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11 UNITED STATES PATENT AND TRADEMARK OFFICE  
12

13  
14 BEFORE THE PATENT TRIAL AND APPEAL BOARD  
15

16 IGB AUTOMOTIVE LTD. and  
I.G. BAUERHIN GmbH

17 Petitioners,

18 v.

GENTHERM GmbH

19 Patent Owner  
20

21 Case IPR2014-00666

22 U.S. Patent 7,229,129  
23

24 **EXPERT REPORT OF JAMES RICE, PHD**  
25

26 **Case**  
**IGB v. Gentherm**  
**IPR2014-00666**

27 **Exhibit**  
**2001**  
**Gentherm**  
28

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1           **I.                   INTRODUCTION**

2           1.       It is my understanding that IGB Automotive Ltd. and I.G. Bauerhin GmbH  
3 (collectively “IGB”) have filed a Petition to institute an inter partes review of claims 1-12 of U.S.  
4 Patent No. 7,229,129 B2 (“the ‘129 patent”), currently assigned to Gentherm GmbH  
5 (“Gentherm”). I further understand the Gentherm has filed a preliminary response to the IGB  
6 petition.

7           2.       The petition submitted by IGB relied on a number of prior art references, however,  
8 the Patent Trial and Appeal Board found the following prior art to be relevant to an inter partes  
9 review; US 4,946,220 to Wyon, US 4,997,230 to Spitalnick, and US 6,003,950 to Larsson. As a  
10 result of their review of the submissions by IGB and Gentherm, the Patent Trial and Appeal  
11 Board has instituted an inter partes review of claims 1-7 of the ‘129 patent. As ordered, the inter  
12 partes review is to consider the following grounds:<sup>1</sup>

13                   Claims 1-3, 6, and 7, unpatentable under 35 U.S.C. § 103(a) as  
14                   obvious over Wyon and Spitalnick; and

15                   Claims 4 and 5, unpatentable under 35 U.S.C. § 103(a) as  
16                   obvious over Wyon, Spitalnick, and Larsson.

17           3.       I am submitting this report on behalf of Gentherm.

18           **II.                   BACKGROUND AND QUALIFICATIONS**

19           4.       I hold Bachelors, Masters, and Ph.D. degrees in Mechanical Engineering. I have  
20 over 30 years of professional experience in mechanical engineering design and analysis in both  
21 academic and industrial environments. I have worked as a consultant or advisor for over 30  
22 companies, including Ford Motor Company, Boeing Aircraft, General Motors, and Siemens. I  
23 have authored or co-authored over 30 publications and numerous consulting reports.

24           5.       I have extensive background and experience in the area of mechanical engineering  
25 design and analysis. In particular, I have extensive education, background, and experience in the  
26 fundamental technical areas of relevance to the design and engineering of mechanical equipment.

27  
28 <sup>1</sup> DECISION, Institution of Inter Partes Review 37 C.F.R. § 42.108, p. 19, September 30, 2014.

1 A major portion of my professional experience has involved my direct participation in  
2 engineering projects involving the design and development of a wide variety of mechanical  
3 systems and components. In particular, this experience has included participation in engineering  
4 design and analysis projects in automotive heating, ventilation and air conditioning. These are, of  
5 course, areas of particular importance and relevance to the issues involved in this matter.

6 6. A current copy of my curriculum vitae setting forth details of my background and  
7 relevant experience is attached as Exhibit 2002. My curriculum vita includes a listing of all of the  
8 publications I have authored. Gentherm retained me in connection with the above captioned  
9 investigation. I am being compensated at my usual rate of \$350 per hour. My compensation is  
10 not dependent on the outcome of this litigation.

### III. SUMMARY OF OPINIONS

7. As detailed in the following sections of this report, I have formed the following opinions.

- The flow in the device disclosed in the Wyon patent is in the opposite direction to that of the '129 patent.
- Because the flow is in the opposite direction, the Wyon patent does not represent a viable primary reference that could be used in combination with other prior art to render the '129 patent obvious.
- In addition to not disclosing the required hole pattern limitation of claim 1, Wyon fails to disclose an additional limitation of claim 1.
- Wyon achieves a uniform flow distribution by an entirely different means than that taught by the '129 patent. Wyon thus teaches away from the '129 patent.
- Wyon in view of Spitalnick and Larsson cannot possibly render claims 4 and 5 obvious.
- A person of ordinary skill in the relevant art would have no reason, motivation, or reasonable expectation of success in modifying the Wyon designs to incorporate the perforations taught in Spitalnick.
- Modifying the Wyon designs to arrive at the seat assemblies claimed in claims 1-7 of the '129 Patent would not have been obvious to a person of ordinary skill in January 2001.

### IV. LEGAL CONSIDERATIONS

8. The following sections present my understanding of the relevant legal principles that I have relied upon in reaching the opinions expressed in this report.

1                   **A.     One of Ordinary Skill in the Art**

2           9.     I understand that claims are interpreted from the perspective of one of ordinary  
3 skill in the art at the time of the invention and not from the perspective of the judge, a lay person,  
4 those skilled in remote arts, or geniuses in the art at hand. I also understand that whether a  
5 claimed invention is obvious is judged from the perspective of this person of ordinary skill in the  
6 art at the time of the invention. I further understand that the characteristics of this hypothetical  
7 person having ordinary skill in the art should be defined before engaging in any claim  
8 construction or invalidity analysis. Factors that can be considered in determining the level of  
9 ordinary skill in the art include (1) the educational level of the inventor; (2) the type of problems  
10 encountered in the art; (3) the prior art solutions to those problems; (4) the rapidity with which  
11 innovations are made; (5) the sophistication of the technology; and (6) the educational level of  
12 active workers in the field.

