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(54) **FACADE FRAME FOR TIMBER FRAME CONSTRUCTION**

(57) Facade frake for wood timber construction, the facade frame comprising a frame, the frame comprising a opening having a circumferential wall, an inner side having a first stretch, and an outer side having a second stretch, which second stretch comprises a groove.

To provide a facade frame for wood timber construction by means of which a building can be manufactured faster and cheaper, is a substantially U-shaped profile beam covering the first and second stretch of the frame and at least a part of the circumferential wall, the profile beam comprising:

- a first strip, covering the first stretch,
- a second strip, covering the second stretch, and comprising at least a projection extending towards the first strip, the projection extending into the groove of the second stretch, and
- a third strip connected to the second strip by means of a resilient element, and covering at least a part of the circumferential wall.

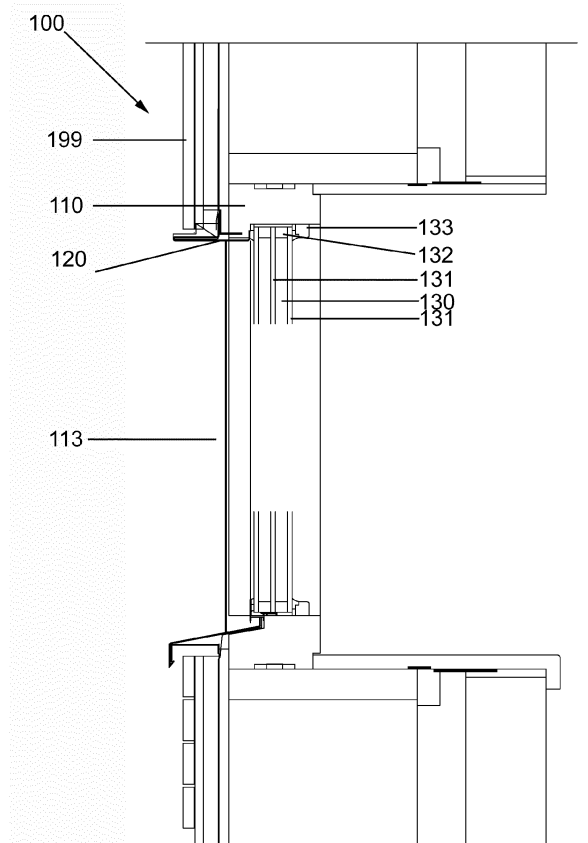


Fig 1A

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Description

[0001] The present invention relates to a facade frame for timber frame construction, the facade frame comprising a frame, the frame comprising:

- an inner side,
- an outer side, and
- an opening extending from the outer side to the inner side, wherein the opening opening is defined by a circumferential wall extending from the outer side to the inner side.

[0002] Timber frame construction is a well-known construction method for manufacturing buildings, where use is made of facade frame manufactured in a factory which are assembled into a building at a construction site.

[0003] In order to place windows and doors, a chambranle is placed in the facade frame at the construction site, after which a glass panel or door is placed in the chambranle. This is a time consuming step in the assembly of buildings, and such a chambranle is a relatively expensive part of the building.

[0004] It is an objective of the present invention to provide a facade frame for timber frame construction by means of which a building can be manufactured faster and cheaper.

[0005] To this end, a facade frame according to the preamble is characterized in that the inner side of the frame comprises a first stretch adjacent to the circumferential wall, and

the outer side of the frame comprises a second stretch adjacent to the circumferential wall, which second stretch comprises a groove, wherein a substantially U-shaped profile beam covers the first stretch, the second stretch and at least a part of the circumferential wall, the U-shaped profile beam comprising:

- a first strip, covering the first stretch,
- a second strip, covering the second stretch, and comprising at least a projection extending towards the first strip, which projection extends into the groove of the second stretch, and
- a third strip connected to the second strip by means of a resilient element and covering at least a part of the circumferential wall.

[0006] In this way, a glass panel or door can directly be placed against the third strip of the profile beam at the factory, so no chambranle needs to be placed in the facade frame. The building can therefore be assembled more quickly. The absence of a chambranle furthermore contributes to a better isolation of the building the facade frame is incorporated into, and the second stretch of the outer side of the frame and the circumferential wall are protected against weather influences.

[0007] "Inner side" is intended to refer to a first side meant to be placed at the inside of the building after placing the facade frame in a building.

[0008] "Outer side" is intended to refer to a second side meant to be placed at the outside of the building after placing the facade frame in a building.

