

Deckblatt Übersetzung

Daten der Übersetzung:

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|--------------------------------------------|-----------------------|
| Court/Gericht: | Bundesgerichtshof |
| Date of Decision / Datum der Entscheidung: | 2020-04-21 |
| Docket Number / Aktenzeichen: | X ZR 75/18 |
| Name of Decision / Name der Entscheidung: | Konditionierverfahren |



Arbeitskreis
Patentgerichtswesen
in Deutschland e.V.



FEDERAL COURT OF JUSTICE

IN THE NAME OF THE PEOPLE

JUDGMENT

X ZR 75/18

Pronounced on:
21 April 2020
Anderer
Judicial Secretary
as Clerk of the
Court Registry

in the patent nullity proceedings

Konditionierverfahren/Conditioning procedure

EPC Art. 54(2)

The delivery, installation and commissioning of a system at a purchaser's premises do not necessarily establish a sufficient probability that any third party will examine the system and thereby obtain knowledge of an invention.

Federal Court of Justice, judgment of 21 April 2020 – X ZR 75/18 – Federal Patent Court

ECLI:DE:BGH:2020:210420UXZR75.18.0

The X. Civil Senate of the Federal Court of Justice, following the oral hearing on 21 April 2020, attended by the judges Dr. Bacher and Hoffmann, the judges Dr. Kober-Dehm and Dr. Rombach as well as the judge Dr. Rensen

ruled that:

On appeal by the defendant, the judgment of the 2nd Senate (Nullity Senate) of the Federal Patent Court of 27 November 2017 is amended.

The action is dismissed.

The plaintiff shall bear the costs of the legal dispute.

By operation of law

Facts of the case:

1 The defendant is the owner of European patent 1 495 486 (patent in suit), which was granted with effect for the Federal Republic of Germany, was applied for on 15 April, 2003, claiming a German priority of 15 April, 2002, and relates to a process and an apparatus for conditioning semiconductor wafers or hybrids.

2 Patent claim 1, to which three further claims are referred back, and patent claim 5, to which five further claims are referred back, are according to a limitation method:

1. A method of conditioning semiconductor wafers and/or hybrids comprising the steps of:

Providing an at least partially enclosed space (1) with a wafer/hybrid accommodating means (10) therein for accommodating a semiconductor wafer and/or hybrid; and

passing a dry fluid through the wafer/hybrid receiving means (10) to temper the wafer/hybrid receiving means (10);

wherein at least a portion of the fluid exiting the wafer/hybrid receiving means (10) is used to condition the atmosphere within the space (1);

said space (1) being substantially closed by a container (5);

wherein the portion of the fluid exiting the wafer/hybrid collection device (10) is first tempered and then allowed to flow out within the space (1); and

wherein the portion of the fluid exiting the wafer/hybrid collection device (10) is tempered by being used to pre-cool the fluid in a heat exchanger outside the space (1) before being allowed to flow out inside the space (1).

5. apparatus for conditioning semiconductor wafers and/or hybrids comprising:

an at least partially enclosed space (1), the space (1) being substantially closed by a container (5), with wafer/hybrid receiving means (10) therein for receiving a semiconductor wafer and/or hybrid; and

conduit means (r2, r3, r4, r5, i3, i4) for passing a dry fluid through the wafer/hybrid receiving means (10) to temper the wafer/hybrid receiving means (10) and for passing at least a portion of the fluid exiting the wafer/hybrid receiving means (10) into the chamber (1) to condition the atmosphere in the chamber (1);

said conduit means (r2, r3, r4, r5, i3, i4) comprising:

a first conduit (r2) for conducting the fluid from outside the space (1) into the wafer/hybrid receiving means (10);

a second line (r3) via which the fluid can be conducted from the wafer/hybrid pick-up device (10) to outside the space (1); and

a third line (r4) via which the fluid can be returned from outside the chamber (1) into the chamber (1);

wherein a temperature control device (70; 70, 80") is provided between the second and third lines (r3, r4);

the temperature control device (70; 70, 80") having a heat exchanger (95) to which at least part of the fluid leaving the chamber (1) can be fed;

wherein the heat exchanger (95) serves for pre-cooling the supplied fluid;

wherein the conduit means (r2, r3, r4, r5, i3, i4) is designed in such a way that the part leaving the heat exchanger (95) can be at least partially returned to the space for conditioning the atmosphere.

