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(54) **COVERING MEMBER FOR CONCEALED HINGES**

(57) Covering member (10) for concealed hinges (14), comprising a platelet (11) with a central body (12) with which at least one tab (13) is associated, configured to be inserted in a corresponding seating (17) associated with the concealed hinge (14). The tab (13) comprises an elastically yielding mechanical mean, which is configured to couple with at least one part of the seating (17) to obtain a stable and reliable coupling between the tab (13) and the seating (17) and therefore between the covering member (10) and the concealed hinge (14).

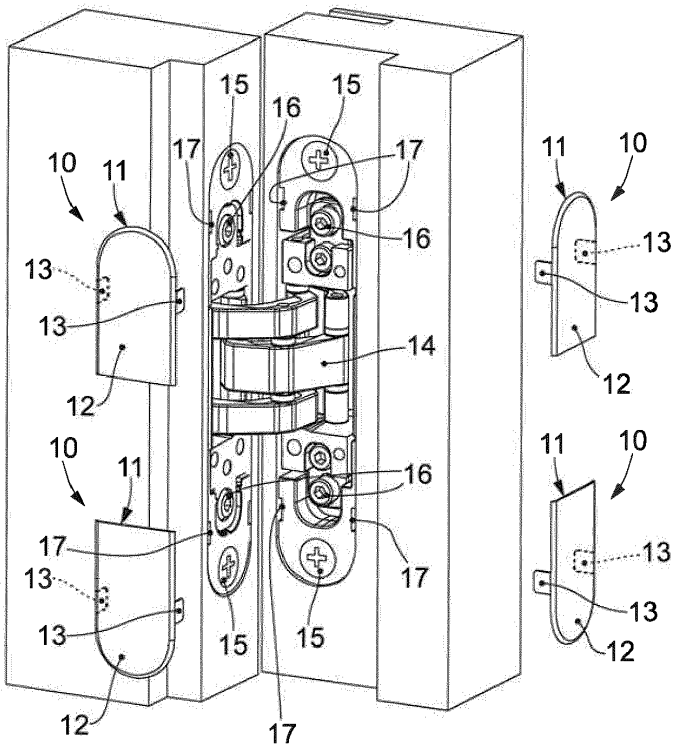

fig. 1

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Description

FIELD OF THE INVENTION

[0001] The present invention concerns a covering member for hinges of the so-called concealed type, that is, not visible from the outside when the mobile structure on which the hinge is mounted, such as for example a door, or the panel of a piece of furniture, is in a closed position with respect to a fixed structure, such as for example the jamb of a door, or the frame of a piece of furniture. The covering member is suitable to cover the mechanical parts that allow the hinge to be attached to the fixed structure and the mobile structure, or to be adjusted with respect to them, to cover those parts when the hinge is in the open position and thus to improve the esthetics of the door, window or piece of furniture in its entirety.

BACKGROUND OF THE INVENTION

[0002] In the field of furniture, doors and windows, recessed or concealed hinges are known, that is, the type which, in the closed position, all the elements of which it consists are completely inserted inside the door or window or piece of furniture on which they are mounted, so that they are not visible from outside.

[0003] Two examples of concealed hinges are described in the European patent applications EP-A-2.719.851 and EP-A-2.390.446, in the name of the present Applicant.

[0004] It is also known that, to improve the esthetics of doors or windows or furniture on which concealed hinges are mounted, the mechanical parts that allow the hinge to be attached to the fixed structure and the mobile structure, or to be adjusted, such as for example the heads of the attachment and adjustment screws, are conveniently covered by covering members, each consisting of a shaped platelet, which has the shape of a part of the hinge. Each platelet is normally made by molding a very thin metal sheet, for example 0.5 mm thick, and provided with two or more lateral tabs, with a determinate constant thickness and configured to be inserted into corresponding seatings that normally consist of recesses or hollows present on the sides of the hinging bodies of the hinge.

[0005] Known covering members have the disadvantage, however, that they must have the lateral tabs extremely precise so that they can be inserted without play into the corresponding seatings. Any lack of precision in the sizes of the lateral tabs, in particular in their thickness, in relation to those of the seatings, would cause an unstable and insecure coupling, so that there would be a high probability that the covering member itself could accidentally detach from the hinge, thus losing its function.

[0006] Furthermore, it often happens that the producers of doors, windows or furniture produce the seatings, in which the two hinging bodies of a concealed hinge are disposed, in a not very precise way, usually through milling, with the consequence that, once the hinge is mounted, there are plays between the seating in the door or window or piece of furniture and the corresponding hinging body of the hinge; plays make the assembly of known covering members even more unstable and insecure.

