Patents Act 1977 **Opinion Number** **04/25**

OPINION UNDER SECTION 74A

Patent	EP 3611592 B1
Proprietor(s)	Selmo S.N.C. Di Bozzato Mauro E Fantin Alessandro
Exclusive Licensee	
Requester	Panoramix Ltd
Observer(s)	Haseltine Lake Kempner LLP
Date Opinion issued	10 June 2025

The request

1. The comptroller has been requested to issue an opinion as to whether EP 3611592 B1 is invalid for lack of novelty and inventive step based on three documents:

D1 "KTX 1, KTX 2, KTX 3, KTX 4. User Manual.", 10 November 2016 (2016-11-10), Retrieved from : https://web.archive.org/web/20161110205550if_/http://www.hessen.ee/tootelehed/terma/user_manual_terma_ktx.pdf

D4 "SELMO DYNAMIC MANUAL" Rev. Beta – March 2018, pages 1-19, *"retrieved on 14 February 2025"*

D5 EP 1598723 B1 published 24th July 2013

2. EP 3611592 was filed on 13th August 2019, claiming priority from Italian patent application IT20180008109 filed on 17th August 2018. It designated GB and was granted on 24th March 2021.

Observations

3. Observations were received challenging the asserted publication date of D4 and arguing that D4 should be disregarded. They also argue that D1 and D5 together do not show a lack of inventive step. They note that it seems the requestor admits that neither D1 nor D5, on their own, shows a lack of novelty.

Matters to be considered by this Opinion

4. The first thing for me to deal with is the publication date of document D4. The requestor admits that they found a copy of this document online in 2025, clearly after

the priority and filing dates of the patent. They argue that this document shows it was published prior to the priority date because of the marking at the bottom of each page saying '*Rev. Beta – March 2018'*. They state that this retrieval was done on the 'wayback machine' on 14 February 2025, but do not provide any evidence of a publication date from the 'wayback machine', nor of a URL specifically using the archive.org web site tool.

5. The Observer argues that the printing of '*Rev. Beta – March 2018'* is insufficient evidence that D4 was made publicly available at that time. Further they state that they failed to find D4 by searching the 'wayback machine' tool. They note a number of decisions of the EPO boards of appeal that they summarise by stating that '*the mere presence of a date on a document is not necessarily sufficient to prove its public disclosure on that date'*. Finally they note that '*Rev. Beta'* suggests the document may be preliminary or internal in nature.

6. The wayback machine tool at archive.org provides some historic 'snap shots' of public websites, each snapshot being provided with the date at which the information was taken – thus the tool itself provides a snapshot date (an example of this is given in relation to the URL for D1 above). The requestor has not provided any evidence of this snapshot date for D4. I also tried to find a snapshot of D4 using the wayback machine but failed. I agree with the observer that the wording '*Rev. Beta March 2018'* is not persuasive as to a publication date. I am not persuaded that there is sufficient evidence that D4 was publicly available before the priority date. Thus I will not give my opinion on the validity of the Patent based on D4.

7. A second point is that the request refers to '*D1 and/or D5'* in relation to novelty and inventive step. As the requestor admits, D1 was cited by the EPO during the pre-grant prosecution of the Patent application. Further D1 is explicitly listed as prior art in the patent itself in paragraph 25. D5 was not cited during prosecution at the EPO. Because of this, I will not give my opinion on validity based solely on D1, as I consider this would be nothing more that revisiting arguments that would have been already considered by the EPO.

8. Section 2.2.1 of the request seems to discuss lack of novelty given D1 or D5, but then concludes that both lack a key inventive feature of claim 1. Therefore I will limit my opinion to consideration of lack of validity to inventive step in relation to either document D5 or a combination of D1 and D5.

The Patent

9. The invention relates to a compact thermostat with a timer control so that the thermostat set temperature can change according to a schedule. The schedule can be programmed by user controls and a display screen. The controller provides an electrical output to control a water heater. The thermostat is suitable for direct attachment to a heated radiator towel rail with a temperature probe end 4 fitted to a port on the radiator to sense the internal water temperature. To provide flexibility in how the thermostat can be located, the housing portion in which the display and controls sit can be rotated relative to the rest of the thermostat. The housing position can be adjusted after the thermostat is mounted to the radiator.

