising at least one arched part that is coupled on a perimeter edge having a closed contour which is part of a base belonging to a piece of furniture.

[0007] Said perimeter edge of the base comprises a lower section, an upper section and an intermediate section in which the other two sections, lower and upper, converge. The lower section of the edge of the base fits into a channel of the arched part which is configured to rest on a floor surface by its lower face, while the lower section of the edge of the base rests on a support surface of the arched part.

[0008] The arched part comprises a rear portion in contact with an inner face of the upper section of the edge of the base of the piece of furniture; wherein said rear portion is an elevation of an upper face of the arched part which presses resiliently along its entire length against the inner face of the upper section of the edge of the base of the piece of furniture.

[0009] The arched part has at one end thereof a male element materialised by an extension, while the opposite end of the arched part has a female element materialised by a recess; wherein the extension fits into the recess forming a structure having a closed contour that adapts and adjusts to the perimeter having a closed contour of the perimeter edge of the base of the piece of furniture.

[0010] The rear portion of the arched part is located in an area adjacent to a rounded edge delimited by the convergence of the upper face of the arched part and a plane corresponding to a vertical branch of an angular staggering located in correspondence with an outer lateral face of the arched part; wherein a plane corresponding to a horizontal branch of the angular staggering is part of the support surface wherein the lower section of the edge of the base of the piece of furniture rests.

[0011] The arched part further comprises:

- An inner rounded edge formed by the convergence of the lower face and an inner lateral face of the arched part.
- An outer rounded edge located at an end opposite the inner rounded edge; wherein the lower face of the arched part is delimited between the two rounded edges, inner and outer.

[0012] The upper face of each of the arched parts includes a furrow along the entire length of the arched part, with the exception of a first end section adjacent to the extension, and a second end section that is longer than the first end section; wherein the second end section

comprises the recess along its entire length.

[0013] The continuity of the furrow of the arched part is interrupted by several intermediate flaps.

[0014] In an embodiment of the invention, the support device for furniture comprises at least two arched parts that are joined together by means of the extensions and the recesses constituting the male elements and female elements, respectively, arranged in the ends of the arched parts.

[0015] The arched parts are made of an injected plastic material, which is lightweight and wear-resistant.

[0016] The function of the arched parts is to serve as a support, providing the piece of furniture with a rigid surface to make contact with the floor, which improves the contact properties of the piece of furniture with said floor and makes it easier to move the piece of furniture without making noise or scratching certain floor types (tiles, terrazzo, etc.).

[0017] The shape of the arched parts adapted to the edge of the base, as well as the perfectly rounded edges, prevents the arched parts from dislodging from their location once the device of the invention is assembled, even under extreme conditions of use.

[0018] Thus, the device of the invention offers a unique assembly intended to provide the best support for the piece of furniture on the floor under the best conditions, executed regardless of size or suitable material.

[0019] Next, to facilitate a better understanding of this specification and being an integral thereof, a series of figures has been attached, in which the object of the invention has been represented in an illustrative and non-limiting manner:

Brief description of the drawings

[0020]

Figure 1.- Shows an exploded perspective view of the support device for furniture, object of the invention.

Figure 2.- Shows a plan view of two arched parts made of plastic material forming part of the device of the invention.

Figure 3.- Shows a sectional detail of the device of the invention.

Figure 4.- Shows a profile view of an arched part forming part of the device of the invention.

Figure 5.- Shows a plan view of an arched part made of plastic material forming part of the device of the invention.

Description of an embodiment of the invention

[0021] Considering the numbering adopted in the figures, the support device for furniture comprises two arched parts (1) made of plastic material that are coupled on a perimeter edge (2) having a closed contour which is part of a metal base (3) belonging to a piece of furniture

(4), such that said perimeter edge (2) of the base comprises a lower section (2a), an upper section (2b) and a curved intermediate section (2c) where the other two sections, lower (2a) and upper (2b), converge.

[0022] Thus, the piece of furniture (4) rests on a floor (5) by means of the two arched parts (1), providing a characteristic positioning of the assembly of the piece of furniture (4) that prevents the deterioration of the floor (5) and also the deterioration of the base (3) of the piece of furniture (4).

