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Datasheet for the decision of 12 April 2013

Case Number: T 1281/09 - 3.2.02

Application Number: 01302344.5

Publication Number: 1138262

IPC: A61B 8/13, A61B 8/14

Language of the proceedings: EN

Title of invention:
Tomographic ultrasonic diagnostic apparatus

Applicant:
Panasonic Corporation

Opponent:
-

Headword:
-

Relevant legal provisions:
EPC Art. 54, 56, 84, 123(2)

Keyword:
"Clarity (yes, after amendments)"
"Added subject-matter (no, after amendments)"
"Novelty (yes, after amendments)"
"Inventive step (yes, after amendments)"

Decisions cited:
-

Catchword:
-

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Beschwerdekammern | Boards of Appeal | Chambres de recours

Case Number: T 1281/09 - 3.2.02

D E C I S I O N
of the Technical Board of Appeal 3.2.02
of 12 April 2013

Appellant: (Applicant)
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Representative:
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Decision under appeal:
Decision of the Examining Division of the European Patent Office posted 20 January 2009 refusing European patent application No. 01302344.5 pursuant to Article 97(2) EPC.

Composition of the Board:

Chairman: E. Dufrasne
Members: C. Körber
M. Stern

Summary of Facts and Submissions

I. On 20 January 2009 the Examining Division posted its decision to refuse European patent application No. 01302344.5 for lack of clarity, with obiter dicta dealing with novelty, inventive step and added subject-matter.

II. An appeal was lodged against this decision by the applicant by notice received on 16 March 2009. The appeal fee was paid on 20 March 2009. The statement setting out the grounds of appeal was received on 29 May 2009.

III. By communication of 12 December 2012, the Board summoned the appellant to oral proceedings and forwarded its provisional opinion.

IV. With letter received on 1 February 2013, the appellant submitted an amended set of claims and description pages.

V. By communication of 20 February 2013, the Board informed the appellant that the oral proceedings were cancelled.

VI. The appellant requested that the decision under appeal be set aside and that a patent be granted on the basis of the set of claims filed as main request on 1 February 2013, or, in the alternative, on the basis of the first, second or third auxiliary request filed with the statement of grounds of appeal.

VII. The following document is of importance for the present decision:

D1: JP-A-06054850 and English-language machine translation thereof.

VIII. Claim 1 of the main request reads:

"An ultrasonic diagnostic apparatus comprising:
ultrasonic transmitting/receiving means (14) for transmitting ultrasonic waves to a living body and receiving the reflected waves from the living body, the transmitting/receiving means being arranged, in use, to convert the received waves into an electric signal;
control means (12) for determining a driving frequency of the ultrasonic waves to be transmitted from said ultrasonic transmitting/receiving means;
a transmitting circuit (13) for converting a trigger signal having the driving frequency determined by said control means into a pulse signal for application to the ultrasonic transmitting/receiving means; and
display means (17) for displaying a diagnostic image based on the electric signal from said ultrasonic transmitting/receiving means;
the ultrasonic diagnostic apparatus being characterized by:
an operation panel (11) for, when manipulated by an operator, setting an intended depth of field of view of the displayed diagnostic image resulting from applying said ultrasonic waves from said ultrasonic transmitting/receiving means to said living body;
wherein said control means determines the driving frequency of the ultrasonic waves to be transmitted from said ultrasonic transmitting/receiving means in

accordance with the depth of field of view which has been set by said operator using said operation panel, such that when the depth of field of view is made shallow, the driving frequency of the ultrasonic waves to be transmitted from said ultrasonic transmitting/receiving means is increased, and when the depth of field of view is made deep, the driving frequency of the ultrasonic waves to be transmitted from said ultrasonic transmitting/receiving means is decreased."

Claims 2 to 5 are dependent claims.

IX. The appellant's arguments are summarised as follows:

The focus position setting means of Dl would not be considered by one skilled in the art as means for setting a field of view, but rather as means for setting the focus position and nothing else. An operator wanting to alter the depth of field of view was unlikely to manipulate the focus position in an effort to achieve this.

