



(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
12.02.2003 Bulletin 2003/07

(51) Int Cl.7: F24D 19/02

(21) Application number: 02078120.9

(22) Date of filing: 31.07.2002

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
IE IT LI LU MC NL PT SE SK TR
Designated Extension States:
AL LT LV MK RO SI

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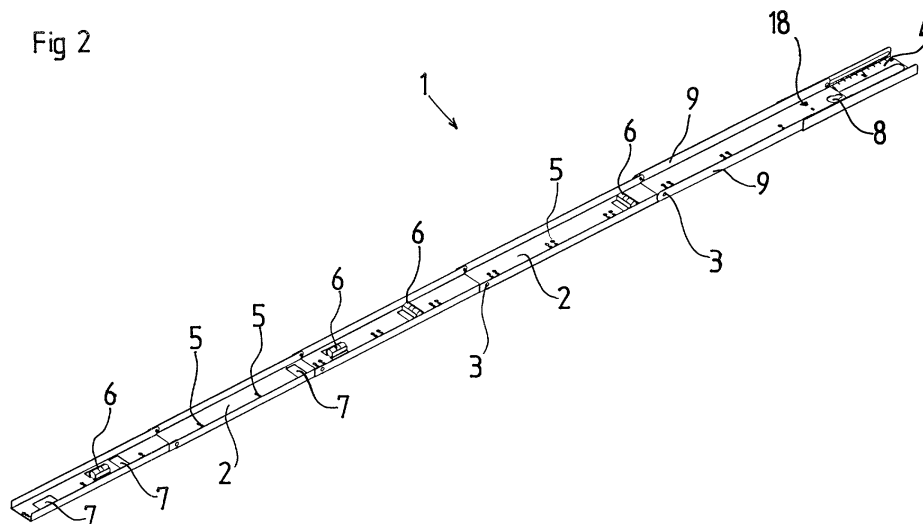
(54) Mounting accessory

(57) A mounting accessory for mounting, for example, a radiator of a specific size is disclosed. The radiator is mounted on a wall at a given distance above a floor or some other permanent interior decoration detail. The mounting accessory includes means for positional determination and marking of anchorage points for one or more brackets which carry the radiator. The means for positional determination are included, on the one hand in a scale for horizontal positional determination, and on the other hand in a scale for vertical positional determination. The scale for vertical positional determination may be vertically positioned by means of a movable positioning device.

A method of mounting the above-mentioned radiator comprises the steps that:

a first anchorage point for a bracket is positionally determined and a second anchorage for a second bracket is positionally determined taking the first as a point of departure. The mounting accessory is placed vertically against the wall and positioned in the vertical direction with the aid of a movable positioning device. When the first anchorage point has been marked, the accessory is pivoted around it to a horizontal position whereafter the second anchorage point is marked.

Fig 2



Description

TECHNICAL FIELD

[0001] The present invention relates to a mounting accessory for mounting, for example, a radiator of a specific size on a wall and at a certain distance above a floor.

[0002] The present invention also relates to a method of mounting a radiator of a specific size on a wall and at a certain distance above a floor, comprising the steps that a first anchorage point for a bracket is positionally determined, and that a second anchorage point is thereafter positionally determined using the first as a point of departure.

BACKGROUND ART

[0003] Radiators, or in daily parlance heater elements, are most generally mounted on the wall beneath a window in dwellings and at workplaces. As progress has been made towards improved thermal insulating properties in windows, greater freedom of choice has been achieved in the positioning of the radiators, even though radiators are often traditionally placed beneath windows, despite the fact that this positioning implies a certain limitation in the vertical direction.

[0004] In general, the radiators are mounted in position with the aid of brackets which are screwed in placed in the wall and on which parts of the radiators rest or are supported. The number of brackets is determined by the width of the radiator and, to some degree, its weight, since there is an upper limit for the weight which a mounting bracket will be capable of carrying. The brackets are secured in the wall flush with one another with the aid of screws or the like. Each bracket is secured using at least one screw, but often several screws. The position of the screws is generally determined using a carpenter's rule or some similar measurement tool for measuring the distance in the vertical direction, counting from the floor. In such instance, a major problem is that walls and floors are seldom built with such precision that it may be safely assumed that the floor is entirely horizontal. The risk is thus imminent that the brackets will be positioned at different heights and that the radiator will slant. This is principally an esthetical problem, but, in extreme cases, may contribute in affecting the mechanical strength of the brackets and also that the degree of reliability in the suspension thus provided deteriorates.