3 The plaintiff challenged the patent in suit on the grounds of inadmissible extension and lack of patentability. The defendant defended the patent as amended and with two auxiliary requests.

4 The Patent Court declared the patent in suit null. The defendant's appeal is directed against this, in which it continues to pursue its first-instance claims. The plaintiff opposes the appeal.

Grounds of the decision

5 The admissible appeal is successful and leads to the dismissal of the
action.

6 I. The patent in suit concerns a method and an apparatus for
conditioning semiconductor wafers or hybrids.

7 1. According to the statements in the patent in suit, test
measurements on semiconductor wafers are typically carried out in the
temperature range between -200 C and +400°C. For this purpose, the wafer is
placed on a sample table (chuck), which is cooled or heated according to the
desired temperature. The temperature of the wafer must not fall below the dew
point of the surrounding gaseous medium, because otherwise moisture on its
surface would condense or freeze, which would hinder the measurement or
make it impossible (para. 2).

8 In devices known in the state of the art, such as those illustrated by way
of example in Figure 5 reproduced below, the sample table 10 is located in a
substantially closed container 5 which encloses a space 1 (para. 5).

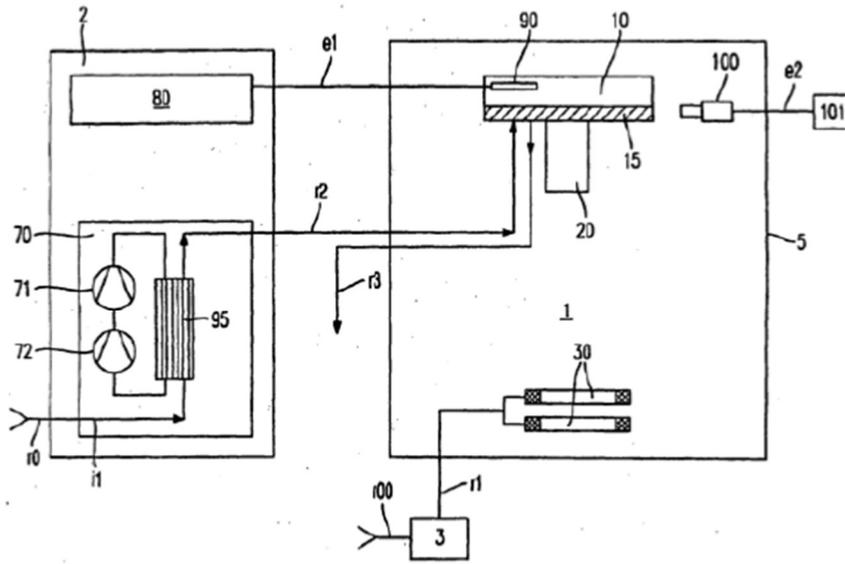


FIG. 5

9 In order to condition the atmosphere in room 1 and expel humid ambient air, dried air or a similar fluid, for example nitrogen, is supplied to container 5 via a line r1 and outflow elements 30. The air is usually at room temperature and is dried in an external air dryer 3. It flows out of the container 5 again via cracks, crevices or a separate outlet line (par. 14).

10 A separate temperature control unit (temperature control rack 2) regulates the temperature of the sample table 10, which is heated by a heating unit 90 or flushed with air for cooling (par. 10 f.). For the purpose of cooling, dry air is fed to a heat exchanger 95 which is connected to cooling units 71, 72. Subsequently, the dry air is fed via a supply line r2 into the container 5 to the sample table 10, where it is passed through cooling coils or pipes and discharged via a line r3 into the atmosphere around the container (para. 13).

11 The patent in suit describes the disadvantage of such devices as being that they require a relatively large amount of dry air. In addition, the wafer ices up immediately at corresponding temperatures if the air dryer 3 fails (para. 15).

12 2. Against this background, the patent in suit concerns the technical problem of enabling conditioning that is more efficient and provides a higher degree of operational safety.

