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(54) Radiator mount

(57) A radiator mount for securing a radiator (2) on, for example, a wall (1) includes a rail (3) and a runner (12). The rail (3) is fixable on the wall (1) and has a first (4) and a second (5) anchorage device for cooperation with edge regions (6, 7) of the radiator (2). The runner (12) is movably connected to the rail (3) at a first end of the rail (3). The runner (12) carries the first anchorage device (4) and is positively actuated towards the second anchorage device (5). In the runner (12), there is a locking space which is defined in one direction by a surface on the rail (3), and in an opposing direction by a surface on the runner (12). The two surfaces converge in a direction towards the second anchorage device (5). Between the surfaces, there is a locking element which is positively actuated towards the second anchorage device (5).

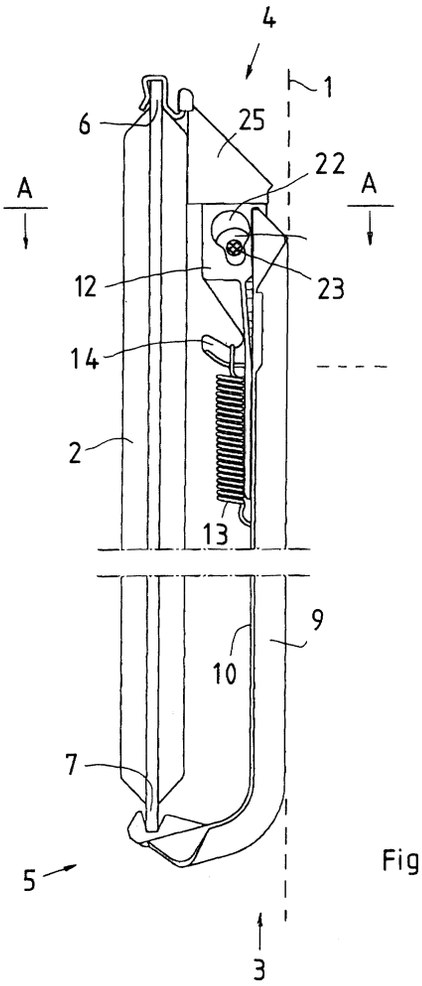

Fig 1

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Description

TECHNICAL FIELD

[0001] The present invention relates to a radiator mount for securing a radiator on a substrate such as a wall, comprising a rail fixable to the substrate and, for cooperation with opposing edge regions of the radiator, having a first and second anchorage device, a runner, which at a first end region of the rail, is movably connected thereto for movements in a direction towards and away from the second anchorage device, the runner carrying the first anchorage device and being positively actuated towards the second anchorage device.

BACKGROUND ART

[0002] EP 98850056 discloses a radiator anchorage or mount of the type intimated by way of introduction. This radiator anchorage has an elongate rail which, in the normal case, is mounted vertically on a wall. The lower end of the rail has an anchorage for a lower portion of the radiator, while the upper end of the rail has an upper anchorage for retaining an upper portion of the radiator. The upper anchorage is movable in the longitudinal direction of the rail in an elongate slit in its upper end. The anchorage includes a plastic part engaging with the rail, as well as a combined locking and engagement device which is interiorly accommodated in a recess in the plastic part and which engages both with the rail and with radiator. The plastic part is spring-biased in a downward direction.

[0003] The above-described design and construction afford a self-locking function so that unintentional lifting off of a radiator from the radiator anchorage or mount is rendered impossible. However, it is far too complicated and expensive in manufacture.

[0004] DE 29 715 031 U1 shows a mounting device for a radiator. The design according to this publication is extremely complicated and comprises a large number of small parts which make the mounting device so expensive in manufacture that it is less attractive on the market.

PROBLEM STRUCTURE

[0005] The present invention has for its object to design the radiator mount intimated by way of introduction such that it may be realised with the least possible number of component parts so that it manufacturing price may be cut. The present invention further has for its object to design the radiator mount so that it will be self-locking and eliminate any risk of play between the radiator and the rail. Finally, the present invention has for its object to design the radiator mount such that intentional dismounting of a radiator may simply be put into effect in that the self-locking function in the radiator mount is cancelled.

