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Datasheet for the decision of 19 September 2024

Case Number: T 2555/22 - 3.2.07

Application Number: 13777821.3

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Language of the proceedings: EN

Title of invention:
ARTICULATED ARM APPARATUS AND SYSTEM

Patent Proprietor:
VANRX Pharmasystems Inc.

Opponent:
Groninger & Co. GmbH

Headword:

Relevant legal provisions:
EPC Art. 56, 83

Keyword:
Inventive step - (yes)
Sufficiency of disclosure - (yes)

Decisions cited:
T 2057/12

Catchword:

Europäisches Patentamt
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Beschwerdekammern

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Case Number: T 2555/22 - 3.2.07

D E C I S I O N
of Technical Board of Appeal 3.2.07
of 19 September 2024

Appellant: (Opponent)	Groninger & Co. GmbH Hofäckerstraße 9 74564 Crailsheim (DE)
Representative:	Witte, Weller & Partner Patentanwälte mbB Postfach 10 54 62 70047 Stuttgart (DE)
Respondent: (Patent Proprietor)	VANRX Pharmasystems Inc. 200 - 3731 North Fraser Way Burnaby, BC V5J 5J2 (CA)
Representative:	RACKETTE Patentanwälte PartG mbB Postfach 13 10 79013 Freiburg (DE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 4 October 2022 concerning maintenance of the European Patent No. 2812163 in amended form.**

Composition of the Board:

Chairman	G. Patton
Members:	S. Watson
	S. Ruhwinkel

Summary of Facts and Submissions

I. An appeal was filed by the opponent against the decision of the opposition division maintaining European patent No. 2 812 163 in amended form on the basis of the second auxiliary request.

II. In preparation for oral proceedings, the board gave its preliminary opinion in a communication pursuant to Article 15(1) RPBA, dated 1 July 2024, according to which the appeal was likely to be dismissed. Neither party responded substantively to the communication.

III. Oral proceedings before the board took place on 19 September 2024.

At the conclusion of the proceedings the decision was announced. Further details of the oral proceedings can be found in the minutes.

IV. The final requests of the parties are as follows:

The opponent (appellant) requests that the decision under appeal be set aside and the patent revoked.

The patent proprietor (respondent) requests that the appeal be dismissed.

V. The arguments of the parties relevant for the decision are dealt with in detail in the reasons for the decision.

VI. The following documents are referred to in this decision:

D1: DE 103 48 841 B4

D2: EP 1 894 684 B1
D4: DE 20 2005 017 588 U1
D5: JP 11-888
D5a: English translation of D5
D6: Trelleborg Sealing Solutions brochure, "Dichtungslösungen für die Lebensmittel- und pharmazeutische Industrie", March 2008.

VII. Independent claim 1 of the sole request reads as follows (feature labelling as used by the appellant in its statement of grounds of appeal):

1.1 "A method of manipulating pharmaceutical products in a sealable isolator chamber comprising:
1.2 rotating a shaft (112) that passes through an opening in the sealable isolator chamber,
1.3 providing a plurality of interconnected arm segments (110, 130) that are operatively connected to the shaft in the sealable isolator chamber,
1.4 sealing a space within the plurality of interconnected arm segments by a cleanable radial seal exposed to the inside of the isolator, and
1.5 sealing a portion of the shaft inside the chamber, and
1.6 moving the plurality of interconnected arm segments to manipulate the pharmaceutical products,
1.7 characterised in that the sealable isolator chamber is configured to maintain an aseptic condition for pharmaceutical applications, and
1.8 in that the cleanable radial seal is an exposed cleanable radial lip seal,
1.9 further including the steps of translating the

shaft in a series of opposing strokes while the step of sealing a portion of the shaft maintains a hermetic seal during the steps of translating."

Reasons for the Decision

1. *Sufficiency of disclosure (Article 83 EPC)*

1.1 The opposition division found that the skilled person was able to carry out the claimed invention as they were aware from their common general knowledge of several solutions for sealing linear and rotational movement of shafts which would lead to a hermetic seal (decision under appeal, point II.4.4.2).