[0005] In order to remedy this problem, attempts have been made to determine the position of a second anchorage point by means of measurements in the lateral direction taking the first anchorage point as the point of departure. Such measurements are carried out using a rule or the like and it is generally difficult to keep the rule steadily horizontal so that the anchorage points and, thereby, the brackets are positioned at the same height. Another solution is to employ a spirit level in order that

the anchorage points will lie on a horizontal line. It may in such instance be difficult to determine the distance in the lateral direction between two adjacent brackets and the risk is that it becomes necessary to make long marks on the wall in order thereafter to be able to measure the desired spacing between the brackets. Employing a combination of a rule and a spirit level at the same time in order to satisfy both the requirement on an accurate distance in the lateral direction and that the anchorage points lie on a horizontal line is an extremely difficult operation. Besides, spirit levels are quite bulky and unwieldy in those lengths that are required for mounting radiators which are elongate in the lateral direction. A further problem is that reading-off the relatively finely calibrated measurement scale on an ordinary carpenter's rule is difficult for several reasons. On the one hand, the mounting operation is carried out at an accelerated tempo because of high production rate requirements within the building industry, and on the other hand, the working position, close to the floor, is unsuitable from the ergonomical viewpoint, and finally the lighting conditions on a building site are, in many cases, unsatisfactory. As a result, the risk of incorrect reading-off of calibrations, and thereby of inaccurate mounting of the brackets is thus great.

PROBLEM STRUCTURE

[0006] The object of the present invention is to realise an accessory and a method for mounting radiators so that the mounted radiator will be horizontal. The method and the accessory are to be simple and rapid so that time - and thereby cost - savings, may be made and the risk of mistakes is eliminated.

SOLUTION

[0007] The objects forming the basis of the present invention will be attained if the mounting accessory intimated by way of introduction is given the characterising feature that it includes means for positional determination and marking of anchorage points for one or more brackets that support the radiator, the means for positional determination being included in, on the one hand, a scale for horizontal positional determination and, on the other hand a scale for vertical positional determination, and that the scale for vertical positional determination may be vertically positioned by means of a movable positioning device.

[0008] Further advantages will be attained if the accessory is moreover given one or more of the characterising features as set forth in appended subclaims 2 to 9.

[0009] Regarding the method, the objects of the present invention will be attained if it is characterised in that the first anchorage point is positionally determined in that a mounting accessory is placed vertically against the wall and positioned in the vertical direction in relation

to the floor with the aid of a movable positioning device, that the first anchorage point is marked in a vertical scale, that the accessory is pivoted around the first anchorage point to a horizontal position, and that the second anchorage point is marked in a horizontal scale.

[0010] Regarding the method, further advantages will be attained if this is characterised by one or more of the characterising features as set forth in appended sub-claims 11 to 12.

BRIEF DESCRIPTION OF THE ACCOMPANYING DRAWINGS

[0011] The present invention will now be described in greater detail hereinbelow, with reference to the accompanying Drawings. In the accompanying Drawings:

Fig. 1 is a schematic side elevation of a radiator and a supporting bracket;

Fig. 2 is a perspective view of the mounting accessory according to the present invention;

Fig. 3 is a view straight from the front of a portion of the mounting accessory;

Fig. 4 is a view according to Fig. 3 of another portion of the mounting accessory;

Fig. 5 is a perspective view of a slide included in the present invention;

Fig. 6 is a view straight from the front of a portion of the slide according to Fig. 5; and

Fig. 7 is a perspective view of the mounting accessory in the folded state.

DESCRIPTION OF PREFERRED EMBODIMENT

[0012] Fig. 1 schematically shows a radiator 19 mounted on a wall 23, seen from the side. The radiator 19 is supported by a bracket 20 which is anchored in the wall by means of at least one, but often several anchorage members 21, 22. The bracket 20 grasps around the upper 25 and lower 26 edges of the radiator 19. In principle, the lower edge 26 of the radiator 19 rests in a groove provided for this purpose in the bracket 20. The distance between the lower edge 26 of the radiator 19 and a subjacent floor 24 is designated A. The distance between the floor 24 and the upper anchorage member 21 is designated B. The distance A is optional and is greatly influenced by the environment in which the radiator 19 is mounted. The distance B is in turn influenced, on the one hand, by the distance A which has been chosen and, on the other hand, by the size and type of radiator 19 and the associated bracket 20. For a predetermined pair of a radiator 19 and a bracket 20, a dis-

tance C will be obtained between the lower edge 26 of the radiator 19 and the upper anchorage member 21. The distance B is the sum total of the distances A and C.

[0013] There are further radiator types in addition to that which is shown in Fig. 1. In certain cases, they are provided with plate stirrups on the rear side and the brackets 20 which are employed for these radiators 19 are disposed to grasp around the stirrups. Consequently, several alternatives are possible. The bracket 20 may grasp in an upper edge of an upper stirrup and a lower edge of a lower stirrup. Alternatively, the bracket 20 grasps in the lower edges of both the lower and the upper stirrup or the upper edge of the upper stirrup and the lower edge 26 of the radiator 19. However, the principles of the appearance and use of the accessory according to the present invention are the same regardless of what type of radiator 19 and bracket 20 which are to be mounted.

[0014] Fig. 2 shows a mounting accessory 1 in perspective. The mounting accessory 1 is intended for mounting of radiators 19 on a wall 23. The mounting accessory 1 is built up from a plurality of sections 2 which are connected to one another by means of joints 3. Thus, the mounting accessory 1 may be folded together and unfolded as required.

