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### (54) Clamping bracket for fixing two wall profiles to each other

(57) Clamping bracket (20) for fixing two adjoining wall profiles (1, 2) to each other, each wall profile having a pair of channels (11, 12) which extend in the lengthwise direction of the profiles (1, 2) and have openings situated opposite each other. The clamping bracket consists of a rigid coupling piece (21) and a resilient coupling piece (22) parallel thereto. The coupling pieces (21, 22) are fixed to each other at their centres by means of a connecting element (23), relative to which at least

one coupling piece (21, 22) is rotatable about an axis which is situated perpendicular to the coupling pieces (21, 22). The length of the resilient coupling piece (22) is greater than the distance between the bottoms of the channels (12) in which it is placed. After placing of the coupling pieces (21, 22) in the corresponding channels (11, 12), the resilient coupling piece (22) can be moved towards and away from the corresponding profile (2), with the result that it clicks into a concave and convex form respectively.

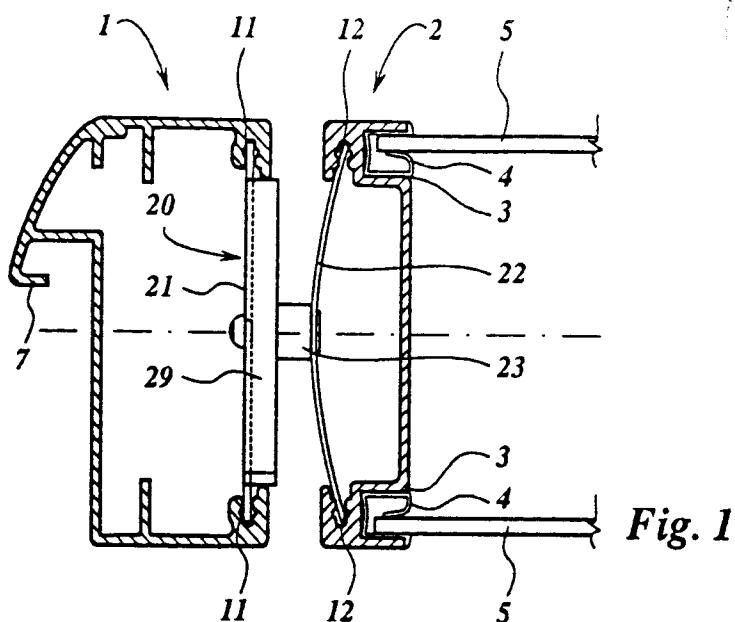


Fig. 1

## Description

The invention relates to a clamping bracket for fixing two adjoining wall profiles to each other, each wall profile having a pair of channels which extend in the lengthwise direction of the profiles and have openings situated opposite each other. The profiles are in particular door or window frame profiles.

Clamping brackets of the abovementioned type are not known. Wall profiles of the abovementioned type are known. According to a known fixing method, an upright and sometimes in addition an auxiliary upright are used. The profiles are placed at some horizontal distance from each other against the upright, after which an omega profile is placed on each side of the wall in the space between the profiles, which omega profile is fixed to the upright by means of screws in the bottom thereof, the omega profiles having such dimensions that the parallel end parts thereof rest against the outside of the profiles and the upright is clamped against the profiles by means of the screws. Finally, the omega profile is covered by a decorative strip.

The known fixing method explained above has the disadvantage that it requires a relatively large quantity of material and time to carry out, while the covering strip of the omega profile interrupts the exterior of the wall and therefore detracts from the appearance of the wall or from the freedom of choice with it.

Furthermore, since for the fixing of panels of a wall there are fixing methods by means of which adjoining panels can be fixed against each other against an upright, so that a so-called "zero seam" occurs between the panels, it is desirable to obtain such a zero seam also for connecting the abovementioned profiles.

The invention aims to achieve this object and to that end provides a clamping bracket according to claim 1.