Fig.1

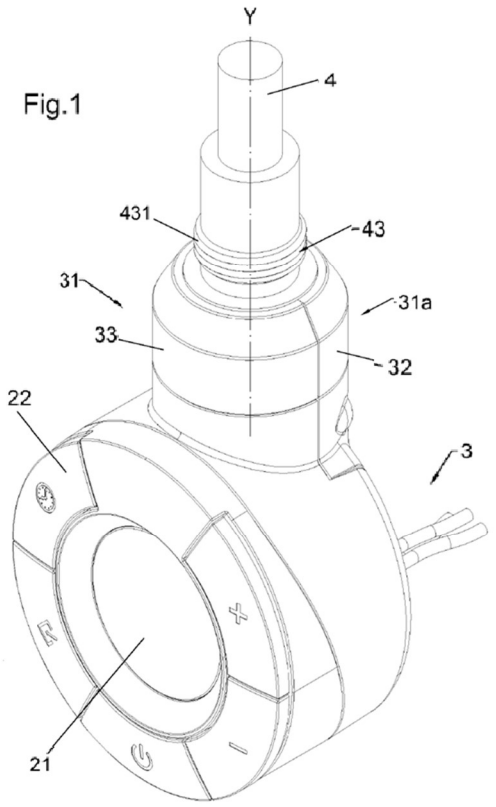
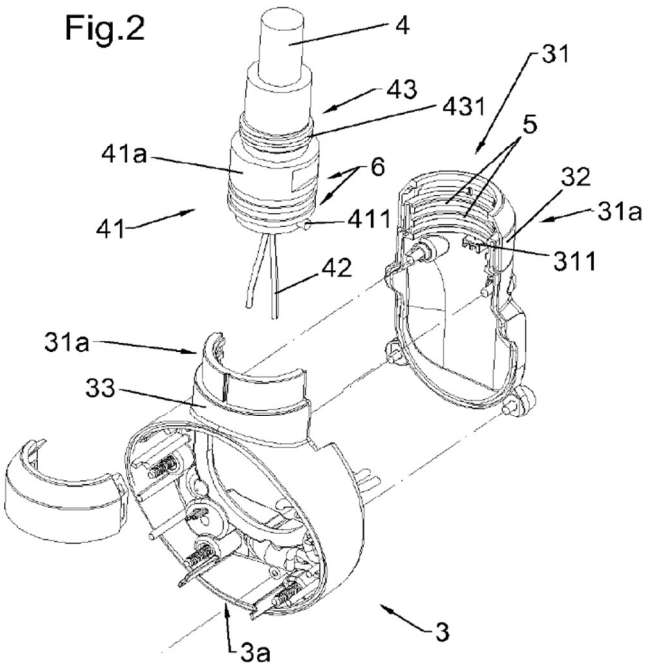
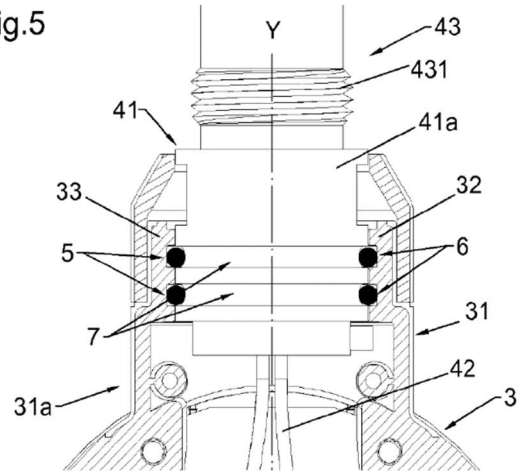


Fig.2



10. Figures 1 and 2 above shows a preferred embodiment with the housing 3 as a two half-shells 32, 33 receiving the temperature probe portion 4. User display 21 is surrounded by control buttons 22. The probe has an external threaded end 43 for a plumbing fitting of the radiator. The probe 4 is held such that it can rotate about the marked Y axis relative to the housing 3. The rotation is allowed by flexing of inner connecting cables 42 and the travel is limited by pin 411 coming in to contact with stop 311. Below is a cross-section showing how the probe is held by the closed shells. Cylindrical end 41 is shaped to fit within the cylindrical seat 31 of the housing with o-rings (black circles) acting as projecting bodies 6 extending from the probe to fit into corresponding annular ‘housings’ 5. Thus a projecting ‘ring’ on the probe fits into a groove inside the housing seat to fix the probe to the housing while allowing rotation. The patent says that the opposite arrangement to that shown can be used with the groove in the probe and ring in the seat.

