



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
26.05.2021 Bulletin 2021/21

(51) Int Cl.:
E04G 21/18 (2006.01)

(21) Application number: **20208509.8**

(22) Date of filing: **18.11.2020**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME KH MA MD TN

(72) Inventor: **Fleet-Chapman, Dean Newark NG23 7AN (GB)**

(74) Representative: **Loven, Keith James LOVEN Patents & Trademarks Limited 51 Wragby Road Sudbrooke Lincoln, Lincolnshire LN2 2QU (GB)**

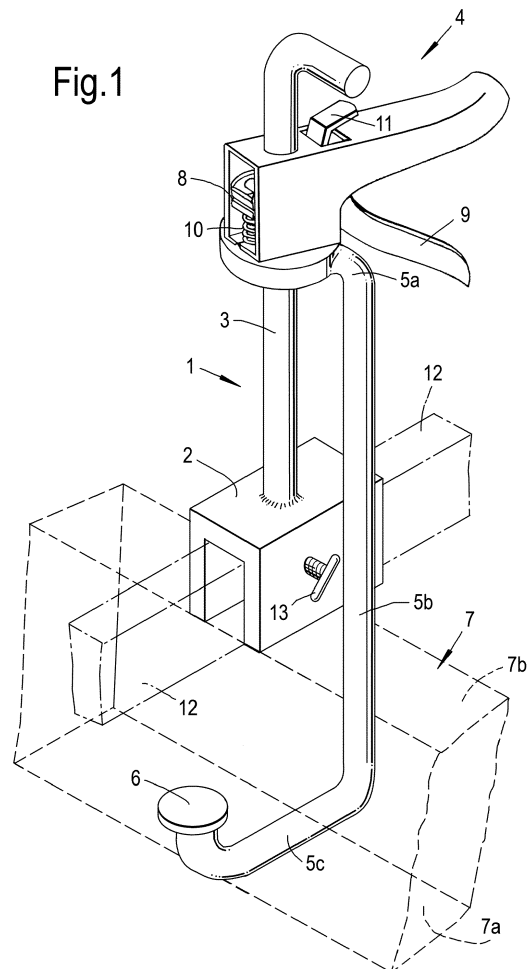
(30) Priority: **21.11.2019 GB 201916988**

(71) Applicant: **Fleet-Chapman, Dean Newark NG23 7AN (GB)**

(54) **BRICK-LAYING LINE SUPPORT**

(57) A bricklaying guide line support comprises an L-shaped member (12) and a pair of carriers (1) therefor. Each carrier comprises a channel member (2) configured to be received with the open face of the channel on the upper surface of a rafter (7) or truss of a roof and provided with clamping means (3, 4, 5) engaging the lower surface of the rafter or truss to releasably hold the channel member on the rafter or truss. At least one of the channel members (2) also including releasable locking means (13) for locking the L-shaped member (12) in a selected position resting on the upper surfaces of the rafters and passing through the channel members (2), with the other limb of the L-shape depending therefrom in a direction normal to the plane of the upper surfaces of the rafters.

Fig.1



Description

Field of the Invention

[0001] This invention relates to a brick-laying line support for use in corbelling and "cut up" detail on the gable ends of buildings.

Background to the Invention

[0002] Bricklayers building gable ends typically use a movable guide line set at the appropriate angle by being attached to an L-shaped timber support nailed across the upper surfaces of the roof rafters or trusses and with the limb of the L extending downwardly for attachment of the line. The reason this form of support is still being used today is the fact that it maintains a fixed point at the top of the roof rafters/trusses. This is significant for the bricklayer because the apparatus needs this fixed finishing point to work down from for the 'cut up' and corbelling detail. The bricklayer also needs assurance that the 'cut up' of the bricks and possibly 3 or 4 corbelled courses of bricks above the 'cut up' are going to finish exactly in line with the top of the rafters. This is crucial because the roof tiles need to travel flat over the corbel detail to form the eaves at the gable ends. The corbel detail cannot be 20mm higher or lower than the rafters. However, the accurate positioning of these timber supports is time-consuming, often requiring the bricklayer to climb up the roof rafters at least three or four times per gable to nail and then move the piece of timber on the top of the rafters (which can be a fall of 4 or 5 metres to the floor).