13 3. To solve this problem, the patent in suit proposes in claim 1 a method and in claim 5 an apparatus, the features of which can be divided as follows (feature division of the Patent Court in square brackets):

- 1.1 The method is for conditioning semiconductor wafers and/or hybrids and comprises the following steps:
- 1.2 Providing an at least partially enclosed space 1, which is substantially closed by a container 5 and in which a receiving device 10 for receiving a semiconductor wafer or hybrid is located [1.2 and 1.5],
- 1.3 passing a dry fluid through the receiving means 10 to temper it.
- 1.4 At least a portion of the fluid exiting the receiving device 10 is used to condition the atmosphere within the space (1).
- 1.6 This portion of the fluid is first tempered and then caused to flow out within the space 1.
- 1.7 The tempering is accomplished by using that portion of the fluid to precool fluid in a heat exchanger outside of space 1.
- 5.1 The apparatus is used for conditioning semiconductor wafers and/or hybrids and comprises:
- 5.2 an at least partially enclosed space 1, which is substantially closed by a container 5 and in which a receiving device 10 for receiving a semiconductor wafer or hybrid is located,
- 5.3 conduit means (r2, r3, r4, r5, i3, i4) for passing a dry fluid through the receiving means 10,
 - 5.3a for tempering the latter, and
 - 5.3b for conducting at least a portion of the fluid leaving the receiving means 10 into the space 1 to condition the atmosphere therein.
- 5.4 The conduction device comprises:
- 5.5 a first conduit r2 for conducting the fluid from outside the space 1 into the receiving device 10,
- 5.6 a second line r3, via which the fluid can be conducted from the receiving device 10 to outside the chamber 1,
- 5.7 a third line r4, via which the fluid can be returned to the chamber 1 from outside the chamber 1.
- 5.8 A temperature control device 70, 80" is arranged between the second and third lines.
- 5.9 The temperature control device has a heat exchanger 95,
 - 5.9a to which at least part of the fluid leaving chamber 1 can be fed [5.9] and
 - 5.10 which serves to precool the supplied fluid.

5.11 The conduit device r2, r3, r4, r5, i3, i4 is designed in such a way that the part leaving the heat exchanger 95 can be at least partially returned to the chamber for conditioning the atmosphere.

14 4. Some features require explanation.

15 a) Of central importance for the desired increase in efficiency and operational safety is the use, provided for in features 1.4, 1.6 and 1.7, of the dry fluid initially used for tempering the receiving device 10 for subsequent conditioning of the chamber 1.

16 For this purpose, the fluid is not completely discharged into the environment after passing through the receiving device, but is at least partially fed to a temperature control device and then fed into the space 1. This enables an increase in efficiency because no additional fluid has to be used to temper the chamber 1. At the same time, operational reliability is increased because the fluid is already dry before it is introduced into the receiving device 10 and it therefore does not necessarily require a further drying process before being passed on into the chamber 1.

17 To further increase efficiency, the fluid is tempered, namely heated, according to feature 1.7 (paragraph 48 of the patent in suit) by being used to precool another fluid in a heat exchanger. This reduces the need for energy to be supplied externally for the tempering process and the cooling process.

18 b) Patent claim 5 protects a device which is designed in such a way that the method according to the invention can be carried out. For this purpose, features 5.3 to 5.7, which find no correspondence in patent claim 1, provide for a suitably designed conduction device.

19 c) From the explanation of the functional context in the description and the features of the patent claim corresponding thereto, it is sufficiently clear, as the Patent Court stated in connection with auxiliary request I – in deviation from its opinion that was filed in accordance with Sec. 83(1) Patent Act in connection with citation A7, but correct - that the fluid leaving chamber 1 within the meaning of feature 5.9a is the fluid which has exited the receiving device 10 and subsequently been conducted out of chamber 1, as provided for in feature

5.6. It is also sufficiently clear from this that it is precisely this part of the fluid which, according to features 1.6 and 1.7 or 5.9 to 5.11, is tempered in a heat exchanger and then led back into the space 1.

20 II. The Patent Court gave the following main reasons for its decision:

21 The subject-matter of claims 1 and 5, in all defended versions, did not go beyond the content of the originally filed documents. However, it was not new because the defendant had obviously used it before the priority date by supplying at least one system according to the invention to I. AG (hereinafter: customer). No confidentiality agreement had been concluded with the customer, either expressly or impliedly. It had not been a joint development or evaluation project. The customer also had no other economic interest in secrecy, especially since the defendant had already offered the systems in question to other potential customers and had also supplied them in at least two cases. In view of this, there had been the not remote possibility that other experts could have gained knowledge of the design of the system. There had been reason for such investigations already because the defendant had claimed a unique selling proposition at that time with a cooling temperature of up to -40°C. The defendant had not been able to prove the obviousness of the system. The obviousness was not contradicted by the fact that closer examinations would have required partial dismantling and in particular removal of the thermal insulation foam in the cooling unit (hereinafter also: chiller). With a purchase of the plant, experts such as competitors would have had the possibility to examine the plant without restrictions, in particular without consideration of the plant operation and the requirements for a clean room.