[0023] The arched parts (1) comprise a section delimited by an upper face (1a), a lower face (1b) that is in contact with the floor (5), an inner lateral face (1c) and an outer lateral face (1d), wherein an angular staggering (6) is formed in combination with a channel (7). These two elements (6), (7) form a support surface (8) on which the lower section (2a) of the perimeter edge (2) of the base (3) of the piece of furniture (4) rests.

[0024] One part of the perimeter edge (2) makes contact with a bottom (7a) of the channel (7) following the arched parts (1).

[0025] On the other hand, a rear portion (9) of the upper face (1a) of the arched parts (1) contacts and fits against an inner face (10) of the upper section (2b) of the perimeter edge (2) of the base (3), such that this contact between the arched parts (1) and the inner face (10) of the perimeter edge (2), together with the positioning on the support surface (8) of the arched parts (1), secures the anchoring of such anchor parts (1) to the perimeter edge (2) of the base (3). This prevents the dislodging of said arched parts (1), even if the piece of furniture (4) is dragged along the floor (5).

[0026] The rear portion (9) of the upper face (1a) of the arched parts (1) comprises an end elevation that is in contact with the inner face (10) of the upper section (2b) of the perimeter edge (2) of the base (3).

[0027] The edges of the arched parts (1) have a rounded configuration that will be described below.

[0028] The two arched parts (1) incorporate at their opposite ends male and female elements that fit together, wherein the male element of one of the arched parts (1) comprises an extension (11) that fits into a recess (12) constituting the female element of the other matching arched part (1).

[0029] Thus, considering a first arched part (1), an end comprises an extension (11) and the opposite end comprises a recess (12), such that this first arched part (1) is joined to a second arched part (1) which also has the extension (11) and the recess (12) at its opposing ends.

[0030] Each of the arched parts (1) incorporates in its upper face (1a) a furrow (16) along the entire length of the arched parts (1), with the exception of a first end section (13) adjacent to the extension (11) and a second end section (14), which is longer than the end section (13). The second end section (14) comprises the recess (12) (female element) along its entire length.

[0031] The continuity of said furrow (16) is interrupted by several intermediate flaps (15) that make the structure

of each of the arched parts (1) more rigid.

[0032] The second end sections (14) of the two arched parts (1) make it possible to adapt the total length of the contour formed by such parts to the length of the perimeter edge (2) of the base (3) of the piece of furniture (4). A few pieces of the second end sections (14) can be cut for it.

[0033] The convergence of the lower face (1b) and the inner lateral face (1c) of the arched parts (1) comprises an inner rounded edge (17). Each arched part further comprises an outer rounded edge (18) located at an end opposite said inner rounded edge (17), such that the lower face (1b) of the arched parts (1) is delimited between those two rounded edges: inner (17) and outer (18), and not by sharp edges as is the case in other conventional devices.

[0034] The assembly of the arched parts (1) on the edge (2) of the base (3) of the piece of furniture (4) avoids looseness in order to better support said arched parts (1) and therefore prevent the possibility of dislodging thereof.

[0035] The rear portion (9) of each arched part (1) is located in an area adjacent to a rounded edge (19) delimited by the convergence of the upper face (1a) of the arched part (1) and a plane corresponding to a vertical branch of the angular staggering (6) arranged in correspondence with an outer lateral face (1d) of the arched part (1); wherein a plane corresponding to a horizontal branch of the angular staggering (6) is part of the support surface (8) on which the lower section (2a) of the edge (2) of the base (3) of the piece of furniture (4) rests.

[0036] The way in which the two arched parts (1) adjust to one another by the ends thereof forms a closed frame structure that is perfectly adapted to the perimeter of the edge (2) of the base (3) of the piece of furniture (4), without any looseness, which achieves a perfect fit that prevents said frame structure (formed by the two arched parts (1)) from dislodging or loosening during the most unfavourable uses thereof.

[0037] It should also be noted that the characteristic joining of the two arched parts (1) by the ends thereof by means of the tongue-and-grooved coupling prevents any looseness and provides a stronger and more solid attachment.