[0015] At the one end of the mounting accessory 1, there is a sliding scale or slide 4. The object of the slide 4 is to realise an adjustable distance from the floor, whereby the distance "A" from the floor to the lower edge of the mounted radiator is established. At several places in the sections 2 there are a number of markings 5 in the form of holes through which markings for the anchorage devices 21 can be made in positions which are predetermined by the radiator model and bracket 20 which are to be mounted. The markings 5 are included in two separate series, of which the one series is intended for positional determination in the horizontal direction, while the other series is intended for positional determination in the vertical direction. The second series is thus employed for marking of positions at a distance B from the floor 24. In order to ensure that the mounting accessory 1 is held straight horizontally or alternatively vertically, and that the markings will thereby be exact, a plurality of bubble tubes 6 on different sections 2 of the mounting accessory 1 are provided. The bubble tubes 6 are disposed in two directions which are at right angles to each other for employment in both the vertical and the horizontal positions.

[0016] As was previously mentioned, the mounting accessory 1 is foldable and a number of recesses 7 are provided to permit the folding operation. The recesses 7 are disposed in register with the bubble tubes 6 in the folded state.

[0017] Fig. 3 shows one of the sections 2 in close-up. The section 2 which is shown is the distal section 2 of Fig. 2, most proximal the sliding scale 4. The section 2 which, in most respects is representative of all sections 2, has a main portion 10 and edges 9 which are trans-

versely directed to the main portion 10, preferably by bending. In Fig. 3, the markings 5 are also particularly clearly visible and they will now be described in greater detail. Each one of the markings 5 consists of a figure marking 16 and a hole 17. The holes 17 which are accompanied by figure markings 16 which represent even hundreds of millimetres are, in the preferred embodiment, principally intended for positional determination in the horizontal direction. The other markings 5, where the figure markings 16 do not assume even hundreds, are intended for positional determination in the vertical direction, i.e. for marking of anchorage points for a given type of bracket 20 for a predetermined radiator model. Thus, the accessory has two different scales, one horizontal and one vertical. The figure markings 16 indicate a distance C from a zero position. The zero position in the vertical scale is, in the preferred embodiment, that position which corresponds to the lower edge of the radiator and which is marked on the outermost section 2 on the mounting accessory 1. For the horizontal scale, the zero position consists, in the preferred embodiment, of a hole 8 a distance from the same end edge. The vertical and the horizontal scale are thus offset in relation to one another and the level of offset corresponds to the distance between the zero positions of the scales. Close to the hole 8 at the end of the accessory 1, there is thus disposed a marking 18 which directly corresponds to the position of the lower edge 26 of the radiator 19, counting from the floor 24 when the mounting accessory 1 supports against the floor either with the lower edge of the outermost section 2 or with the edge of the slide 4. Thus, the distance between the marking 18 and the end of the mounting accessory 1 is equal to the distance A in Fig. 1.

[0018] The hole 17 at each figure marking 16 is intended for markings on the wall behind, for example using a pen or pointed instrument such as a dowel or screw. In which marking hole 17 where the marking is to be made thus depends on the model or type of radiator 19 and bracket 20 which are to be mounted. Only certain predetermined positions are marked on the mounting accessory 1. This is because an attempt has been made to minimise the number of different anchorage brackets which are needed for a given range of radiators and this limitation affords production engineering and economic advantages. The advantage inherent in marking only those positions which may come into question in the mounting of a given range of radiator types is that the reading-off of correct distances will be facilitated and the risk of mistakes is reduced considerably or entirely eliminated. Those markings 5 which may come into consideration in a given mounting case with a predetermined type of bracket 20 are read-off from a table.

[0019] Fig. 4 shows another section 2 of the mounting accessory 1 in close-up. This section 2 is to be found somewhere centrally on the accessory 1 which is shown in its entirety in Fig. 1. Also on this section 2, there is a number of markings 5. Moreover, the section 2 has two bubble tubes 6 and, in the position which is shown in the

Figure, the one bubble tube 6 is horizontal while the other is located in the vertical position. In other words, the one bubble tube 6 is disposed parallel with the longitudinal direction of the accessory and the other is disposed at right angles to the longitudinal direction of the accessory. The upper bubble tube 6 (in the Figure) is used when the accessory is held horizontally. The lower bubble tube 6 which is horizontal thus provides information as to whether the mounting accessory 1 is held in the vertical position.

[0020] Fig. 5 shows a close-up of the sliding scale 4 or the slide which is disposed on the one end of the mounting accessory 1, i.e. that end which is directed downwards when in use. In the preferred embodiment, the slide 4 has, like the remaining sections 2, a main portion 11 and transversely directed edges 12 which are preferably produced by bending. The fit is such that the slide 4 runs relatively easily on the end of a section 2. In order to hold the slide 4 in place, two flaps 15 are provided which are bent a distance over the edges 9 of the sections 2. Further, the main portion 11 of the slide 4 has been provided with a longitudinal hole 14. The longitudinal hole 14 is provided so that the slide 4 will not unnecessarily conceal any of the markings 5 which are provided on that section 2 to which it is connected. The slide 4 is, as was mentioned previously, slidably connected to an end section 2 of the mounting accessory 1. The concept is that the desired distance "A" between the lower edge 26 of the radiator 19 and the floor 24 is to be adjustable. To this end, a calibration 13 is provided on the slide 4. In the preferred embodiment, the marking 18 is provided with at least one recess in which the calibration 13 of the slide 4 can be read-off. The dimension which is visible in the recess is thus the intended distance between the floor and the lower edge of the radiator. Since the vertical or second scale on the accessory is fixed, a protraction of the slide 4 entails a corresponding displacement of the vertical scale in relation to the lower edge of the accessory 1, i.e. the lower edge of the slide 4.