Dl disclosed controlling the driving frequency based upon focus position, colour display field, or Doppler signal detection position, whereas claim 1 of the main request defined controlling the driving frequency based upon the depth of field of view of the displayed diagnostic image. The "depth of field of view" was the lowermost depth to which the diagnostic image extended on the display means, and corresponded to the limit of visible depth position within the living body of the ultrasonic transmitting/receiving means. In contrast, in order to change the driving frequency in Dl, it was

necessary to change one of the above-mentioned parameters. This meant that, in D1, if the driving frequency was controlled by the focus position for example, then an operator would not be able to maintain a constant depth of field of view while adjusting the focus position. This was irritating to an operator who merely wanted to change the focus position but maintain the depth of field of view unchanged. This problem did not occur in the invention as claimed. Accordingly, by simply providing a field of view setting means for allowing an operator to directly set a desired depth of field of view, an ultrasonic diagnostic apparatus having much improved functionality was provided.

In D1, it was possible to set the depth of field of view deep and to thereby extend the area on the display means provided for displaying the diagnostic image. This allowed space for potentially deeply extending diagnostic images to be displayed. However, merely providing this enlarged screen area had no effect at all on the driving frequency. For example, if the display means of D1 was displaying a diagnostic image and the area provided on the display means to accommodate the diagnostic image was increased in depth, then the bottom portion of the diagnostic image would remain blank, as the limit of visible depth would remain unchanged because the driving frequency would not change.

D1 ensured that the maximum visible depth was at a distance deeper than the focal position, so that information from the tissues below the focal position could be obtained. In other words, adjustment of the focal position setting means of D1 could indirectly

result in a depth of field of view for the ultrasonic transmitting/receiving means, but it could not be said to be an intended depth of field of view as the depth of field of view obtained was beneath the focus position set. The operator would thus be setting the desired focus position at a certain location but the obtained depth of field of view would be at a lower location.

Reasons for the Decision

1. The appeal is admissible.

2. Clarity

The clarity objections raised in the impugned decision have been overcome by amendment, and the Board is satisfied that the main request meets the requirements of Article 84 EPC.

3. Amendments

Claim 1 of the main request is based on claims 1, 2 and 5 in combination with page 5, lines 14 to 23, and page 6, lines 24 to 28, of the description and Figure 3 of the application as originally filed. The Board considers that the requirements of Article 123(2) EPC are met.

4. Novelty

Document D1 fails to disclose the features of the characterising portion of claim 1. In particular, the

control of the driving frequency by the focus position (paragraphs [0006] and [0012] to [0015] of the machine translation of D1) cannot be equated with control of the driving frequency by the depth of the field of view as claimed. Dl discloses a system in which the frequency of ultrasonic waves is set based upon the location of a focal position, a colour display field or a Doppler marker. In Dl the depth of field of view remains constant (that is, the screen region in which the diagnostic image is shown does not change in size) but the focal position, colour display field or Doppler marker may be located in any one of the fields 31 to 34 (Figure 2). Depending on the fields in which the focal position, colour display field or Doppler marker are located, the driving frequency of the ultrasonic transducer is set.

Since the available prior art does not anticipate the combination of the features of claim 1 of the main request, its subject-matter is novel within the meaning of Article 54 EPC.

5. Inventiveness

D1 as closest prior art discloses (Figure 1, reproduced as Figure 5 in the present application) the features of the preamble of claim 1.

The technical advantage achieved by the distinguishing features of the characterising portion of claim 1 is that the operator is able to maintain a constant depth of field of view while adjusting the focus position. As the appellant argued (see point IX above), in order to change the driving frequency of the ultrasonic waves in

D1, it is necessary to change the focus position (or one of the other two parameters mentioned in D1). This means that, in D1, if the driving frequency is controlled by the focus position, then an operator would not be able to maintain a constant depth of field of view while adjusting the focus position. This is irritating to an operator who merely wants to change the focus position whilst maintaining unchanged the depth of field of view.

The objective technical problem underlying the invention is to improve the functionality of the ultrasonic diagnostic apparatus.

D1, which is the only cited prior-art document, does not address the above-mentioned drawbacks and gives no hint to depart from the concept disclosed therein towards the solution as defined by the characterising portion of claim 1. Nor is there any basis for considering that the inclusion of these features is within the common general technical knowledge of the skilled person.

Accordingly, the subject-matter of claim 1 of the main request is based on an inventive step within the meaning of Article 56 EPC.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.

2. The case is remitted to the department of first instance with the order to grant a patent on the basis of the following documents:

Claims 1 to 5 filed with letter dated 1 February 2013;

Description:
pages 1, 2 and 5 to 11 as originally filed;
pages 3 and 4 as filed with letter dated 1 February 2013;

Figures 1 to 5 as originally filed.

The Registrar: The Chairman:

D. Hampe E. Dufrasne