1.2 The appellant argued that as claim 1 was broad, more than one example must be given to satisfy the requirements of Article 83 EPC and the opposition division did not provide any evidence that the skilled person was aware of other solutions on the basis of their common general knowledge.

1.3 It is established case law that an invention is in principle sufficiently disclosed if at least one way of carrying out the invention is clearly indicated (see Case Law of the Boards of Appeal, 10th edition 2022 ("CLB"), II.C.5.2). The appellant has not contested that the example given in figures 1 and 2 of the contested patent of a bellows 124 enables the skilled person to carry out the claimed invention.

1.4 It does not appear that more than one example is necessary in the present case. The claim requires that a hermetic seal is maintained when translating a shaft

(feature 1.9 and 1.5) which is also able to rotate (feature 1.2 and 1.5), in an opening in a chamber.

1.4.1 Although it is established case law that the skilled person must be able to carry out the claimed invention over the whole scope of the claims, whether multiple examples are necessary is to be determined on a case-by-case basis (see CLB, II.C.5.4, third paragraph).

In the present case, the appellant has not shown that there are particular embodiments which fall within the scope of the claim but which cannot be carried out.

Therefore, the claim can be carried out across the whole scope of the claims.

1.5 The appellant has therefore not convincingly demonstrated that the opposition division was incorrect on this point.

2. *Inventive step (Article 56 EPC) - claim 1 - D4 in combination with D1*

2.1 It is uncontested that features 1.4 and 1.8 are considered to be the distinguishing features with respect to document D4 taken as the closest prior art.

2.2 It is also not contested that in document D4 the seals (D4, figure 3: 60a, 60c) are axial rather than radial seals and that the objective technical problem is regarded as to provide a sealing arrangement that is easier to clean.

2.3 The appellant however contested the reasoning of the opposition division that the skilled person when trying to improve the ease of cleaning of the seals of D4

would not consider radial seals as these would require a profound re-design of the robot (decision under appeal, point II.4.6.3.2).

According to the appellant, the skilled person would turn to document D1, and motivated by the information in paragraphs [0008] and [0012], would take the teaching of exposed cleanable radial lip seals as shown in figures 2 to 6 of D1 and use these in document D4.

2.4 At the oral proceedings before the board, the appellant argued further that the skilled person would be motivated by paragraphs [0003] to [0005] and [0013] of document D1, which describe the problem of contamination in industrial robots, in particular when there are spaces on the outside of seals which are difficult to clean. Paragraph [0031] of document D1 taught the solution to this problem by using an easy to clean seal 5.1, as shown in figure 3 of document D1.

The skilled person would consider that the radial seals of D1 could be applied in the device of D4 because D1 itself refers to document EP 0 934 805 A2 (see paragraph [0003] of D1) which shows in figure 1 (13, 14) a radial sealing arrangement between arm segments which are similar to those of D4.

The skilled person was therefore taught by D1 to modify the sealing surfaces of D4 which move relative to one another, to be axially parallel, as shown in figure 2 of document D1. This would allow the use of a seal as disclosed in one of figures 3 to 6, in particular seal 5.1 of figures 3 and 4 of D1, to seal the space within the interconnected arm segments.

2.5 The board however agrees with the arguments of the respondent, that even if the skilled person were to consider the teaching of document D1, they would have to undertake modifications of the robot in document D4 which would require inventive activity.

In particular, it would not be possible to merely exchange the seals shown in D4 (60a, 60c) for the cleanable radial lip seals disclosed in D1. The skilled person would have to consider where the seals should be placed and orientated, and which components of the robot of D4 should be modified, and in what manner, in order to hold the seat of the seal. It is not readily apparent from figure 2 of document D1 how and why the skilled person would change the structure of either part 12c in the robot of D4, or the second part in D4 to which the seal is attached. The skilled person would have to undertake a re-design of the components of D4 which goes beyond what is taught in document D1.

2.6 The subject-matter of claim 1 is therefore inventive in view of the combination of documents D4 and D1.

3. *Inventive step (Article 56 EPC) - claim 1 - D4 in combination with D6*

3.1 The appellant also argued, starting from document D4, that the skilled person would turn to document D6, page 24, in particular as the seal on page 24 is said to be easy to clean (D6, page 23, first paragraph).