[0009] In case of a door opening, the opening in the facade frame can extend to the bottom side of the frame.

[0010] The resilient element allows the second strip and the third strip to move away from each other, so the profile beam can be opened temporarily, and the profile beam can be placed such that the projection extends into the groove and the second strip covers the second stretch of the inner side of the frame.

[0011] The outer side of the frame is for example covered with stone strips.

[0012] According to an embodiment, the resilient element is formed integrally with the first, second and third strip and is formed by a fourth strip and a fifth strip which are each at a longitudinal side are mutually connected in the longitudinal direction along a connecting line and extend parallel to each other, and wherein the other longitudinal side of the fourth strip is connected with the longitudinal side of the third strip which extends adjacent to the second strip, and wherein the other longitudinal side of the fifth strip is connected to the longitudinal side of the second strip extending adjacent to the third strip.

[0013] According to an embodiment, the third strip and the fourth strip extend in the same plane.

[0014] According to an embodiment, the second strip and the fifth strip extend under a right angle.

[0015] According to an embodiment, the profile beam is an aluminium profile beam.

[0016] An aluminium profile beam protects the second stretch of the outer side of the frame and the circumferential wall better against weather influences and is easy to maintain.

[0017] According to an embodiment, three or four profile beams are attached to the groove of the opening.

[0018] According to an embodiment, the three or four profile beams are mutually placed at an angle of 90 degrees in the groove.

[0019] According to an embodiment, the frame is a softwood frame.

[0020] The present invention also relates to building, wherein the building comprises a facade frame according to any of the claims 1 - 8.

[0021] According to an embodiment, the building is a house.

[0022] The present invention also relates to method for manufacturing a facade frame, the method comprising the steps of:

- manufacturing a frame of a facade frame, the frame comprising:
 - an inner side,
 - an outer side, and

- an opening extending from the outer side to the inner side, wherein the opening is defined by a circumferential wall extending from the outer side to the inner side, wherein the inner side of the frame comprises a first stretch adjacent to the circumferential wall, and

the outer side of the frame comprises a second stretch adjacent to the circumferential wall, the step of manufacturing a frame of a facade frame comprising:

- forming a groove in the second stretch of the outer side of the frame, and
- attaching a substantially U-shaped profile beam in the groove, the substantially U-shaped profile beam covering the first stretch, the second stretch and at least a part of the circumferential wall,

the U-shaped profile beam comprising:

- a first strip, covering the first stretch,
- a second strip covering the second stretch, and comprising at least a projection extending towards the first strip, the projection extending into the groove of the second stretch, and
- a third strip connected to the second strip by means of a resilient element and covering at least a part of the circumferential wall,

to provide a facade frame according to any of the claims 1 - 8.

[0023] The present invention also relates to method for manufacturing a building, the method comprising the steps of:

- manufacturing a frame of a facade frame at a location at a distance from the construction site, the frame comprising:
 - an inner side,
 - an outer side, and
 - an opening extending from the outer side to the inner side, wherein the opening is defined by a circumferential wall extending from the outer side to the inner side,
- transporting a frame of the facade frame obtained in the previous step to the construction site,
- assembling the facade frame at the construction site to provide a building, wherein the inner side of the frame comprises a first stretch adjacent to the circumferential wall, and

the outer side of the frame comprises a second stretch adjacent to the circumferential wall,

the step of manufacturing a frame of a facade frame at a location at a distance from the construction site comprising:

- forming a groove in the second stretch of the outer side of the frame, and
- attaching a substantially U-shaped profile beam in the frame, the substantially U-shaped profile beam comprising:
 - a first strip, covering the first stretch,
 - a second strip covering the second stretch, and comprising at least a projection extending towards the first strip, the projection extending into the groove of the second stretch, and
 - a third strip connected to the second strip by means of a resilient element, to provide a facade frame according to any of the claims 1-8, and

the method further comprising:

- placing a glass panel or door against the profile beam.

[0024] Placing the glass panel or door against the profile beam can be done at the location at a distance of the construction site, or at the construction site.

[0025] Finally, the present invention relates to profile beam for placing a window or door, the profile beam being a substantially U-shaped profile beam, wherein the U-shaped profile beam comprises:

- a first strip,
- a second strip comprising at least a projection extending towards the first strip, and
- a third strip connected to the second strip by means of a resilient element.

[0026] The present invention will now be illustrated with reference to the drawing where

Fig. 1a shows a longitudinal cross section of a facade frame ; and

Fig. 1b shows a detail of fig. 1a.