[0003] GB2388400A discloses a modification of the currently-used guides which uses a metal saddle which clamps on to a rafter or truss to trap a slidable arm having a swan-neck portion whose end carries a vertically-slidable and clampable post carrying a cleat or winder for attachment of the line. This arrangement is said to overcome the disadvantages of timber-based structures nailed to the rafters by making vertical adjustment of the line between courses of bricks easier. However, it also introduces some other disadvantages. For example, the device provides no way of giving the exact finishing point of the top of the rafter without using additional tools i.e. an additional straight edge along the rafters which is both clumsy and time consuming. Also, if the finishing point is established the bricklayer would then have to move it for the next course of corbelling using an additional straight edge and tape measure to measure down from the top of the rafters, losing the fixed finishing point again because the whole of the vertical rod would have to be moved. Without this fixed finishing point it is difficult and inaccurate to measure down from a straight edge on top of the rafters to a builders line to form the 'cut up' and corbel detail which may be 4 brick courses below the top of the rafters. Furthermore, in providing only a single attachment point, it may be subject to inaccuracy through movement of the support relative to the rafter.

Summary of the Invention

[0004] The present invention provides a bricklaying guide line support, comprising an L-shaped member guided by a pair of carriers, each carrier comprising a channel member configured to be received with the open face of the channel on the upper surface of a rafter or truss of a roof and provided with clamping means engaging the lower surface of the rafter or truss to releasably hold the channel member on the rafter or truss, at least one of the channel members also including releasable locking means for locking the L-shaped member in a selected position resting on the upper surfaces of the rafters and passing through the channel members, with the other limb of the L-shape depending therefrom in a direction normal to the plane of the upper surfaces of the rafters.

[0005] The downwardly-dependant limb of the L-shaped member is preferably provided with spaced slots or notches along its length for temporary attachment of the guide line or string. The downwardly-dependant limb may also carry indicia indicating distances from the inner edge of the L-shaped member that rests on the rafters, for example indicating standard brick course measurements, or simply a distance scale.

[0006] The clamping means can be a screw clamp, for example, but is preferably of the type operable single-handedly, for example employing a friction drive mechanism of the type used in used in caulking guns and the like and having a spindle which is friction driven by a drive plate with an aperture through which the spindle passes, the edge of which engages the spindle to drive it forward when the plate makes a first angle with the vertical and which releases the spindle when the angle changes, enabling the plate to move ready for the next stroke or forward movement of the spindle. Examples of such mechanisms are disclosed in US1986166, US2530539 and US4081112.

[0007] The L-shaped member is suitably formed of metal, such as stainless steel to resist corrosion for use in the open air, but could be made of a plastics material. It will be understood that the limbs of the L will be at 90 degrees to each other.

[0008] The support of the invention offers stability and accuracy by being clamped on top of at least two rafters on the roof adjacent to the gable to ensure the correct level and line. It also offers the capability of going down or up the roof plain at any angle whilst maintaining the same degree of accuracy, as it will still be attached to at least two rafters. The cut up and corbel detail can be achieved whilst the support is attached at 45 degrees up a roof valley for instance, with the same degree of accuracy.

[0009] While the invention support of the invention is defined in terms of the L-shaped member being supported on the upper surfaces of the rafters with the second limb of the L extending downwardly, it will be understood that it can readily be mounted in other orientations, for example for use in constructing a parapet wall detail on

a gable that extends above the plane of the upper surfaces of the rafters. In such a case, the L-shaped member can be reversed so as to extend upwardly normal to the plane, an aperture being left in the brickwork for removal of each support when the brickwork is complete.

