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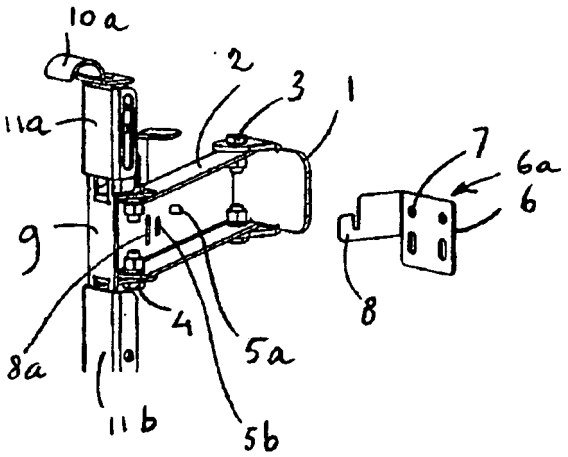
(54) Bracket for heating installation

(57) The present invention relates to an installation for the heating of a space, for example a room in a residential house, consisting of:
- at least one panel-shaped heating element, and
- at least one fixing bracket for the attachment in a fixed position of the specified heating element, to a large extent parallel to and attached at a fixed distance to a wall surface, where the fixing bracket includes a locking element, with a locking position for the specified attachments when in the fixed position, and with an unlocking position to allow unlocking from the fixed position, whereby the heating element is moveable following unlocking from the fixed position, whereby the fixing bracket has at least two points of rotation, whereby following unlocking the panel-shaped heating element is at least substantially moveable parallel to such a wall surface.

With the major advantage that a simple, robust and reliable suspension method is provided which allows cleaning and repair to be carried out in a simple manner.

FIG. 3



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Description

[0001] The present invention relates to a heating installation in accordance with the preamble to Claim 1.

[0002] Installations for the securing of heating elements or radiators, primarily in panel form or also in block form, to the surface of a wall are generally known. Instances are described for example in W02009130497, WO0014453 and GB2304405. Three methods of attachment, and in particular methods of movement and displacement, are identified here, namely:

- in W02009130479 a radiator with brackets at top and bottom is so attached to the wall that upon loosening the upper attachment the radiator is able to swing forward under its own weight; the space behind the radiator is thereby made free, so that any necessary cleaning and repairs to the radiator and wall surface can be carried out; in order to provide such space the radiator will be required to tilt over to a significant degree; precisely this factor will impede manoeuvrability for non-experts, since the weight of such radiators is unexpectedly great for non-experts;
- in W00014453 the attachment of a radiator is so implemented that the surface of the radiator and the surface of the wall can be rotated with respect to one another around a vertical axis; this allows cleaning and repairs, but the heating range can also be altered and thereby increased; in this application the distribution of weight may cause difficulties in providing support, in particular in the event of undesired deflection of the rotating shaft;
- in GB2304405 telescopic bracket attachments are applied; without any requirement to remove the brackets on either the radiator or the wall surface, the radiator can be moved away from the wall to some extent and back towards the wall by sliding these bracket elements apart and back together; this method allows the cleaning and repair of the wall surface and radiator elements; however, the distribution of weight will not only impede the sliding of the bracket elements but the distribution of weight will be so altered that undesired bending of these bracket elements will be difficult to avoid.

[0003] In order to temporarily facilitate the movement of such a radiator away from such a wall surface, the installation according to the present invention has the characteristic that the fixing bracket has at least two points of rotation, whereby, following unlocking, the heating element in panel form is at least substantially moveable in parallel with such a wall surface.

[0004] Such a construction has inter alia the advantage that the movement is easily carried out by non-experts and is not too heavy. Moreover, the displacement is now parallel to the wall surface, hereafter referred to as a parallelogram motion, whereby the distribution of weight between one or more fixing clamps remains substantially equal. Wear, damage or unexpected injuries during cleaning, repair or other work can hereby to a large extent be prevented and avoided.

[0005] In a further example application the installation according to the present invention has the characteristic that the heating element can be displaced horizontally; and that the fixing clamp moreover includes a telescopic connection whereby the heating element is accordingly moveable away from the wall surface.