Fig.5



Claim Construction

11. As a first step in determining the validity of the patent I must correctly construe the claims. This means interpreting them in the light of the description and drawings as instructed by Section 125(1). In doing so I must interpret the claims in context through the eyes of the person skilled in the art. Ultimately the question is what the person skilled in the art would have understood the patentee to be using the language of the claims to mean. This approach has been confirmed in the decisions of the High Court in *Mylan v Yeda*[1] and the Court of Appeal in *Actavis v ICOS*[2].

12. Section 125(1) of the Act states that:

> *For the purposes of this Act an invention for a patent for which an application has been made or for which a patent has been granted shall, unless the context otherwise requires, be taken to be that specified in a claim of the specification of the application or patent, as the case may be, as interpreted by the description and any drawings contained in that specification, and the extent of the protection conferred by a patent or application for a patent shall be determined accordingly.*

13. And the Protocol on the Interpretation of Article 69 of the EPC (which corresponds to section 125(1)) states that:

> *Article 69 should not be interpreted in the sense that the extent of the protection conferred by a European patent is to be understood as that defined by the strict, literal meaning of the wording used in the claims, the description and drawings being employed only for the purpose of resolving an ambiguity found in the claims. Neither should it be interpreted in the sense that the claims serve only as a guideline and that the actual protection conferred may extend to what, from a consideration of the description and drawings by a person skilled in the art, the patentee has contemplated. On the contrary, it is to be interpreted as defining a position between these extremes which combines a fair protection for the patentee with a reasonable degree of certainty for third parties.*

14. The claims comprise a single independent claim 1 and dependant claims 2 to 12. Claim 1 reads:

> *1. A thermostat assembly (1) for heater devices, in particular for radiators and heaters, comprising:*
>
> *- electronic thermoregulation means (2) configured to activate and deactivate the heating of the heating means adapted to flow inside said heater device;*
>
> *- a casing (3) which defines a cavity (3a) adapted to accommodate said electronic thermoregulation means (2) and comprising first mechanical*

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[1] *Generics UK Ltd (t/a Mylan) v Yeda Research and Dev. Co. Ltd & Anor* [2017] EWHC 2629 (Pat)
[2] *Actavis Group & Ors v ICOS Corp & Eli Lilly & Co.* [2017] EWCA Civ 1671

coupling means (31), said first mechanical coupling means (31) comprising a substantially cylindrical seat (31a);

- a probe (4) for detecting the temperature value of said heating means comprising:
- second mechanical coupling means (41) complementary to said first mechanical coupling means (31) of said casing (3) to allow the coupling of said probe (4) to said casing (3), said second mechanical coupling means (41) comprising a substantially cylindrical body (41a) projecting from said probe (4) and configured to be coupled by interference with said seat (31a) of said first mechanical coupling means (31);
- electrical connection means (42) for the connection to said electronic thermoregulation means (2);
- third mechanical coupling means (43) configured to allow the connection of said probe (4) to an inlet mouth of said heater device;

when said probe (4) is coupled to said casing (3), said first mechanical coupling means (31) and said second mechanical coupling means (41) being configured to allow the rotation of said casing (3) with respect to said probe (4) according to an axis of rotation (Y);

characterized in that at least a first annular housing (5) is defined in said seat (31a) and at least one projecting body (6) at least partially annular is defined in said cylindrical body (41a) or at least a first annular housing (5) is defined in said cylindrical body (41a) and at least one projecting body (6) at least partially annular is defined in said seat (31a); said projecting body (6) being adapted to be arranged in said first annular housing (5) when said probe (4) is coupled to said casing (3) so that the fitting of the projecting body (6) in the first annular housing (5) prevents the decoupling of said probe (4) from said casing (3) but does not prevent said rotation of said casing (3) with respect to said probe.

15. There are no issues of claim construction raised in the request, nor in the observations. I also have not found any significant problems in interpretation of the claim language, though I will make some comments below.

16. The claim refers to an axis of rotation, but does not explicitly define this in relation to the shape and relative locations of the casing and probe. I think it is implied that this rotation axis is also the central symmetry axis of the cylindrical body as well as the symmetry axis extending from the centre of the annular housing and annular body.