SOLUTION

[0006] The objects forming the basis of the present invention will be attained if the radiator mount is characterised in that there is provided, in the runner, a locking space which, in one direction, is defined by a surface on the rail, and, in an opposing direction, by a surface on the runner, the surfaces on the rail and the runner converging in a direction towards the second anchorage device, and that there is provided, between the surfaces of the rail and the runner, a locking element which is exposed to a force in a direction towards the second anchorage device.

[0007] These design and structural features will realise a construction in which the runner, as a result of the self-locking wedging of the locking element between surfaces on the runner and the rail, a rigid positional fixing of the runner being imparted in relation to the rail. This entails, on the one hand, a safeguard against unintentional lifting off of a radiator and, on the other hand, an elimination of play in the mount according to the present invention. Thus, the radiator is rigidly mounted both in the vertical and in the horizontal directions.

[0008] Further advantages will be attained according to the present invention if the mount according to the present invention is also given one or more of the characterising features as set forth in appended subclaims 2 to 5.

BRIEF DESCRIPTION OF THE ACCOMPANYING DRAWINGS

[0009] The present invention will now be described in greater detail hereinbelow, with particular reference to the accompanying Drawings. In the accompanying Drawings:

Fig. 1 is a vertical side elevation of the mount according to the present invention and a radiator mounted therein;

Fig. 2 is a vertical side elevation of a component included in the mount according to the present invention;

Fig. 3 is a top plan view of the component according to Fig. 2; and

Fig. 4 is a cross section through the mount according to the present invention taken along the section markings A-A in Figs. 1 and 2.

DESCRIPTION OF PREFERRED EMBODIMENT

[0010] In Fig. 1, reference numeral 1 relates to a broken line which is intended to illustrate a wall on which the mount according to the present invention and a radiator 2 secured therein are mounted. The radiator

mount has a rail 3 which is vertically oriented in Fig. 1 and has an upper or first anchorage device 4 and a lower or second anchorage device 5, the anchorage devices 4 and 5 being disposed to cooperate in a positionally fixing manner with opposing edge portions of the radiator 2, viz. an upper edge portion 6 and a lower edge portion 7, respectively.

[0011] Possibly, a recumbent or horizontal orientation of the rail 3 is conceivable, and in which event both of the anchorage devices 4 and 5 will engage with the vertical aside edges of the radiator.

[0012] As is apparent from Fig. 4, the rail 3 has, along its opposing edges, two gutter-shaped formations 8 and 9 which, with their arched bottom portions, rest against the wall 1. The gutter-shaped formations are connected via a substantially planar trip-shaped portion 10 which is located a distance from the wall 1 so that an accommodation space 11 is formed therebetween.

[0013] At an upper region of the strip-shaped portion or central portion 10 of the rail 3, there is provided an upwardly open groove which, as will be described in greater detail below, is intended for the vertically movable securement of a runner 12.

[0014] The upper anchorage device 4 is mounted on the runner 12 which, via a spring 13, is pretensioned in a direction towards the lower or second anchorage device 5. The spring 13 engages with its upper end in a catch 14 projecting from the runner 12 and, with its lower end, in an aperture intended for this purpose in the substantially planar central portion of the rail 3.

[0015] The runner 12 has, along its opposing, vertical side edges, grooves 15 between whose bottoms a neck 16 in the runner is located. The edge of the neck 16 facing towards the wall 1 has a flange 17 projecting on both sides of the neck, the flange being accommodated in the space 11 between the central portion 10 of the rail 3 and the wall 1. The neck 16 is accommodated in the above-mentioned groove in the substantially planar central portion of the rail 3, this groove being open from the upper end of the rail and downwards a short distance, in Fig. 1 approximately to level B. As a result, the runner 12 will be movable in the longitudinal direction of the rail towards and away from the lower or second anchorage device 5 so that the distance between the anchorage devices 4 and 5 may be varied in the order of magnitude of 20-50 mm. As a result of the action of the spring 13, both of the anchorage devices will be clamped fast on edge portions on the radiator 2 or on special anchorages on the radiator.

