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(54) **Support for supporting long objects**

(57) A support for supporting long objects (2) and comprises at least two opposite trestles (3) assembled each of at least two vertical frames (4) and at least one horizontal bar (6). Each frame (4) consists of a number of frame parts (5) releasably placed on top of each other and that each frame part (5) is formed with an upper and

lower seat for accommodating a lower and upper side, respectively of an end portion of a bar (6). A support is provided, which is adapted to support long objects in such way that there is free access for carrying out working operations on the objects, e.g. painting the objects.

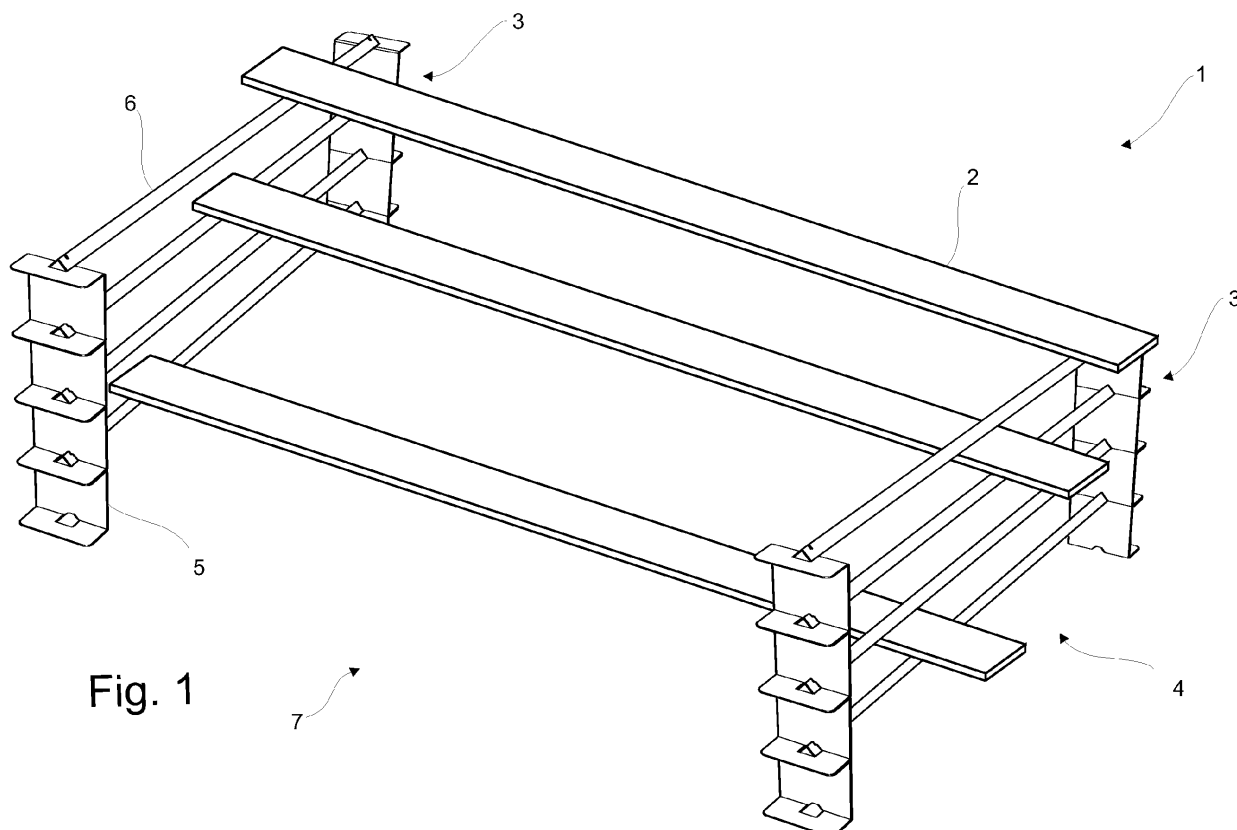


Fig. 1

Description

[0001] The invention relates to a support for supporting long objects and comprises at least two trestles assembled each of at least two vertical frames and at least one horizontal bar.

[0002] The invention also relates to a method for assembling a trestle of the support and to a use of the support.

[0003] Owing to their size long objects will often occupy relative much of the available space on devices adapted for supporting such objects. Supports of that kind therefore need to have a large supporting area, which causes the devices to be relatively expensive to get and to use.

[0004] The term "long object" includes in this connection an object which, seen in a system of co-ordinates, has a larger extension along one of the coordinates than along the two other ones. Thus a long object can e.g. be a plank, a bar, a timber, a log, but also slabs, panels, and any other objects that need temporary storage, or storage and/or working where existing storage and/or storage facilities and/or equipment are inappropriate and/or insufficient for the objects.

[0005] As a typical support a table can be mentioned, which however suffer of that disadvantage that a table has a very limited supporting area at disposal in relation to its size since the long objects can be supported in one level only, namely on the tabletop.

[0006] Larger supporting areas for supporting long objects can be obtained when using racks with shelves placed in more levels. This solution is usable when storing the objects for a longer time but not for a shorter time because it is a strenuous and time-consuming work to place and to remove again such long objects from the relatively inaccessible shelves.

[0007] Ordinary racks can however not be used in practice for supporting long objects being subjected to working operations such as e.g. painting as it hardly is possible to carry out such operations in the narrow space between the shelves.