13                   **B.     Claim Construction**

14           10.    The property right protected by a patent is defined by the claims of the patent,  
15 which appear as numbered paragraphs at the end of the text. Each claim stands on its own when  
16 determining infringement or validity. These are the “metes and bounds” that define the scope of  
17 the property right. Thus, the first step in analyzing either the infringement or validity of a patent  
18 claim begins with an analysis of the wording of the claim itself, also referred to as “claim  
19 construction.”

20           11.    The first step in construing a claim is an analysis of how the claim language would  
21 be understood by a person having ordinary skill in the art. To understand the perspective of a  
22 person of ordinary skill in the art, one must determine the field of art to which the patent pertains,  
23 and then the background of one of ordinary skill in that art. Dictionaries, encyclopedias, and  
24 treatises may be used to demonstrate how one skilled in the art would understand a specific term  
25 or phrase recited in a claim. Such terms or phrases are also referred to as “claim limitations,”  
26 because, as discussed below, they limit what is covered by a claim. Typically claims that use  
27 different claim language are construed to be of different scope.  
28



12. After reviewing the precise language used in the claim, the patent specification and prosecution history are reviewed to ensure that they do not alter the way one skilled in the art would understand a claim limitation. At times, the specification might provide further clarification as to the meaning of a claim limitation. However, claims are not limited to the disclosed embodiments, and claim limitations should not be narrowly construed solely because the disclosed embodiment contains a particular feature.

13. Statements made by a patent applicant during prosecution of the patent application might provide further clarification as to the meaning of a claim limitation. For example, the applicant may argue that certain prior art raised by the examiner is outside the scope of a claim because it fails to disclose a certain claim limitation. In addition to the claim language, patent specification, and prosecution history, which are the preferred sources for claim construction, outside sources such as prior art may be referenced to construe a claim limitation.

### **C. Patent Validity**

14. Validity, like infringement, is determined on a claim-by-claim basis. Thus, even if certain claims are shown to be invalid, the remaining claims remain valid until shown otherwise.

#### **1. Prior Art**

15. “Prior art” refers, in some sense, to matters which were known before the filing of the patent application and which therefore can establish that the claimed inventions are not new, or were obvious. The patent laws provide that the claims are not new if the invention claimed is disclosed in certain prior art references. This encompasses any printed publication in this or a foreign country as well as any public use or sale in the U.S. of the claimed subject matter, specifically any publication dated more than one year prior to the filing of a patent application, any publication dated before the invention of the claimed subject matter of a patent application, any U.S. patent issued on an application filed before the invention, and anything sold or offered for sale in the U.S. more than one year prior to the filing of a patent application.

#### **2. Anticipation**

16. A patent claim is invalid as anticipated (i.e., the claimed invention is not new or not novel) under section 102 of the Patent Act (35 U.S.C. § 102) when a single prior art reference

(e.g., a patent or publication) discloses within the four corners of the document every limitation recited in the claim arranged or combined in the same way as recited in the claim. This analysis is very similar to an infringement analysis. In an infringement analysis, the claims are first construed, and then the properly construed claims are compared to the product that is being accused of infringement. If the accused product includes all limitations of the claim combined or arranged as recited in the claim, it infringes that claim. Anticipation analysis is much the same, except that the properly construed claims are compared to a prior art reference, not to the accused product. If that prior art reference teaches all the limitations combined or arranged as recited in the claim in a manner that would enable one skilled in the art to practice the claimed invention, that claim is not new, but is “anticipated” by the prior art reference.

17. For example, if a claim simply specifies the limitations of A, B and C, and the accused product contains at least those three elements arranged as required by the claim, then the accused product infringes. Likewise, if a prior art reference teaches at least elements A, B and C arranged as required by the claim, the claim is anticipated.

18. For a prior art reference to “teach” the limitations of a claim, a person of ordinary skill in the art must recognize the limitations as disclosed, expressly or inherently, in that single reference and, to the extent the claim specifies a relationship between the limitations, the disclosed limitations must be in the same relationship as recited in the claim. Additionally a disclosure can “teach” a limitation only if the disclosure of the reference is enabling. This means that a person of ordinary skill in the art, having become familiar with the prior art, must be enabled thereby to practice the invention without undue experimentation.

19. A prior art reference may anticipate a claimed invention when the claim limitations not expressly found in that reference are nonetheless “inherent” in it. However, a single prior art reference may only anticipate a claimed invention by inherent disclosure when the prior art reference must necessarily include the unstated limitation. To establish inherency, the extrinsic evidence (evidence outside of the document) must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.

### 3. Obviousness

20. Where a single prior art reference does not disclose all limitations of a claim, that claim may nonetheless be proven invalid as obvious under 35 U.S.C. § 103. For a claim to be obvious, all limitations of the claimed invention must be present in two or more prior art references, or in prior art references combined with the knowledge generally possessed by one of ordinary skill in the art. Thus, if a claim specifies the limitations A, B and C, and one reference shows only A and B, C must be disclosed in a separate reference or, alternatively, must be part of the knowledge of one of ordinary skill in the art. In determining obviousness, one must consider the claim as a whole.