[0021] When the slide 4 has been moved to the desired position with the aid of the calibration 13, it is lockable in this position. Preferably, this locking facility is realised in that a screw or clamping device is provided through a longitudinal recess 15 on the edge 12 of the slide 4 and is disposed to extend through the edge 12 and through a circular hole in the edge 9 on a section 2. The screw or clamping device is not shown on the Drawings, but it may be tightened and slackened for a freely optional adjustment of the desired distance "A" between the lower edge 26 of the radiator 19 and the floor 24.

[0022] Fig. 6 shows a portion of the slide 4 seen straight from the front. The calibration 13 which is to be read-off in the recess at the marking 18 is now more clearly visible.

[0023] Fig. 7 shows a perspective view of the mounting accessory 1 in a folded state. The mounting accessory 1 has been folded in its joints 3 so that the total

length does not exceed the length of one section. Moreover, the slide 4 has been moved to its maximum retracted position. For it to be possible to fold the mounting accessory 1 to the illustrated position, the recesses 7 (see Fig. 1) are disposed in those positions which fall in register with the bubble tubes 6 when the accessory 1 is folded together.

[0024] In association with the joints 3, there may advantageously be provided one or a couple (not shown) of ridges on the edges 9 in order to decelerate the folding and thereby reduce the risk of pinching. In a manner corresponding to that for the bubble tubes, recesses (not shown) in the edge 9 are advantageously provided in register with the ridges in the folded state.

[0025] The method of mounting a radiator using the mounting accessory 1 will now be described.

[0026] First, that distance "A" which is desirable between the lower edge 26 of the radiator 19 and the floor 24 is determined. This determination may be made by a rough measurement of the total available wall space in the vertical direction, for example in that the distance between the floor 24 and a window above is measured. Taking the height of the radiator 19 as the point of departure, a suitable distance "A" is then determined between its lower edge 26 and the floor 24. The slide 4 is set with the aid of its calibration 13 at this distance preferably directly by reading-off of the calibration 13 of the slide 4 in the recess at the marking 8, and is fixed in this position with the aid of the screw or clamping device.

[0027] It may be read-off from a table what distance C is required between the lower edge of the radiator 19 and the anchorage device 21 which is to fix the radiator bracket 20 in the wall 23. The mounting accessory 1 is supported against the floor 24 and the wall 23 in the position intended in the longitudinal direction for a first bracket 20 and a check is then carried out that the mounting accessory 1 assumes a vertical position. This may be advantageously checked using the bubble tubes 6. The marking 5 for the anchorage devices of the bracket 20 which corresponds to the distance C which is required between the lower edge 26 and the anchorage device 21 is found and a mark is made in the associated hole 17 in the vertical scale. This mark corresponds to the position of the anchorage device 21 of the first bracket 20. The mark is located at the distance "B" above the floor 24. When the position is marked, the anchorage device 21 is screwed, in the preferred embodiment, in the wall at least a short distance. The mounting accessory 1 is placed with its hole 8 over the anchorage device 21 screwed in place and is pivoted to a horizontal direction in a direction towards the desired placing of an additional bracket 20. The bubble tubes 6 are used to check that the position is horizontal. The desired position in the horizontal direction is marked in the horizontal scale, i.e. a position for the upper anchorage device 21 of the next bracket is marked. In the same way as was previously done, the marking is made in one of the holes 17, but this time, hence, in a hole which is included in

the horizontal scale. The first and second anchorage points which are marked are now located at the same height, i.e. the distance "B" above the floor 24. If additional brackets 20 are necessary for supporting the radiator 19, these can be marked using the earlier anchorage devices 21 as the point of departure in the same manner as previously. Otherwise, the brackets 20 are finally mounted in place and the radiator can be placed thereon.

DESCRIPTION OF ALTERNATIVE EMBODIMENT

[0028] In the preferred embodiment, there is provided a special marking 18 corresponding to the lower edge 26 of the radiator 19. The marking 18 is the zero point in the vertical scale. One alternative is to make the zero point for the vertical scale coincide with the end of the outermost section 2. This end is then allowed to correspond to the position of the lower edge 26 of the mounted radiator 19. In such instance, the marking 18 is eliminated from the mounting accessory 1. The calibration 13 on the slide 4 is read-off at the end of the outermost section 2, and the distance A is thus set at this position. The distance C between the lower edge 26 of the radiator 19 and the upper anchorage device 21 for the bracket is read-off and marked in the same manner as previously, even if the zero point of the vertical scale has been moved.