[0008] The above-mentioned disadvantages of the prior art supports are according to the present invention remedied by,

[0009] in a first aspect of the invention providing a support of the kind mentioned in the opening paragraph which is adapted to support long objects in such way that there is free access for carrying out working operations on the objects, e.g. painting the objects,

[0010] in a second aspect of the invention providing a support of the kind mentioned in the opening paragraph which does not take up much space during storage and transport,

[0011] in a third aspect of the invention providing a support of the kind mentioned in the opening paragraph which is adapted in such way that it is easy, fast and comfortable to place long objects upon the support and to remove the objects again,

[0012] in a fourth aspect of the invention providing a

support of the kind mentioned in the opening paragraph which is inexpensive to get and use,

[0013] in a fifth aspect of the invention providing a support of the kind mentioned in the opening paragraph which has a large supporting area in proportion to the size of the support,

[0014] in a sixth aspect of the invention providing a support of the kind mentioned in the opening paragraph which is easy, inexpensive and fast to build,

[0015] in a seventh aspect of the invention providing a support of the kind mentioned in the opening paragraph which can be adapted for use with a plurality of various length of long objects.

[0016] The novel and unique features according to the invention whereby this is achieved consists in the fact that each frame consists of a number of frame parts releasably placed on top of each other and that each frame part is formed with an upper and lower seat for accommodating a lower and upper side, respectively of an end portion of the bar.

[0017] Each trestle thus is divided up into a number of trestle parts in form each off two opposite frame parts and a bar whereby two opposite trestle parts form together a support section of the support device and the support sections releasable are placed on top of each other.

[0018] This construction implies that advantage that the support sections consecutively can be placed on top of each other concurrently with stepwise filling up the bars of the sections with objects.

[0019] Thereby is, according to the invention, advantageously obtained that there is free access to threat, e. g. paint objects placed upon a first support section as long as a second support section is still not placed on top of the first one and these operations can be repeated successively as long as needed or until all the bars of the support is occupied by the painted objects.

[0020] According to the invention can already painted objects be lying upon the bars for being dried up and the support device can successively be separated again into single support sections so that the painted objects easily and comfortable can be removed. In an expedient embodiment of the invention can each frame part consist of an U-formed plate, which has a body extending into a vertical direction and an upper and lower flange protruding from said body into a horizontal direction.

[0021] It can moreover, according to the invention, be appropriate to form the upper seat partly in the upper flange of a frame part and partly in the body and the lower seat partly in the lower flange of the frame part and partly in the body so that each seat can accommodate a part of an end portion of a bar.

[0022] The lower side of the end portion of the bar can according to the invention furthermore be formed with a lower transverse slit which has a width corresponding to the wall thickness of the plate of a frame part and the body of the frame part can be formed with an upper incision fitting to said lower transverse slit whereby the upper side of the end portion of the bar can be formed with

an upper transverse slit, which is cut in the same cross section of the end portion of the bar as the lower side of the end portion of the bar and likewise has a width corresponding to the wall thickness of the plate of a frame part and the body of the frame part be formed with a lower incision fitting to said upper transverse slit.

[0023] Thereby is advantageously obtained a stable support since the engagement between the opposite slits in the bars and the incisions in the bodies of the frame parts secure that the opposite frame parts keep the predetermined distance from each other, that the bars form a right angle with the respective frame parts. The bar can according to the invention be formed with a square or rectangular cross-section and the sides of the bar be forming an angle with a horizontal plane whereby the support is in particular suitable for painting the objects since the shape and position of the bars causes the objects to have a minimum of contact with the bars.

[0024] The opposite lateral edges of an end portion of a bar which has a square or rectangular cross section can, according to the invention, be placed in the seats of two frame parts placed on top of each other in such way that said edges are flushing with the upper and lower faces, respectively of the opposite flanges of the two frame parts, whereby that advantage is achieved that the upper flange of a frame part is supporting the lower flange of a superjacent frame part.

[0025] The slits in an end portion of a bar and the incisions in the body of a frame part can according to the invention moreover be formed in such way that the upper face of the upper flange of a frame part is abutting the lower face of the lower flange of another frame part when the two frame parts are placed on top of each other and an end portion of a bar is placed in the upper and lower seat, respectively of said frame parts whereby also advantageously is achieved that the upper flange of a frame part is supporting the lower flange of a superjacent frame part.

[0026] According to the invention can each trestle of the support easily and quickly be assembled by carrying out the operation steps mentioned below whereby the trestle obtains a stable and rigid structure, which nevertheless is easy to disassemble again in the reversed order.

[0027] These operations consist in placing two first frame parts upon a support with their respective flanges protruding into opposite directions, placing the opposite end portions of a first bar in the upper seats of the first frame parts, placing two second frame parts on top of the two first frame parts with their lower seats engaging the opposite end portions of the first bar, placing the opposite end portions of a second bar in the upper seats of the second frame parts, placing two third frame parts on top of the two second frame parts with their lower seats engaging the opposite end portions of the second bar, and repeating said operations until the support is finished.