21. An obviousness finding cannot be made solely on the basis that all of the claim limitations are found in the prior art; most inventions are new combinations of known components. Instead, there must be some reason to combine the limitations in the fashion claimed by the invention at issue. There is no rigid test for determining the existence of a reason to combine the limitations. Factors used to determine the existence of such a reason include: (1) interrelated teachings of multiple patents; (2) the effects of demands known to the design community or present in the marketplace; (3) and the background knowledge and common sense possessed by a person having ordinary skill in the art. Furthermore, any need or problem known in the field of endeavor at the time of invention and addressed by the patent at issue can provide a reason for combining the limitations in the manner claimed.

22. A patent claim is invalid as obvious if the differences between the claimed subject matter and the prior art are such that the subject matter as whole at the time of the invention would have been obvious to a person having ordinary skill in the art of the subject matter to which the patent claim pertains. It is improper, however, to use hindsight in assessing obviousness by, for example, using the claim as a template for piecing together components (or steps) found in separate prior art references. Furthermore, a person skilled in the art must have a reasonable expectation of success that the references combined to establish obviousness would result in the claimed invention.

1           23.     The following factual inquiries are employed in an obviousness determination: (1)  
2     the level of ordinary skill in the art; (2) the scope and content of the prior art; (3) the differences  
3     between the prior art and the claims at issue; and (4) other objective evidence of non-obviousness,  
4     commonly referred to as “secondary considerations.” These secondary considerations may  
5     include commercial success of the claimed invention (including success in the face of initial  
6     skepticism in the industry), long felt but unresolved needs, copying by others, the failure of  
7     others, licensing by others, praise and laudatory comments by others, and unexpected results.

#### 8                               **4.     Written Description**

9           24.     I understand that, to comply with the “written description” requirement, a patent  
10    must convey with reasonable clarity to those skilled in the art that, as of the filing date, the  
11    inventor was in possession of the full scope of each and every limitation of the claimed invention.

## V. BACKGROUND ON THE '129 PATENT AND THE CLAIMS AT ISSUE

25. As illustrated below in Figure 1, the '129 patent describes a ventilated seat assembly 10.<sup>2</sup> The features of the ventilated seat assembly are provided in a ventilated seating system, which is generally located on top of a seat 30 which includes a seat back 32 and a seat cushion or base 34 beneath a trim layer that is in contact with the occupant.<sup>3</sup> The system includes a bag made from upper and lower sheets of non-permeable material that encloses a three-dimensional spacer material.<sup>4</sup> In the contested claims, forced air enters the spacer and exits through perforations in the bag's upper sheet and out through the trim cover to enhance occupant comfort.<sup>5</sup>