The clamping bracket according to the invention is simple and cheap, and it is easy and quick and consequently cheap to fit in a wall and possibly to remove from the wall if desired subsequently. When a suitable number of clamping brackets is used over the height of the profiles, the profiles are fixed well in all directions, which is advantageous if the profiles are frame profiles of a door or an opening window in the case of which torsional forces can occur over the length of the profiles as a result of imperfect vertical alignment.

The invention is explained below with reference to the drawings, in which:

Fig. 1 shows part of a cross-section through a horizontal plane of a wall with a clamping bracket according to the invention during fitting;

Fig. 2 shows a cross-section like that of Fig. 1, but with the clamping bracket after fitting; and

Figs 3, 4 and 5 show a top view, a front view and a side view respectively of the clamping bracket of Figs 1 and 2.

The cross-section shown in Fig. 1 of part of a wall comprises a vertical door frame profile 1 and at some distance from it a window frame profile 2 with recesses 3, which by means of adapter profiles 4 are suitable for 5 accommodating therein panes 5 which are parallel to each other and to the wall. The door frame profile has a stop part 7 against which a door (not shown) can rest.

The frame profiles 1, 2 shown are known per se and each have near the other profile 2 or 1 respectively a 10 pair of channels 11 or 12 respectively extending in the lengthwise direction of the profile 1, 2 with openings facing each other. In known applications the channels 11, 12 are used for auxiliary pieces for corner connections of a wall. Of course, the profiles for application of the 15 invention can have channels specially designed for that purpose.

The wall part shown in Figs 1 and 2 also shows a clamping bracket 20 according to the invention. Figs 3, 4 and 5 show a top view, front view and side view respectively of the clamping bracket 20.

The clamping bracket 20 comprises a rigid coupling piece 21 and a resilient coupling piece 22. The coupling pieces 21, 22 are fixed to each other in the centre thereof by means of a connecting element 23. The connecting 25 element 23 is rotatable relative to at least one of the coupling pieces 21, 22 about an axis situated perpendicular to a main face of the resilient coupling piece 23.

The length of the rigid coupling piece 21 is greater than the distance between the opposite openings of the 30 pair of channels 11 and is preferably equal to the distance between the bottoms of the channels 11 of the frame profile 1. The length of the resilient coupling piece 22 is greater than the distance between the bottoms of the pair of channels 12 of the window frame profile 2.

35 As can be seen in Fig. 4, the resilient coupling piece 22 has two diagonally situated corners 26 which are rounded. Where the length of the rigid coupling piece 21 is equal or almost equal to the distance between the bottoms of the channels 11, the rigid coupling piece 21 also 40 has diagonally situated, rounded corners 27. The rounded corners 26 of the resilient coupling piece 22 are preferably situated on a diagonal which, after fitting of the clamping bracket 20, is parallel to a diagonal of the rigid coupling piece 21 with the rounded corners 27. This 45 means that the ends of the coupling pieces 22, 21 are rotated one after the other in the same direction into the corresponding channels 12 and 11 respectively, without a coupling piece which was rotated in earlier becoming detached by the rotation of the other coupling piece.

50 For the sake of strength and, as explained later, in order to obtain a more suitable grip of a tool (not shown), the rigid coupling piece 21 preferably has at least one stop part 29 opposite the resilient coupling piece 22. If, as shown, the rigid coupling piece is made of sheet material, something which is simple and cheap to achieve, each stop part 29 preferably consists of a folded-over edge part in the lengthwise direction of the rigid coupling piece 21.

The clamping bracket according to the invention is used in the manner explained below:

After a part of a wall with the window frame profile 2 with the panes 5 has been placed, the resilient coupling piece 22 is rotated in the direction of the arrow 30 (Fig. 4) into the pair of channels 12 of the window frame profile 2. It is ensured that the resilient coupling piece 22 is curved to a convex shape relative to the window frame profile 2 and the panes 5 in the manner shown in Fig. 1. Owing to the taut convex shape of the resilient coupling piece 22, the clamping bracket 20 will be retained securely in the channels 12 of the window frame profile 2.