[0006] An example implementation of the installation in accordance with the present invention is described in detail below on the basis of a drawing, wherein

FIGURE 1 provides an isometric view of the installation with fixing clamp according to the invention,
FIGURE 2 is an enlarged view of part of FIGURE 1 showing the situation where the fixing clamp is locked, and
FIGURE 3 is an enlarged view of part of FIGURE 1 showing the situation where the fixing clamp is unlocked.

[0007] In these FIGURES similar elements have the same reference number.

[0008] FIGURE 1 shows an isometric view of the installation in accordance with the invention for the fixing to the wall of a radiator, usually in panel form but also with ribs, or of still another type. Fixing clamps are applied for this purpose, one of which is represented in FIGURE 1, without the radiator or a radiator element being represented. By means of a wall hook 1 a clamp arm 2 being a main element of the fixing clamp is attached to a clamp bar 9. Located at the upper side and underside of this clamp bar 9 are radiator clamps 10a and b with which for example a panel-shaped radiator can be clamped. Bar-like elements 11 a, b, and c are also indicated. These bar elements are connected in a known manner to clamp bar 9, for example by sliding over one another to cause a clamping effect or also fixed by means of a screw. In particular height distances can be set by means of bar element 11b. Further the specified radiator clamps 10a and b can be connected with the bar elements 11a and b.

[0009] More particularly details of such a fixing bracket are identifiable in FIGURES 2 and 3. These FIGURES provide an enlarged view of the upper element of such a bracket. Elements of the clamping bar, for example its edges with through drillings, are attached to the specified wall hook 1 and clamp bar 9 via a wall shaft 3 and a radiator shaft 4. The shafts 3 and 4 are known nut/bolt connections or also other elements which make possible rotation of the connected elements with respect to one another.

[0010] A combination of a lever 5 and a locking hook 6 are applied for purposes of locking and unlocking. Lever 5 is capable of rotation around a lever shaft 5 using clamp arm 2. In particular in FIGURE 3 it can clearly be seen that the locking hook 6 with its rear side 6a (or the rear side or wall surface side) as a separate element can be

attached on the one hand to for example a wall surface, for example with bolts or screws via holes 7. Four of these holes 7 are indicated, of which two are in slotted form to allow minor adjustments in position. The locking hook 6 is a rectangular piece of material. This piece of material has a locking lip 8 which is slid into the clamp arm 2 through a slot 8a as the radiator is rotated towards the wall. The lever 5 is subsequently rotated to the position shown on FIGURE 2 for locking, so that the lever rests on saddle 5b and fits precisely into the recess in the locking lip 8 and the clamp arm 2.

[0011] Note that in the situation shown in FIGURE 3 with the clamp unlocked, the clamp is free to rotate around the two specified axes. The radiator can thereby be moved away from the wall, with the wall surface and the (for example) panel-shaped radiator remaining parallel. The combination of for example two clamps, the wall surface and the radiator panel thereby form a parallelogram. The space created between the wall surface and the radiator panel by unlocking and moving the radiator panel can be used for any repairs and cleaning. A major advantage is that the movement remains limited, that the distribution of forces across the fixings remains virtually equal and that there is a large degree of manoeuvrability for non-experts.

[0012] It is also possible for the clamp arm 2 to be composed of two parts which constitute a telescopic connection in a known manner. It is precisely the combination of the limited degree of rotation and the proper degree of support which make this possible. It is therefore preferable that the sliding obtained through the telescope connection should be possible only over a limited distance.

[0013] It will be clear to any expert that the most advantageous fixing consists of four mounting clamps and a single locking hook. Both proper support and simple locking are thereby obtained. Further possible variants are deemed to fall within the scope of protection of the appended claims.

EXPLANATION OF SYMBOLS

[0014]

1	wall hook
2	clamp arm
3	wall shaft
4	radiator shaft
5	lever
5a	lever shaft
5b	saddle
6	locking hook
7	holes
8	locking lip
9	clamp bar
10 a,b	radiator clamps
11a,b,c	bar elements

Claims

1. Installation for the heating of a space, for example a room in a residential house, consisting of:

   - at least one panel-shaped heating element, and
   - at least one fixing bracket for the attachment in a fixed position of the specified heating element, to a large extent parallel to and attached at a fixed distance to a wall surface, where the fixing bracket includes a locking element, with a locking position for the specified attachments when in the fixed position, and with an unlocking position to allow unlocking from the fixed position, whereby the heating element is moveable following unlocking from the fixed position, with the characteristic that the fixing bracket has at least two points of rotation, whereby, following unlocking, the heating element in panel form is at least substantially moveable in parallel with such a wall surface.