[0029] In the preferred embodiment, it was stated that the mounting takes place using a floor as the point of departure. It is also conceivable that other permanent interior decoration details are employed as the point of departure for the measurements. One concrete example of such an interior decoration detail is a fitting which fixes the connection pipe of the radiator or a stirrup which interconnects these to one another against the wall. If the distance A is set taking this fitting as the point of departure, the distance B will consequently relate to the distance between the fitting and the position of the upper anchorage device 21.

[0030] The present invention may be modified without departing from the scope of the appended Claims.

Claims

1. A mounting accessory for mounting, for example, a radiator (19) of a specific size on a wall (23) and at a certain distance above a floor (24) or some other permanent interior decoration detail, **characterised in that** the mounting accessory (1) includes means (5) for positional determination and marking of anchorage points for one or more brackets (20) that support the radiator, said means (5) for positional determination being included in, on the one hand, a scale for horizontal positional determination and, on the other hand a scale for vertical positional determination; and that the scale for vertical posi-

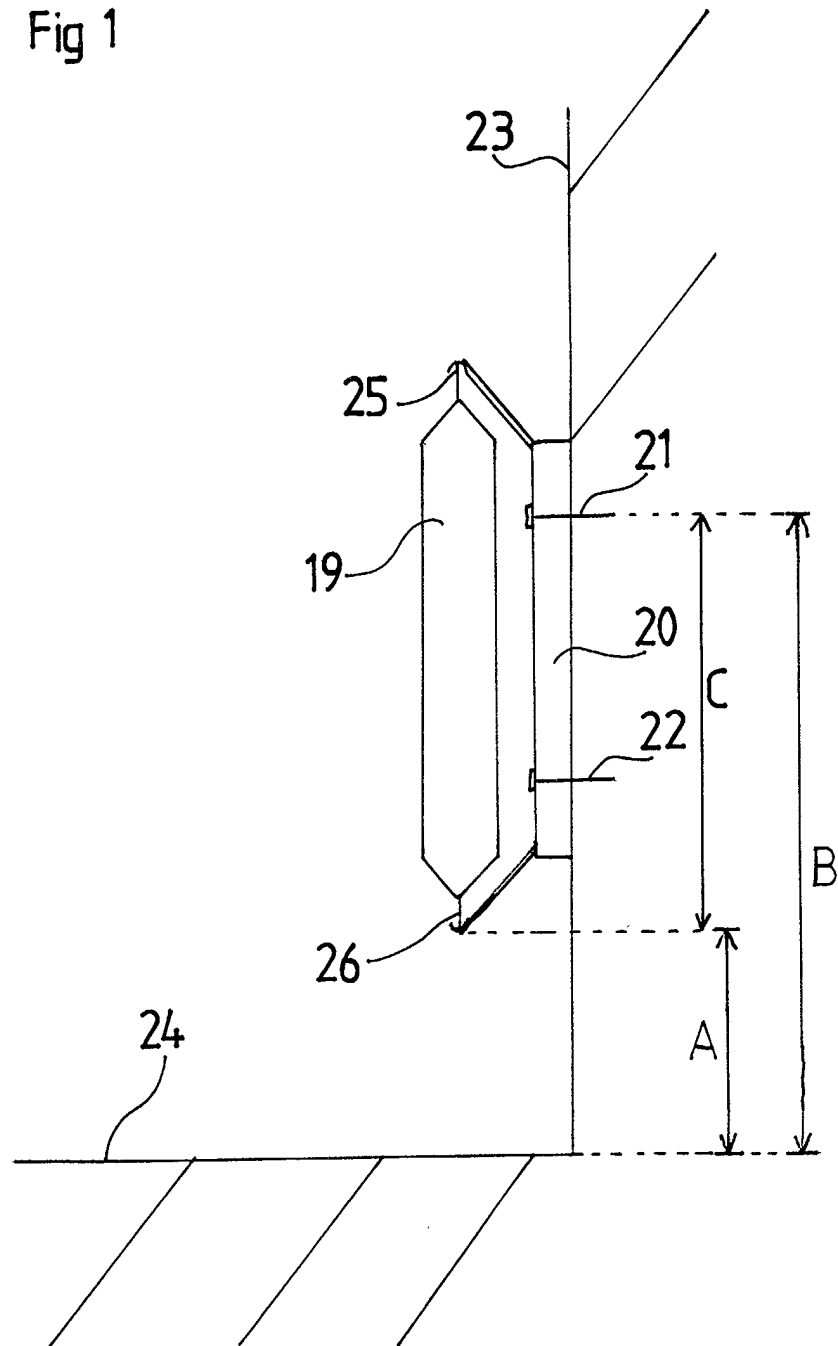
tional determination may be vertically positioned by means of a movable positioning device (4).