[0028] The invention will be explained in greater detail

below, giving further advantageous features and technical effects and describing exemplary embodiments with reference to the drawing, in which

Fig. 1 shows a support device according to the invention, seen in perspective,

Fig. 2 shows a trestle, seen in perspective,

Fig. 3 is an exploded view of a trestle part, seen in perspective ,

Fig. 4 is a detailed view of a frame part, seen in perspective,

Fig. 5 shows a sectional view of a part of the trestle taken along line V - V in fig. 2, and

Fig. 6 shows the support device when disassembled for transportation.

[0029] The support device of the invention is in the following described as an embodiment adapted to support boards of wood being painted and afterwards dried up.

[0030] In fig. 1 is said embodiment of the support 1, by way of example, shown in a situation where the support device supports only three boards 2 of wood to be painted and dried up. The capacity of the support device is however arranged for supporting a larger numbers of boards, (not seen) and the support device can within the scope of the invention also be used for supporting other objects, (not seen).

[0031] The shown support comprises in this case two opposite trestles 3, but can within the scope of the invention comprise another number of trestles, (not seen).

[0032] Each trestle 3 consists in this case of four single trestle parts 4 placed on top of each other and each trestle part 4 consists of two opposite frame parts 5 and a square tube 6, as seen in fig. 1 and 2.

[0033] Within the scope of the invention can each trestle part however comprise two or more bars, (not shown).

[0034] Two opposite trestle parts 4 form moreover together a support section 7 of the support device 1 and the five support sections 7 are releasably placed on top of each other.

[0035] Owing to the above mentioned specific structure of the support 1 according to the invention a large number of boards of woods can now easily and quickly be painted and dried up within a relatively little space.

[0036] These operations take place in the following way:

- placing a first support section upon e.g. a floor,
- painting a suitable number of boards placed on the first support and let the painted boards be laying on the support for drying up,
- placing a second support section on top of the first

one, and

- repeating the operations until the boards all has been painted or the support is not able to contain more boards.

[0037] The removal of the dry boards takes place in the reversed order.

[0038] Since said painting operations takes place on a support section before placing the next one on top of the first one is achieved that important advantage that the operator, (not seen) has free access to the boards to be painted so that he/she unhindered is able to perform an excellent painting of the board and moreover in an easy and comfortable way.

[0039] In fig. 2 a trestle 3 is shown comprising the four single trestle parts 4.

[0040] An exploded view of one single trestle part 4 with the two opposite frame parts 5 and the tube 6 is disclosed in fig. 3.

[0041] Each frame part 5 is moreover formed as an U-formed plate 8 with a body 9 and a lower flange 10 and an upper 11.

[0042] The tube 6 is formed with a square cross section defining two opposite lateral edges 12 placed in a horizontal plane and two other opposite lateral edges 13 placed in a vertical plane.

[0043] When using the support 1 for painting e.g. boards of wood it is an advantage that the upper vertical edge 13 has a relatively little supporting area.

[0044] The end portions 14 of the tube 6 are formed each with a lower transverse slit 15 and an upper transverse slit 16. The width of each of these slits 15, 16 correspond to the thickness of the plate of the frame part 5.

[0045] The body 9 of the U-formed frame part 5 is formed with an upper vertical incision 17 fitting to the lower transverse slit 15 in the tube 6 and with a lower vertical incision 18 fitting to the upper transverse slit 16 in the tube 6.

[0046] The upper flange 11 of the frame part 5 is formed with an upper horizontal incision 19 merging with the upper vertical incision 17 in the body 9 and the lower flange with a lower horizontal incision merging with the lower vertical incision 20 in the body 9 such that a frame part is formed with an upper seat 17,19 for receiving the lower slit 15 in the tube 6 and a lower seat 18,20 for receiving the lower slit 16 in the tube 6.

[0047] A frame part 5 is shown in detail in fig. 4, with the upper vertical incision 17 and the lower vertical incision 18. The lower vertical incision 18 has a cut corner 21 enabling the frame part to receive a cylindrical tube or a rectangular tube with a side facing downwards.

[0048] One frame part 5, the lower part of another frame part 5 and the end of the tube 6 are shown in cross-section in fig. 5.

[0049] The edge surrounding the upper vertical incision 17 and the lower vertical incision 18 of the two frame parts 5 are fitted into the lower transverse slit 15 and the upper transverse slit 16, respectively. The two frame

parts and the tube are in a locked position.

[0050] Another advantage of the invention is seen in fig. 6. The frame parts 5 and the tubes 6 are shown in a fragmentary view, where frame parts and the tubes are disengaged. It is apparent how easily the support 1 can be transported and how little space the support will fill up.

[0051] Mounting a trestle part 4 takes place by simply placing the end portions 14 with the lower slits 15 of the tube 6 in the upper seats 17,19 of two opposite frame parts 5.

[0052] Mounting the next trestle part takes place by placing a frame part 5 on top of each of the first frame parts 5 in such way that the lower seat 18,20 of the next frame parts engages the end portions 14 with the upper slits 15 of the tube 6 already placed in the upper seats 17,19 of the first frame parts 5 and then place the end portions 14 with the lower slit 15 of the next tube 6 in the upper seats 15,19 of the next frame parts 5.

[0053] The engagements between the slits of the tube and the incisions of the frame parts secure that the finished trestle achieves a strong and rigid structure.

[0054] In preparation for stabilizing the trestle parts against external influences the lower slit in the end portions of the tube can made relatively deep so that a strong engagement between the tube and the frame parts is achieved.