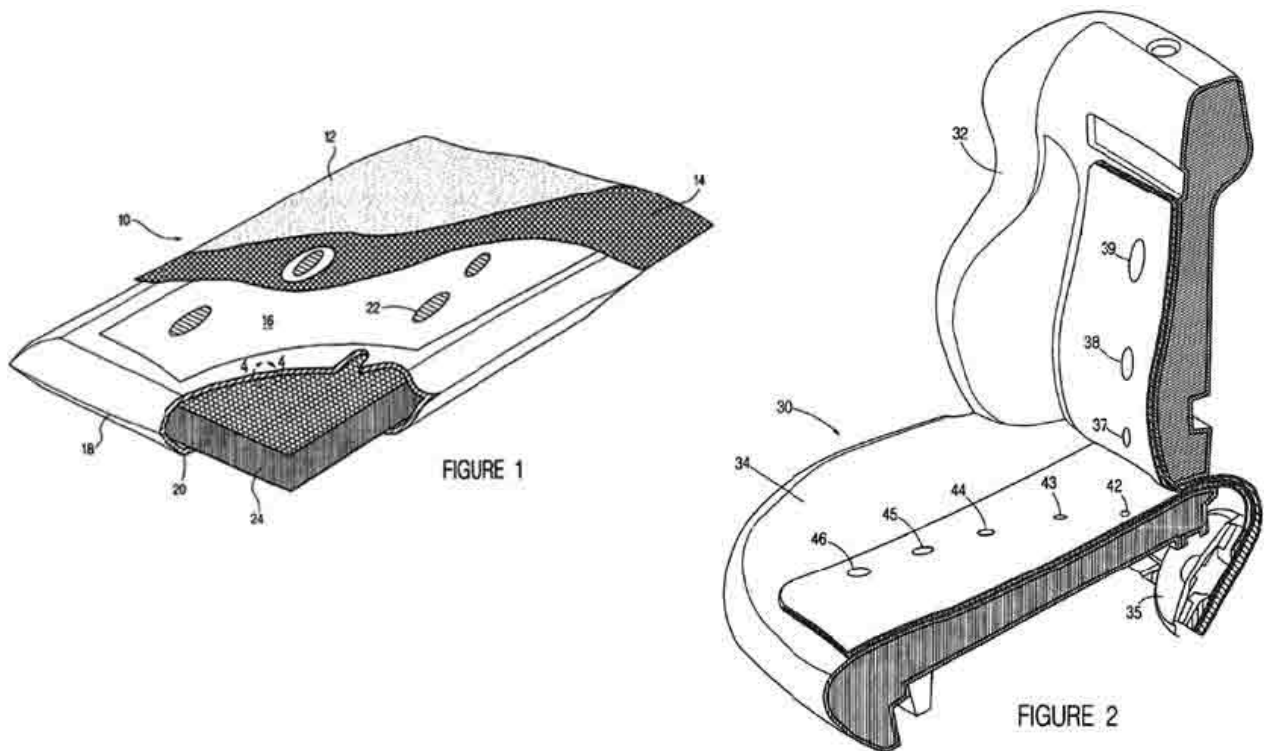


Figure 1. FIGURES 1 and 2 of the '129 Patent

<sup>2</sup> '129 patent, Abstract; see also *ibid*, col. 4, lines 5-8

<sup>3</sup> *Ibid*, col. 2, lines 15-17; see also *ibid*, col. 4, lines 33-39

<sup>4</sup> *Ibid*, col. 2, lines 18-25

<sup>5</sup> *Ibid*, col. 2, lines 40-42

1           26.     A key feature of the invention of the '129 patent that is relevant to this proceeding  
2 is the variation in the combined cross-sectional area of holes 22 — holes that are grouped by  
3 distance from an opening in the bag.<sup>6</sup> As the distance between each group of holes and the air  
4 mover increases, the cross-sectional area of each group increases.<sup>7</sup> The '129 patent teaches that  
5 this variation in combined cross-sectional area is intended to provide a uniform distribution of air  
6 flow as the distance from the air source is increased.<sup>8</sup>

7           27.     Claim 1 of the '129 patent reads as follows.

8                 1. A ventilated seat assembly for use with an air mover  
9 comprising:  
10                 a seat having a seat base and a backrest, at least one of the  
11                 seat base and the backrest comprising:  
12                 a cushion;  
13                 a trim cover;  
14                 a generally enclosed chamber formed by a top portion and  
15                 an air-impermeable bottom portion and including an  
16                 opening for receiving air from the air mover, the top  
17                 portion of the chamber including a plurality of holes  
18                 configured to provide air movement through the chamber;  
19                 and  
20                 a spacer located within the chamber;  
21                 wherein each of the plurality of holes has a cross-sectional  
22                 area, the holes located substantially the same distance  
23                 from the chamber opening defining a group having a  
24                 total cross-sectional area, the top portion of the chamber  
25                 including more than one group of holes, with the  
26                 total cross-sectional area of each defined group of holes  
27                 increasing the farther each defined group of holes is  
28                 from the chamber opening.

19           28.     Claim 1 is an independent claim and all of the other claims in question depend,  
20 either directly or indirectly, from claim 1.

21           29.     Claim 4 reads as follows

22                 4. The ventilated seat assembly of claim 1, further comprising a heater  
23                 for raising the temperature of the air exiting the ventilated seat, the heater  
24                 positioned beneath the trim cover.

25           30.     Claim 5 of the '129 patent reads as follows.

26                 5. The ventilated seat assembly of claim 4, wherein the top portion of

27 <sup>6</sup> '129 patent, col. 5, line 51 through col. 6, line 4

28 <sup>7</sup> Ibid

<sup>8</sup> Ibid, col. 2, lines 42-45

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the chamber and the heater are separate elements.

31. Claim 7 depends from claim 6. Claim 6 and 7 read as follows.

6. The ventilated seat assembly of claim 1, wherein each of the seat base and the backrest comprises a cushion, a trim cover, a chamber, and a spacer.

7. The ventilated seat assembly of claim 6, wherein the chamber in the seat base and the chamber in the backrest are configured to receive air from a single air mover.

1 **VI. OPINIONS AND BASES THEREOF**

2 32. In the following sections, I present in detail my opinions concerning the validity of  
3 the '129 patent.

4  
5 **A. The Level of Ordinary Skill in the Art**

6 33. In my opinion, one of ordinary skill in the art would have the following  
7 educational and professional experience:

- 8 • Vocational training in mechanical or electrical engineering or related field plus 3-4 years  
9 of experience designing consumer heating, cooling, or ventilation systems; or
- 10 • A B.S. in mechanical or electrical engineering or related field, plus 1-2 years of  
11 experience designing consumer heating, cooling, or ventilation systems

12 34. This identification of the level of ordinary skill is based on the fact that the '129  
13 patent claims relate to heating and cooling systems for automobiles, as well as my experience  
14 working with and becoming familiar with the educational and professional experience level of  
15 engineers and technicians designing heating, cooling, or ventilation systems in the automotive and  
16 other consumer industries. My identification of the level of ordinary skill is also informed by my  
17 opinion that heating, cooling, and ventilation systems for automobile seats is a technology that is  
18 somewhat sophisticated but not excessively sophisticated compared to other industrial arts, as  
19 well as the problems encountered in the art, such as efficiently and safely deliver conditioned air  
20 to an automobile occupant.

21 35. I conducted my analysis and offer my opinions from the perspective of this person  
22 of ordinary skill in the art in January 2001, the date of the '129 patent inventions.

23 **B. Claim Construction of "Spacer"**

24 36. While not material to my other conclusions here, I have been asked for my opinion  
25 regarding the proper construction of the claim term "spacer." In its petition, IGB proposes a  
26 construction for the term "spacer material" appearing in claims 1, 6, 8, and 9 as "a material that is  
27  
28



intermediate of a top and bottom portion.<sup>9</sup> This proposed construction is entirely too broad and completely ignores the clear requirement that the spacer material must be a material that is air permeable as detailed in the following quoted portions of the specification (emphasis added).<sup>10</sup>

“An air movement system (e.g., a fan or a duct coupled to the vehicle’s air conditioning system) is coupled to the bag and hence to the air space created by the spacer material to cause air movement laterally, longitudinally and vertically through the spacer material.”

“The spacer material is sufficiently stiff to avoid blockage of air flow when the seat is occupied, even by heavy occupants.”