Brief Description of the Drawings

[0010] In the drawings, which illustrate an exemplary embodiment of the invention:

Figure 1 is a perspective view of a carrier forming part of the support;

Figure 2 is an end view of part of a gable of a building during construction of the corbelling, showing the use of the supports;

Figure 3 is a perspective view of the gable end and part of the roof structure of the building shown in Figure 2; and

Figure 4 is an enlarged elevational view of the L-shaped member forming part of the support.

Detailed Description of the Illustrated Embodiment

[0011] Referring first to Figure 1, the carrier 1 comprises a channel member 2 attached to an elongate rod 3 on which is slidably mounted a friction clamping mechanism 4 coupled to a clamping hook 5 which has a first portion 5a extending outwardly from the rod 3 at an acute angle thereto and leading into a second portion 5b extending parallel to the axis of the rod 3. At the end of the second portion 5b a short third portion 5c extends normally to the second portion and carries at its end a clamping plate 6 whose centre lies on the axis of the rod 3 so as to be capable of engaging the lower surface 7a of a rafter 7, a portion of which is shown in broken lines, when the channel member 2 is located on the upper surface 7b of the rafter. The clamping mechanism 4 is of the type used with caulking guns to drive a plunger into a cartridge containing a viscous liquid to be expelled through a nozzle. The mechanism 4 has a drive plate 8 which has an aperture through which the rod 3 passes with surrounding clearance. The plate 8 is engaged by a trigger 9 and is caused to rotate slightly against a compression spring 10 so that the edges of the aperture grips the surface of the rod 3 and urges it forward relative to the mechanism housing. Release of the trigger 9 allows the plate to move back along the rod 3 under the influence of the spring 10, ready for the next stroke. A spring-loaded locking plate 11 similarly has an aperture therethrough and the edge of the aperture engages the rod to hold it against movement when the trigger 9 is released. In this way, a clamping force can readily be exerted on the rafter 7 between the channel member 2 and the clamping plate 6 to hold the channel member in place. The clamping mechanism can be released by pushing on the locking plate 11 causing it to rotate from a locking position, in which it is oblique to the rod 3, to a release position, in

which it extends normally to the axis of the rod, when the edge of the aperture no longer engages with the rod, allowing it to be pulled outwardly of the rafter by means of a grip portion 3a at the end of the rod 3.

[0012] Pairs of the carriers 1 are respectively clamped on to two spaced rafters, with an L-shaped member 12 passing through the channel members 2 and contacting the upper surfaces of the rafters 7. At least one of the channel members 2 has a screw 13 threaded into a hole in one side thereof to engage the L-shaped member 12 and to lock it against movement when it has been located in the desired position relative to the brickwork to support the bricklaying guide line 20, as illustrated in Figures 2 and 3. A first L-shaped member 12 supported by a first pair of carriers 1 will be located at the top of the gable and a second L-shaped member 12 will be located at the lower part of the gable, with the line 20 extending between them at the desired spacing from the plane of the upper surfaces of the rafters for the corbelling course 22 of bricks being laid. After the first corbelling course has been completed, further courses require only the movement of the guide line 20 upwards on the L-shaped member to the next course level.

[0013] Figure 4 shows the L-shaped member 12 in more detail. It is suitably formed of stainless steel with a width of 6mm and a depth of 50mm, although it will be appreciated that the actual dimensions are not critical to the invention; the member needs to be rigid enough not to bend easily in use, while not being excessively heavy. The length of the main portion 12a of the member is sufficient to span a plurality of rafters, which are typically spaced at 400mm. The downwardly-depending portion 12b of the member is of the same width and depth, while the length is suitably 250-300mm from the edge of the first portion that rests on the rafters. The portion 12b is provided with pairs of slots 14 on opposed edges, spaced apart at intervals of 25mm and having a depth sufficient to receive a guide line looped around the portion. A depth of about 3mm has been found to be suitable. A deeper slot 15 is formed on the upper edge of the main portion 12a at a position corresponding with the centre of the downwardly-depending portion 12b to receive the excess line and hold it clear of the bricklaying operations. A depth of about 10mm is suitable for this purpose.