22 III. This assessment does not stand up to scrutiny in the appeal proceedings.

23 1. However, the Patent Court correctly decided that the subject matter of the patent in suit in all defended versions does not go beyond the content of the originally filed documents, and this is not objected to by the appeal.

24 2. The factual findings of the Patent Court do not support the
conclusion that the subject matter of the patent in suit was available to the public
before the priority date.

25 a) The Patent Court correctly decided, and in this respect also not
objected to by the appeal, that at the end of the year 2000 the defendant
delivered to the customer a system which exhibits all the features of patent
claims 1 and 5, again in all the defended versions.

26 b) However, the established facts do not allow the conclusion that the
subject matter of the patent in suit was available to the public due to the delivery
and the subsequent operation of the plant.

27 aa) According to Art. 54(2) EPC, the state of the art includes
everything which has been made available to the public by written or oral
description, by use or in any other way before the filing or priority date of the
application.

28 As the Patent Court correctly pointed out, prior use is obvious in this
sense if there is a possibility, which is not merely theoretical and not merely
remote, that any third party, and thus also skilled persons, may obtain reliable
and sufficient knowledge of the invention (see, for example, Federal Court of
Justice, judgment of 9 December 2014 - X ZR 6/13, GRUR 2015, 463 marginal
no. 39 - Presszange; judgment of 8 November, 2016 - X ZR 116/14 marginal
no. 25). According to life experience, it can be assumed that these conditions
are met if a device according to the invention has been offered or supplied to a
third party (Federal Court of Justice, GRUR 2015, 463 marginal no. 39 -
Presszange).

29 However, the offer or delivery of a device according to the invention does
not automatically lead to disclosure even if the customer is not subject to a duty
of confidentiality. If no obligation to maintain secrecy has been agreed and
secrecy is not otherwise to be expected, it must generally be assumed that
knowledge of the invention has been disclosed to the public with the delivery
and that the possibility has been created, which is in any case not remote, that
any third party can take note of it (Federal Court of Justice, judgment of 8

November, 2016 - X ZR 116/14 marginal no. 26). Even in such situations, however, a merely theoretical or remote possibility of knowledge is not sufficient.

30 bb) The Patent Court correctly assumed that there is no indication of a confidentiality agreement with the customer.

31 (1) The appeal does not show any evidence for an explicit non-disclosure agreement.

32 (2) Circumstances that would allow the conclusion of an implied non-disclosure agreement are also not apparent.

33 (a) As the Patent Court correctly stated, the customer of a system is in principle obliged to maintain secrecy even without a special agreement if he was involved in its development.

34 In such a situation, it is recognizable for the customer that the supplier and a developer or manufacturer cooperating with it have an interest in not disclosing the results of the development to third parties. If he agrees to a joint development activity in this initial situation, in the absence of a deviating agreement or other special features he is in any case obliged according to the principles of good faith not to pass on the results to third parties without the consent of the contractual partner. This shall also apply if he has no own interest in secrecy, for example because he is not involved in the manufacture and sale of further equipment to third parties and his contribution to the joint development activity does not give rise to any expectation of his own co-entitlement to industrial property rights in question.

35 A joint development activity in this sense can also take place within the framework of a sales contract which obligates a contracting party to deliver a jointly developed product on a certain date.

36 Contrary to the opinion of the appellant, it is also not decisive whether the purchaser uses the equipment for his own development activities or exclusively for production purposes. Even in the latter constellation, a buyer may be involved in the development of a product purchased by it and therefore be subject to confidentiality obligations.

37 (b) The Patent Court was rightly unable to reach the conclusion that
the plant was supplied within the scope of a development project.

38 Admittedly, contrary to the opinion of the Patent Court, it cannot be
concluded from the fact that the customer - justified or unjustified - sent a
reminder for the delivery and used the system in production that the customer
was not involved in the development. On the basis of the statements of the
witnesses S. and F., however, the Patent Court correctly determined that the
customer did not develop the system together with the defendant or its
cooperation partners, but merely developed its own programs for testing wafers.