[0016] At the end of the neck 16 facing away from the flange 17, the runner 12 is of greater width than the groove and typically approximately the same width as, or slightly greater width than the central portion 10 of the rail 3. As a result, the runner 12 will be substantially tightly and accurately guided in that the edges 18 in the central portion 10 of the rail defining the groove extend into the grooves 15 of the runner.

[0017] The runner 12 has a locking space 19 for accommodating a locking element 20 which has an active locking position where lifting upwards of the runner 12 against the action of the spring 13 is prevented, and a free position where the runner 12 is movable towards and away from the lower anchorage device 5.

[0018] The locking space 19 is defined in one direction by the one edge portion 18 of the central portion 10 of the rail 3, and in an opposing direction by a corresponding locking surface 21 in the runner 12. The two surfaces defining the locking space, the one on the rail and the other interiorly in the runner, converge in a downward direction, i.e. in a direction towards the second anchorage device 5 so that a cuneiform space is formed between these two spaces in which the locking element 20 may be accommodated. The locking element 20 which is positively actuated in a direction towards the second anchorage device 5, in the normal case in a downward direction, towards the lower anchorage device, will thereby display a striving to move into the increasingly narrower portion of the locking space so that, thereby, the locking element is urged against the surface disposed on the rail which defines the locking space 19. In the embodiment shown on the Drawings, the positive force against the locking element 20 is realised by force of gravity.

[0019] In one alternative embodiment, a spring may be provided for realising the positive force acting on the locking element in the locking direction towards the second anchorage device 5.

[0020] In the illustrated embodiment, the locking element is a circular-cylindrical disk or washer which is freely movable in the locking space 19. In Figs. 2 and 3, the locking space 19 is open upwardly, for which reason the locking element 20 could be placed in the locking space via the upwardly facing opening. However, it is apparent from Fig. 1 that, on the upper side of the runner 12, there is disposed an anchorage 25 with the upper anchorage device 4, and this anchorage is of such a size that it also covers the upwardly directed opening of the locking space 19. For this reason, the locking space 19 has a laterally directed aperture 22 out into the surroundings, so that a locking element 20 may be inserted in or taken out from the locking space 19 via this aperture 22.

[0021] It will be apparent from Fig. 2 that the locking element 20 is located in a wedge-shaped, downwardly tapering space where the rail 3 constitutes a defining wall. From this it follows that, on the least vibration in the construction, or on the least movement between the runner and the rail, the locking element 20 will have a tendency to fall steadily further down into the cuneiform locking space 19 in order to be clamped fast therein. A highly efficient self-locking effect will hereby be obtained because of the wedging effect, whereby unintentional or unauthorised lifting of the runner 12 is effectively prevented. Besides, such an upwardly directed movement of the runner 12 would wedge the locking element 20 in the locking space 19 even further.

[0022] It follows from the foregoing that an intentional releasing of the runner 12 so that this may be moved upwards requires that the locking element 20 can be released in the locking space 19 by an upwardly directed displacement in relation to the runner. For this reason, the locking element 20 is provided with an engagement member 23 which, in the embodiment according to Fig. 2, may be a through-going aperture in the locking element 20 and which, in the embodiment according to Fig. 1, may be a laterally projecting projection on the locking element 20. Under any circumstances, the engagement member 23 serves for realising either direct manual upward lifting of the locking element or serves as an anchorage for a suitable tool by means of which the locking element may be lifted to a free position in the locking space 19 where the runner 12 may readily be lifted.

[0023] In Figs. 3 and 4, reference numeral 24 relates to an opening for accommodating a screw which is employed for joining together the runner 12 and the above-described anchorage 25 for the upper anchorage device 4.