[0014] It will be appreciated that the channel members 2 may have a depth corresponding to the depth of the L-shaped members, i.e. 50mm, but that it may be greater or smaller without affecting the operation of the support, provided that the underside of each L-shaped member 12 is in contact with the upper surface of the rafters at each channel 2.

Claims

1. A bricklaying guide line support, comprising an L-shaped member and a pair of carriers therefor, each carrier comprising a channel member configured to

be received with the open face of the channel on the upper surface of a rafter or truss of a roof and provided with clamping means engaging the lower surface of the rafter or truss to releasably hold the channel member on the rafter or truss, at least one of the channel members also including releasable locking means for locking the L-shaped member in a selected position resting on the upper surfaces of the rafters and passing through the channel members, with the other limb of the L-shape depending therefrom in a direction normal to the plane of the upper surfaces of the rafters.

2. A bricklaying guide line support according to Claim 1, wherein the downwardly-depending limb of the L-shaped member is provided with spaced slots or notches along its length for temporary attachment of the guide line or string.
3. A bricklaying guide line support according to Claim 1 or 2, wherein the downwardly-depending limb carries indicia indicating distances from the inner edge of the L-shaped member that rests on the rafters.
4. A bricklaying guide line support according to Claim 3, wherein the indicia indicate standard brick course measurements.
5. A bricklaying guide line support according to Claim 3 or 4, wherein the indicia comprise a distance scale.
6. A bricklaying guide line support according to any preceding claim, wherein the clamping means is a screw clamp.
7. A bricklaying guide line support according to any of Claims 1 to 5, wherein the clamping means comprises a friction drive mechanism.