37. The ‘129 patent goes further and identifies a specific proprietary material from Mueller Textile as an appropriate choice.<sup>11</sup> In line with the requirements provided in the above quoted portion of the specification, Mueller Textile describes their “**3mesh spacer fabric**” product in the following quote.<sup>12</sup>

“**3mesh spacer fabric** guarantees perfect air distribution – even under pressure. In addition the perfect adjustment to every contour increases the comfort. Therefore 3mesh is used everywhere, where perfect comfort or soft touch is requested: in climatic and ventilated seats, seat covers, head liners, instrument and door panels as well as in composite constructions and invisible airbag solutions.”

38. Clearly, in my opinion, a person of ordinary skill reading the ‘129 patent would understand the term “spacer” to include the requirement that the material or layer must be air permeable and maintain that air space or flow. As such, in my opinion, the proper construction for the term “spacer” is “a material or layer that maintains space and allows air flow between two layers or objects.”

39. I have reviewed the file history of the ‘129 patent (Exhibit 2003) and it is consistent with this conclusion.

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<sup>9</sup> Petition for Inter Partes Review of U.S. Patent No. 7,229,129, April 18, 2014, p. 12

<sup>10</sup> ‘129 patent, col. 2, lines 27-29, 34-38

<sup>11</sup> Ibid, col. 3, lines 56-67

<sup>12</sup> <http://www.mullertextiles.com/index.php?id=58>

**C. Wyon in View of Spitalnick Does Not Render Claims 1-3, 6 and 7 Obvious**

40. IGB contends that the combination of US Patent 4,946,220 to Wyon (hereinafter “Wyon”) and US Patent 4,997,230 to Spitalnick (hereinafter “Spitalnick”) renders claims 1-3, 6 and 7 of the ‘129 patent obvious.

**1. The Wyon Patent**

41. As illustrated below in Figure 2, the Wyon patent discloses a ventilated vehicle seat.

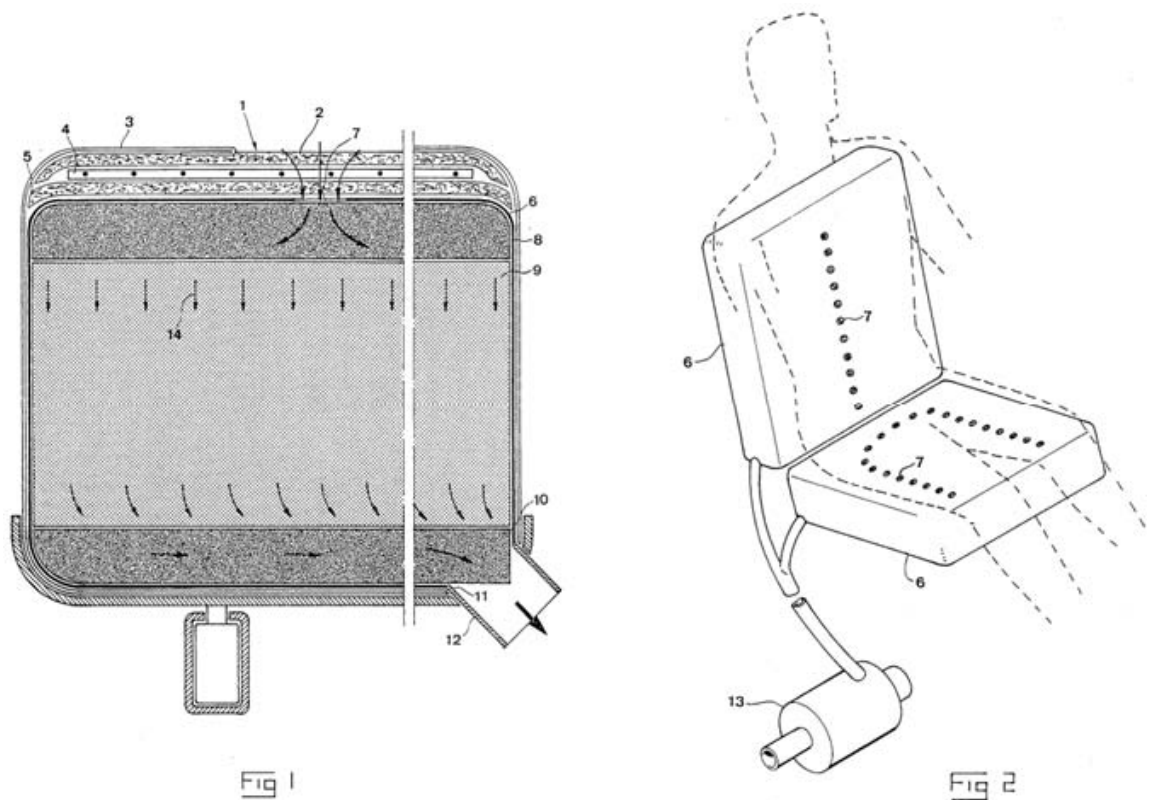


Figure 2. Fig. 1 and Fig. 2 of Wyon

42. IGB contends that Wyon includes each and every element of claim 1 of the ‘129 patent with the sole exception that Wyon does not disclose the following limitation of claim 1 of the ‘129 patent.<sup>13</sup>

“wherein each of the plurality of holes has a cross-sectional area, the holes located substantially the same distance from the chamber opening defining a group having a total cross-sectional area, the top portion of the chamber including more than one group of holes, with the total cross-sectional area of each defined group of holes increasing the farther each defined group of holes is from the chamber opening.”<sup>14</sup>

43. In contrast, Wyon’s device discloses holes 7 that are the same size, “preferably about 20 mm.”<sup>15</sup> IGB admits that the variable hole size element is not found in Wyon and suggests that the missing feature may be found in Spitalnick.