39 cc) Despite the lack of secrecy, the delivery, installation and
commissioning of the system at the customer's premises, contrary to the opinion
of the Patent Court, did not establish a sufficient probability that arbitrary third
parties would examine the system and in particular determine that the air used
for conditioning the recording device is tempered in a subsequent step with the
aid of a heat exchanger and fed into room 1.

40 (1) According to the findings of the Patent Court, prior to the priority
date, employees of the customer could not obtain knowledge of the internal
structure of the cooling and temperature control system during normal operation
of the plant.

41 The Patent Court found that the customer's employees did not maintain
and repair the chiller themselves during the period in question. According to
witness S., the sales company was responsible for this. The employees of the
customer did not know how the system was set up and functioned. They were
not allowed to make any changes to the device except for changes to the
measuring software.

42 (2) It also follows from the findings of the Patent Court that a closer
examination of the system by third parties was not possible without the consent
of the customer.

43 The system was located in a clean room-like hall to which only a limited
group of persons had access. Thus, there is no sufficient probability that any
third party could enter the hall and examine the plant.

44 From the witness statements reproduced by the appellant, according to which technicians from outside the company were allowed to enter the hall for the purpose of maintenance and troubleshooting of other systems and were not under constant observation, there is at most a theoretical possibility of knowledge. In order to gain knowledge of the invention, the persons concerned would have had to tamper with the equipment without authorization. This may not be theoretically impossible. However, a sufficient probability for this could at most be affirmed if concrete indications were evident that the customer would have tolerated or even encouraged such behavior. The latter is not the case. It seems rather unlikely that such investigations would have gone unnoticed. It can be assumed that the basic mode of operation could already have been discovered by a hand sample. For this, too, the prober system would have had to be taken out of operation and the three air lines between the chiller and the sample table would have had to be disconnected. The fact that the customer would have tolerated such interventions by a third party not authorized to do so seems far-fetched, if only because it had no discernible interest in such actions itself.

45 (3) There was also no sufficient probability that employees of the customer could attempt to gain knowledge about the functioning of the cooling system until the priority date of the patent in suit or that they could allow third companies, in particular competitors of the defendant, access to the system for this purpose.

46 (a) According to the aforementioned findings of the Patent Court, installation, maintenance and repair of the system were the sole responsibility of the supplier. The interest of the customer in a functioning machine was thus safeguarded. The customer had no reason to make any considerations in this regard.

47 (b) The fact that the customer itself wanted to manufacture or sell equipment according to the invention and could therefore have been interested in finding out how the cooling system worked is neither asserted nor otherwise apparent.

48 (c) There are also no indications that the customer had an interest in obtaining more detailed knowledge about the function of the cooling system for other reasons.

49 As a circumstance that could justify such an interest, the prospect that a competitor of the defendant could reproduce the system and offer it to the customer at a more favorable price can at most be considered. It seems unlikely that the customer would have agreed to this, because it would have had to accept interventions in the substance of the plant and thus certain financial disadvantages, but in return it would at best have obtained a vague prospect of more favorable procurement opportunities.

50 In order to reliably verify the construction of the chiller, a hand test was not sufficient. Rather, at least the insulating foam had to be removed, which would have required a repair. According to the information provided by witness H., such a repair would have been possible in principle, but would have been very costly and probably only feasible by employees of the manufacturer. This effort, which was to be expected with certainty, was at best countered by the hope that a competitor of the defendant could offer a comparable system at a lower price. This prospect appears too vague to establish a sufficient probability of knowledge.

51 That the customer would at least allow a competitor to conduct a hand test that would not involve irreversible interventions also does not seem likely. On the basis of such an examination, at best vague knowledge could be gained about the design of the heat exchanger. The fact that the purchaser was interested in acquiring a plant whose construction was based on such findings does not appear to be true to life.

52 (4) The possibility that the customer sold the plant to a third company after the end of its useful life seems more likely. In the period between the delivery of the plant and the priority date of the patent in suit, however, such a transaction was not to be expected.

53 According to the information provided by the witness S., the customer had acquired two plants of the type in question before the priority date, one of

which had been in operation for approximately six years and the other for more than ten years. Against this background, the probability that the customer would sell a plant within two years after commissioning seems too low to establish the sufficiently concrete possibility of knowledge before the priority date.