Claims

1. **A support device for furniture** comprising at least one arched part (1) that is coupled on a perimeter edge (2) having a closed contour which is part of a base (3) belonging to a piece of furniture (4); wherein said perimeter edge (2) of the base (3) comprises a lower section (2a), an upper section (2b) and an intermediate section (2c) in which the other two sections, lower (2a) and upper (2b), converge; and wherein the lower section (2a) of the edge (2) of the base (3) fits into a channel of the arched part (1) which is configured to rest on a floor surface by its

lower face (1b), while the lower section (2a) of the edge (2) of the base (3) rests on a support surface of the arched part (1);

characterised in that:

- the arched part (1) comprises a rear portion (9) in contact with an inner face (10) of the upper section (2b) of the edge (2) of the base (3) of the piece of furniture (4); wherein said rear portion (9) is an elevation of an upper face (1a) of the arched part (1) along its entire length which presses resiliently against the inner face (10) of the upper section (2b) of the edge (2) of the base (3) of the piece of furniture (4);

- the arched part (1) has at one end a male element materialised by an extension (11), while the opposite end of the arched part (1) has a female element materialised by a recess (12); wherein the extension (11) fits into the recess (12) forming a structure having a closed contour that adapts and adjusts to the perimeter having a closed contour of the perimeter edge (2) of the base (3) of the piece of furniture (4).

2. **The support device for furniture** according to claim 1, wherein the rear portion (9) of the arched part (1) is located in an area adjacent to a rounded edge (19) delimited by the convergence of the upper face (1a) of the arched part (1) and a plane corresponding to a vertical branch of an angular staggering (6) arranged in correspondence with an outer lateral face (1d) of the arched part (1); wherein a plane corresponding to a horizontal branch of the angular staggering (6) is part of the support surface (8) on which the lower section (2a) of the edge (2) of the base (3) of the piece of furniture (4) rests.

3. **The support device for furniture** according to any one of the preceding claims, **characterised in that** the arched part (1) comprises:

- an inner rounded edge (17) formed by the convergence of the lower face (1b) and an inner lateral face (1c) of the arched part (1);

- an outer rounded edge (18) located at an end opposite the inner rounded edge (17); wherein the lower face (1b) of the arched part (1) is delimited between the two rounded edges, inner (17) and outer (18).

4. **The support device for furniture** according to any one of the preceding claims, **characterised in that** the upper face 1(a) of each of the arched parts (1) includes a furrow (16) along the entire length of the arched part (1), with the exception of a first end section (13) adjacent to the extension (11), and a second end section (14) that is longer than the first end section (13); wherein the second end section (14) com-

prises the recess (12) along its entire length.

5. **The support device for furniture** according to claim 4, **characterised in that** the continuity of the furrow (16) of the arched part (1) is interrupted by several intermediate flaps (15). 5