44. It is clear from the specification of the ‘129 patent that one of ordinary skill in the art would understand that the purpose of the hole size variation is to achieve a uniform amount of air flow throughout the seat, as explained in the following quoted portion of the specification of the ‘129 patent.<sup>16</sup>

“The features of the present invention are also accomplished by altering the hole sizes so that holes nearer the air flow entrance or exit are smaller, thereby equalizing the amount of air which passes through the holes.”

45. Further, there is an additional limitation of the ‘129 patent that is not found in Wyon. In addition to lacking a variable hole pattern, Wyon also does not teach the positive air flow recited in claim 1 of the ‘129 Patent. That claim recites

“a generally enclosed chamber formed by a top portion and an air-impermeable bottom portion and including an opening *for receiving air from the air mover*”<sup>17</sup>

46. In Wyon, the flow is sucked through the device rather than blown through as in the challenged claims and Spitalnick.<sup>18</sup> Since the flow in the Wyon device is in the opposite direction

<sup>13</sup> I note here that I disagree with IGB, there is an additional limitation of claim 1 which is not found in Wyon and is discussed in a following section.

<sup>14</sup> ‘129 patent, col. 5, line 52 through col. 6, line 4

<sup>15</sup> ‘220 patent, col. 3, lines 2-5

<sup>16</sup> ‘129 patent, col. 2, lines 42-45

<sup>17</sup> Ibid, col. 5, lines 45-47

<sup>18</sup> ‘220 patent, col. 1, lines 61-67

1 to that of the '129 patent, the “generally enclosed chamber” in Wyon does not receive “air from  
2 the air mover” as required by the subject element of claim 1. Rather, the “generally enclosed  
3 chamber” of Wyon supplies air to the air mover, i.e., the flow is in the opposite direction. Clearly,  
4 Wyon does not include the blowing element of claim 1 of the '129 patent. Thus, the Wyon patent  
5 does not meet all of the other limitations of claim 1.

6 47. As detailed in the following sections, in my opinion, to one of ordinary skill in the  
7 art in January 2001, combining Wyon with Spitalnick to arrive at the claimed seat assemblies in  
8 claims 1-7 would not have been obvious.

## 9 2. The Spitalnick Patent

10 48. As illustrated below in Figure 3, the Spitalnick patent discloses seat cover that  
11 provides ventilated heating and cooling.

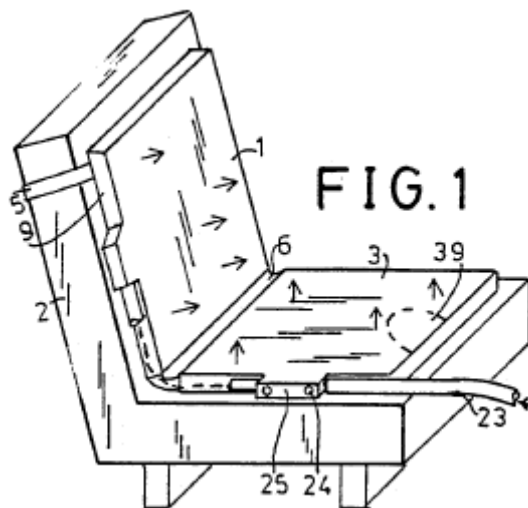


Figure 3. Fig. 1 of Spitalnick

21 49. Spitalnick discloses the use of an existing air conditioning unit to provide  
22 ventilation.<sup>19</sup> It forces positive air pressure from the air conditioner, through a duct, into the seat  
23 cover, and out through the front panel.<sup>20</sup> Spitalnick’s device purports to “ensure equal air flow at  
24 regions close and far from the air inlet” by using “variable perforations 20” to make the air  
25

27 <sup>19</sup> ‘230 patent, col. 1, lines 46-48

28 <sup>20</sup> Ibid, col. 1, line 65 through col. 2, line 3

permeability of the front panel non-uniform.<sup>21</sup> It shows these “variable perforations 20” in Figure 4, below.

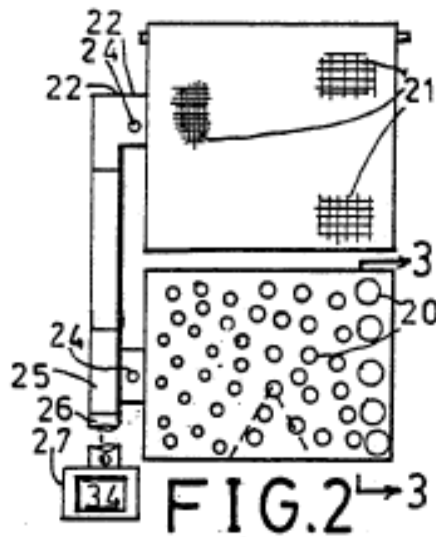


Figure 4. Fig. 2 of Spitalnick

### 3. Wyon Achieves a Uniform Flow by a Different Means Than the ‘129 Patent and Spitalnick

50. Wyon teaches that critical factors for achieving uniform distribution of the air flow are negative air pressure and uniform hole sizes — not positive pressure and the use of variable hole sizes — and thus, in my opinion, would teach a person of ordinary skill away from the hole pattern and air flow claimed in the disputed claims of the ‘129 patent. Referring to Fig. 2 of Wyon shown above in Figure 2, the general approach to obtain a uniform flow distribution is described in the following quoted portion of the specification of Wyon.<sup>22</sup>