[0027] Fig. 1a shows a longitudinal cross section of a facade frame 100 according to the invention. The facade frame 100 comprises a frame 110 of for example soft-wood having an inner side 111, an outer side 112 and an opening 113 extending from the inner side 111 to the outer side 112. The opening 113 is defined by a circumferential wall 114 (see also fig. 1b). The outer side of the frame 110 is for example provided with stone strips 199.

[0028] A substantially U-shaped profile beam 120 of for example aluminium is attached in the frame 110, against which a glass panel 131 of a window 130, or for

example three glass panels 131 of a window 130 separated by intermediate stops 132, can be placed. The window 130 is then clamped against the profile beam 120 by means of a stop 133 provided in the frame 110.

[0029] The facade frame 100 can be manufactured at any location at a distance from the construction site, such as a factory, and transported to the construction site where it can be assembled in a building. The window 130 or for example a door can then directly be placed in the facade frame 100 against the profile beam 120 without the need of first placing a chambranle. It is also possible to place the window 130 or door in the facade frame 100 already at the location at a distance from the construction site, and then transport the facade frame 100 as a whole to the construction site to incorporate it in a building.

[0030] Fig. 1b shows a detail of fig. 1a of the substantially U-shaped profile beam 120 attached in the frame 110.

[0031] The inner side 111 of the frame 110 comprises a first stretch 115 adjacent to the circumferential wall 114 and the outer side 112 of the frame 110 comprises a second stretch 116 adjacent to the circumferential wall 114. The second stretch 116 is provided with a groove 117.

[0032] The U-shaped profile beam 120 comprises a first strip 121, a second strip 122 and a third strip 123. The second strip 122 comprises a projection 125 extending towards the first strip 121. The profile beam 120 is placed with the projection 125 into the groove 117, such that the first strip 121 of the profile beam 120 covers the first stretch 115 of the inner side 111, the second strip 122 of the profile beam 120 covers the second stretch 116 of the outer side 112, and the third strip 123 covers at least a part of the circumferential wall 114.

[0033] The third strip 123 is connected to the second strip 122 by means of a resilient element 126. In this way, the second strip 122 and the third strip 123 can be moved away from each other when placing the profile beam 120, such that the profile beam 120 can be placed such that the projection 125 of the second strip 122 extends into the groove 117 and the first strip 121 covers the first stretch 115 of the inner side 111.

[0034] The resilient element 126 is formed integrally with the first, second and third strip and is formed by a fourth and fifth strip 127 and a fifth strip 128 which each are mutually connected at a longitudinal side in the longitudinal direction along a connection line and extend parallel to each other. The other longitudinal side of the fourth strip 127 is connected with the longitudinal side of the third strip 123 extending adjacent to the second strip 122, the third strip 123 and the fourth strip 127 extending in the same plane. The other longitudinal side of the fifth strip 128 is connected to the longitudinal side of the second strip 122 extending adjacent to the third strip 123, the second strip 122 and the fifth strip 128 extending under a right angle. In this way the resilient element 126 forms a frame extending outwards which can cover and protect the top side of the outer cladding, for example

the stone strips 199 attached to the frame 110, against mechanical damage and weather influences.

5 Claims

1. A facade frame (100) for timber frame construction, the facade frame (100) comprising a frame (110), the frame (110) comprising:

- an inner side (111),
- an outer side (112), and
- an opening (113) extending from the outer side (112) to the inner side (111), wherein the opening (113) is defined by a circumferential wall (114) extending from the outer side (112) to the inner side (111), **characterized in that** the inner side (111) of the frame (110) comprises a first stretch (115) adjacent to the circumferential wall (114), and the outer side (112) of the frame (110) comprises a second stretch (116) adjacent to the circumferential wall (114), which second stretch (116) comprises a groove (117), wherein a substantially U-shaped profile beam (120) covers the first stretch (115), the second stretch (116) and at least a part of the circumferential wall (114), the U-shaped profile beam (120) comprising:

- a first strip (121), covering the first stretch (115),
- a second strip (122), covering the second stretch (116), and comprising at least a projection (125) extending towards the first strip (121), which projection (125) extends into the groove (117) of the second stretch (116), and
- a third strip (123) connected to the second strip (122) by means of a resilient element (126) and covering at least a part of the circumferential wall (114).