6. **The support device for furniture** according to any one of the preceding claims, **characterised in that** it comprises at least two arched parts (1) that are joined together by means of the extensions (11) and recesses (12) constituting the male elements and female elements, respectively, arranged in the ends of the arched parts (1). 10
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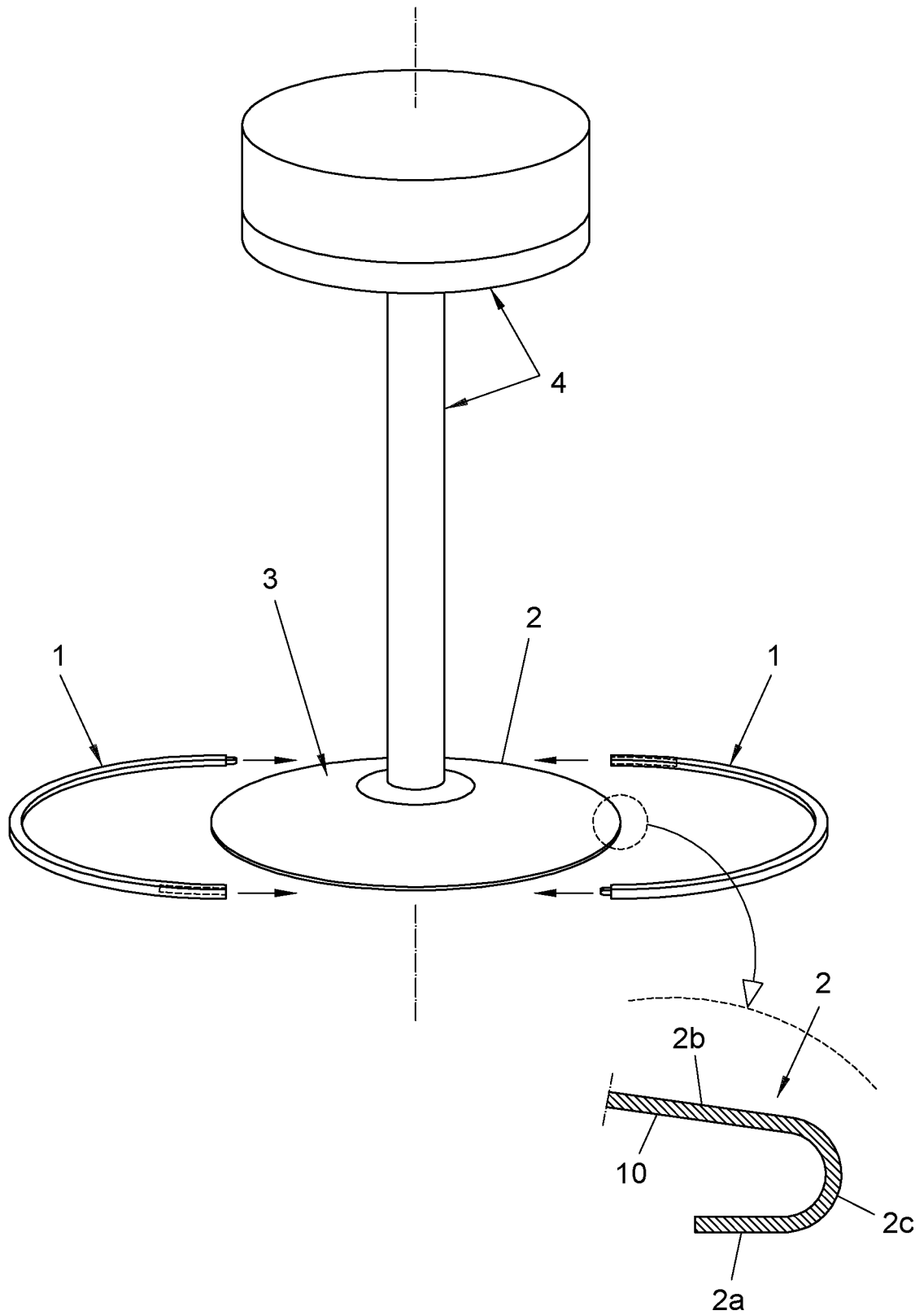