[0024] Even though the locking element may advantageously be in the form of a circular washer, other configurations are conceivable. Thus, the locking element may be in the form of a wedge-shaped disk which corresponds to the configuration of the downwardly tapering, cuneiform locking space 19. Regardless of the configuration of the locking element, this may be provided with friction-increasing formations along those surface portions which have a locking cooperation with the rail 2 and the obliquely inclined surface 21 of the runner.

Claims

1. A radiator mount for securing a radiator (2) on a substrate such as a wall (1), comprising a rail (3) fixable to the substrate and, for cooperation with opposing edge regions (6, 7) of the radiator (2), having a first (4) and second (5) anchorage device, a runner (12), which at a first end region of the rail, is movably connected thereto for movements in a direction towards and away from the second anchorage device (5), the runner carrying the first anchorage device (4) and being positively actuated (13) towards the second anchorage device (5), **characterised in that** there is provided, in the runner (12), a locking space (19) which, in one direction, is defined by a surface (18) on the rail (3) and, in an opposing direction, by a surface (21) on the runner (12), the surfaces on the rail and the runner converging in a direction towards the second anchorage device (5); and that there is disposed, between the surfaces of the rail and the runner (18, 21, respectively), a locking element (20) which is exposed to a force in a direction towards the second anchorage device (5).

2. The radiator mount as claimed in Claim 1, **characterised in that** the rail (3) is substantially vertical, with the first anchorage device (4) and the runner (12) at the upper end region of the rail; and that the locking element (20) is loosely placed in the locking space (19) and, under the action of force of gravity, is movable into contact with the surfaces of the rail and the runner (18, 21, respectively) **in that** direction in which these converge.

3. The radiator mount as claimed in Claim 1, **characterised in that** the rail (3) is substantially vertical, with the first anchorage device (4) and the runner (12) at the upper end region of the rail; and that the locking element (20) is spring-pretensioned into contact with the surfaces of the rail and the runner (18, 21, respectively) **in that** direction in which these converge.

4. The radiator mount as claimed in any of Claims 1 to 3, **characterised in that** the locking space (19) is, via an aperture (22) for passage of the locking element (20), in communication with the ambient surroundings, the aperture being located at that end region of the locking space where the distance between the surfaces of the rail and the runner (18, 21, respectively) is greatest.

5. The radiator mount as claimed in any of Claims 1 to 4, **characterised in that** the locking element (20) is in the form of a circular washer of considerably greater diameter than thickness.