17. I note that, in comparison to the embodiment, the claim does not require a display or user controls, only that there is an electronic thermostat control inside the housing electrically connected to the probe via means 42. Also, there is nothing in the claim about the casing being formed from two halves such that the seat 31a is assembled around the body 41a. I note that the final part of the claim only requires one ‘ring and groove’ arrangement rather than two, and the ‘ring’ is only required to be ‘partly annular’.

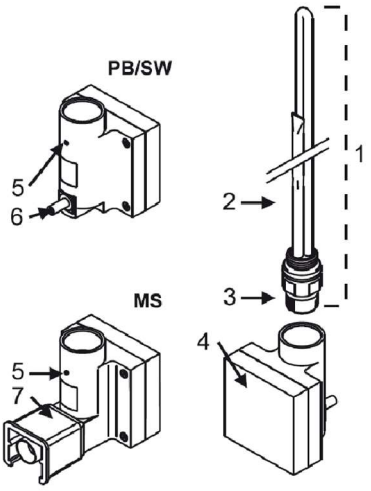
Document D1 – KTX1-4 User Manual

18. This document gives instructions for both the installation and the use of an electronic thermostat and heater for an electrical heated towel rail. This combined device differs from that of the patent in that it includes a heating element along with the temperature probe, with both inserted into the rail. Various models are covered by the manual, which differ mainly in the type of user control provided, eg many include a timer function, some a clock and one a IR remote control. Another variation is how the mains power is connected. The manual shows the general layout on page 4:

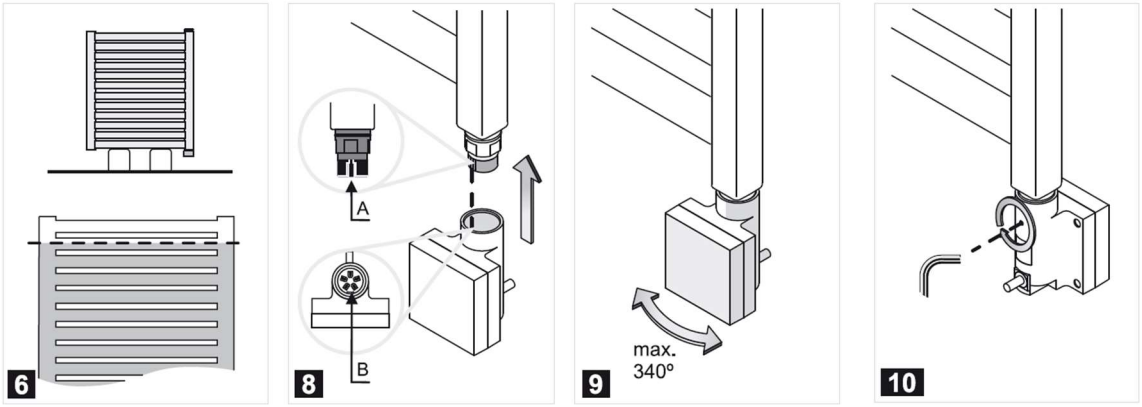
CONSTRUCTION OF THE HEATING ELEMENT UNIT

Complete KTX unit contains Terma-SPLIT heating element and controller for it. Depending on the model of the controller, it can also be completed by a remote programmer.

1. Heating element
2. Capillary with temperature sensor
3. Heating element head
4. Controller
5. Blocking thread
6. Power wire (versions –PB, –PW, –SW)
7. Masking cover for X-type connection (versions –MS)



19. The installation method is substantially the same for each model and type of radiator. Firstly the heating element and temperature probe is inserted into the radiator and the head 3 is screwed to the radiator fitting, leaving the lower end exposed. The manual shows installation steps on page 5, with the key ones shown below:



6. Put the radiator back in an upright position and check the level of the liquid inside it.
7. Make sure that the connection between the radiator and the heating element is tight.
8. Install the controller – fit the indents on the head (A) with the indents in the controller (B).
9. Position the controller casing in a way providing an easy and comfortable access.
10. Secure the casing at the back with Allen key.

20. It can be seen that the controller housing is not split and assembled around the heater head, rather it is pushed over the head and seems to be secured with the aid of the ‘blocking thread’ 5. Further it seems that the during the connection step, the

orientation of the housing to the head is specified by indicated indents. The attached housing is subsequently able to be rotated relative to the previously fitted probe head when assembled.