40

45

50

55

Fig.1

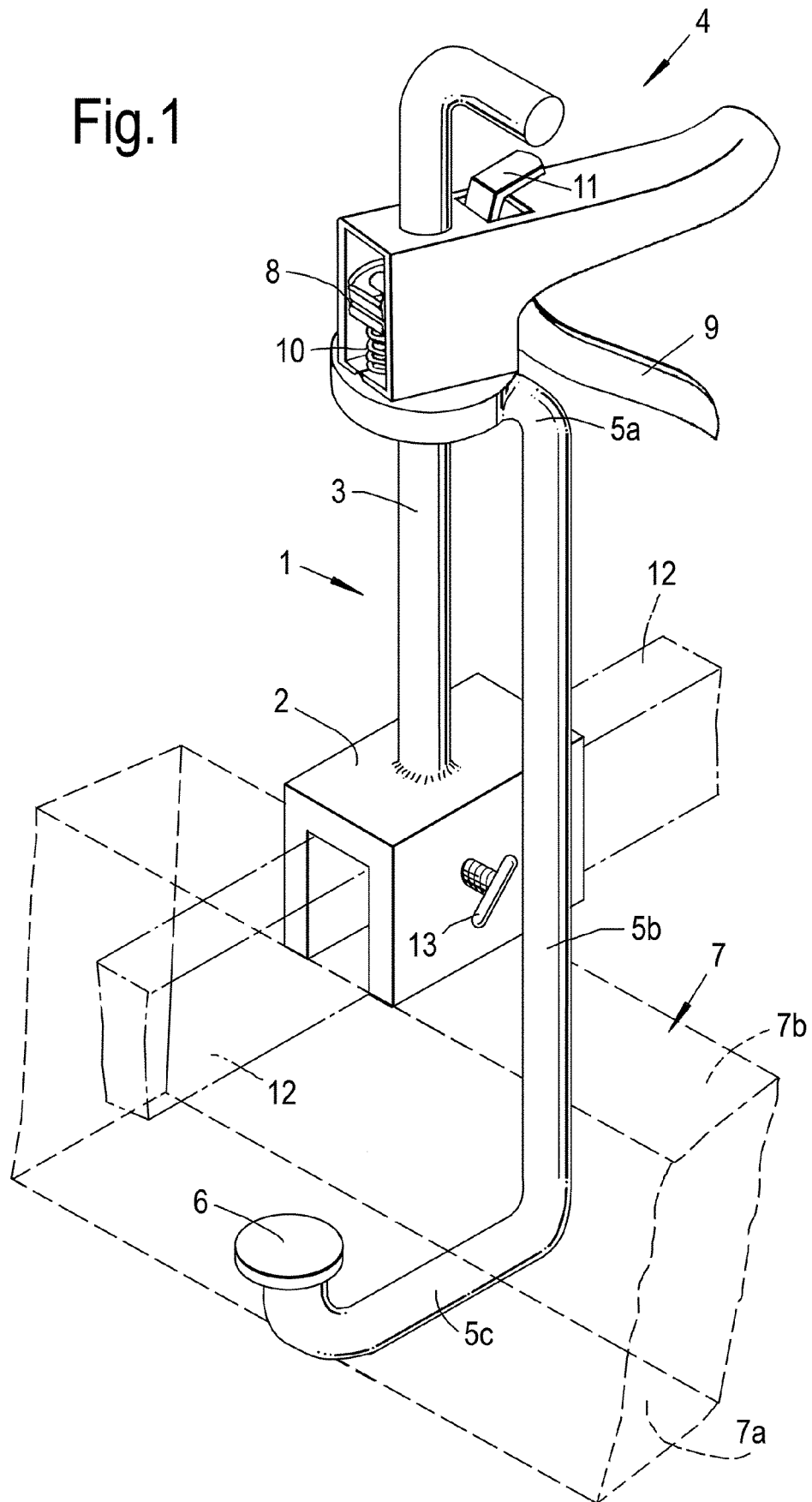


Fig.2

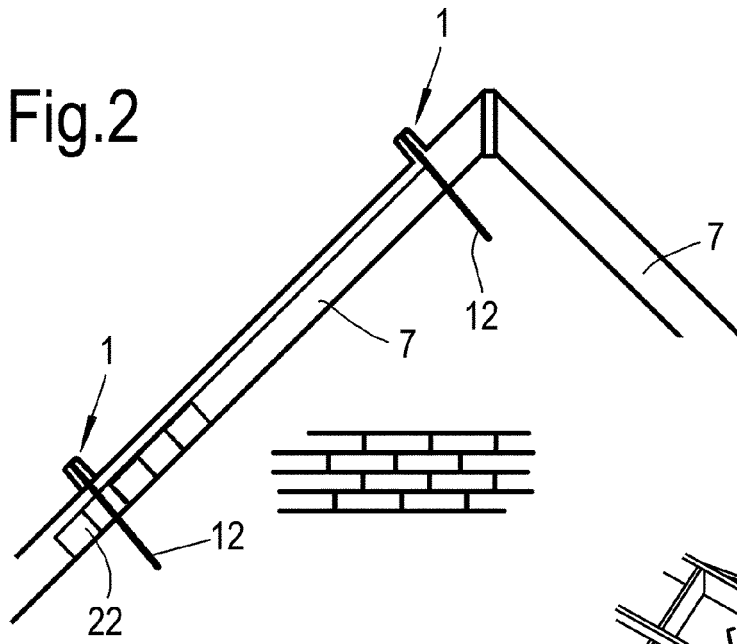