2. The facade frame (100) according to claim 1, wherein the resilient element (126) is formed integrally with the first, second and third strip (123) and is formed by a fourth strip (127) and a fifth strip (128) which are each at a longitudinal side are mutually connected in the longitudinal direction along a connecting line and extend parallel to each other, and wherein the other longitudinal side of the fourth strip (127) is connected with the longitudinal side of the third strip (123) which extends adjacent to the second strip (122), and wherein the other longitudinal side of the fifth strip (128) is connected to the longitudinal side of the second strip (122) extending adjacent to the third strip (123).

3. The facade frame (100) according to claim 2, wherein the third strip (123) and the fourth strip (127) extend in the same plane.
4. The facade frame (100) according to any of the claims 2 or 3, wherein the second strip (122) and the fifth strip (128) extend under a right angle. 5
5. The facade frame (100) according to any of the preceding claims, wherein the profile beam (120) is an aluminium profile beam (120). 10
6. The facade frame (100) according to any of the preceding claims, wherein three or four profile beams are attached to the groove (117) of the opening (113). 15
7. The facade frame (100) volgens conclusie 5, wherein the three or four profile beams are mutually placed at an angle of 90 degrees in the groove (117). 20
8. The facade frame (100) according to any of the preceding claims, wherein the frame (110) is a softwood frame (110). 25
9. Building, **characterized in that** the building comprises a facade frame (100) according to any of the claims 1-8. 25
10. The building according to claim 9, wherein the building is a house. 30
11. Method for manufacturing a facade frame (100), the method comprising the steps of:
- manufacturing a frame (110) of a facade frame (100), the frame (110) comprising: 35
 - an inner side (111),
 - an outer side (112), and
 - an opening (113) extending from the outer side (112) to the inner side (111), wherein the opening (113) is defined by a circumferential wall (114) extending from the outer side (112) to the inner side (111), **characterized in that** the inner side (111) of the frame (110) comprises a first stretch (115) adjacent to the circumferential wall (114), and 40
- the outer side (112) of the frame (110) comprises a second stretch (116) adjacent to the circumferential wall (114), 45
- the step of manufacturing a frame (110) of a facade frame (100) comprising: 50
- forming a groove (117) in the second stretch (116) of the outer side (112) of the frame (110), and 55

- attaching a substantially U-shaped profile beam (120) in the groove (117), the substantially U-shaped profile beam (120) covering the first stretch (115), the second stretch (116) and at least a part of the circumferential wall (114),

the U-shaped profile beam (120) comprising:

- a first strip (121), covering the first stretch (115),
- a second strip (122) covering the second stretch (116), and comprising at least a projection (125) extending towards the first strip (121), the projection (125) extending into the groove (117) of the second stretch (116), and
- a third strip (123) connected to the second strip (122) by means of a resilient element (126) and covering at least a part of the circumferential wall (114),

to provide a facade frame (100) according to any of the claims 1-8.

12. Method for manufacturing a building, the method comprising the steps of:

- manufacturing a frame (110) of a facade frame (100) at a location at a distance from the construction site, the frame (110) comprising:

- an inner side (111),
- an outer side (112), and
- an opening (113) extending from the outer side (112) to the inner side (111), wherein the opening (113) is defined by a circumferential wall (114) extending from the outer side (112) to the inner side (111),

- transporting a frame of the facade frame obtained in the previous step to the construction site,

- assembling the facade frame (100) at the construction site to provide a building, **characterized in that** the inner side (111) of the frame (110) comprises a first stretch (115) adjacent to the circumferential wall (114), and the outer side (112) of the frame (110) comprises a second stretch (116) adjacent to the circumferential wall (114), the step of manufacturing a frame (110) of a facade frame (100) at a location at a distance from the construction site comprising:

- forming a groove (117) in the second stretch (116) of the outer side (112) of the

frame (110), and

- attaching a substantially U-shaped profile beam (120) in the frame (110), the substantially U-shaped profile beam comprising:

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- a first strip (121), covering the first stretch (115),

- a second strip (122) covering the second stretch (116), and comprising at least a projection (125) extending towards the first strip (121), the projection (125) extending into the groove (117) of the second stretch (116), and

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- a third strip (123) connected to the second strip (122) by means of a resilient element (126), to provide a facade frame (100) according to any of the claims 1-8, and

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the method further comprising:

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- placing a glass panel (131) or door against the profile beam (120).

13. Profile beam (120) for placing a window or door, the profile beam (120) being a substantially U-shaped profile beam (120), **characterized in that** the U-shaped profile beam (120) comprises:

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- a first strip (121),

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- a second strip (122) comprising at least a projection (125) extending towards the first strip (121), and

- a third strip (123) connected to the second strip (122) by means of a resilient element (126).