[0055] The upper slit in the end portions of the tube can be made not so deep and serves more or less to guide the next trestle part securely and quickly into the correct position on top of the first one.

[0056] In a variant of the previously described way of assembling a complete trestle each of the trestle parts is fully assembled beforehand so that the trestle parts right away can be stabled on top of each other and the assembling of the trestle thereby can be speeded up.

[0057] The support of the invention is above described and on the drawing shown for being used to support long boards of wood being painted.

[0058] Within the scope of the invention the support can however be used for supporting other long objects being treated in other ways than painting and made of other materials than wood and the support can also be used for storing long objects.

Claims

1. A support (1) for supporting long objects (2) and comprises at least two opposite trestles (3) assembled each of at least two vertical frames (4) and at least one horizontal bar (6), **characterized in that** each frame consists of a number of frame parts (5) releasably placed on top of each other and that each frame part (5) is formed with an upper (17,19) and lower seat (18,20) for accommodating a lower and upper side, respectively of an end portion (14) of the bar (6).
2. A support according to claim 1, **characterized in**

that each frame part (5) consists of an U-formed plate (8) which has a body (9) extending, in the use position of the support, into a vertical direction and an upper (11) and lower (10) flange protruding from said body into a horizontal direction.

3. A support according to claim 1 or 2, **characterized in that** the upper seat (17,19) is formed partly in the upper flange (11) of a frame part (5) and partly in the body (9) and that the lower seat (18,20) is formed partly in the lower flange (10) of the frame part and partly in the body (9). 10
4. A support according to claim 1, 2 or 3, **characterized in that** the lower side of the end portion (14) of the bar (6) is formed with a lower transverse slit (15) which has a width corresponding to the wall thickness of the plate of a frame part (5) and that the body (9) of the frame part is formed with an upper incision (17) fitting to said lower transverse slit. 20
5. A support according to any of the claims 1 - 4, **characterized in that** the upper side of the end portion (14) of the bar (6) is formed with an upper transverse slit (16) which has a width corresponding to the wall thickness of the plate of a frame part (5) and that the body (9) of the frame part is formed with a lower incision (18) fitting to said upper transverse slit. 25
6. A support according to claim 5, **characterized in that** the upper and lower slit (15, 16) are cut in the same cross section of the end portion (14) of the bar (6). 30
7. A support according to any of the claims 1 - 6, **characterized in that** the bar (6) is formed with a square or rectangular cross section and that each side of a cross section of the bar is forming an acute or obtuse angle with a horizontal plane. 35
8. A support according to any of the claims 1 - 7, **characterized in that** opposite lateral edges (13) of an end portion (14) of a bar (6) which has a square or rectangular cross section and is placed in the seats of two frame parts (5) placed on top of each other are flushing with the upper and lower faces, respectively of the opposite flanges (10,11) of said two frame parts. 40
9. A support according to any of the claims 1 - 8, **characterized in that** the slits (16) in the end portion (14) of the bar (6) and the incisions in the body (9) of the frame part (5) are formed in such way that the upper face of the upper flange (11) of one frame part is abutting the lower face of the lower flange (10) of another frame part when the two frame parts are placed on top of each other and the end portion of the bar is placed in the upper (17,19) and lower 50

(18,20) seats, respectively of said frame parts.

10. A support according to any of the claims 1 - 9, **characterized in that** the bar (6) is a tube with a square cross section. 5
11. A support according to any of the claims 1 - 10, **characterized in that** the width of each of those parts of the seats, which are formed in the flanges (10,11) of the frame part (5) corresponds to the distance between two opposite lateral edges (12,13) of the tube (6). 10
12. A support according to any of the claims 1 - 11, **characterized in that** each of those parts of the seats (17,18), which are formed in the body (9) of the frame part (5) forms an angle of 90°. 15
13. A method for assembling a trestle (3) of a support (1) according to the claims 1 - 12, **characterized in** the steps of 20
 - placing two first frame parts (5) upon a support with their respective flanges (10,11) protruding into opposite directions,
 - placing opposite end portions (14) of a first bar (6) in the upper seats (17,19) of the first frame parts,
 - placing two second frame parts (5) on top of the two first frame parts (5) with their lower seats (18,20) engaging the opposite end portions of the first bar,
 - placing opposite end portions (14) of a second bar (6) in the upper seats (17,19) of the second frame parts,
 - placing two third frame parts on top of the two second frame parts with their lower seats engaging the opposite end portions of the second bar, and
 - repeating said operations until the support is finished.
14. A use of a support according to claim 1 - 12 for supporting long objects (2) being subjected to working operations and/or to the method according to claim 13 for assembling the support (1). 45
15. A use according to claim 14 for painting and afterwards drying up hoardings and timbers of wood. 55