Fig.3

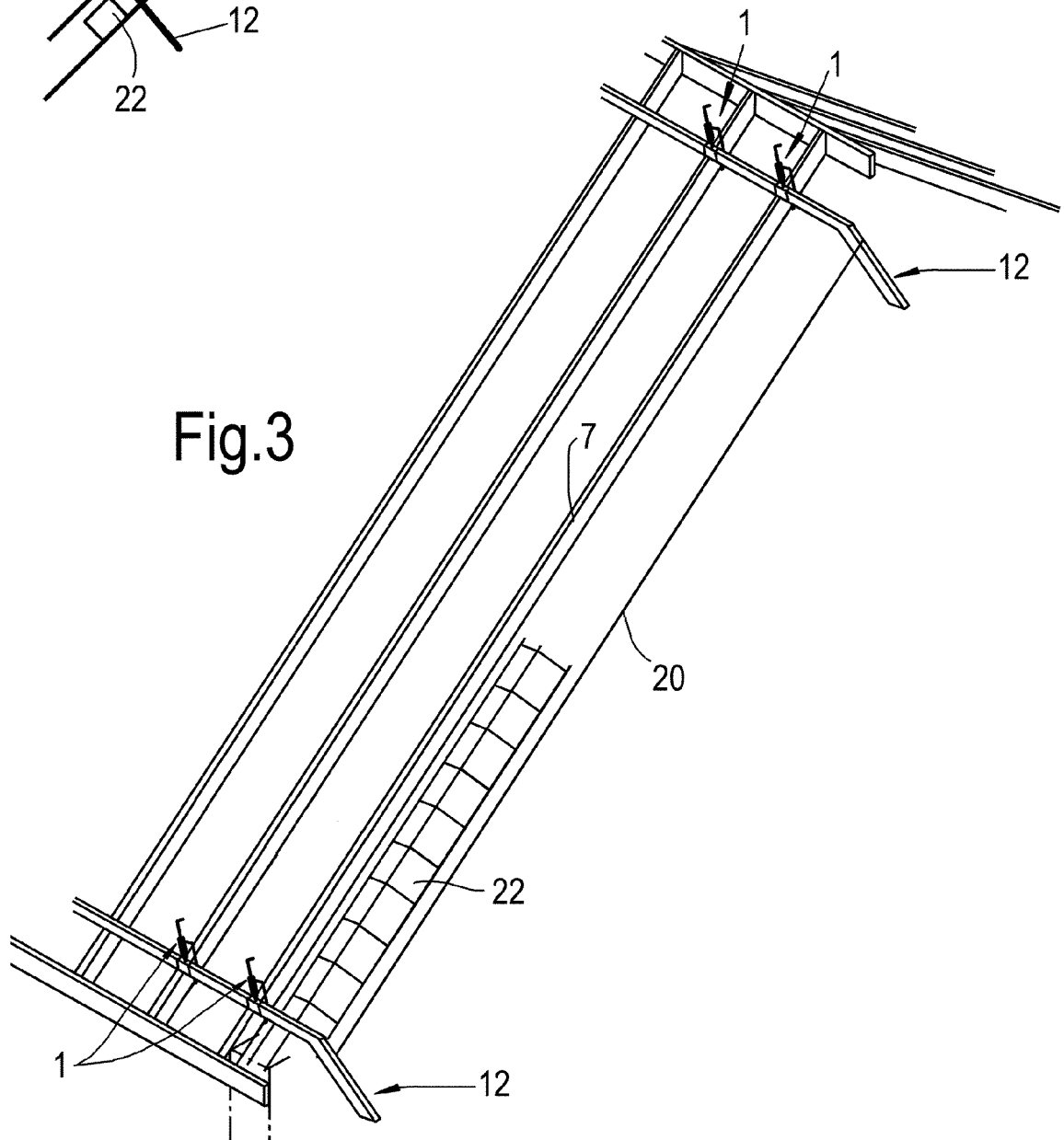
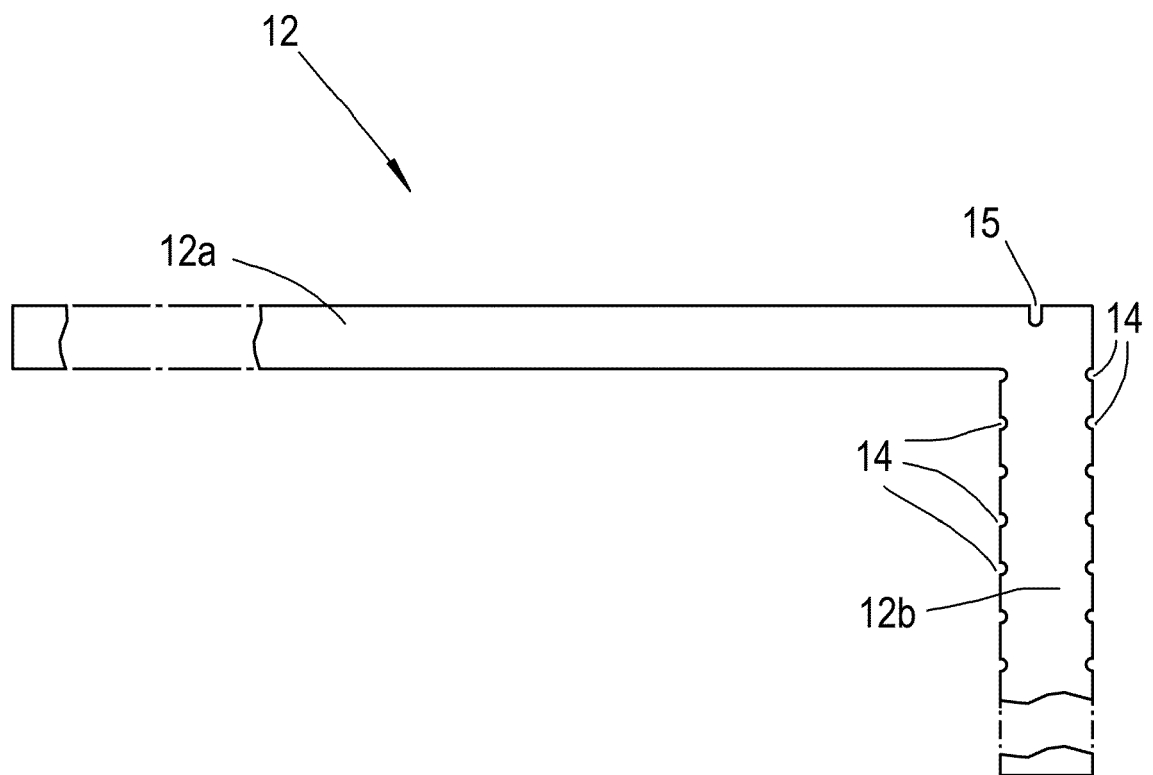