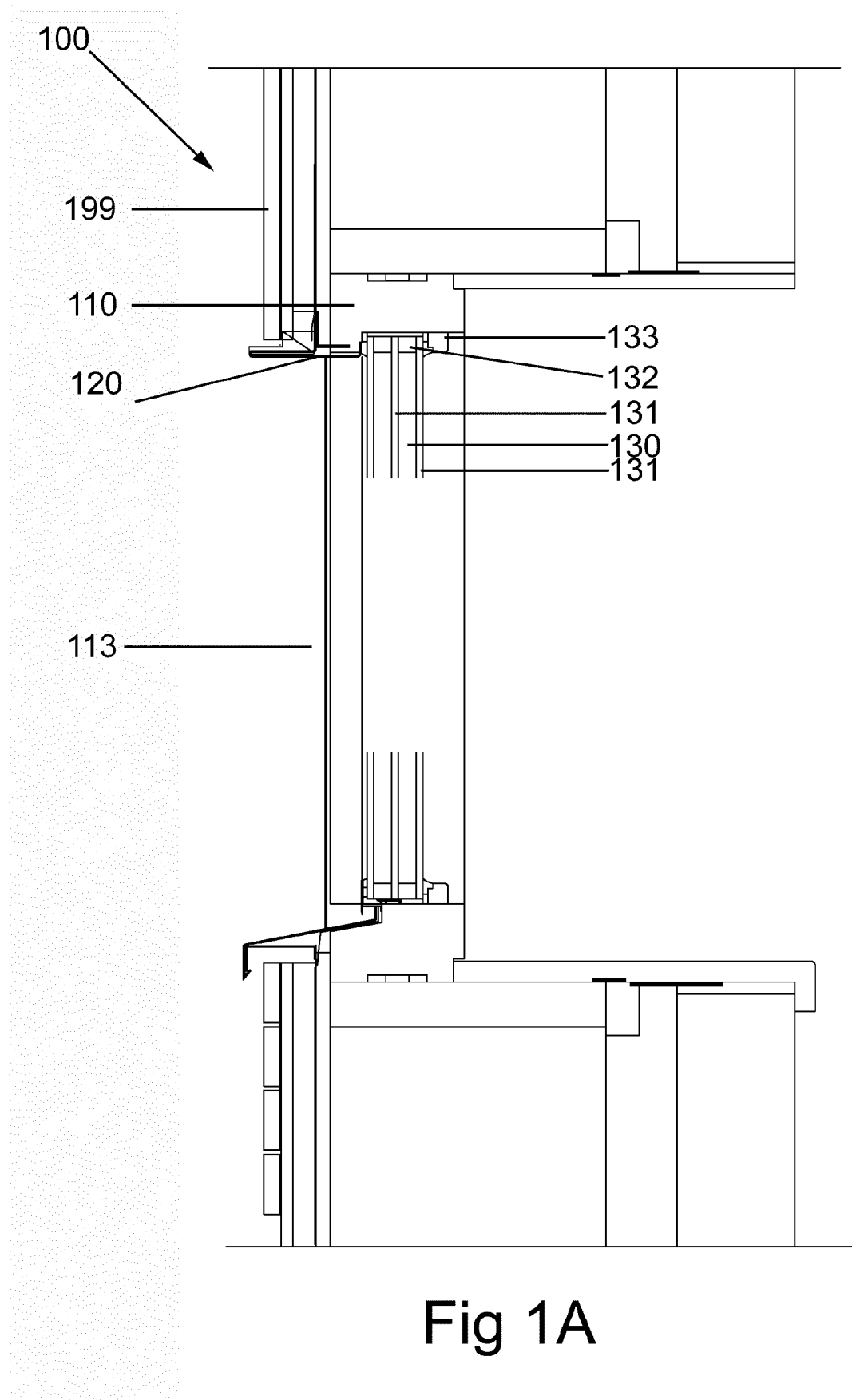
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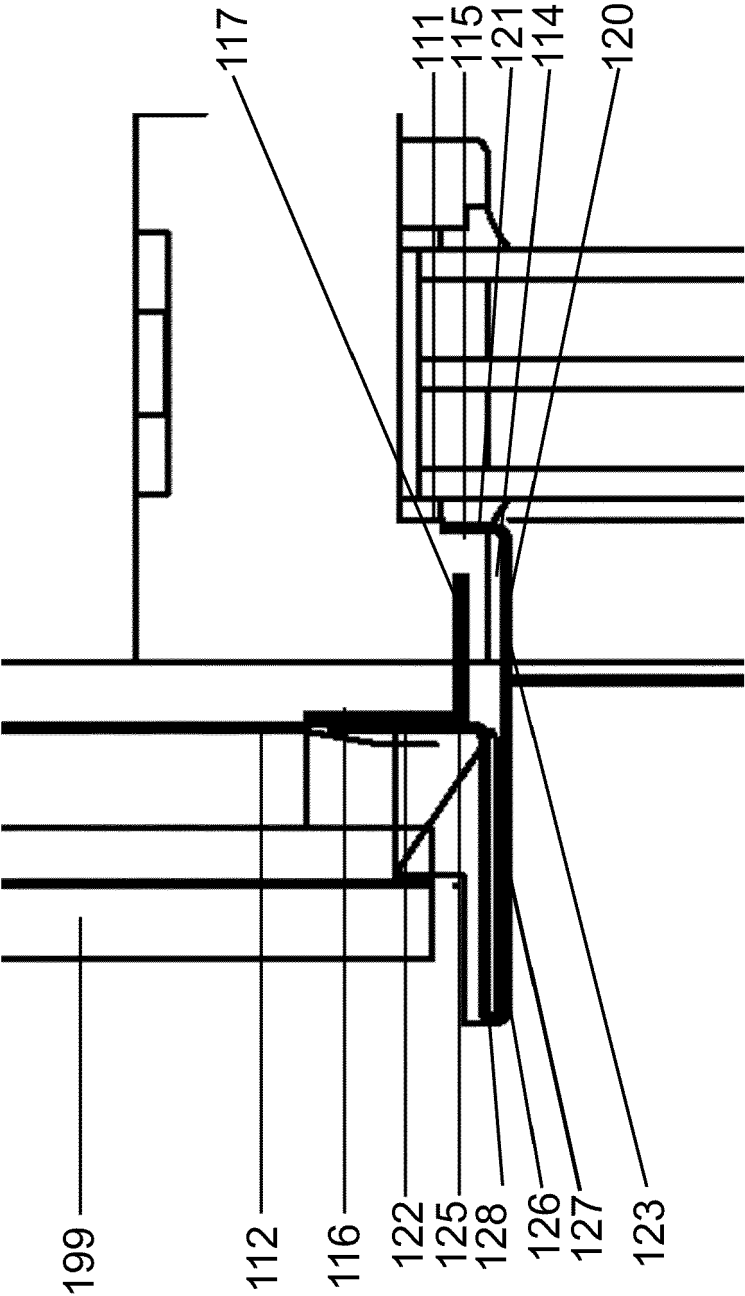