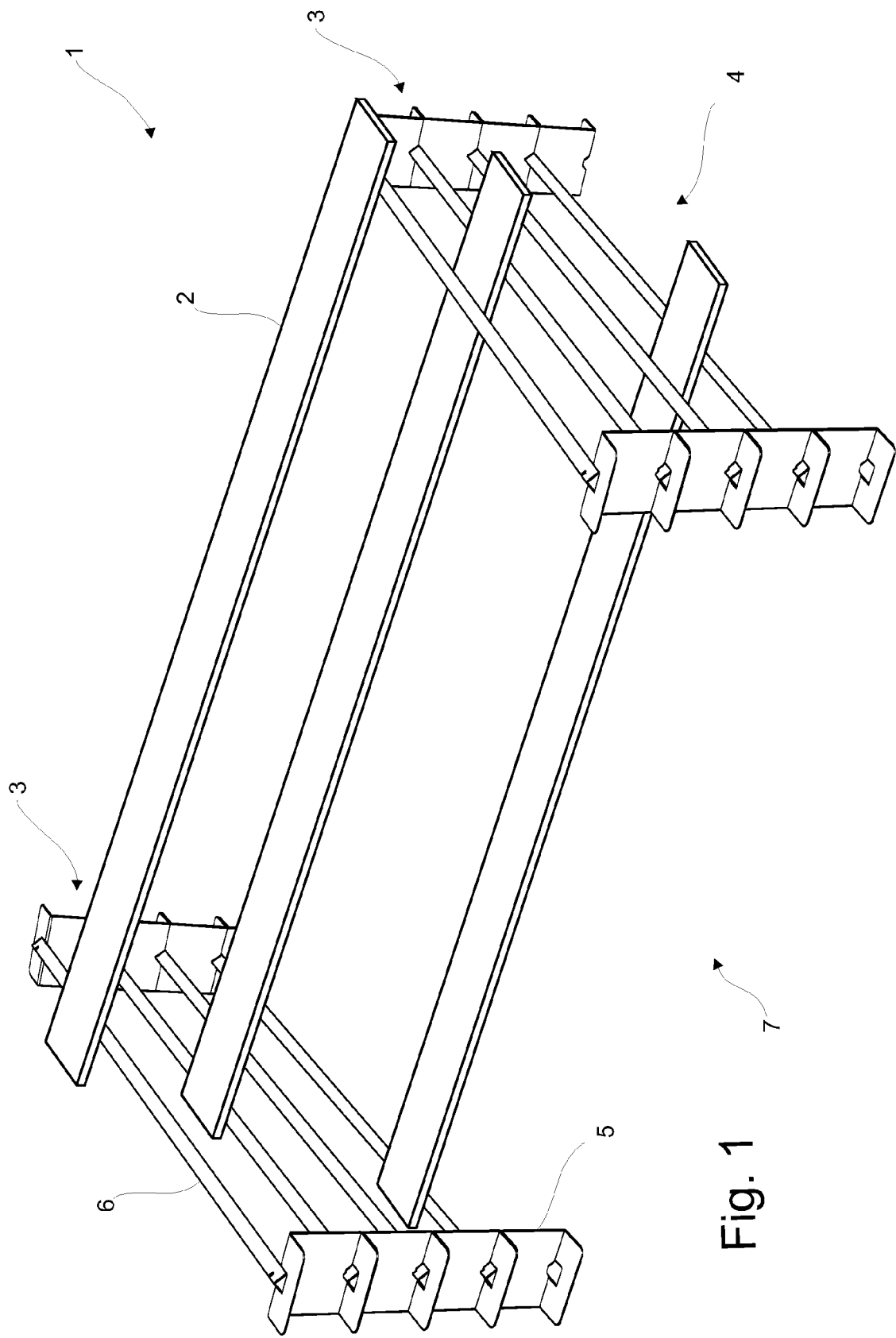


Fig. 1

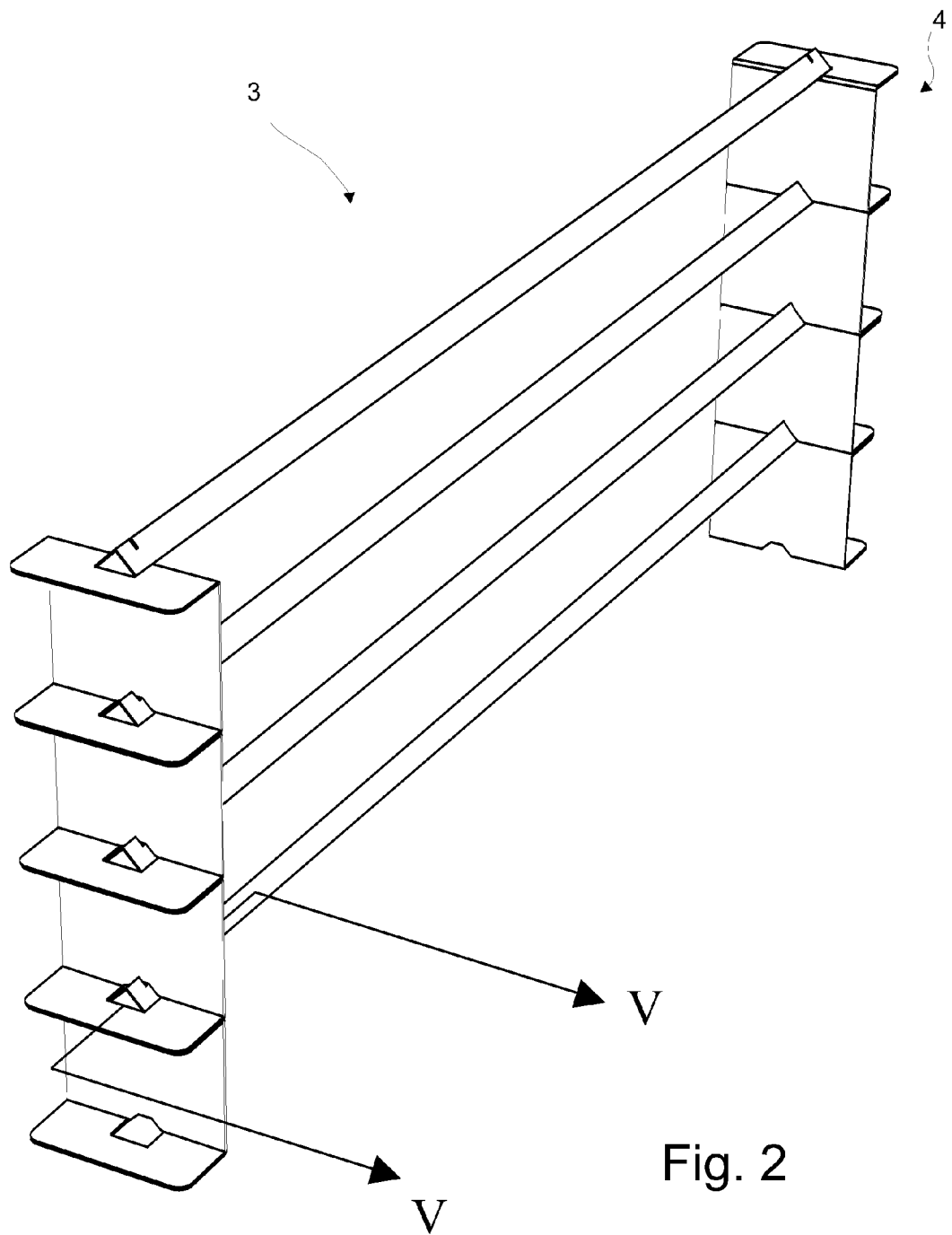