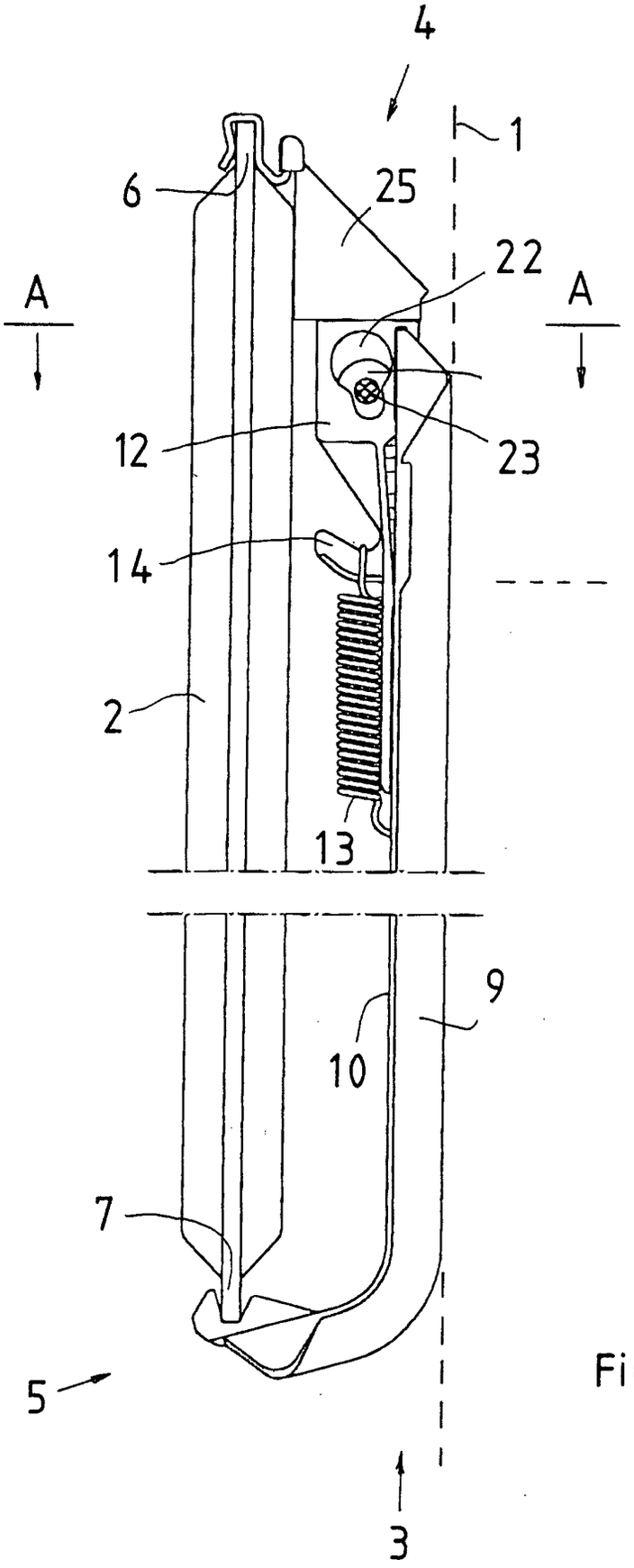

Fig 1

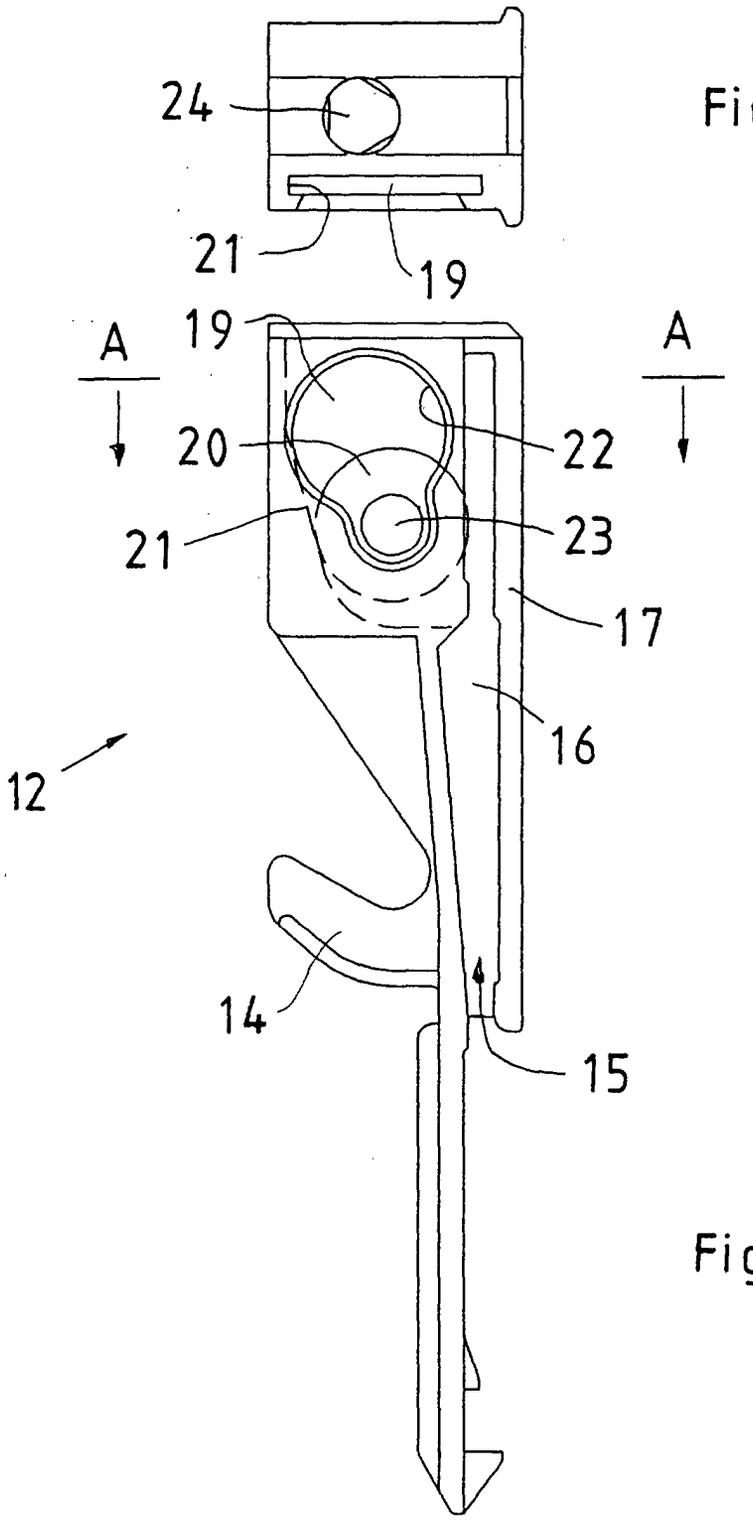