2. The mounting accessory as claimed in Claim 1, **characterised in that** said means (5) for positional determination of anchorage points are disposed at such distances from a zero point which correspond to distances between engagement points on either the radiator or the brackets. 5
3. The mounting accessory as claimed in Claim 2, **characterised in that** the zero point for the scale for vertical positional determination is the lower edge of the mounting accessory. 10
4. The mounting accessory as claimed in Claim 2 or 3, **characterised in that** the zero point for the scale for horizontal positional determination is a recess proximal the one end of the mounting accessory. 15
5. The mounting accessory as claimed in Claims 1 to 4, **characterised in that** the movable positioning device comprises a sliding scale which is lockable in free, optional positions. 20
6. The mounting accessory as claimed in Claim 4 or 5, **characterised in that** the scale (4) is lockable by means of a screw device. 25
7. The mounting accessory as claimed in any of Claims 1 to 6, **characterised in that** the accessory (1) includes a bubble tube (6). 30
8. The mounting accessory as claimed in any of Claims 1 to 7, **characterised in that** the accessory (1) is foldable to a compact state. 35
9. The mounting accessory as claimed in Claim 8, **characterised in that** the accessory (1) is provided with projections for reducing the pinching risk when folding. 40
10. A method of mounting a radiator of a specific size on a wall and at a certain distance above a floor or any other permanent interior decoration detail, comprising the steps: that a first anchorage point for a bracket is positionally determined, and that a second anchorage point for a second bracket is positionally determined taking the first as a point of departure, **characterised in that** the first anchorage point is positionally determined **in that** a mounting accessory (1) is placed vertically against the wall and is positioned in the vertical direction in relation to the floor or the interior decoration detail with the aid of a movable positioning device, that the first anchorage point is marked in a vertical scale, that the accessory is pivoted around the first anchorage point to a horizontal position, and that the second 45

anchorage point is marked in a horizontal scale.

11. The method as claimed in Claim 10, **characterised in that** the positioning device is set at a desired position before the mounting accessory is placed against the wall.
12. The method as claimed in Claim 10 or 11, **characterised in that** the vertical and horizontal positions of the mounting accessory (1), respectively, are read-off on bubble tubes (6) before the anchorage points are marked. 50