Document D5 – EP 1598723 B1

21. D5 shows a thermostat for electrical heater radiators for towels that in the embodiments includes a heating element B attached to thermostat 1 enclosing control circuit 4 in casing 2 having lid 3 with regulator control 7. The assembly is shown below:

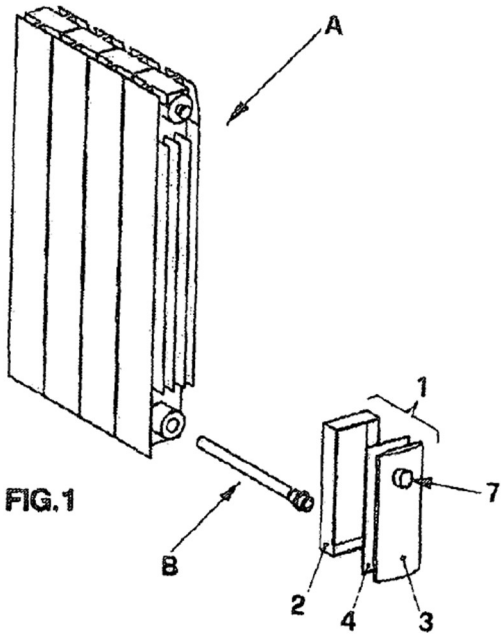


FIG.1

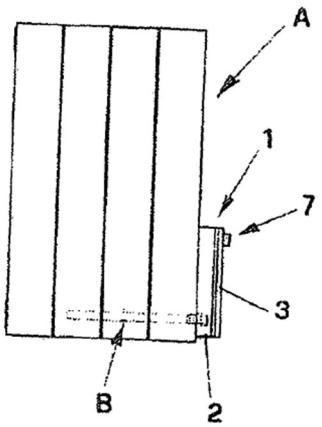


FIG.2

22. The document focusses on a particular construction of the control 7, and does not discuss how element B is attached to the rest of the device. While the document is a little unclear, it is my understanding that there is no temperature probe or thermostatic element formed with element B.

23. The control 7 is said to provide a knob to turn a potentiometer and a push button, both carried by the circuit 4. As far as I can understand the description, there is no means that actually senses a temperature of either the radiator, the heater B or the ambient air. Thus there seems to be no actual thermostatic control described, despite the device being called a 'thermostat'. I note that the claims of D5 say 'a potentiometer suited to change the temperature', but it is unclear if this is anything other than a user control input to the circuit, rather than providing a feedback signal to regulate the heater power delivered.

24. The request in particular notes:

> *The knob, which has a truncated-conical shape, houses the key in a circular seat. Rotating the knob adjusts the temperature via the potentiometer, while pressing the key changes the operating mode via the push button.*

And later the request states:

The key aspects of the feature are already disclosed in D5:
1. An annular housing defined in either the seat or cylindrical body
2. A projecting body defined in the other component
3. The projecting body fits into the annular housing when coupled
4. This arrangement prevents decoupling while allowing rotation.

Below are some of the drawings of this control:

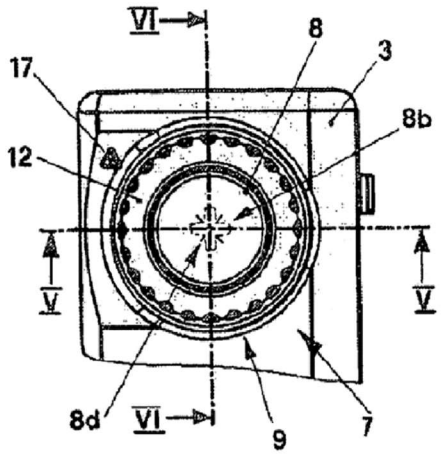


FIG. 4

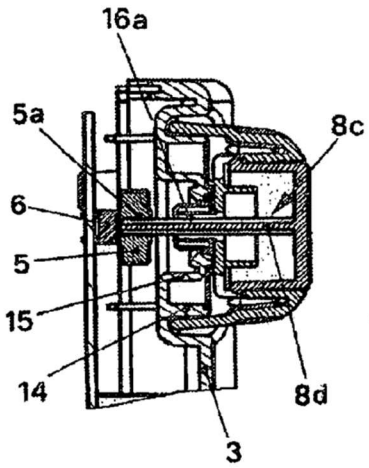


FIG.6

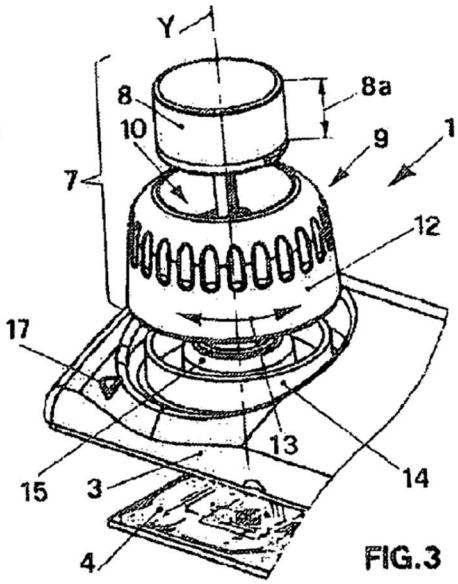


FIG.3

25. I note that the outer knob portion 12 appears to possibly have a ring of oval air vents, but it is unclear to me if this might imply the inner structure has either some kind of mechanical thermostat means or an electronic temperature sensitive sensor or switch. My understanding is that no temperature sensitive element is likely to be present.

The Law

26. Section 3 of the Patents Act 1977 states:

> *An invention shall be taken to involve an inventive step if it is not obvious to a person skilled in the art, having regard to any matter which forms part of the state of the art by virtue only of section 2(2) above (and disregarding section 2(3) above).*

27. To determine whether or not an invention defined in a particular claim is inventive over the prior art, I will rely on the principles established in *Pozzoli SPA v BDMO SA [2007] EWCA Civ 588,* in which the well-known *Windsurfing* steps were reformulated:

> *(1)(a) Identify the notional "person skilled in the art";*
> *(1)(b) Identify the relevant common general knowledge of that person;*
>
> *(2) Identify the inventive concept of the claim in question or if that cannot readily be done, construe it;*

(3) Identify what, if any, differences exist between the matter cited as forming part of the "state of the art" and the inventive concept of the claim or the claim as construed;

(4) Viewed without any knowledge of the alleged invention as claimed, determine whether those differences constitute steps which would have been obvious to the person skilled in the art.

Inventive step of claim 1

28. Firstly, I note that the request makes this statement (in 2.2.1) regarding novelty of the patent over D1 and D5:

> *The specific arrangement of an annular housing and projecting body, where one is in the seat and the other in the cylindrical body, appears to be novel over the provided prior art. This mechanism, which allows rotation while preventing decoupling, is not explicitly described in either D5 or D1. Novel features:*
> *1. The use of an annular housing and projecting body for coupling*
> *2. The flexibility in placing these features in either the seat or cylindrical body*
> *3. The dual function of preventing decoupling while allowing rotation*

29. The request states it uses the *Windsurfing* steps to argue lack of inventive step and gives a detailed description of who the skilled person is and their knowledge. In contrast, the observations use the 'problem solution approach' directed to the combination of D1 and D5 and thus the observations do not directly comment on each of the *Windsurfing* steps.

30. Regarding the request's picture of the skilled person, what is proposed seems reasonable and I am content to accept it.

31. The request does not provide a clear definition of the inventive concept, instead it describes a 'key aspect' of the invention as the mechanical coupling between the casing and probe that uses *'a matching pair of an annular housing and a projecting body'* which are annular '*indicating a ring-like shape that facilitates rotation'*. The request goes on to say: '*These features are crucial to the invention's functionality as it enables the secure coupling of the probe to the casing while still allowing for the rotational adjustment that is central to the thermostat's design.'*. This 'key aspect' seems to be broadly the same as the novel difference the request earlier identifies between either D1 or D5 and claim 1.

32. The request also does not clearly state what it considers to be is the starting point of the prior art, but it does state that:

> *Based on the comparison to the prior art document D5, in view of D1, this feature does not appear to be inventive over the prior art. The key aspects of the feature are already disclosed in D5:*
> *1. An annular housing defined in either the seat or cylindrical body*
> *2. A projecting body defined in the other component*

3. The projecting body fits into the annular housing when coupled
4. This arrangement prevents decoupling while allowing rotation.

This seems to require some kind of reading of documents D1 and D5 together. The request however does not provide an argument for why the skilled person would be presented with both of these documents together.