[0007] A first purpose of the present invention is to obtain a covering member for concealed hinges which is economical, simple to make and install, and which at the same time is also very stable and reliable, so that once installed it does not exit undesirably from its seatings, even when there are possible plays between the seatings in the door, window or piece of furniture, and the corresponding hinging bodies of the concealed hinge.

[0008] The Applicant has devised, tested and embodied the present invention to overcome the shortcomings of the state of the art and to obtain these and other purposes and advantages.

SUMMARY OF THE INVENTION

[0009] The present invention is set forth and characterized in the independent claim.

[0010] The dependent claims describe other characteristics of the present invention.

[0011] In accordance with the above purpose, a covering member for concealed hinges according to the present invention comprises a platelet with a central body with which at least one tab is associated, bent with respect to a surface of the central body and configured to be inserted in a corresponding seating associated with the concealed hinge.

[0012] According to a characteristic aspect of the present invention, the tab comprises an elastically yielding mechanical mean, which is configured to couple with at least one part of the seating to obtain a stable and reliable coupling between the tab and the seating.

[0013] According to another characteristic aspect of the present invention, the elastically yielding mechanical mean comprises a cambering or a bend.

[0014] Furthermore, according to other characteristics of the present invention, two tabs are provided, disposed laterally and on opposite sides with respect to the central body; or three tabs, at least two of which are disposed laterally and on opposite sides with respect to the central body; or four tabs, disposed laterally and in pairs, on opposite sides with respect to the central body; or five tabs, at least four of which are disposed laterally and in pairs, on opposite sides with respect to the central body.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] These and other characteristics of the present invention will become apparent from the following description of some embodiments, given as a non-restrictive example with reference to the attached drawings wherein:

- fig. 1 is a three-dimensional view of some covering members according to the present invention in ac-

cordance with a first embodiment, ready to be mounted in a concealed hinge of a known type;
- fig. 2 is a three-dimensional view of the covering members in fig. 1 mounted on the concealed hinge;
- fig. 3 is a perspective view of a covering member in fig. 1;
- fig. 4 is an enlarged detail of fig. 3;
- fig. 5 is a cross section view, on an enlarged scale, of the detail in fig. 4;
- fig. 6 is a perspective and schematized view of a first variant of the detail in fig. 4;
- fig. 7 is a perspective and schematized view of a second variant of the detail in fig. 4;
- fig. 8 is a perspective and schematized view of a second embodiment of a covering member according to the present invention;
- fig. 9 is a perspective view of a third embodiment of a covering member according to the present invention;
- fig. 10 is a perspective view of a fourth embodiment of a covering member according to the present invention.

DETAILED DESCRIPTION OF SOME EMBODIMENTS OF THE PRESENT INVENTION

[0016] For a simpler explanation of the present invention, the same reference numbers refer to identical or very similar parts in the different embodiments.

[0017] According to a first embodiment of the present invention, a covering member 10 (figs. 1 to 7) comprises a platelet 11, for example made of metal or plastic material, with a central body 12 with which two lateral tabs 13 are associated, disposed on opposite sides and bent substantially at 90° with respect to a surface of the central body 12.

[0018] Both the central body 12 and the lateral tabs 13 are advantageously made in a single piece, for example by molding, and have the same thickness, for example about 0.5 mm.

[0019] Fig. 1 shows four covering members 10 ready to be mounted on a concealed hinge 14 of a known type, for example of the type described in one of the European patent applications EP-A-2.719.851 and EP-A-2.390.446 cited above. In particular, each covering member 10 is configured to cover a part of each of the two hinging bodies of the concealed hinge 14, specifically the one in which the attachment screws 15 and adjustment screws 16 of the concealed hinge 14 are positioned.

[0020] In this specific case, each hinging body of the concealed hinge 14 is provided with four seatings 17, made on the sides and each consisting of a recess or cavity. The transverse size of each seating 17 is substantially the same as, or slightly more than, that of the thickness of each lateral tab 13.

[0021] One lateral tab 13 of the covering member 10 is suitable to be inserted into each seating 17.

[0022] According to a characteristic aspect of the present invention, each lateral tab 13 comprises an elastically yielding mechanical mean 18, for example made during the molding step, which in the example given here consists of a cambering (figs. 4 and 5).

[0023] According to a first variant, shown in fig. 6, the elastically yielding mechanical mean 18 consists of a bend disposed along an axis perpendicular to the surface of the central body 12.