Fig 1



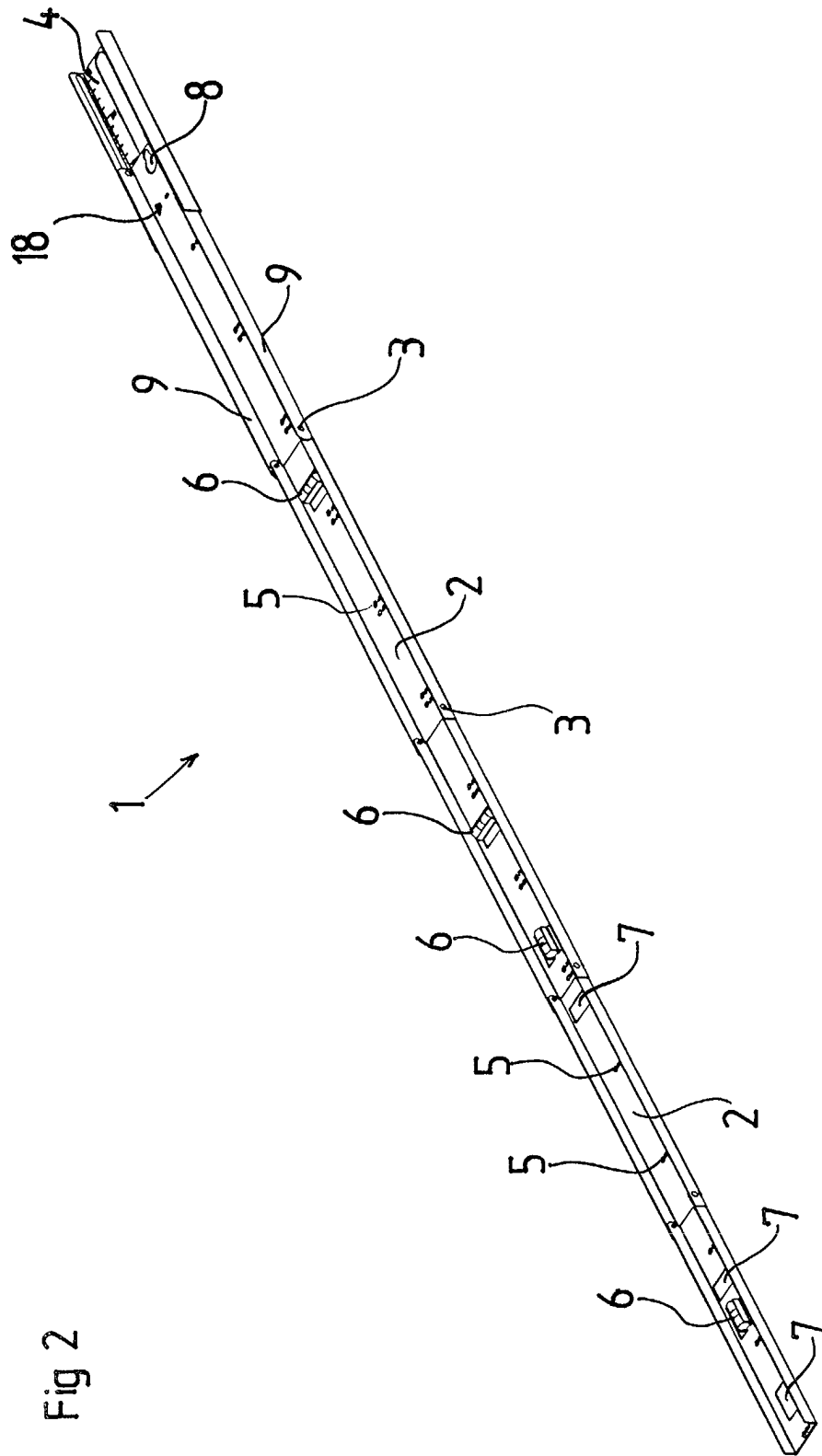


Fig 2

Fig 3

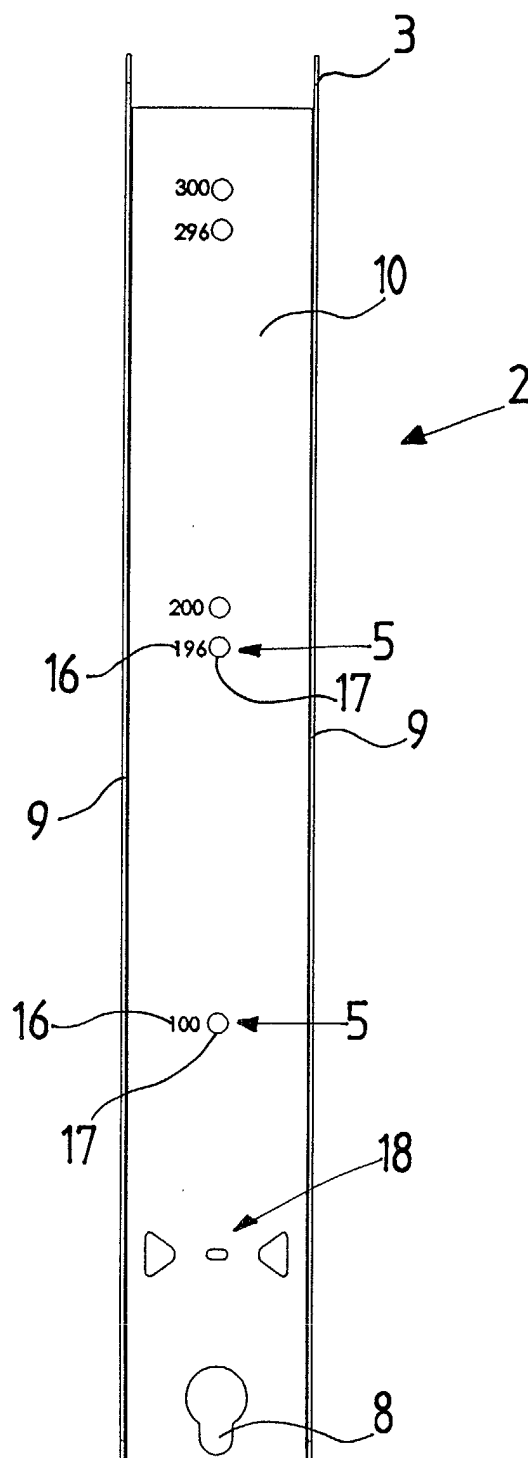


Fig 4