According to the appellant, it is part of the common general knowledge of the skilled person that radial seals require that the surfaces to be sealed are axially parallel. It would therefore be obvious for the skilled person to modify D4 so that the sealing

surfaces are parallel and then to use the seal of D6 which is designed to be easy to clean.

The appellant argued further at the oral proceedings before the board that the figure shown in the bottom left of page 25 of document D6, taught the skilled person how to re-design the components of document D4 in order to use a radial seal.

3.2 The board however again agrees with the arguments of the respondent that the combination of documents D4 and D6 would require a re-design of the robot of document D4 which would require inventive activity on the part of the skilled person. Document D4 already has seals, there is no indication in D6 that would lead the skilled person to modify the outer surfaces of the joint and replace the existing seals with exposed cleanable radial lip seals. The board is of the view that the figure shown on page 25 does not give sufficient information to the skilled person for them to modify D4 as required to use radial instead of axial seals.

3.3 The subject-matter of claim 1 is therefore also inventive in view of documents D4 and D6.

4. *Inventive step (Article 56 EPC) - claim 1 - D5 in combination with D1 or D6*

4.1 The appellant contested the opposition division's findings that the skilled person would not replace the seals 64, 65 or 66 in the device of document D5 (D5, figure 2) with exposed cleanable radial lip seals (feature 1.8) because the seals in D5 are axial seals and replacing them would require a re-design of the robot (decision under appeal, point II.4.6.5.2).

4.2 The appellant argued at the oral proceedings before the board that the distinguishing features were features 1.1 and 1.8.

The appellant used the objective technical problem as being to adapt the device of D5 for use with pharmaceutical products and improve the ease of cleaning.

4.2.1 As the skilled person knew from their common general knowledge that both wafer production, as in document D5 (D5a, paragraphs [0001] to [0003]), and pharmaceutical product manipulation, as set out in feature 1.1, required stringent cleanroom conditions, it was obvious to use the device of document D5 for manipulating pharmaceutical products.

4.2.2 The skilled person was aware that when using a device for pharmaceutical products the pressure inside the chamber should be kept higher than the surrounding environment in order to prevent contamination from outside the chamber, so the vacuum chamber taught by document D5 would not be necessary.

The seal 66, between arm segments 12 and 13 in document D5, was a radial seal so that this seal in D5 would be replaced by a lip seal as known from D1 or D6, without any re-design of the device of D5 being required, in order to improve the ease of cleaning as suggested in documents D1 and D6.

4.3 The board however follows the arguments of the respondent that the skilled person would not use the device of D5 for manipulating pharmaceutical products

nor would they replace the seal 66 with a seal according to either D1 or D6.

4.3.1 The purpose of document D5 is the use of vacuum dust seals when a manipulator device is installed in a vacuum chamber to prevent the outflow of dust from inside connections (see D5a, page 1).

There is no motivation for the skilled person to use the device of document D5 in a manner contrary to its stated purpose, by specifically not using it in a vacuum chamber as suggested by the appellant (see also CLB, I.D.6, fourth paragraph and T 2057/12, Reasons 3.1.4).

4.3.2 If the device of document D5, including the vacuum chamber, were to be used for manipulating pharmaceutical products, the skilled person would not use an exposed cleanable radial lip seal, as taught by documents D1 and D6. Such seals could deform and allow dust to enter the chamber so that the skilled person would not consider this type of seal in the device of document D5, irrespective of its ease of cleaning.

4.4 The subject-matter of claim 1 is therefore inventive in view of the combination of document D5 with either D1 or D6.

5. *Inventive step (Article 56 EPC) - claim 1 - D1 plus common general knowledge or document D4*

5.1 The opposition division found that claim 1 differed from the method of document D1 in that document D1 did not disclose a method of manipulating pharmaceutical products (feature 1.1) nor did it disclose that the rotating shaft is also transposed in a series of

opposing strokes while the step of sealing a portion of the shaft maintains a hermetic seal during the steps of translating (feature 1.9) (see decision under appeal, point II.4.6.2.2 and also II.4.5.2).