Fig 3

Fig 2

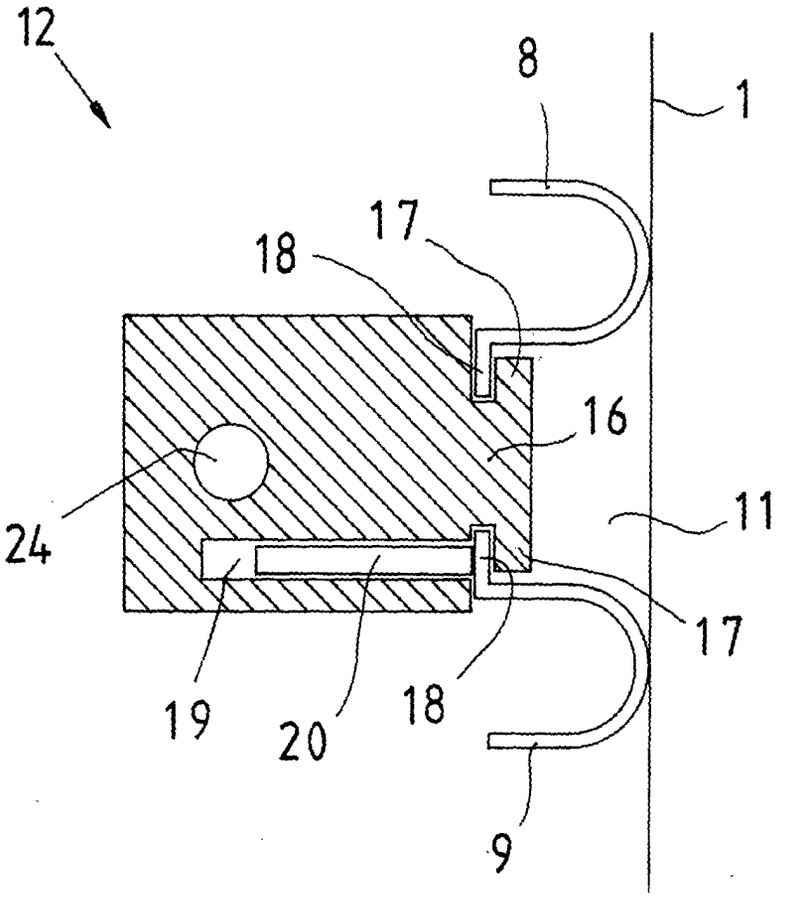

Fig 4