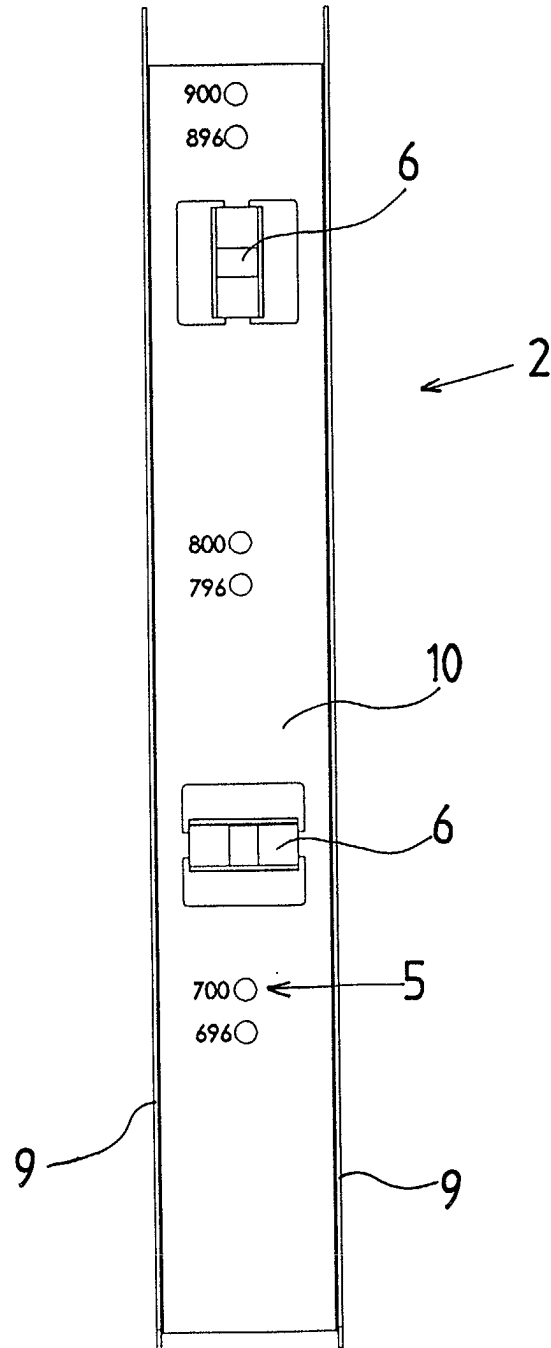


Fig 6

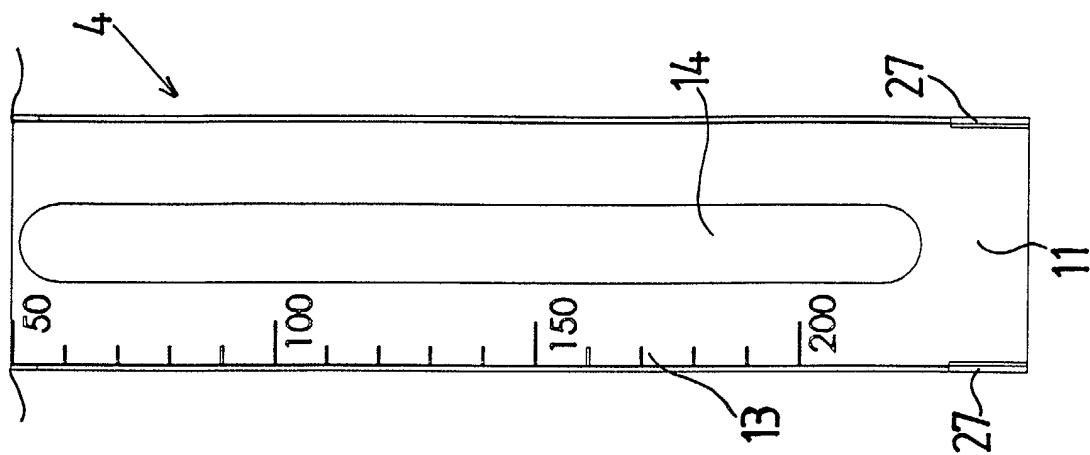


Fig 5

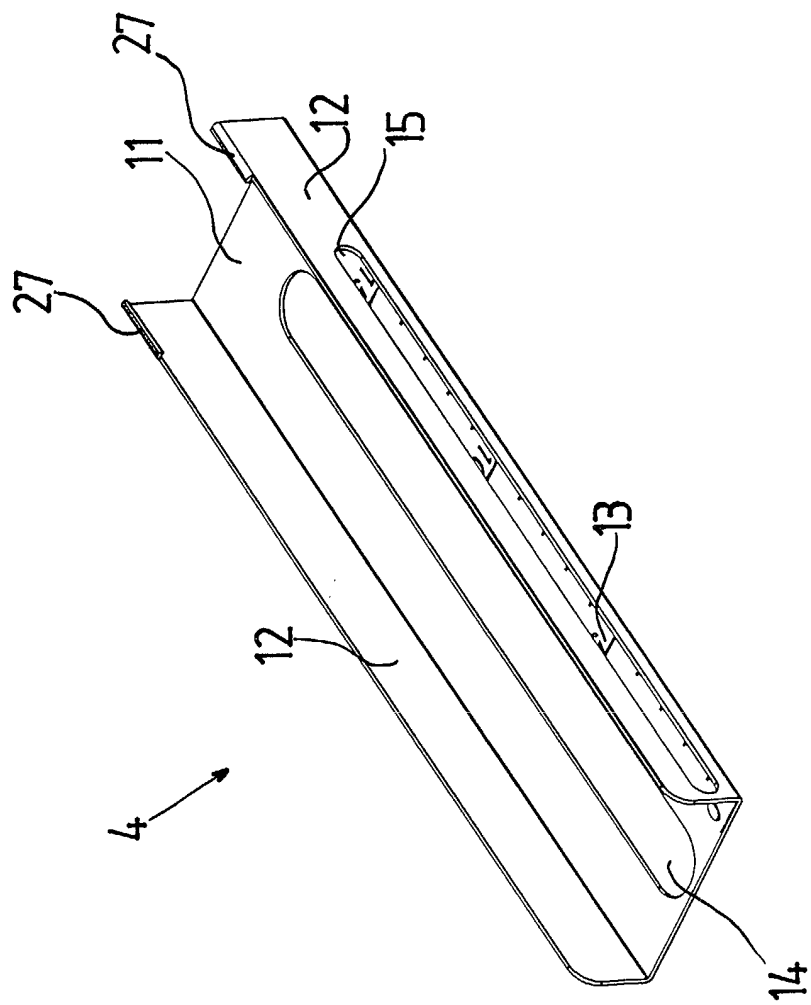


Fig 7