FIG. 1

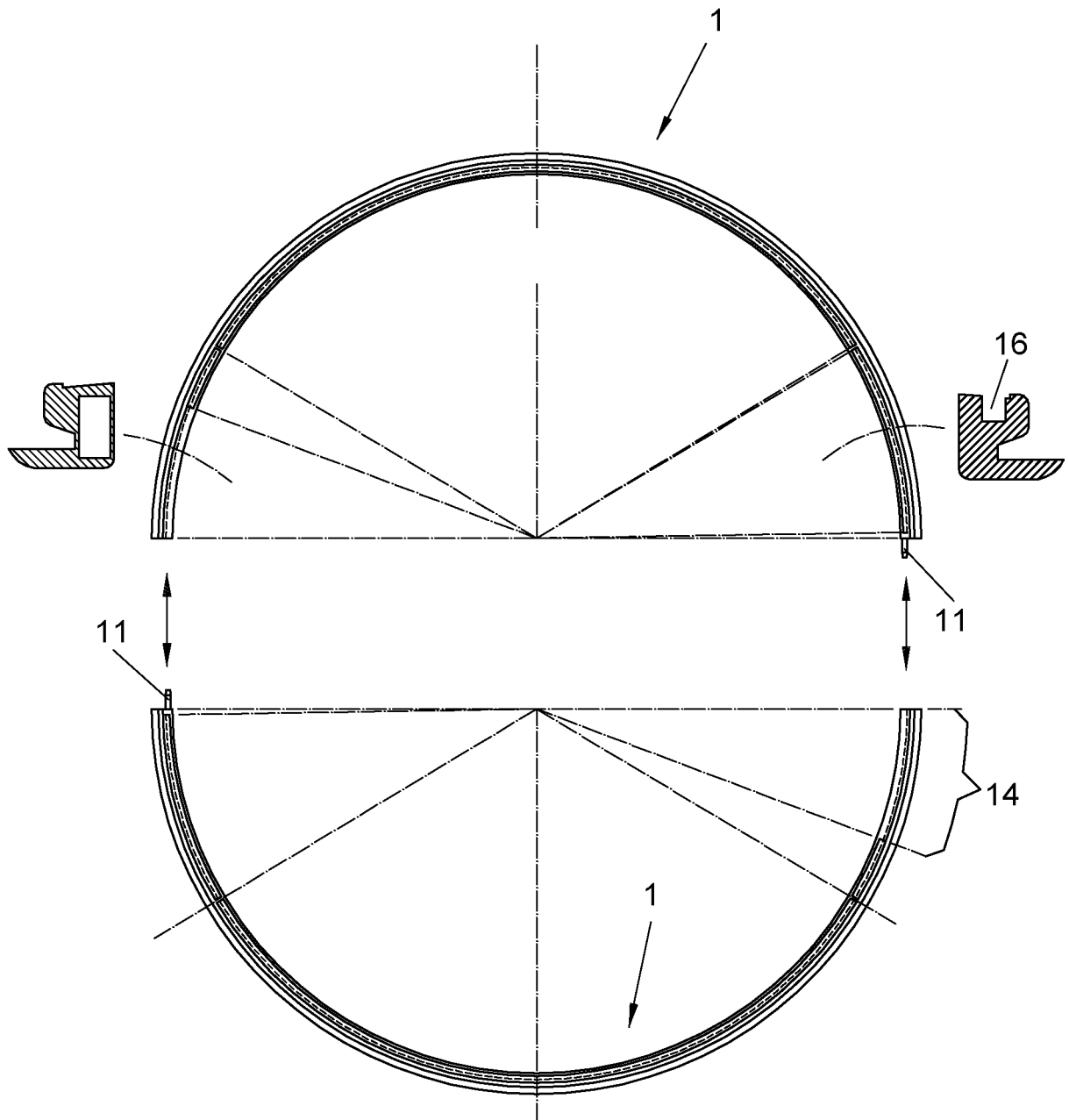


FIG. 2

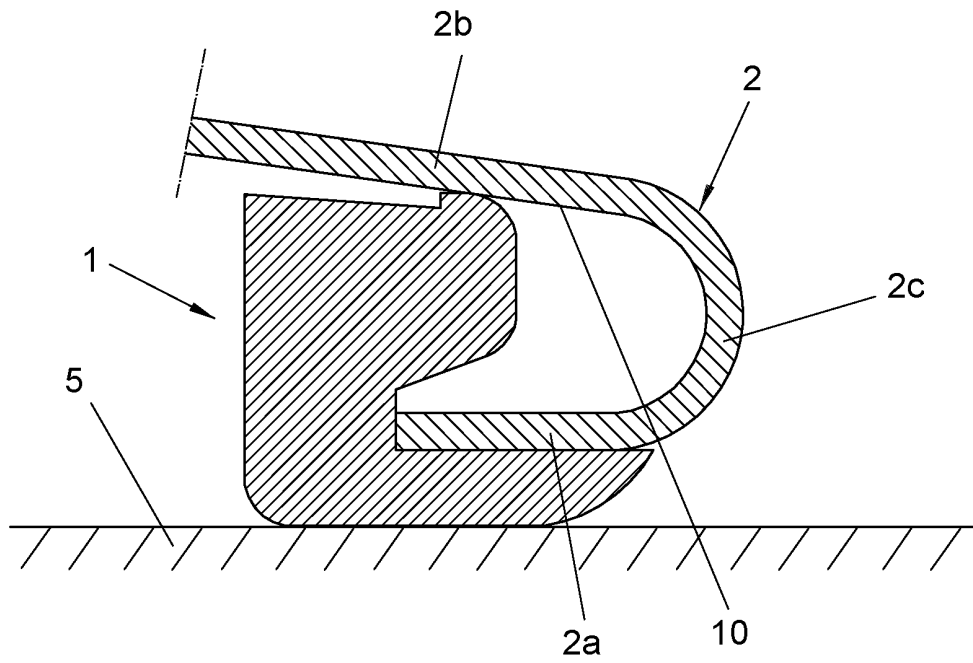


FIG. 3

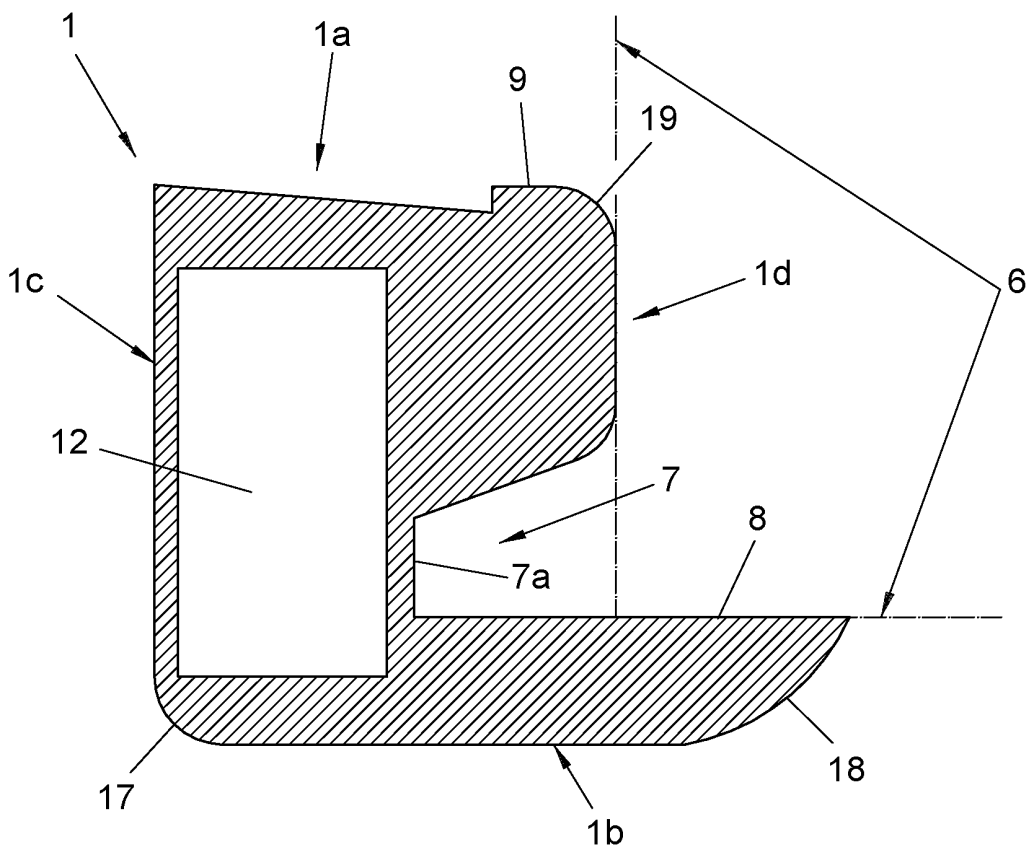


FIG. 4

INTERNATIONAL SEARCH REPORT

International application No.
PCT/ES2018/070191

5	A. CLASSIFICATION OF SUBJECT MATTER	
	See extra sheet	
	According to International Patent Classification (IPC) or to both national classification and IPC	
10	B. FIELDS SEARCHED	
	Minimum documentation searched (classification system followed by classification symbols) A47B	
	Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched	
15	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	
20	Category*	Citation of document, with indication, where appropriate, of the relevant passages
		Relevant to claim No.
	A	JP S5013705U U 13/02/1975, the whole document
25	A	US 5681416 A (NEUMANN TOM ET AL.) 28/10/1997, column 3, lines 27 - 54; figure 1,
	A	US 2955645 A (CRAMER HAROLD W) 11/10/1960, the whole document.
30	A	US 906873 A (HACKH EUGEN) 15/12/1908, The whole document.
	A	[Retrieved on 05-04-2018]; Published on 2016, Jan, 8 th . https://www.youtube.com/watch?v=YbLvrEpnAKc..
35		
40	<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.	
	* Special categories of cited documents:	"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
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45	"E" earlier document but published on or after the international filing date	"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
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50	"P" document published prior to the international filing date but later than the priority date claimed	
	Date of the actual completion of the international search 31/07/2018	Date of mailing of the international search report (01/08/2018)
55	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 A. Fernández Pérez Telephone No. 91 3498539

Form PCT/ISA/210 (second sheet) (January 2015)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/ES2018/070191

Information on patent family members

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Patent document cited in the search report	Publication date	Patent family member(s)	Publication date
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		CA2107814 C	03.08.1999
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INTERNATIONAL SEARCH REPORT

International application No.

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CLASSIFICATION OF SUBJECT MATTER

A47B91/00 (2006.01)

A47B91/04 (2006.01)

A47B91/12 (2006.01)

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