54 (5) The question left open by the Patent Court as to whether the system was supplied with an operating manual from which the basic structure and the air flow necessary for proper operation were recognizable is also not relevant to the decision in the instance of appeal.

55 Even if relevant information was apparent from an operating manual or the like, this could at most lead to obviousness if it was to be expected that the customer would share this knowledge with any third party or if it actually passed on this information in a way that led to the expectation that it could be disseminated at will. The former does not seem likely against the background shown above. For the latter, there is a lack of sufficient evidence. In this respect, too, no changes were to be expected until the priority date, because the warranty period did not expire until after this date.

56 c) The fact that, according to the findings of the Patent Court, the defendant supplied systems of the same type to at least two other companies before the priority date does not lead to a different assessment.

57 aa) With such deliveries, the subject matter of the patent in suit could have been disclosed if the customers in question had had more extensive possibilities of learning about or examining the system by third parties. However, there are no concrete indications for this, neither from the parties' submissions nor from other circumstances.

58 (1) Witness W., who worked for B., stated that he did not know exactly how the Aircool unit functioned; he and his colleagues had only checked whether the given specifications were met and had trusted the supplier. It is true that a new product sooner or later becomes known through a sale to third parties, but not through customers and users, but through the manufacturing company. Witness Sch., who also worked for B., stated that the equipment had

a service life of at least 10 to 15 years. According to the testimony of both witnesses, strict secrecy precautions existed at B..

59 (2) With regard to a possible sale to M., nothing else applies. The witness Si., who worked for the exclusive distribution company, stated that he himself had not known how the chiller was constructed.

60 bb) Against this background, it can be left open whether the defendant also supplied systems according to the invention to other customers before the priority date. In this respect, too, there are no indications that these customers had a further interest in acquiring and passing on information about the design of the chiller. In this initial situation, contrary to the opinion of the plaintiff, it cannot be assumed that the probability of knowledge already exceeded the relevant threshold due to the larger number of customers.

61 d) The fact that, according to the findings of the Patent Court, the defendant offered systems of the same type for sale to an unlimited circle of companies also does not lead to a different assessment.

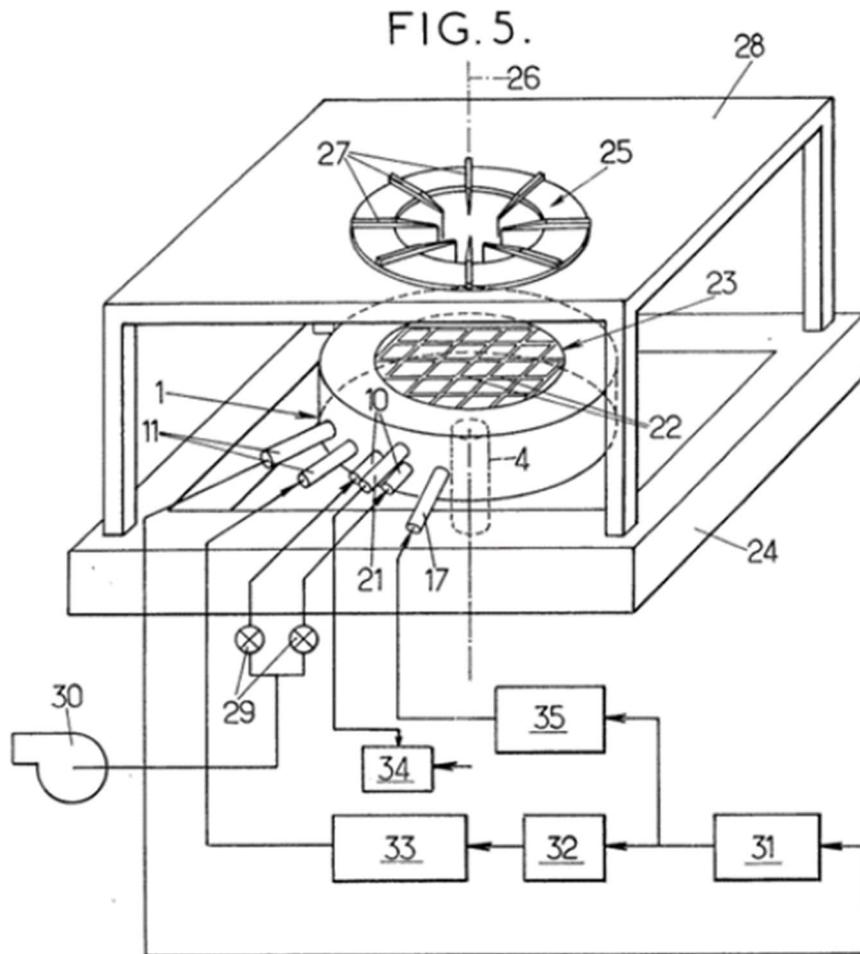
62 However, the subject-matter of the patent in suit would have become obvious by means of offers if the construction according to the invention had been apparent from the offer itself. However, no evidence for this has been presented or is otherwise apparent.