33. The request goes on to state:

> *The main difference is that the current application specifies the projecting body as being "at least partially annular". However, this aspect would likely be considered obvious to a person skilled in the art, given that the housing it fits into is annular. Making the projecting body at least partially annular would be a logical design choice to match the shape of the housing and ensure a secure fit.*

34. Because there is no clear statement of what the inventive concept is in the request, it is difficult for me to follow the logic of the argument regarding the *Windsurfing* steps. There is also little in the request to explain which teachings in which documents might be combined to form the inventive concept. The request seems to focus on the knob construction of D5 as showing an assembly of two parts where rotation is allowed by an annular housing receiving a projecting body. It is unclear to me if the request considers that this construction in D5 might be equivalent to the 'key aspect' or if this construction in D5 is be combined with the teachings of D1.

35. It is clear in claim 1 that the thermostat assembly is specifically located between a temperature probe and a thermostat housing carrying electronics – the mechanical connection of a cylindrical probe end and a housing seat being though use of a annular housing receiving a projecting body. I consider that the inventive concept must include all of these features, but the request appears to be focussing instead on the construction of a control knob in D5, that is not, as I understand it, a connection of a temperature probe and a housing.

36. Further, I consider that the inventive concept of claim 1 must be understood to include the feature of the temperature probe being suitable for connection to '*an inlet mouth of said heater device'*. The knob construction of D5 is clearly not suitable for this task.

37. The Observations state that they consider D5 to show how a control knob can be mounted to a thermostat body so that is can rotate freely but that:

> *This teaching is specific to the function and context of the control knob and provides no useful indication for the rotation of the entire housing relative to the probe. There is no suggestion in D5 that its solution for knob rotation could be transposed or adapted to solve the problem of post-installation orientation of the entire housing.*

I think that this is a broadly correct view of D5, in as much as the mechanical rotational feature is not described in terms of connecting a thermostat housing to a probe that is fixable to a radiator.

38. The Observations also state that:

> *D1 describes a thermostat assembly but does not disclose the possibility of rotating the housing containing the controls relative to the probe after the installation has been completed.*

39. I do not think that is a correct view of D1. I consider that the skilled reader of D1 would understand that not only can the housing be rotated to the required orientation when it is being mounted to the radiator, but that it could be adjusted at a later time, such as after the radiator is fixed to a wall etc. in use. The assembly method of D1 clearly shows that the controls can be positioned to a suitable position for the end user by rotating the housing on the probe.

40. I note that when considering D1 as the closest prior art, there is little detail shown of the mechanism for connecting the housing to the probe, nor is there much detail of how an electrical connection is expected to be made. What D1 does show is two things: firstly a cylindrical probe end fitting into a seat of a housing of a thermostat; and secondly the housing is able to be rotated to a required angle. The means by which the rotation is provided is not disclosed in D1. I also note when considering D5, there is no disclosure of a temperature probe for fitting to a radiator, nor is there disclosure of rotation of the radiator heating element B relative to the housing 2.

41. Starting with D1, I think the difference compared to the inventive concept is that there is no disclosure of using a mechanical coupling between the header head and controller which comprises a protruding ring fitting in an annular groove. I do not think that the skilled reader would view D5 as suggesting the control knob construction might demonstrate a type of coupling which is obvious to try between the heater head and controller.

42. I conclude that I am not persuaded by the argument presented in the request that claim 1 lacks an inventive step given D1 and D5.

43. Starting with D5, there is a large difference compared to the inventive concept, not least the lack of a temperature probe associated with heater B and no rotational coupling between heater B and the rest of the device. I do not think that the knob construction in D5 would suggest to the skilled reader that they need to provide such a rotational coupling, not that they should adapt the heater B to include a temperature probe. Alternatively, I do not think it obvious to adapt the control knob 7 of D5 to have a temperature probe that is electrically connected to the circuit 4 and for this probe to have a coupling to allow connection to an inlet mouth of a radiator.

44. I conclude that claim 1 does not lacks an inventive step given D5 in isolation.

Conclusion

45. It is my opinion that claim 1 is valid in the light of D5 or a combination of D5 and D1.

46. Accordingly, it is my opinion that the patent is valid based on the argument and evidence submitted by the requester.

Gareth Lewis
Examiner

NOTE

This opinion is not based on the outcome of fully litigated proceedings. Rather, it is based on whatever material the persons requesting the opinion and filing observations have chosen to put before the Office.