[0024] According to a second variant, shown in fig. 7, the elastically yielding mechanical mean 18 consists of a bend disposed along an axis inclined with respect to the surface of the central body 12.

[0025] The presence of the elastically yielding mechanical mean 18 guarantees that the covering member 10 remains stably and reliably associated with the concealed hinge 14 when the lateral tabs 13 are inserted into the corresponding seatings 17 (fig. 2).

[0026] According to a second embodiment, shown in fig. 8, a covering member 110 according to the present invention comprises three lateral tabs 13, two of which are disposed on opposite sides with respect to the central body 12, while the third is disposed in a central position with respect to the other two.

[0027] According to a third embodiment, shown in fig. 9, a covering member 210 according to the present invention comprises four lateral tabs 13, disposed in pairs on opposite sides with respect to the central body 12.

[0028] According to a fourth embodiment, shown in fig. 10, a covering member 310 according to the present invention comprises five lateral tabs 13, four of which are disposed in pairs on opposite sides with respect to the central body 12, while the third is disposed in a central position with respect to the other four.

[0029] It is clear that modifications and/or additions of parts may be made to the covering members 10, 110, 210 and 310 as described heretofore, without departing from the field and scope of the present invention.

[0030] It is also clear that, although the present invention has been described with reference to some specific examples, a person of skill in the art shall certainly be able to achieve many other equivalent forms of covering members for concealed hinges, having the characteristics as set forth in the claims and hence all coming within the field of protection defined thereby.

Claims

1. Covering member (10, 110, 210 and 310) for concealed hinges (14), comprising a platelet (11) with a central body (12) with which at least one tab (13) is associated, configured to be inserted in a corresponding seating (17) associated with said concealed hinge (14), **characterized in that** said tab (13) comprises an elastically yielding mechanical mean (18), which is configured to couple with at least one part of said seating (17) to obtain a stable and reliable coupling between said tab (13) and said

seating (17) and therefore between the covering member (10) and the concealed hinge (14).

2. Covering member (10, 110, 210 and 310) as in claim 1, **characterized in that** said tab (13) is disposed on one side of said central body (12) and is bent substantially at 90° with respect to a surface of said central body (12).

3. Covering member (10, 110, 210 and 310) as in claim 1 or 2, **characterized in that** said elastically yielding mechanical mean (18) comprises a cambering.

4. Covering member (10, 110, 210 and 310) as in any claim hereinbefore, **characterized in that** said elastically yielding mechanical mean (18) comprises a bend disposed along an axis perpendicular to a surface of said central body (12).

5. Covering member (10, 110, 210 and 310) as in any of the claims from 1 to 3, **characterized in that** said elastically yielding mechanical mean (18) comprises a bend disposed along an axis inclined with respect to a surface of said central body (12).

6. Covering member (10) as in any claim hereinbefore, **characterized in that** it comprises two tabs (13) disposed laterally on opposite sides with respect to said central body (12).

7. Covering member (110) as in any of the claims from 1 to 5, **characterized in that** it comprises three tabs (13), of which at least two are disposed laterally on opposite sides with respect to said central body (12).

8. Covering member (210) as in any of the claims from 1 to 5, **characterized in that** it comprises four tabs (13), disposed laterally and in pairs, on opposite sides with respect to said central body (12).

9. Covering member (310) as in any of the claims from 1 to 5, **characterized in that** it comprises five tabs (13), of which at least four are disposed laterally and in pairs, on opposite sides with respect to said central body (12).