Fig. 2

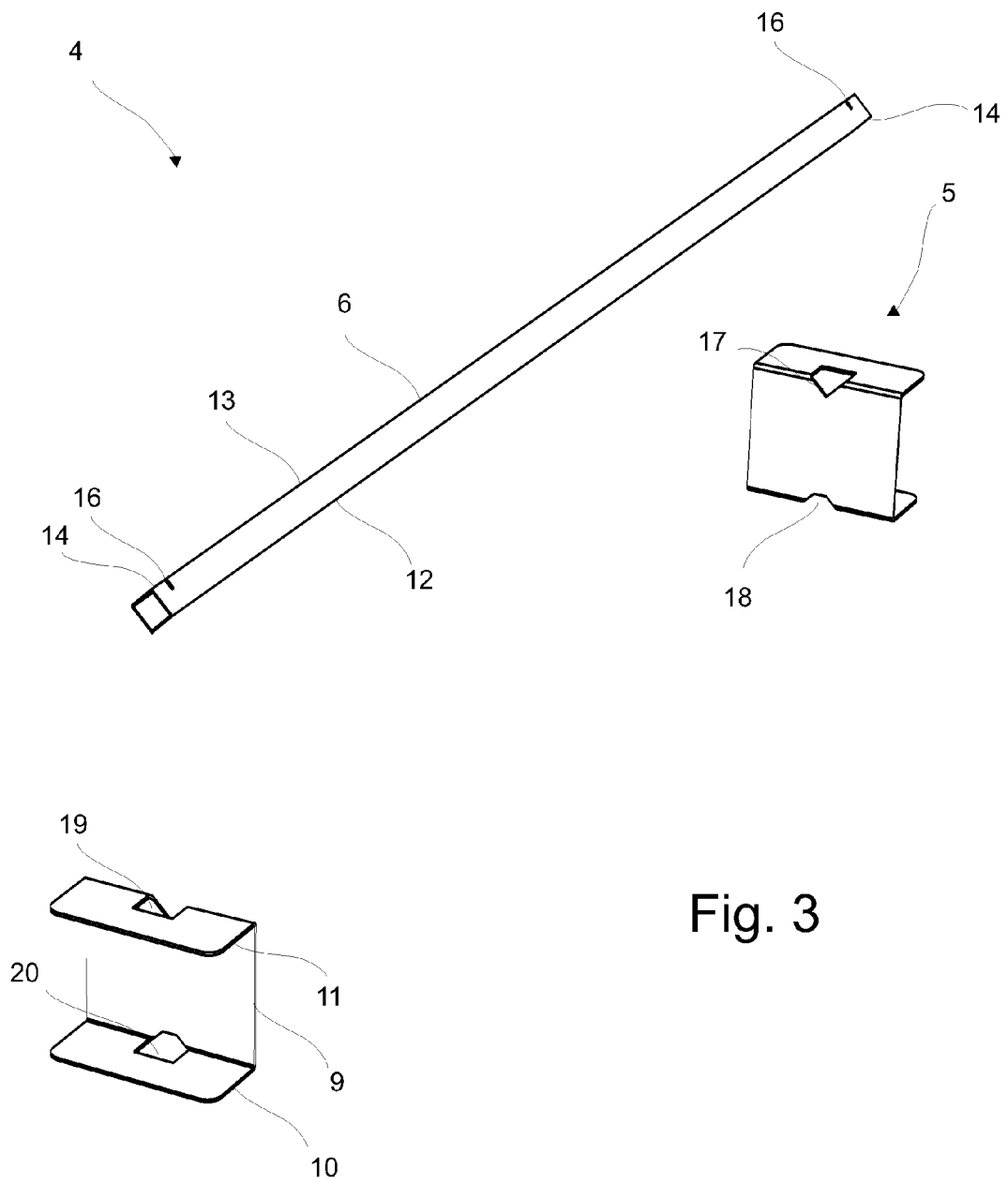


Fig. 3