With the use of an elongated tool (not shown) the rigid coupling piece 21 is then rotated into the pair of channels 11 of the door frame profile 1. The tool can be a piece of flat iron with projections at suitable points which can grip over the stop parts 29 on either side of the rigid coupling piece 21.

The door frame profile 1 with the rigid coupling piece 21 connected thereto is then pushed towards the window frame profile 2, with the result that the resilient coupling piece 22 connected to the window frame profile 2 clicks in the direction of pushing, after which it is curved to a concave shape relative to the window frame profile 2 and the panes 5.

After these actions, the profiles 1, 2 will rest against each other, so that without the use of uprights or aids other than the clamping bracket 20 a seam between the profiles 1, 2 with a width of zero (therefore called a "zero seam") is obtained.

For the demounting and removal of the clamping bracket 20, the mounting steps explained above are applied in the reverse order.

A clamping bracket according to the invention, such as the clamping bracket 20, can be used for various types of profiles, such as for connecting two window frame profiles, a frame profile to a wall corner profile and a frame profile to a wall end profile. The only condition is that the profiles must have spaces which fulfil the function of the abovementioned channels 11, 12. These spaces or channels can also be provided within the scope of the invention by a suitable auxiliary profile which is fitted in the frame profile to be connected.

The rigid coupling piece 21 is preferably made of sheet material, and the resilient coupling piece 22 is preferably made of spring steel.

## Claims

1. Clamping bracket (20) for fixing two adjoining wall profiles (1, 2), each wall profile having a pair of channels (11, 12) which extend in the lengthwise direction of the profiles (1, 2) and have openings situated opposite each other, consisting of an elongated rigid coupling piece (21) and an elongated resilient coupling piece (22) and a connecting element

5 (23) which is fitted between the centres of the coupling pieces (21, 22) and is rotatable relative to at least one coupling piece (21, 22) about an axis which is situated perpendicular to a main face of the resilient coupling piece (22), the ends of the coupling pieces (21, 22) being suitable for accommodation in the channels (11, 12), while the length of the rigid coupling piece (21) is greater than the distance between the opposite openings of the channels (11) of a profile (1) of the profiles (1, 2), and the length of the resilient coupling piece (22) is so much greater than the distance between the bottoms of the opposite channels (12) of the other profile (2) that the resilient coupling piece (22) after placing thereof can click into the last-mentioned channels (12) on either side of a plane through the last-mentioned channels (12).

10 2. Clamping bracket (20) according to claim 1, characterized in that two corners (26) of the resilient coupling piece (22) situated on a diagonal are rounded.

15 3. Clamping bracket (20) according to claim 1 or 2, characterized in that two corners (27) of the rigid coupling piece (21) situated on a diagonal are rounded.

20 4. Clamping bracket (20) according to claim 2 and 3, characterized in that the diagonals with the rounded corners (26, 27) of the coupling pieces (21, 22) are parallel when the latter are mounted.

25 5. Clamping bracket (20) according to claim 3 or 4, characterized in that the length of the rigid coupling piece (21) is equal to the distance between the bottoms of the opposite channels of the one profile (1).

30 6. Clamping bracket (20) according to a preceding claim, characterized in that the rigid coupling piece (21) has one or more stop elements (29) opposite the resilient coupling piece (22).

35 7. Clamping bracket (20) according to a preceding claim, characterized in that the rigid coupling piece (21) is made of sheet material.

40 8. Clamping bracket (20) according to claim 6, characterized in that the rigid coupling piece (21) is made of sheet material and the one or more stop elements are flanged edge parts (29).

45 9. Clamping bracket (20) according to a preceding claim, characterized in that the resilient coupling piece (22) is made of spring steel.