63 IV. The contested decision is also not correct in its result for other reasons (Sec. 119(1) Patent Act).

64 1. The protected subject-matter was not obvious to the skilled person on the basis of the European disclosure 341 156 (A7).

65 a) A7 discloses a device for testing wafers for semiconductor circuits.

66 This device may have a housing 3 (carter) carrying a support 2 (plateau) (A7 sp. 4 lines 6-8). The connecting leads for the interconnection lines in the lower area of the support 2 run through the side wall of this housing (A7 Sp. 6 Z. 17-26).



69 Along the entire circumference of the support 2 (sur toute la périphérie du carter) runs an annular circumferential chamber 16 (chambre annulaire, A7 Sp. 7 Z. 63 f.). From this, dry gas flows in the direction of the support 2 through outlet devices 18, which end at the level of the support 2 and are oriented towards the center thereof, in order to prevent condensation or icing of moisture on the surface of the object at low or negative temperatures, respectively (A7 Sp. 5 Z. 9-13, Sp. 8 Z. 13-18). For this purpose, the device is advantageously equipped with a supply unit for dry gas (unité de fourniture d'un gaz sec, A7 Sp. 5 Z. 6-7, hereinafter: dry gas unit). The dry gas unit has a dry block (bloc de séchage de gaz) or dryer 31 (séchateur d'air) for drying the gas (A7 Sp. 5 Z. 7-8, Sp. 9 Z. 4 f.). This is supplied to the circumferential chamber 16 via the connection line 17 (A7 Sp. 7 Z. 64 f., Sp. 9 Z. 19-21).

70 According to a preferred embodiment, the device has a cover or cap 19 in ring form (couvercle annulaire or capot, A7 Sp. 4 Z. 17, Sp. 8 Z. 19). The cap

19 covers the support 2 and is open in the middle (A7 Sp. 8 Z. 19 f.). Its purpose is to help direct the gas from the peripheral chamber 16 toward the support surface (A7 Sp. 4 Z. 16-20, Sp. 8 Z. 2022).

71 To further improve the absence of condensation, the device may have a heat exchanger 20 (échangeur thermique) in at least one outer zone around the support 2 or in the outer wall of the housing 3, through which cold or warm fluid flows and binds moisture from the atmosphere around the support 2 (A7 Sp. 4 Z. 30-37, Sp. 8 Z. 23-32).

72 Further, it is said to be advantageous if the fluid for temperature control is the same gas as that used for de-icing (A7 Sp. 5 Z. 1820), and if it flows through the drying block before reaching the cooling block 32 (A7 Sp. 5 Z. 20-22). The outlet of the line 11 is then preferably connected to the dryer 31 or to the source of compressed air in such a way that the thermal losses are reduced (la sortie 11 est de préférence raccordée au sécheur 31 ou à la source d'air sous pression de manière à réduire les pertes thermiques, A7 Sp. 9 Z. 16-18).

73 b) Thus, in any case, features 1.1 and 1.3 as well as 5.1 and 5.3 to 5.7 are disclosed.

74 c) Not disclosed is a space substantially closed by a container within the meaning of features 1.2 and 5.2.

75 According to the description of A7, the optional cap 19 serves to cover the support; however, it is open in the middle (A7 Sp. 4 lines 16-18) and therefore not suitable to form a substantially closed space together with the housing 3.