2. An installation in accordance with Claim 1, **with the characteristic** that the heating element can be displaced horizontally.

3. An installation in accordance with Claim 1 or 2, **with the characteristic** that the fixing clamp moreover includes a telescopic connection whereby the heating element is accordingly moveable away from the wall surface.

FIG. 1

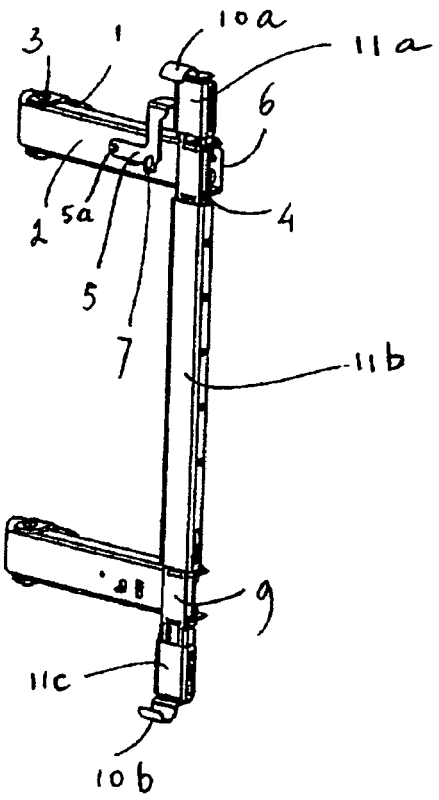


FIG. 2

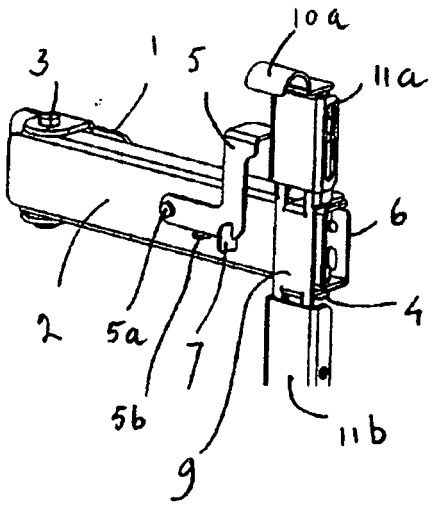
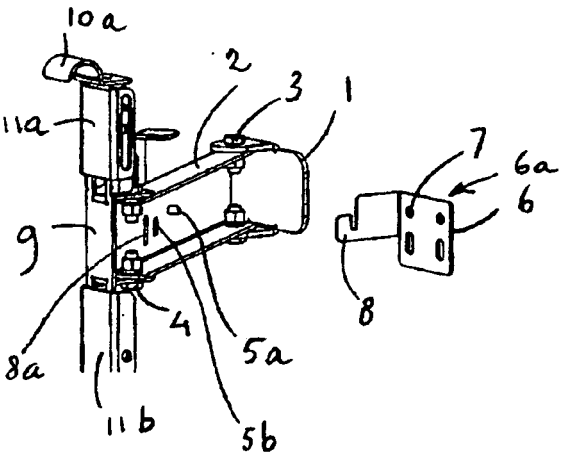


FIG. 3



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EUROPEAN SEARCH REPORT

Application Number
EP 11 00 6916

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 Y	DE 20 2008 006172 U1 (SCHERER NORBERT [DE]) 4 December 2008 (2008-12-04) * paragraph [0030]; figures 14, 15 * -----	1,2 3	INV. F24D19/02
Y	GB 2 304 405 A (PRESTWOOD KIM JOHN [GB]) 19 March 1997 (1997-03-19) * pages 1,3,4; figures 2,3 * -----	3	
			TECHNICAL FIELDS SEARCHED (IPC) F24D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	29 March 2012	Arndt, Markus

CATEGORY OF CITED DOCUMENTS

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EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 11 00 6916

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29-03-2012

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DE 202008006172 U1	04-12-2008	NONE	
GB 2304405 A	19-03-1997	NONE	

EPO FORM P0459

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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- WO 0014453 A **[0002]**
- GB 2304405 A **[0002]**
- WO 2009130479 A **[0002]**