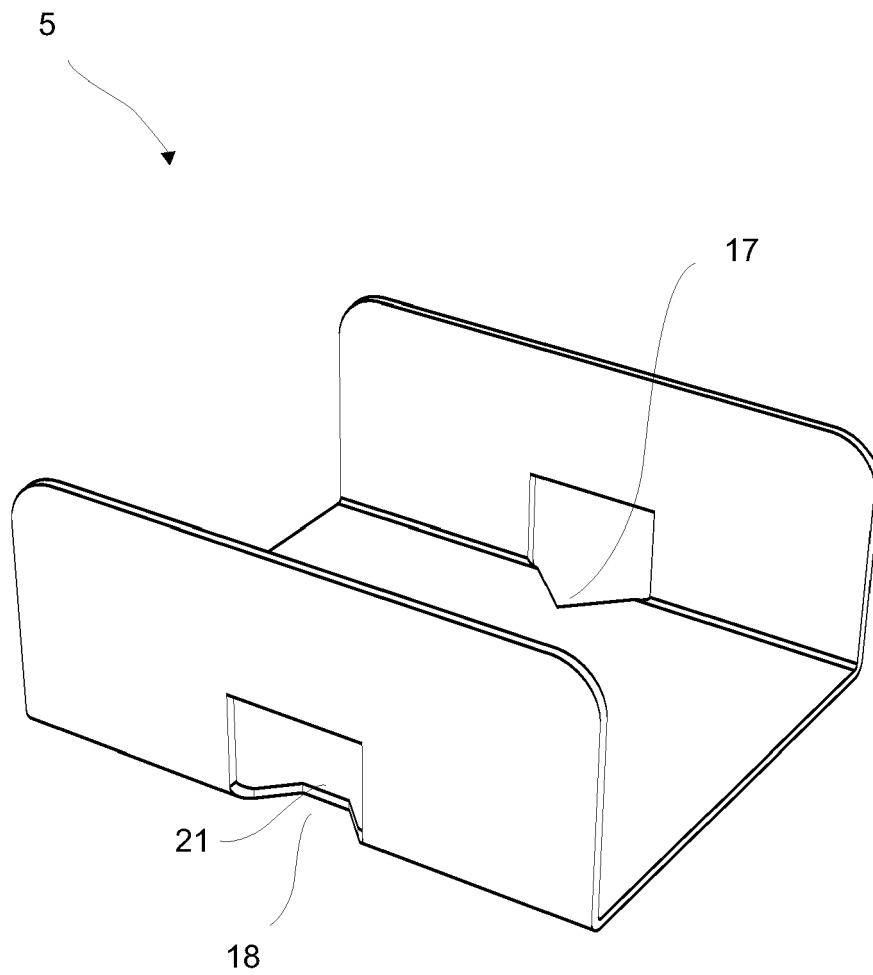
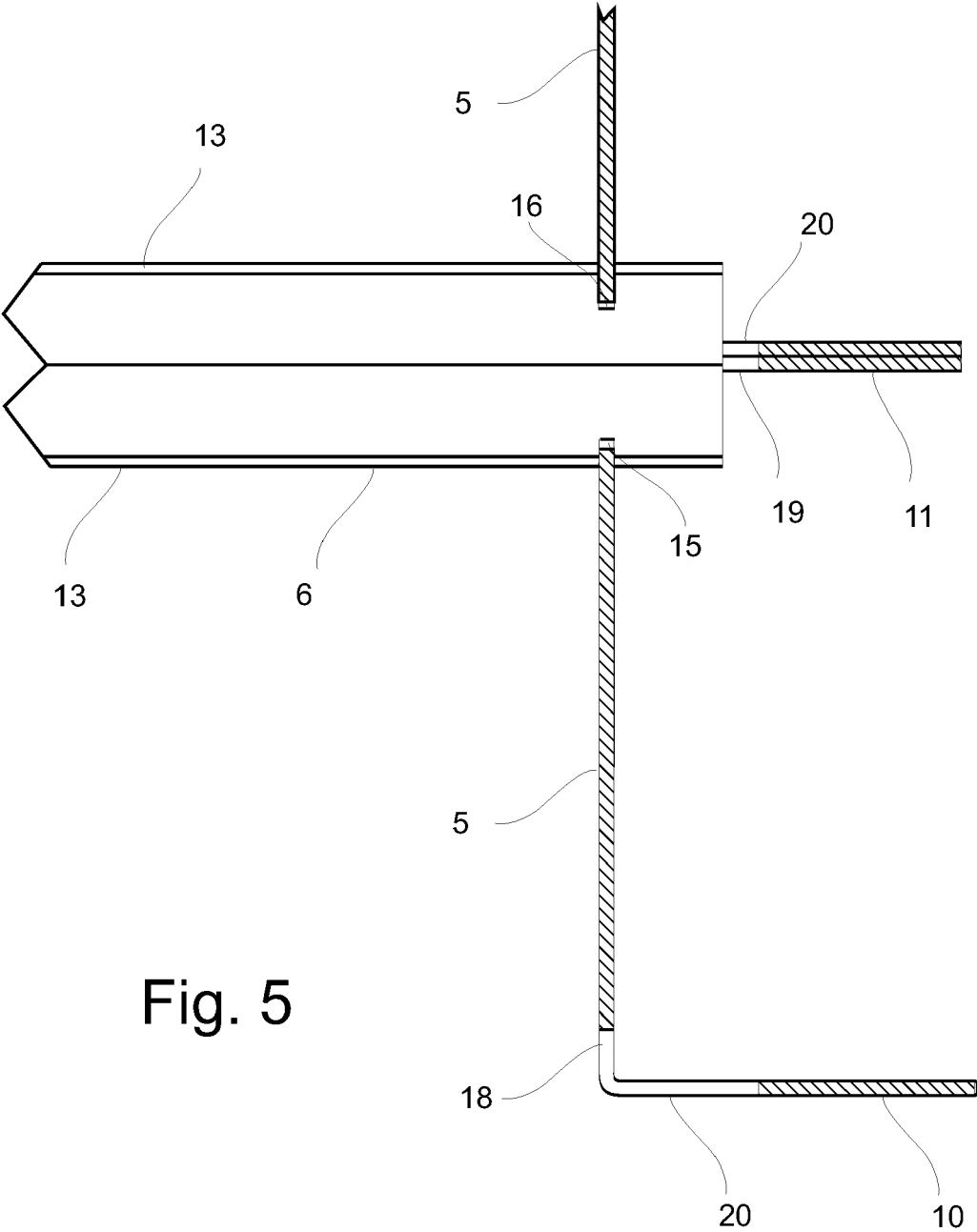