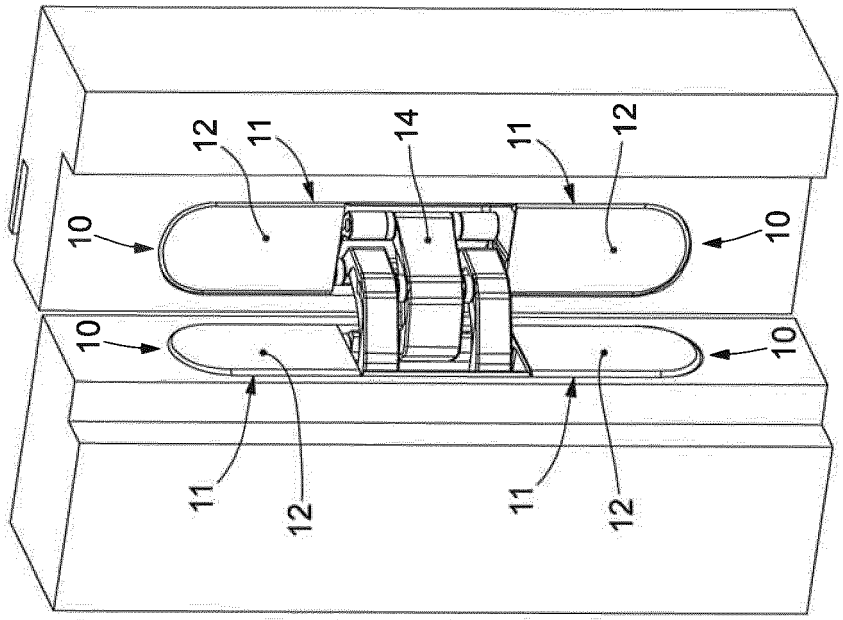

fig. 2

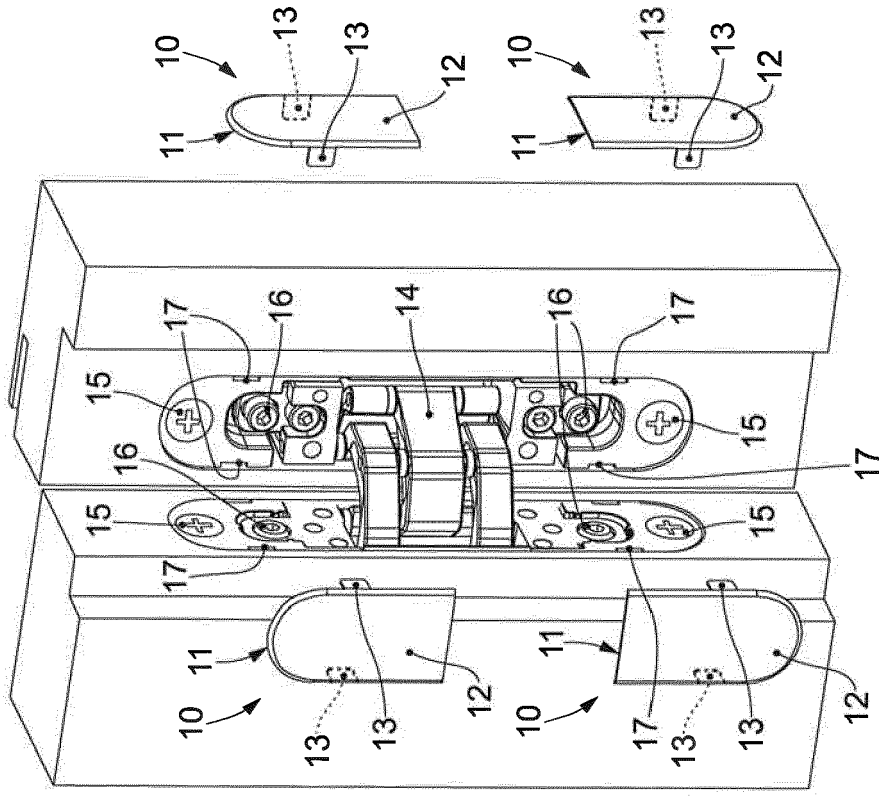

fig. 1

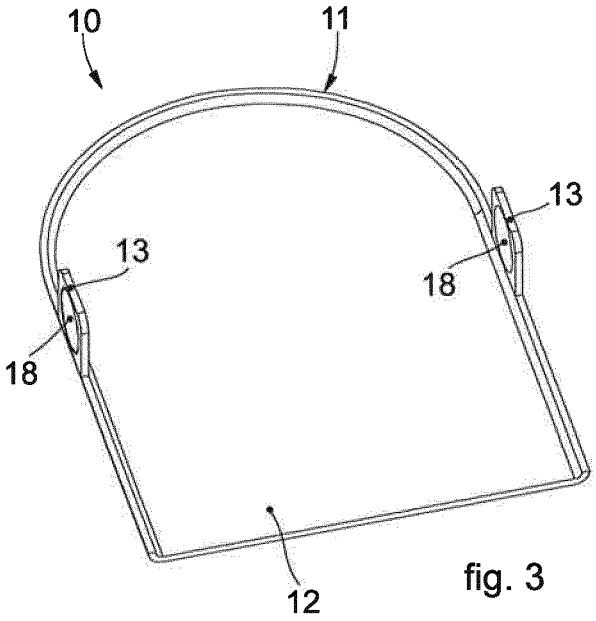

fig. 3

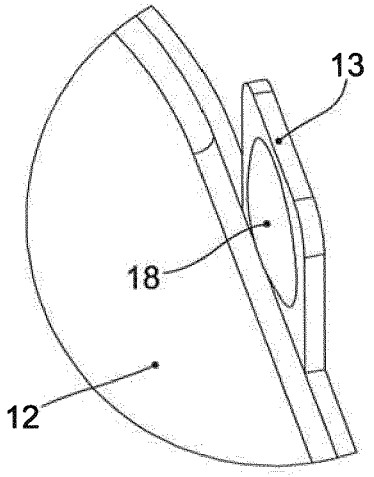

fig. 4

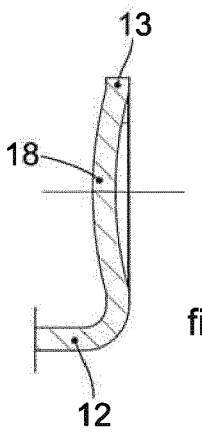

fig. 5

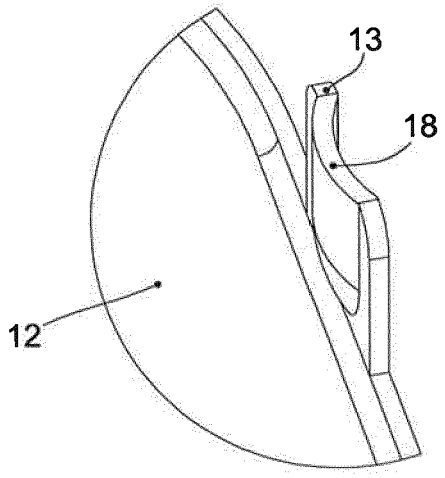

fig. 6

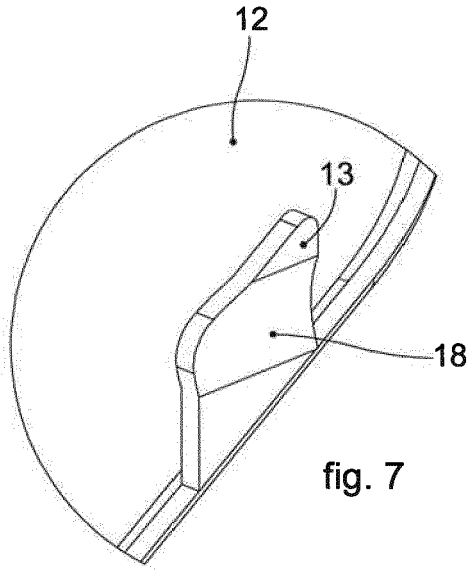

fig. 7

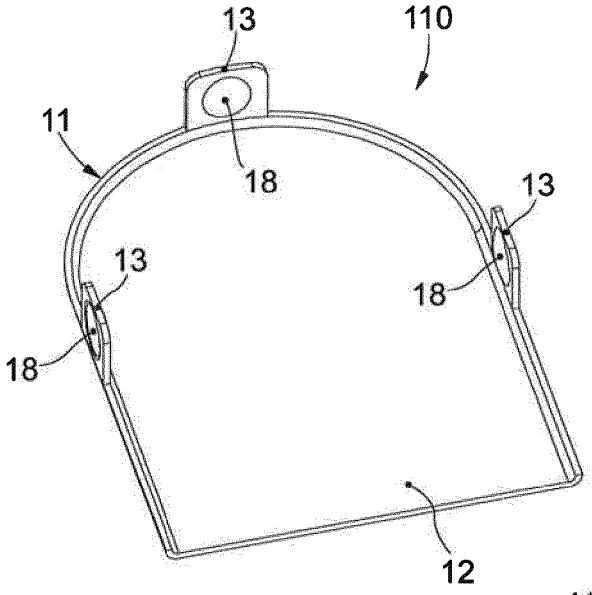

fig. 8

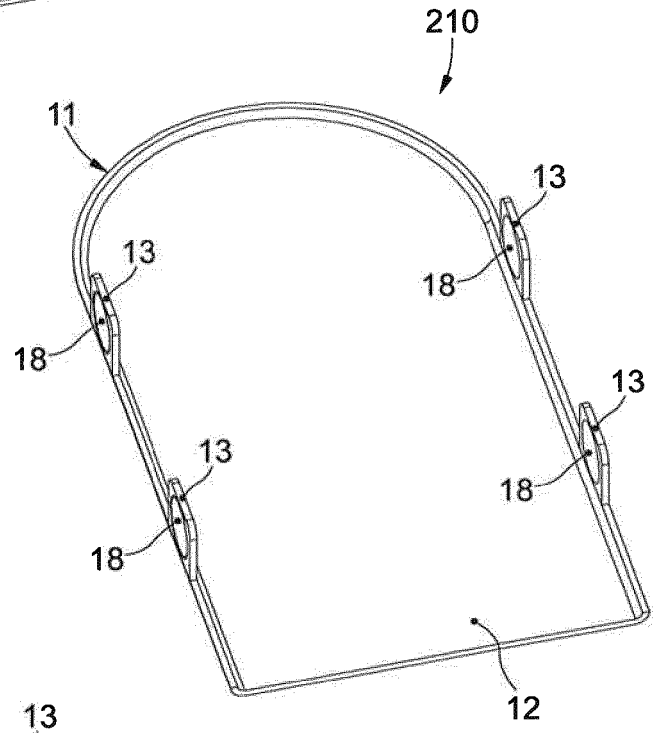

fig. 9

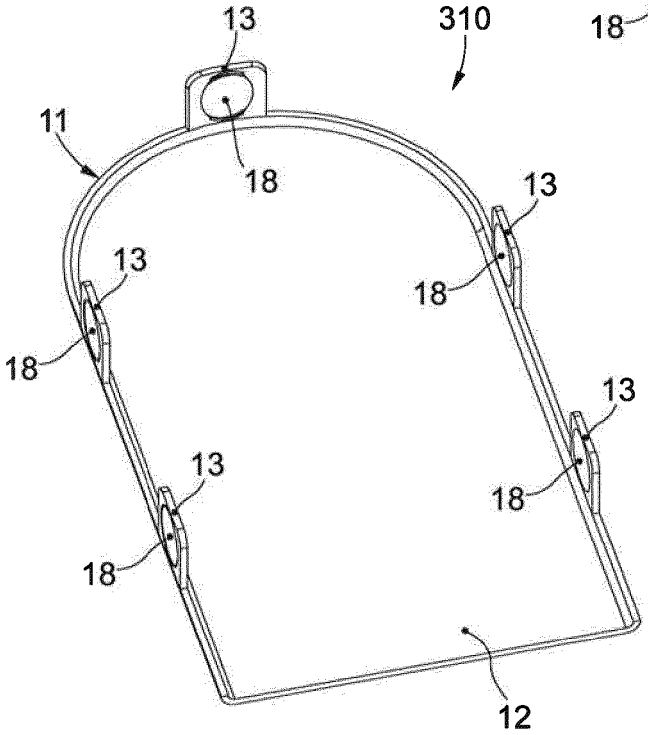

fig. 10

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EUROPEAN SEARCH REPORT

Application Number
EP 16 20 1421