5.2 The appellant argued that document D1 did show a method of manipulating pharmaceutical products in a sealable isolator chamber in paragraph [0002] of D1, which referred to handling devices in the form of multi-axis industrial robots.

5.3 The board notes that claim 1 is directed to a method of manipulating pharmaceutical products in a sealable isolator chamber (feature 1.1) not to a device for manipulating pharmaceutical products. According to established case law, where a claim is for a process, the "use" feature is a functional process feature comparable to the other steps of the method, as long as it defines the application or use of a method rather than an implicit effect arising from the method steps (see CLB, I.C.5.2.5, second paragraph).

In the present case, the method is clearly applied to manipulating pharmaceutical products in a sealable isolator chamber. Document D1 does not show this feature and the appellant has not shown where this feature is found in the prior art, nor why, without the use of hindsight the skilled person would modify the method of D1 as required by feature 1.1.

5.4 The board is also not convinced by the appellant's arguments that it would be obvious to add axial movement to the shaft 3 in D1. The appellant argues that all modifications (axial movement of the shaft, longer arm segments or additional rotary joints) which extend the operating range of the robot in D1 are

obvious. This would imply that any modification to the robot of document D1 is obvious.

However, it is established case law that for a claimed invention to be obvious it must be shown that not only could the modification be made but that the skilled person would have made such a modification.

Even if the skilled person is aware, from their common general knowledge, that rotating shafts may also move axially, the board is of the view that it is not part of the common general knowledge to modify any and every rotating shaft in this way. Similarly, although document D4 discloses that the shaft moves axially through an opening in a sealable isolator chamber, there is no motivation for the skilled person to apply this feature to the robot of D1 as document D4 gives no indication of any technical effect of such a modification.

The appellant argued that figure 2 of D1 shows that the robot of D1 is structurally capable of having translating movement of shaft 3. However, considering figure 1 (2, 3), it is clear that no effective translating strokes are possible without modification of the robot. When looking at the robot 1 in D1 as a whole, it is not clear where the sealable isolating chamber of D4 should be positioned as the shaft is required by feature 1.2 to pass through an opening in the sealable isolating chamber and a portion of the shaft must be sealed inside the chamber according to feature 1.5.

5.5 The subject-matter of claim 1 is therefore inventive in view of the combination of document D1 with common general knowledge or document D4.

6. *Inventive step (Article 56 EPC) - claim 1 - D2 in combination with D1 or D6 and D4*

6.1 In the decision under appeal, the opposition division found that document D2 did not show feature 1.9, nor did it show features 1.4 and 1.8 as the seals in document D2 were axial seals (D2, figure 2 (126, 132); figure 3 (154).

Therefore even the combination of documents D2 and D4 would not lead to the claimed subject-matter as document D4 also did not disclose features 1.4 and 1.8 (see decision under appeal, point II.4.6.4.2).

6.2 The appellant argued that the distinguishing features do not have any common technical effect and therefore could be considered using a partial problem approach.

According to the appellant, the partial problems could be considered to be to provide a sealing arrangement which is easier to clean and to provide a further degree of freedom of the robot.

The skilled person would turn to documents D1 or D6 for the solution to the first problem and to D4 for the solution to the second problem.

6.3 The board however agrees with the respondent that the skilled person would not be motivated to modify the robot of D2 to provide a rotating shaft which also translates through an opening in a sealable isolator cover. It is not clear what would motivate the skilled person to alter a shaft in D2 so that it translates as well as rotates, when the disclosure of document D2 is directed to a robot having only rotary motion (D2,

figure 1). It is also not clear why the skilled person would modify the robot in D2 such that it would include exposed radial seals rather than axial seals, in particular as D2 already discloses radial seals together with the axial seals, but with the radial seals enclosed within the robot (D2, figure 5, 144).

6.4 The subject-matter of claim 1 is inventive in view of the combination of document D2 with document D1 or D6 and with document D4.

7. *Conclusion*

As none of the appellant's objections prejudices the maintenance of the patent in the amended form found by the opposition division to fulfil the requirements of the EPC, the appeal is to be dismissed.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar: The Chairman:

G. Nachtigall G. Patton

Decision electronically authenticated