Fig. 4



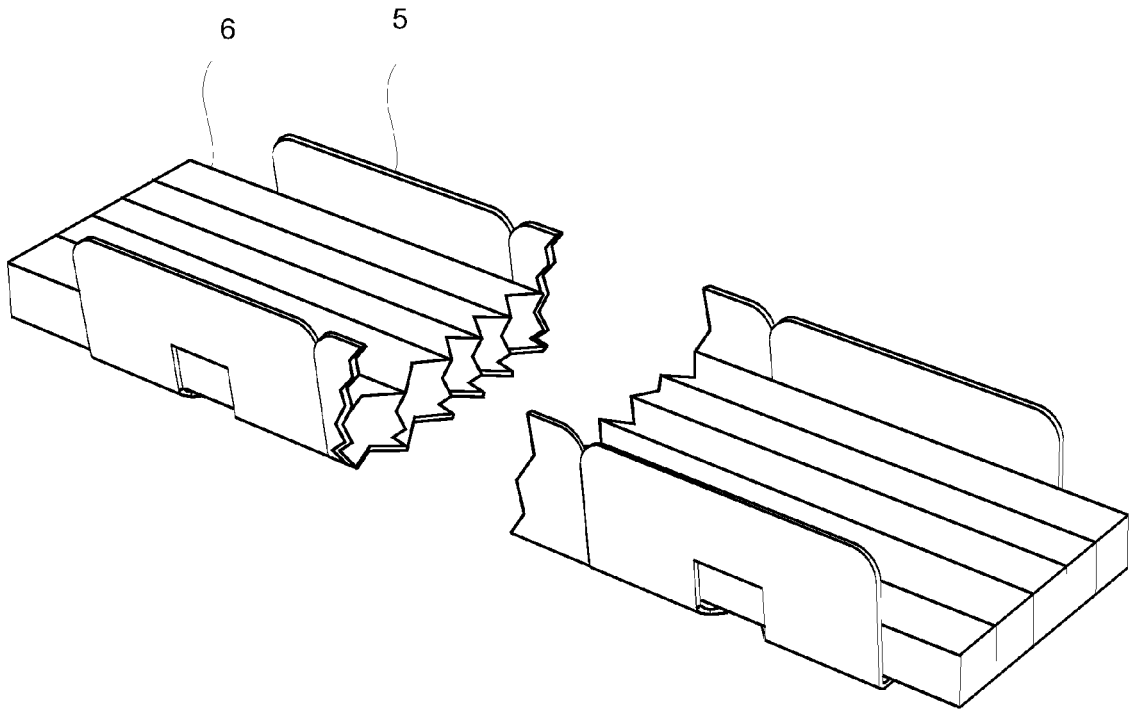


Fig. 6



EUROPEAN SEARCH REPORT

 Application Number
 EP 13 15 4942

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 4 433 753 A (WATSON MARSHALL [US]) 28 February 1984 (1984-02-28)	1,7,14,15	INV. B25H1/06
A	* column 3, line 37 - column 4, line 61 * * figures 1-4 *	13	

X	US 2009/120886 A1 (WEISS PAUL M [US] ET AL) 14 May 2009 (2009-05-14)	1	
A	* paragraphs [0027] - [0030] * * figures 2,10 *	13,14	

A	US 5 025 936 A (LAMOUREAUX DAVID [US]) 25 June 1991 (1991-06-25)	1,13,14	
	* figure 2 *		

The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			B25H A47B
Place of search		Date of completion of the search	Examiner
The Hague		6 September 2013	Bonnin, David
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 13 15 4942

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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06-09-2013

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