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	DE 20 2014 102793 U1 (SIMONSWERK GES MIT BESCHRÄNKTER HAFTUNG [DE]) 27 June 2014 (2014-06-27) * paragraphs [0022] - [0024]; figures 1,3 * -----	1-9	INV. E05D11/00
Y	DE 197 28 641 A1 (SOUTHCO [US]) 22 January 1998 (1998-01-22) * figures 1a,4-6,10-12 * * column 9, line 45 - column 10, line 12 * * column 11, line 6 - column 12, line 11 * -----	1-9	
A	US 6 152 554 A (PARISI BERNARD [US]) 28 November 2000 (2000-11-28) * column 3, lines 6-32; figures 1-3 * -----	1-9	

TECHNICAL FIELDS SEARCHED (IPC)

E05D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	21 March 2017	Klemke, Beate

CATEGORY OF CITED DOCUMENTS

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EPO FORM 1503 03.82 (P04C01)

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21-03-2017

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 202014102793 U1	27-06-2014	NONE	
DE 19728641 A1	22-01-1998	AU 688703 B2	12-03-1998
		CA 2196648 A1	16-01-1998
		DE 19728641 A1	22-01-1998
		FR 2751018 A1	16-01-1998
		FR 2754300 A1	10-04-1998
		FR 2754301 A1	10-04-1998
		FR 2785012 A1	28-04-2000
		GB 2315296 A	28-01-1998
		IT TO970121 A1	14-08-1998
		JP H1061306 A	03-03-1998
		TW 334492 B	21-06-1998
		US 5765263 A	16-06-1998
US 6152554 A	28-11-2000	NONE	

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- EP 2719851 A **[0003] [0019]**
- EP 2390446 A **[0003] [0019]**