When the suction turbine 13 is powered up it creates a negative pressure at the opening 11 in the perforated sheet rubber material 6. The sheet rubber material is tightly bearing under tension against the sides of the foamed plastic body, whereby the pores close to those surfaces of the foamed plastic body are sealed, so that no air can arrive to the opening 11 without passing through the foamed plastic body 9. Both horsehair layers 8, 10 are permeable to air, as is the porous foamed plastic body 9 itself, and they have a tendency to distribute a concentrated negative air pressure

<sup>21</sup> Ibid, col. 2, lines 54-58

<sup>22</sup> Ibid, col. 3, lines 22-39

1 uniformly over a larger area. This fact and the action of the suction turbine  
2 create a negative air pressure substantially evenly distributed over the  
3 upper side of the porous body, as indicated by the small arrows 14. This  
4 evenly distributed negative air pressure provides substantially the same  
5 suction effect at each of the holes 7 in the perforated sheet rubber material  
6 6.

7 51. Thus, according to the teaching of Wyon a uniform flow distribution is obtained in  
8 an entirely different manner from that taught by the '129 patent as well as Spitalnick.

9 **4. One of Ordinary Skill Would Not Incorporate Positive Air**  
10 **Pressure Into Wyon's Device**

11 52. As explained in the following quoted portion of the specification of Wyon, Wyon  
12 teaches that suction is an important feature of the device and provides a more effective ventilation  
13 system.<sup>23</sup>

14 A device according to the invention makes it possible to suck air through  
15 those support surfaces of the chair with which the body of a person sitting  
16 in a chair would be in contact, by which means sucked air will pass close  
17 to the contact surfaces of the seated person's body, thus cooling them in a  
18 comfortable way and keeping them dry. It has been found that in the  
19 device according to the invention the heat flow from those parts of the  
20 body forming the contact surfaces with the chair may be just as high as if  
21 the person were freely standing up, the value of the heat flow being  
22 naturally dependent on the internal construction of the device and on the  
23 suction effect utilized of the suction device in use. Furthermore, the  
24 support surfaces of the device are capable of absorbing the sweat  
25 produced, if any, and moisture that may be produced between the body  
26 and the support surfaces, thus maintaining the support surfaces dry and  
27 cool despite this due to the air stream passing.

28 53. Indeed, when discussing alternative designs, Wyon limits the alternatives to other  
29 *suction* devices.<sup>24</sup>

30 54. The teachings of Wyon emphasize the importance of negative air flow and would  
31 dissuade a person of ordinary skill from reversing the flow as is done in Spitalnick. Reversing the  
32 flow in Wyon would result in the loss of the benefits described in the above quoted portion of the  
33 specification. Thus, in my opinion, modifying the designs taught in Wyon to reverse the air flow

34 <sup>23</sup> '220 patent, col. 1, line 59 through col. 2, line 9

35 <sup>24</sup> Ibid, col. 4, lines 50-56

1 as in the '129 patent would not have been obvious to a person of ordinary skill in the art in  
2 January 2001.

3 55. Further, an artisan of ordinary skill would view Spitalnick's use of positive air  
4 pressure as a trade-off in order to enhance portability. That artisan would not perceive  
5 Spitalnick's use of positive pressure as an improvement. The first stated objective of Spitalnick's  
6 disclosure is "to provide a means for cooling and heating the seat of a vehicle that is *portable*["<sup>25</sup>  
7 While permanent devices like Wyon's disclose the addition of a device to provide suction,<sup>26</sup>  
8 Spitalnick's use of the airflow provided by an available source avoids the need for that extra item.  
9 One of ordinary skill would understand Spitalnick's use of an available source as a way to further  
10 its primary objective of portability, not a way to provide more effective and uniform ventilation.  
11 This is particularly true in light of Wyon's emphasis on suction.

12 56. Additionally, reversing the direction of flow in Wyon would threaten its ability to  
13 provide effective ventilation. Wyon is constructed to rely on negative pressure. It states:

14 When the suction turbine 13 is powered up it creates a negative pressure at  
15 the opening 11 in the perforated sheet rubber material 6. The sheet rubber  
16 material is tightly bearing under tension against the sides of the foamed  
17 plastic body, whereby the pores close to those surfaces of the foamed  
18 plastic body are sealed, so that no air can arrive to the opening 11 without  
19 passing through the foamed plastic body 9.<sup>27</sup>

20 57. The disclosure quoted above describes a system designed for negative pressure.  
21 Negative pressure reinforces the inward tension holding the sheet rubber material against the sides  
22 of the foamed plastic body. Thus, it reinforces the seal between the pores and the surfaces of the  
23 foamed plastic body, which forces air to pass through the foamed plastic body 9 and provide  
24 effective airflow. If the direction of the flow were reversed, however, positive air pressure would  
25 work against the seal between the pores and the surfaces of the foamed plastic body, causing  
26 leaks. This would allow air to arrive at the opening 11 without passing through the foamed plastic  
27 body 9. Doing so would impair Wyon's effective and uniform air flow.

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28 <sup>25</sup> Ibid, col. 1, lines 39-45 (emphasis added)

<sup>26</sup> Ibid, col. 3, lines 15-20

<sup>27</sup> Ibid, col. 3, lines 12-29

1           58. In light of Wyon's emphasis on the importance of suction pressure in achieving  
2 uniform pressure distribution and the threats to operability by switching to positive pressure, one  
3 of ordinary skill would have no reason or motivation to modify Wyon to incorporate positive  
4 pressure as claimed in the '129 patent. One of ordinary skill would similarly have no reasonable  
5 expectation of success in doing so.