Fig 1B



EUROPEAN SEARCH REPORT

Application Number

EP 22 20 7476

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EPO FORM 1503 03.82 (P04C01)

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 6 125 605 A (YOUNG ROBERT H [US]) 3 October 2000 (2000-10-03)	1, 5-13	INV. E04F19/06
A	* column 1, line 47 - column 4, line 24; figures 1-4 *	2-4	E06B1/34
	-----		ADD. E06B1/62
X	FR 2 518 157 A1 (FRANCE CONFORT PROUT FRERES SA [FR]) 17 June 1983 (1983-06-17)	13	
A	* page 1, line 1 - page 5, line 35; figures 1-4 *	1-12	

A	US 5 669 192 A (OPDYKE JOSEPH [US] ET AL) 23 September 1997 (1997-09-23)	1-13	
	* column 1, line 40 - column 4, line 18; figures 1-5 *		

A	US 2002/088189 A1 (HONDA TAKASHI [JP]) 11 July 2002 (2002-07-11)	1-13	
	* paragraph [0009] - paragraph [0044]; figures 1-6 *		

			TECHNICAL FIELDS SEARCHED (IPC)
			E04F E04B E06B
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 17 February 2023	Examiner Dieterle, Sibille
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	

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

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5 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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17-02-2023

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6125605 A	03-10-2000	NONE	
FR 2518157 A1	17-06-1983	NONE	
US 5669192 A	23-09-1997	CA 2203482 A1 US 5669192 A	26-10-1997 23-09-1997
US 2002088189 A1	11-07-2002	CA 2366658 A1 US 2002088189 A1	05-07-2002 11-07-2002