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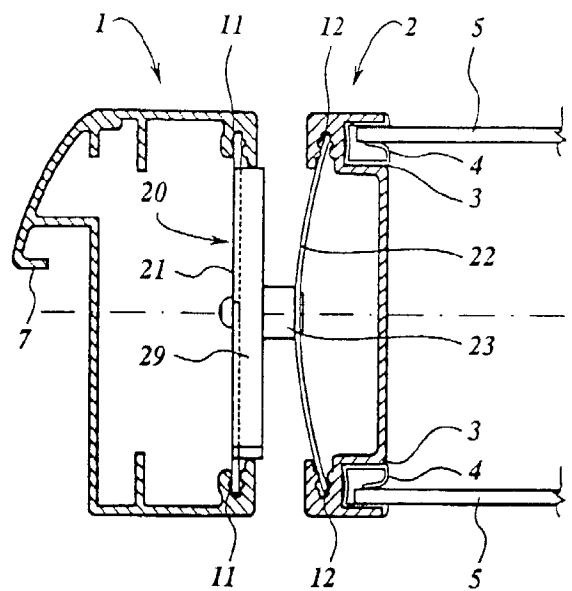


Fig. 1

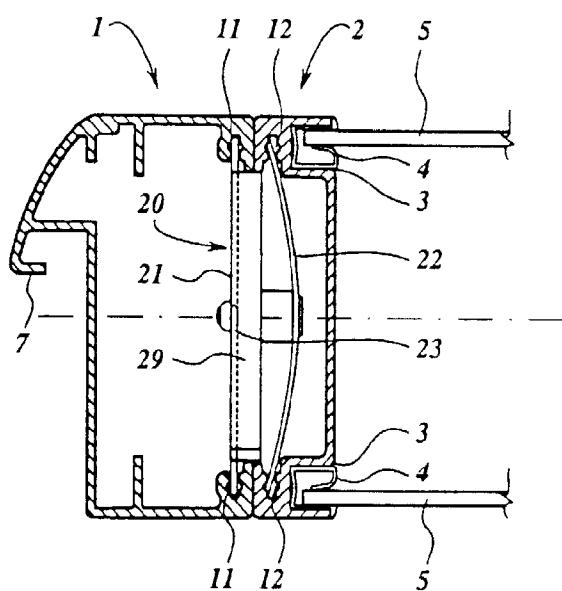


Fig. 2

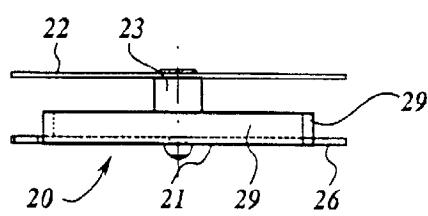


Fig. 3

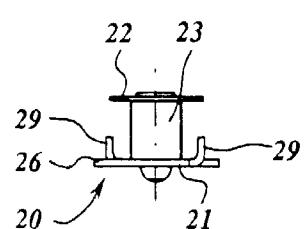


Fig. 4

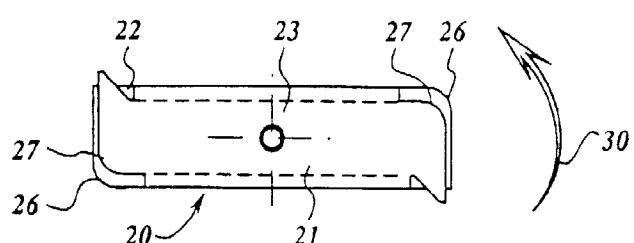


Fig. 5



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## EUROPEAN SEARCH REPORT

Application Number

EP 98 20 0324

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
A	FR 2 068 066 A (DONDANA) 20 August 1971 * the whole document *	1	E06B1/60
A	US 3 103 263 A (LEESER) 10 September 1963 * column 4, line 27 - column 7, line 26; figures *	1,7,8	
A	DE 34 38 876 A (RÜTERBAU) 24 April 1986 * the whole document *	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			E06B E04B F16B
<p>The present search report has been drawn up for all claims</p>			
Place of search	Date of completion of the search		Examiner
THE HAGUE	11 May 1998		Depoorter, F
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 C : non-written disclosure P : intermediate document			
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