76 Contrary to the plaintiff's opinion, the skilled person - who, according to the unobjected findings of the Patent Court, is an engineer in the field of electrical engineering experienced in the further development of test equipment for semiconductor production or a physicist with a technical/university degree who, in the course of his professional activity, has acquired special knowledge in the construction and design of wafer test equipment together with the associated cooling systems - also does not read an almost closed cover when reading A7. This is contradicted by the fact that the cap 9 is cited as the only

means of covering, and it is precisely this that is not supposed to be completely closed. Irrespective of this, it is not necessary for the function of the device disclosed in A7 to generate an overpressure in a space which is in any case almost closed. Rather, condensation or freezing is prevented by directing dry gas via the outlet means 18 onto the support, where it forms a kind of protective layer. The annular cap 19 can contribute to this by favorably influencing the direction of flow of the gas. Overpressure is not required for this.

77 Contrary to the plaintiff's view, the fact that the device disclosed in A7 comprises a vacuum pump 30 does not lead to a different assessment. As already explained above, the vacuum generated by this pump serves to hold the test object on the supporting surface. For this purpose, the ambient pressure need not be above atmospheric pressure.

78 d) A7 also does not disclose a heat exchanger with features 1.7 or 5.9 to 5.10.

79 aa) The heat exchanger 20 proposed as an optional means in the description of A7 does not realize these features.

80 It is true that this heat exchanger also serves the purpose of counteracting condensation. However, this is not done by directing a fluid leaving the heat exchanger onto the support, but by a fluid circulating within it attracting moisture from the surrounding atmosphere. Moreover, it is not apparent from A7 that the fluid circulating in the heat exchanger is used to precool another fluid.

81 bb) The cooling device 32 and the heating device 33 do not realize the mentioned features either.

82 It can be assumed with the Patent Court that these devices must have a heat exchanger from the point of view of the skilled person in order to fulfill the function intended for them. In these heat exchangers, however, the fluid leaving the outlet 11 and intended to be passed on to the inlet 17 is not used to pre-cool another fluid.

83 cc) The statements that it is advantageous to connect the outlet of line 11 to dryer 31 or to the source of compressed air in such a way that the thermal losses are reduced also did not give the skilled person any direct and unambiguous indication of the use of a heat exchanger within the meaning of the patent in suit.

84 As the Patent Court correctly pointed out in its reference granted under Sec. 83(1) Patent Act, it is true that a temperature equalization and thus a pre-cooling takes place when the fluid leaving the outlet 11 and the fluid flowing from the gas source are fed together into the dryer 31 and the fluid flowing back is cooler than the newly supplied fluid. Whether the representation in Figure 5 is to be understood in this sense, or whether it is to be interpreted, as the defendant asserts, to the effect that the fluid returned from the sample table is discharged into the atmosphere in a controlled manner in the region of the dryer, however, cannot be inferred clearly and directly from the citation.

85 It was obvious to the skilled person that a circuit such as could theoretically be taken from the representation in Figure 5 cannot be brought about by the means shown alone. The skilled person was therefore able to find out the relevant mode of operation of the device disclosed in A7 at best by recourse to his expert knowledge. Thus, there is no clear and direct disclosure of a forwarding of the fluid emerging from the outlet 11 into the inlet 17 and thus of a mixing of the two fluid flows which enables an exchange of thermal energy.

86 e) Such an embodiment was also not suggested to the skilled person on the basis of A7.

87 In view of the incomplete disclosure in A7, however, the skilled person had reason to search the state of the art for possibilities to realize the mode of operation considered according to Figure 5.

88 Whether for this purpose, as the plaintiff claims, a heat exchanger was technically necessary or at least expedient with regard to the occurring pressure conditions, does not need to be decided. Even if this were to be affirmed contrary to the opinion of the Patent Court, the use of such a device alone would not have led to the goal. Rather, additional devices would have been necessary

to direct and maintain the air flow in the desired direction. There were no indications of how this could be achieved, either from A7 or from general expert knowledge.

89 In view of this, the skilled person had no reason to further investigate the possibility, only rudimentarily indicated in A7, of recirculating the air exiting from the outlet of line 11 and to additionally use a heat exchanger.

90 2. The other citations are even further off the mark and therefore cannot lead to a different assessment.

91 V. A remittal of the case to the Patent Court is out of the question. For the reasons stated above, the case is ready for decision (Sec. 119(5) sentence 2 Patent Act).

92 VI. The decision on costs is based on Sec. 121(2) Patent Act and Sec. 91(1) sentence 1 Code of Civil Procedure.

Bacher

Hoffmann

Kober-Dehm

Rombach

Rensen

Previous instance:

Federal Patent Court, judgment of 27 November 2017 – 2 Ni 9/15 –