Fig.4





EUROPEAN SEARCH REPORT

 Application Number
 EP 20 20 8509

5

10

15

20

25

30

35

40

45

50

55

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	GB 2 539 374 A (DEREK WILLIAM MORRIS [GB]) 21 December 2016 (2016-12-21)	1,6,7	INV. E04G21/18
Y	* page 5, line 11 - page 8, line 8; figures 1-2 *	2-5	
Y	----- US 2008/072441 A1 (CHARPENTIER DANIEL [CA]) 27 March 2008 (2008-03-27)	2-5	
A	* paragraph [0048] - paragraph [0051]; figure 1 *	1	
A	----- DE 296 12 988 U1 (GRUNERT & CO AKUSTIKBAU GMBH [DE]) 10 October 1996 (1996-10-10)	1,6,7	
A	----- US 3 571 931 A (WILLIAMS BUDDY ARNOLD) 23 March 1971 (1971-03-23)	1-7	TECHNICAL FIELDS SEARCHED (IPC) E04G
	* figures 1-3 *		
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 12 March 2021	Examiner Manera, Marco
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			

 1
 EPO FORM 1503 03.82 (P04C01)

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

EP 20 20 8509

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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

12-03-2021

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 2539374	A	21-12-2016	NONE
US 2008072441	A1	27-03-2008	NONE
DE 29612988	U1	10-10-1996	NONE
US 3571931	A	23-03-1971	NONE

REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- GB 2388400 A [0003]
- US 1986166 A [0006]
- US 2530539 A [0006]
- US 4081112 A [0006]