## 6                           **5. Wyon Teaches Away From Variably Sized Holes**

7           59. A person of ordinary skill in the art in January 2001 would understand from Wyon  
8 that changing the uniform hole pattern in Wyon would threaten the uniform distribution of  
9 negative pressure and air flow, undermining the purpose of the Wyon seat designs.

10          60. Wyon discloses that its suction-equaling device creates "a negative air pressure  
11 substantially evenly distributed over the upper side of the porous body."<sup>28</sup> This "provides  
12 substantially the same suction effect at each of the holes."<sup>29</sup> The flow of a fluid through a hole  
13 increases with increasing size of the hole. Accordingly, changing the size of a hole would result  
14 in a corresponding change in the air flow at that hole and undermine Wyon's uniform distribution.

15          61. Thus, as with the switch to positive air pressure, Wyon discourages one of ordinary  
16 skill from modifying Wyon's uniform hole pattern. One of ordinary skill would have no reason  
17 or motivation to modify Wyon's hole pattern to incorporate Spitalnick's variable or non-uniform  
18 hole pattern. One of ordinary skill would similarly have no reasonable expectation of success in  
19 doing so. To this person of ordinary skill, modifying Wyon's hole pattern to incorporate  
20 Spitalnick's hole pattern or the claimed hole pattern would threaten Wyon's uniform pressure  
21 distribution.

## 22                           **6. Other References Support Nonobviousness**

23          62. Other references available in January 2001 also support the conclusion that a  
24 person of ordinary skill would understand that a negative air pressure combined with uniform hole  
25 sizes, as taught in Wyon, was critical for maintaining an even distribution of air flow. For  
26 example, U.S. Patent No. 6,003,950 to Larsson describes a device for ventilating a chair that

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27 <sup>28</sup> '220 patent, col. 3, lines 29-39, 50-61

28 <sup>29</sup> Ibid



1 relies on a suction device.<sup>30</sup> Larsson teaches that its device achieves “uniform distribution of the  
2 negative pressure,” as known from previous devices, through the specified suction openings.<sup>31</sup>  
3 Larsson teaches that the suction openings all have a diameter of about the same size of 10 mm,  
4 and holes in an overlying cover similarly all have a diameter of about 1-2 mm.<sup>32</sup> Larsson teaches  
5 that its system of negative pressure and uniformly-sized suction openings achieves an “even and  
6 good suction effect” on the covering surfaces.<sup>33</sup>

7 63. Larsson, in my opinion, thus would dissuade and teach a person of ordinary skill  
8 away from modifying Wyon’s hole pattern to match the hole arrangement in the challenged ‘129  
9 patent claims. Modifying Wyon as IGB contends would thus not have been obvious to a person  
10 of ordinary skill in January 2001.

11 **D. Wyon In View of Spitalnick and Larsson Cannot Render Claims 4 and**  
12 **5 Obvious**  
13

14 64. As listed above, claim 4 is dependent on claim 1 and further requires “a heater for  
15 raising the temperature of the air exiting the ventilated seat.” As explained in the preceding  
16 sections, the Wyon seat is based on sucking the air through the seat and as such there is no “air  
17 exiting the ventilated seat” in the manner required by claim 4. Further, as explained in the  
18 preceding sections, a person of ordinary skill would have been discouraged from reversing the air  
19 flow in Wyon to arrive at the air flow required by the claims of the challenged ‘129 claims. It  
20 thus would not have been obvious to a person of ordinary skill to modify Wyon to arrive at the  
21 inventions claimed in claims 4 and 5 of the ‘129 patent.

22 65. Any air heated within the seat in Wyon would be directed away from the occupant.  
23  
24  
25

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26 <sup>30</sup> ‘950 patent, Abstract

27 <sup>31</sup> Ibid, col. 1, line 65 through col. 2, line 16; see also ibid, col. 2, lines 63-65

28 <sup>32</sup> Ibid, col. 6, lines 63-68

<sup>33</sup> Ibid, col. 7, lines 5-9

**E. Wyon In View of Spitalnick and Larsson Cannot Render Claim 7 Obvious**

66. As listed above, claim 7 is dependent on claim 6 which is in turn dependent from claim 1. Claim 7 further requires that “the chamber in the seat base and the chamber in the backrest are configured to receive air from a single air mover.” As explained in the preceding sections, the Wyon seat is based on sucking the air through the seat and as such there is no “chamber” that may receive air from an “air mover” in the manner required by claim 7.

1       **VII.           CONCLUSION**

2           67.    As discussed in detail in the preceding sections, the Wyon patent discloses a  
3 fundamentally different invention from that of the '129 patent. As explained in detail in the  
4 preceding sections, because of the very fundamental differences between the disclosures of the  
5 Wyon patent and those of the '129 patent, the Wyon patent does not represent a viable primary  
6 reference for any combination that would render any claim of the '129 patent obvious. Moreover,  
7 a person of ordinary skill in the relevant art would have no reason, motivation, or reasonable  
8 expectation of success in modifying the Wyon designs to incorporate the perforations taught in  
9 Spitalnick. Modifying the Wyon designs to arrive at the seat assemblies claimed in claims 1-7 of  
10 the '129 Patent would not have been obvious to a person of ordinary skill in January 2001.  
11

12             
13           Dr. James Rice

January 8, 2015

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